AS FILED WITH THE SECURITIES AND EXCHANGE COMMISSION ON NOVEMBER 8, 2000

REGISTRATION STATEMENT NO. 333-45996

SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

AMENDMENT NO. 2
TO
FORM S-1
REGISTRATION STATEMENT
UNDER
THE SECURITIES ACT OF 1933

HARVARD BIOSCIENCE, INC.
(Exact Name of Registrant as Specified in its Charter)

DELAWARE	3826	04-3306140
(State or Other Jurisdiction of Incorporation or Organization)	(Primary Standard Industrial Classification Code Number)	(I.R.S. Employer Identification No.)

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84 OCTOBER HILL ROAD
HOLLISTON, MASSACHUSETTS 01746-1371
(508) 893-8066
(Address, including zip code, and telephone number, including area code, of Registrant's principal executive office)

CHANE GRAZIANO
CHIEF EXECUTIVE OFFICER
HARVARD BIOSCIENCE, INC.
84 OCTOBER HILL ROAD
HOLLISTON, MASSACHUSETTS 01746-1371
(508) 893-8066
(Name, address, including zip code, and telephone number, including area code, of agent for service)

COPIES TO:

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GOODWIN, PROCTER & HOAR LLP	JOHN J. CHENEY, ESQ.
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BOSTON, MASSACHUSETTS 02109-2881	ONE FINANCIAL CENTER
(617) 570-1000	BOSTON, MASSACHUSETTS 02111
	(617) 542-6000

APPROXIMATE DATE OF COMMENCEMENT OF PROPOSED SALE TO THE PUBLIC: As soon as practicable after this Registration Statement becomes effective.

If any of the securities being registered on this Form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933, check the following box. / / _____

If this Form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. / / _____

If this Form is a post-effective amendment filed pursuant to Rule 462(c) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. / / _____

If this Form is a post-effective amendment filed pursuant to Rule 462(d) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. / / _____

If delivery of the prospectus is expected to be made pursuant to Rule 434, please check the following box. / / _____

THE REGISTRANT HEREBY AMENDS THIS REGISTRATION STATEMENT ON SUCH DATE OR DATES AS MAY BE NECESSARY TO DELAY ITS EFFECTIVE DATE UNTIL THE REGISTRANT SHALL FILE A FURTHER AMENDMENT WHICH SPECIFICALLY STATES THAT THIS REGISTRATION

STATEMENT SHALL THEREAFTER BECOME EFFECTIVE IN ACCORDANCE WITH SECTION 8(a) OF THE SECURITIES ACT OF 1933 OR UNTIL THE REGISTRATION STATEMENT SHALL BECOME EFFECTIVE ON SUCH DATE AS THE SEC, ACTING PURSUANT TO SECTION 8(a), MAY DETERMINE.

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THE INFORMATION IN THIS PROSPECTUS IS NOT COMPLETE AND MAY BE CHANGED. WE MAY NOT SELL THESE SECURITIES UNTIL THE REGISTRATION STATEMENT FILED WITH THE SECURITIES AND EXCHANGE COMMISSION IS EFFECTIVE. THIS PROSPECTUS IS NOT AN OFFER TO SELL THESE SECURITIES, AND IT IS NOT SOLICITING OFFERS TO BUY THESE SECURITIES IN ANY STATE IN WHICH THE OFFER OR SALE IS NOT PERMITTED.

SUBJECT TO COMPLETION, DATED NOVEMBER 8, 2000

PROSPECTUS

[THOMAS WEISEL PARTNERS LLC LOGO]

[HARVARD BIOSCIENCE LOGO]

6,422,450 SHARES
COMMON STOCK

- ---

We are selling 6,250,000 shares of our common stock and our president as a selling stockholder is offering an additional 172,450 shares. We will not receive any of the proceeds from the sale of shares by the selling stockholder. We have granted the underwriters a 30-day option to purchase up to an additional 937,500 shares to cover over-allotments, if any.

This is an initial public offering of our common stock. We currently expect the initial public offering price to be between $11.00 and $13.00 per share. We have applied for approval for quotation of our common stock on the Nasdaq National Market under the symbol "HBIO."

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INVESTING IN OUR COMMON STOCK INVOLVES RISKS. SEE "RISK FACTORS" ON PAGE 6.

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	PER SHARE	TOTAL
Public offering price	$	$
Underwriting discount	$	$
Proceeds, before expenses, to us	$	$
Proceeds, before expenses, to the selling stockholder	$	$

NEITHER THE SECURITIES AND EXCHANGE COMMISSION NOR ANY STATE SECURITIES COMMISSION HAS APPROVED OR DISAPPROVED OF THESE SECURITIES OR DETERMINED IF THIS PROSPECTUS IS TRUTHFUL OR COMPLETE. ANY REPRESENTATION TO THE CONTRARY IS A CRIMINAL OFFENSE.

- ---

THOMAS WEISEL PARTNERS LLC

DAIN RAUSCHER WESSELS

ING BARINGS

The date of this prospectus is , 2000

EDGAR GRAPHICS DESCRIPTIONS

INSIDE FRONT COVER-GATEFOLD

Pages 2 and 3: Gatefold has title "Harvard Bioscience Products and the Bottlenecks in Post-Genomics Drug Discovery" at the top. Below these words is a process flow diagram illustrating the drug discovery process and the key bottlenecks within this process. The diagram begins on the upper left portion of the gatefold and flows horizontally to the upper right portion of the gatefold. Below and to the right of the diagram is an orange arrow indicating that orange portions of the diagram represent bottlenecks in the drug discovery process. The diagram is initially split into two parallel tracks which merge into a single track near the middle of the pages as the flow diagram moves to the right. The upper track of the diagram is titled "Compound Development" and includes a green arrow titled "Compound Libraries". Below the arrow are the words "Combinatorial Chemistry". The lower track of the diagram is titled "Target Discovery" and includes two arrows. The first arrow is green and is titled "Target Identification". Above this arrow is the word "Genomics". The next arrow to the right is orange and is titled "Target Validation". Above this arrow is the word "Proteomics". Following the "Compound Libraries" arrow on the upper track and the "Target Validation" arrow on the lower track, the two tracks of the diagram combine and include green and orange arrows to illustrate the remaining stages and key bottlenecks in the drug discovery process. The individual arrows from left to right include an orange arrow titled "Assay Development" followed by a green arrow titled "High Throughput Screening". These two arrows in the diagram appear under the title "Primary Screening". To the right of the "High Throughput Screening" arrow is an orange arrow titled "Lead Optimization" followed by an orange arrow titled "ADMET Screening". These two arrows in the diagram appear under the title "Secondary Screening". To the right of the "ADMET Screening" arrow is a green arrow titled "Clinical Trials", the final arrow in the process flow diagram.

The lower portion of the gatefold consists of product descriptions. The lower left portion begins with the words "Protein Purification" with the following product photos and short descriptions appearing below "Protein Purification". A drawing of a pipette tip is followed by the words "PrepTip-TM Coated pipette tips for the purification of minute protein samples". Below this is a photo of spin columns followed by the words "UltraMicro Spin Columns Small plastic tubes containing purification media that are spun in a centrifuge". Below this is a photo of disposable dialyzers followed by the words "Disposable Dialyzers small plastic chambers capped with a membrane that retains proteins but passes contaminants". Below this are the words "Protein Analysis" with the following product photos and short descriptions appearing below "Protein Analysis". A photo of a DNA/RNA/protein calculator followed by the words "GeneQuant Pro-TM DNA/RNA/Protein calculators". Below this are photos of a purple spectrophotometer, a yellow spectrophotometer and a green spectrophotometer followed by the words "UltroSpec-TM Range of spectrophotometers for molecular biology". Below this is a photo of an amino acid analysis system followed by the words "Biochrom-TM 20 Amino Acid Analysis System".

The lower right portion begins with the word "Absorption". Below this is a photo of an absorption measurement chamber followed by the words "NaviCyte-TM Absorption measurement chambers". Below this is the word "Distribution" with a photo of an equilibrium dialysis plate and followed by the words "96 Well Equilibrium Dialysis Plate Equilibrium dialysis plate for the measurement of the interaction of drugs and proteins". Below this are the words "Metabolism and Elimination" with a photo of an isolated organ system and followed by the words "Isolated Organ Systems Liver and kidney systems used for studying metabolism and elimination". Below this is the word "Toxicology" with a photo of a desktop computer and the ScanTox product followed by the words "ScanTox-TM Screening system for testing toxicology without the use of laboratory animals". Below this is a photo of an infusion pump followed by the words "PHD 2000 Infusion pump for toxicology testing".

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PROSPECTUS SUMMARY

THIS SUMMARY HIGHLIGHTS INFORMATION CONTAINED ELSEWHERE IN THIS PROSPECTUS. YOU SHOULD READ THE ENTIRE PROSPECTUS CAREFULLY, INCLUDING THE "RISK FACTORS" SECTION.

OUR COMPANY

We are a global developer, manufacturer and marketer of innovative, enabling tools used in drug discovery research at pharmaceutical and biotechnology companies, universities and government laboratories. We sell approximately 10,000 products to more than 5,000 customers in over 60 countries. Our proprietary products accounted for approximately 82% of our revenues for the nine months ended September 30, 2000. We have designed our tools to accelerate the speed and to reduce the cost at which our customers can discover and commercialize new drugs. By providing research tools, we participate in the revolutions in genomics, the study of genes, and proteomics, the study of proteins, without bearing the risks inherent in attempting to discover new drugs.

Since our reorganization in March 1996, we have focused on developing tools to alleviate two critical bottlenecks in the drug discovery process:

- PROTEIN PURIFICATION, which is the removal of contaminants such as salts, buffers, detergents and cellular debris from a protein sample, and

- ADMET SCREENING, which is the testing of the absorption, distribution, metabolism, elimination and toxicology properties of drug candidates.

Our proteomics products are tools that allow researchers to purify and analyze proteins contained in a sample. Our ADMET screening products are tools that enable researchers to test drug candidates to determine their absorption, distribution, metabolism, elimination and toxicology properties prior to conducting costly clinical trials.

We market our products primarily through our 1,000 page catalog to approximately 100,000 researchers worldwide. Our catalog is also available on our website. We distribute most of our products directly through our operations in the United States, the United Kingdom, Germany, France and Canada. In addition to our catalog distribution channel, we have a long-standing distribution and marketing relationship with Amersham Pharmacia Biotech, or APBiotech, one of the largest companies in the life sciences industry.

OUR OPPORTUNITY

Drug discovery is a time-consuming and costly process. In the pre-genomics era, the compound development, primary screening and clinical trials stages were bottlenecks in this process. The recent successes of genomics, combinatorial chemistry (the automated production of large numbers of chemical compounds) and high throughput screening have alleviated the bottlenecks at the compound development and primary screening stages. However, these bottlenecks have been replaced by bottlenecks at later stages in the drug discovery process. Our opportunity lies in alleviating these bottlenecks with products that increase the productivity and reduce the cost of drug discovery.

OUR PRODUCTS

We have a broad array of established products for proteomics and ADMET screening. We believe our products offer drug discovery researchers the most comprehensive protein purification and

ADMET screening solutions. In the past two years, we have expanded our product base by introducing the following proprietary tools:

PROTEIN PURIFICATION:

- specially coated pipette tips, which are small plastic tubes coated on the inside with a material that selectively extracts proteins but not contaminants,

- micro spin columns, which are small plastic tubes partially filled with a material that selectively extracts proteins but not contaminants, and

- micro dialyzers, which are small plastic tubes each containing a dialysis membrane which allows small molecules to pass through but retains large molecules such as proteins.

ADMET SCREENING:

- NaviCyte diffusion chambers, which measure drug absorption by simulating membranes in the human body,

- small plastic plates with 96 wells, which each contain a dialysis membrane that allows small molecules to pass through but retains large molecules such as proteins, and

- ScanTox instruments, which enable toxicology testing without the use of animals.

In protein purification, these new products increase productivity and reduce cost by avoiding the cumbersome sample handling steps required by current technology and by being compatible with automated liquid-handling robots. Many of the products are available in 96 well plate formats. In ADMET screening, these new products lower cost and increase automation by using molecular, cellular, tissue and organ based assays to reduce the use of live animals.

In addition to our proprietary products, we provide a broad selection of non-proprietary products that are frequently used in conjunction with our proprietary products. We seek to be a single source for our customers' product needs in protein purification and ADMET screening.

OUR STRATEGY

Our goal is to become the leading provider of innovative, enabling technologies and products for proteomics and ADMET research in the drug discovery process. Key elements of our strategy are to:

- establish our new proteomics and ADMET screening products as industry standards,

- launch a broad range of innovative new tools for drug discovery,

- leverage our existing distribution and marketing channels,

- provide a single source of tools for our customers' research needs in proteomics and ADMET screening, and

- acquire complementary technologies.

We organized our company as a Massachusetts corporation on March 7, 1996 in connection with our purchase of a portion of the assets of Harvard Apparatus, a business which, with its predecessors, had been in existence since 1901. The initial Harvard Apparatus catalog was published in 1901 by Dr. William T. Porter, a professor at the Harvard Laboratory of Physiology. We will be reincorporated by merger in Delaware prior to the closing of this offering. In connection with the reincorporation, we will change our corporate name from Harvard Apparatus, Inc. to Harvard Bioscience, Inc. We have no affiliation with Harvard University. Our principal executive offices are located at 84 October Hill Road, Holliston, Massachusetts 01746. Our telephone number at that location is (508) 893-8066 and our Internet address is www.harvardbioscience.com. The information contained on our website is not part of this prospectus.

We have six wholly-owned subsidiaries, Biochrom Ltd. (United Kingdom), Harvard Apparatus Limited (United Kingdom), Hugo Sachs Elektronik-Harvard Apparatus GmbH (Germany), Harvard Apparatus S.A.R.L. (France), Harvard Apparatus FSC, Inc. (United States) and Ealing Scientific Ltd. (Canada).

The names Harvard Bioscience and Harvard Apparatus and our logo are names and trademarks that we believe belong to us. We have the rights to numerous trademarks and trade names including AmiKa, Biochrom, CPK, GeneQuant, GeneQuantPro, NaviCyte, NovaSpec, PrepTip, PureTip, ScanTox, Stronghold and UltroSpec. This prospectus also contains the trademarks and trade names of other entities that are the property of their respective owners.

THE OFFERING

Common stock offered by us	6,250,000 shares
Common stock offered by our president as a selling stockholder	172,450 shares
Common stock outstanding after the offering	24,782,422 shares
Use of proceeds	For payment of existing debt, redemption of our series A redeemable preferred stock, potential acquisitions, working capital and general corporate purposes.
Proposed Nasdaq National Market symbol	HBIO

The above information is based on 18,532,422 shares outstanding as of October 15, 2000 and excludes:

- 599,096 shares issuable upon exercise of options then outstanding at a weighted average exercise price of $1.00 per share.

Unless otherwise noted, this prospectus assumes:

- no exercise of the underwriters' over-allotment,
- an assumed initial offering price of $12.00 per share,
- a 19.71-for-1 stock split of our common stock effected in connection with this offering,
- our reincorporation by merger in Delaware and our related name change prior to the closing of this offering,
- the redemption of our outstanding series A redeemable preferred stock upon the closing of this offering,
- the automatic conversion of our outstanding series B convertible preferred stock into 955,935 shares of our common stock upon the closing of this offering,
- the issuance of 8,509,905 shares of our common stock upon exercise of all outstanding warrants at a weighted average exercise price of $0.0005 per share prior to the closing of this offering, and
- the amendment and restatement of our certificate of incorporation in connection with this offering.

SUMMARY FINANCIAL DATA

	PREDECESSOR COMPANY FISCAL YEAR ENDED DECEMBER 31, 1995	PREDECESSOR COMPANY FOR THE PERIOD FROM JANUARY 1, 1996 TO MARCH 14, 1996	FOR THE PERIOD FROM INCEPTION MARCH 15, 1996 TO DECEMBER 31, 1996
	(UNAUDITED)	(UNAUDITED)	
	(IN THOUSANDS, EXCEPT SHARE AND PER SHARE DATA)		
STATEMENT OF OPERATIONS DATA:			
Revenues	$ 10,032	$ 1,989	$ 8,198
Cost of goods sold	5,286	1,059	4,080
Stock compensation expense	--	--	--
Gross profit	4,746	930	4,118
Other operating expenses	4,252	810	3,141
Stock compensation expense	--	--	--
Operating income (loss)	494	120	977
Other (expense) income:			
Common stock warrant interest expense	--	--	--
Interest expense, net	(472)	(90)	(177)
Amortization of deferred financing costs	--	--	--
Other	(62)	(139)	98
Other expense, net	(534)	(229)	(79)
(Loss) income before income taxes	(40)	(109)	898
Income taxes	85	--	362
Net (loss) income	$ (125)	$ (109)	$ 536
Preferred stock dividends	--	--	(97)
Net (loss) income available to common stockholders	$ (125)	$ (109)	$ 439
(Loss) income per share:			
Basic	$ (0.01)	$ (0.01)	$ 0.04
Diluted	$ (0.01)	$ (0.01)	$ 0.02
Weighted average common shares:			
Basic	10,259,410	10,259,410	10,259,410
Diluted	10,259,410	10,259,410	20,241,145
Pro forma (loss) income per share:			
Basic			
Diluted			
Pro forma weighted average common shares:			
Basic			
Diluted			

	FISCAL YEAR ENDED DECEMBER 31,			NINE MONTHS ENDED SEPTEMBER 30,	
	1997	1998	1999	1999	2000
				(UNAUDITED)	
	(IN THOUSANDS, EXCEPT SHARE AND PER SHARE DATA)				
STATEMENT OF OPERATIONS DATA:					
Revenues	$ 11,464	$ 12,154	$ 26,178	$ 18,470	$ 22,069
Cost of goods sold	5,128	5,351	13,547	9,359	11,462
Stock compensation expense	--	--	--	--	151
Gross profit	6,336	6,803	12,631	9,111	10,456
Other operating expenses	4,217	4,391	8,151	5,862	7,723
Stock compensation expense	--	--	3,284	937	13,181
Operating income (loss)	2,119	2,412	1,196	2,312	(10,448)
Other (expense) income:					
Common stock warrant interest expense	(117)	(1,379)	(29,694)	(7,403)	(70,920)
Interest expense, net	(223)	(210)	(657)	(468)	(655)
Amortization of deferred financing costs	--	--	(63)	(44)	(56)
Other	10	31	(65)	46	(428)
Other expense, net	(330)	(1,558)	(30,479)	(7,869)	(72,059)
(Loss) income before income taxes	1,789	854	(29,283)	(5,557)	(82,507)

Income taxes	682	783	137	649	1,354
Net (loss) income	$ 1,107	$ 71	$ (29,420)	$ (6,206)	$ (83,861)
Preferred stock dividends	(122)	(122)	(157)	(115)	(123)
Net (loss) income available to common stockholders	$ 985	$ (51)	$ (29,577)	$ (6,321)	$ (83,984)
(Loss) income per share:					
Basic	$ 0.13	$ (0.01)	$ (5.28)	$ (1.13)	$ (13.11)
Diluted	$ 0.06	$ (0.01)	$ (5.28)	$ (1.13)	$ (13.11)
Weighted average common shares:					
Basic	7,406,486	5,598,626	5,598,626	5,598,626	6,407,682
Diluted	17,500,194	5,598,626	5,598,626	5,598,626	6,407,682
Pro forma (loss) income per share:					
Basic			$ 0.01		$ (0.82)
Diluted			$ 0.01		$ (0.82)
Pro forma weighted average common shares:					
Basic			14,902,100		15,873,527
Diluted			17,381,677		15,873,527

Pro forma basic and diluted net (loss) income per share have been calculated assuming the conversion of all outstanding shares of convertible preferred stock into common stock and the exercise of all outstanding warrants for common stock as if they had been converted or exercised on the dates of issuance. Accordingly, common stock warrant interest expense and dividends associated with convertible preferred shares are excluded from the pro forma per share amounts.

The financial data presented above for the year ended December 31, 1995 and for the period from January 1, 1996 to March 14, 1996 represents the financial data of our predecessor company without any adjustments relating to our purchase of a portion of its assets.

	AS OF SEPTEMBER 30, 2000		
	ACTUAL	PRO FORMA	PRO FORMA AS ADJUSTED
BALANCE SHEET DATA:			
Cash and cash equivalents	$ 2,149	$ 2,154	$68,904
Working capital	1,025	1,030	67,780
Total assets	23,236	23,241	89,991
Long-term obligations, net of current portion	5,730	5,730	5,730
Preferred stock	2,500	1,500	--
Common stock warrants	102,115	--	--
Stockholders' equity (deficit)	(97,018)	6,102	74,352

The preceding table presents a summary of our balance sheet data as of September 30, 2000:

- on an actual basis assuming the filing of an amended and restated certificate of incorporation to increase the number of authorized shares of common stock,

- on a pro forma basis to give effect to the conversion of all outstanding shares of convertible preferred stock into an aggregate of 955,935 shares of common stock, the exercise of all outstanding warrants for an aggregate of 8,509,905 shares of common stock upon the closing of this offering and the filing of our amended and restated certificate of incorporation prior to the effective date of this offering, and

- on a pro forma as adjusted basis to reflect the sale of 6,250,000 shares of common stock by us in this offering at an assumed initial offering price of $12.00 per share, after deducting estimated underwriting discounts, commissions and offering expense and the redemption of all outstanding shares of redeemable preferred stock upon the closing of this offering.

RISK FACTORS

AN INVESTMENT IN OUR COMMON STOCK INVOLVES SIGNIFICANT RISKS. YOU SHOULD CAREFULLY CONSIDER THE FOLLOWING RISKS BEFORE YOU DECIDE TO BUY OUR COMMON STOCK.

IF WE ARE UNABLE TO ACHIEVE AND SUSTAIN MARKET ACCEPTANCE OF OUR NEW PROTEOMICS AND ADMET SCREENING PRODUCTS ACROSS THEIR BROAD INTENDED RANGE OF APPLICATIONS, WE WILL NOT GENERATE EXPECTED REVENUE GROWTH.

Our business strategy depends on our successfully developing and commercializing our new proteomics and ADMET screening technologies to meet our customers' expanding needs and demands. For example, our recent acquisition of AmiKa Corporation involved the purchase of the technology that we are using to develop our 96 well plate for serum protein binding analysis. Market acceptance of this and other new products will depend on many factors, including the extent of our marketing efforts and our ability to demonstrate to existing and potential customers that our technologies are superior to other technologies and products that are available now or may become available in the future. If our new products do not gain market acceptance, it could materially adversely affect our business and future growth prospects.

OUR PRODUCTS COMPETE IN MARKETS THAT ARE SUBJECT TO RAPID TECHNOLOGICAL CHANGE, AND THEREFORE ONE OR MORE OF OUR PRODUCTS COULD BE MADE OBSOLETE BY NEW TECHNOLOGIES.

Because the market for drug discovery tools is characterized by rapid technological change and frequent new product introductions, our product lines may be made obsolete unless we are able to continually improve our existing products and develop new products. To meet the evolving needs of our customers, we must continually enhance our current and planned products and develop and introduce new products. However, we may experience difficulties which may delay or prevent the successful development, introduction and marketing of new products or product enhancements. In addition, our product lines are based on complex technologies which are subject to rapid change as new technologies are developed and introduced in the marketplace. We may have difficulty in keeping abreast of the rapid changes affecting each of the different markets we serve or intend to serve. Our failure to develop and introduce products in a timely manner in response to changing technology, market demands or the requirements of our customers could cause our product sales to decline, and we could experience significant losses.

We offer and plan to offer a broad product line and have incurred and expect to continue to incur substantial expenses for development of new products and enhanced versions of our existing products. The speed of technological change in our market may prevent us from being able to successfully market some or all of our products for the length of time required to recover their often significant development costs. Failure to recover the development costs of one or more products or product lines could decrease our profitability or cause us to experience significant losses.

WE HAVE LIMITED EXPERIENCE IN MANUFACTURING SOME OF OUR PRODUCTS WHICH COULD CAUSE PROBLEMS OR DELAYS RESULTING IN LOST REVENUE.

We have only recently begun to manufacture and therefore currently have limited manufacturing capacity for some of our products, such as our PrepTip protein purification pipette tips. If we fail to manufacture and deliver products in a timely manner, our relationships with our customers could be seriously harmed, and our revenue could decline. To achieve the production levels necessary for successful commercialization, we will need to scale-up our manufacturing facilities and establish automated manufacturing methods and quality control procedures. We cannot assure you that manufacturing or quality control problems will not arise as we attempt to scale-up our production or that we can scale-up manufacturing and quality control in a timely manner or at commercially

reasonable costs. If we are unable to manufacture these products consistently on a timely basis because of these or other factors, we may not achieve the level of sales from these products that we otherwise anticipate.

IF AMERSHAM PHARMACIA BIOTECH TERMINATES ITS DISTRIBUTION AGREEMENT WITH US OR FAILS TO PERFORM ITS OBLIGATIONS UNDER OUR DISTRIBUTION AGREEMENT, IT COULD IMPAIR THE MARKETING AND DISTRIBUTION EFFORTS FOR SOME OF OUR PRODUCTS AND RESULT IN LOST REVENUES.

For the nine months ended September 30, 2000, approximately 39% of our revenues were generated through an agreement with Amersham Pharmacia Biotech, or APBiotech, under which APBiotech acts as our primary marketing and distribution channel for the products of our Biochrom subsidiary. Under the terms of this agreement, we are restricted from allowing another person or entity to distribute, market and sell the majority of the products of our Biochrom subsidiary. We are also restricted from making or promoting sales of the majority of the products of our Biochrom subsidiary to any person or entity other than APBiotech or its authorized subdistributors. We have little or no control over APBiotech's marketing and sales activities or the use of its resources. APBiotech may fail to purchase sufficient quantities of products from us or perform appropriate marketing and sales activities. The failure by APBiotech to perform these activities could materially adversely affect our business and growth prospects during the term of this agreement. In addition, our inability to maintain our arrangement with APBiotech for product distribution, could materially impede the growth of our business and our ability to generate sufficient revenue. Our agreement with APBiotech may be terminated under some circumstances, including in the event of a breach of a material term by us. This agreement has a perpetual term; however, it may be terminated by either party upon 18 months' prior written notice. While we believe our relationship with APBiotech is good, we cannot guarantee that the contract will be renewed or that APBiotech will aggressively market our products in the future.

WE MAY BE ADVERSELY AFFECTED BY THREATENED LITIGATION INVOLVING HARVARD UNIVERSITY.

We received correspondence from counsel to Harvard University on November 7, 2000 alleging trademark infringement, false designation of origin, unfair competition and cybersquatting and threatening legal action against us if we do not take certain steps, including ceasing our use of the term "Harvard Bioscience" and other terms containing the term "Harvard." We do not currently intend to take such steps, and we believe it is likely that Harvard University will pursue this matter against us. This legal action could include, among other things, the filing of a complaint against us seeking injunctive relief and treble damages with respect to these claims. We may suffer adverse consequences as a result of this matter which we cannot now predict. If claims for injunctive relief or other damages are asserted and are decided against us, we could suffer monetary damages, lose our ability to use the names "Harvard Bioscience" and "Harvard Apparatus," lose the reputation and goodwill associated with these names and ultimately experience decreased revenues and earnings in subsequent periods. In addition, any lawsuit or claim for injunctive relief may result in significant litigation expenses.

OUR COMPETITORS AND POTENTIAL COMPETITORS MAY DEVELOP PRODUCTS AND TECHNOLOGIES THAT ARE MORE EFFECTIVE OR COMMERCIALLY ATTRACTIVE THAN OUR PRODUCTS.

We expect to encounter increased competition from both established and development-stage companies that continually enter our market. We anticipate that these competitors will include:

- companies developing and marketing life sciences research tools,
- health care companies that manufacture laboratory-based tests and analyzers,
- diagnostic and pharmaceutical companies, and
- companies developing drug discovery technologies.

Currently, our principal competition comes from established companies that provide products which perform many of the same functions for which we market our products. Our competitors may develop or market products that are more effective or commercially attractive than our current or future products. Many of our competitors have substantially greater financial, operational, marketing and technical resources than we do. Moreover, these competitors may offer broader product lines and tactical discounts, and may have greater name recognition. In addition, we may face competition from new entrants into our field. We may not have the financial resources, technical expertise or marketing, distribution or support capabilities to compete successfully in the future.

IF WE ARE UNABLE TO EFFECTIVELY PROTECT OUR INTELLECTUAL PROPERTY, THIRD PARTIES MAY USE OUR TECHNOLOGY, WHICH WOULD IMPAIR OUR ABILITY TO COMPETE IN OUR MARKETS.

Our continued success will depend in significant part on our ability to obtain and maintain meaningful patent protection for our products throughout the world. Patent law relating to the scope of claims in the technology fields in which we operate is still evolving. The degree of future protection for our proprietary rights is uncertain. We own ten U.S. patents and have four patent applications pending in the U.S. We also own numerous U.S. registered trademarks and trade names and have applications for the registration of trademarks and trade names pending. We rely on patents to protect a significant part of our intellectual property and to enhance our competitive position. However, our presently pending or future patent applications may not issue as patents, and any patent previously issued to us may be challenged, invalidated, held unenforceable or circumvented. Furthermore, the claims in patents which have been issued or which may be issued to us in the future may not be sufficiently broad to prevent third parties from producing competing products similar to our products. In addition, the laws of various foreign countries in which we compete may not protect our intellectual property to the same extent as do the laws of the United States. If we fail to obtain adequate patent protection for our proprietary technology, our ability to be commercially competitive will be materially impaired.

In addition to patent protection, we also rely on protection of trade secrets, know-how and confidential and proprietary information. To maintain the confidentiality of trade secrets and proprietary information, we generally seek to enter into confidentiality agreements with our employees, consultants and strategic partners upon the commencement of a relationship with us. However, we may not obtain these agreements in all circumstances. In the event of unauthorized use or disclosure of this information, these agreements, even if obtained, may not provide meaningful protection for our trade secrets or other confidential information. In addition, adequate remedies may not exist in the event of unauthorized use or disclosure of this information. The loss or exposure of our trade secrets and other proprietary information would impair our competitive advantages and could have a material adverse effect on our operating results, financial condition and future growth prospects.

WE MAY BE INVOLVED IN LAWSUITS TO PROTECT OR ENFORCE OUR PATENTS WHICH WOULD BE EXPENSIVE AND TIME-CONSUMING.

In order to protect or enforce our patent rights, we may initiate patent litigation against third parties. We may also become subject to interference proceedings conducted in the patent and trademark offices of various countries to determine the priority of inventions. Several of our products are based on patents which are closely surrounded by patents held by competitors or potential competitors. As a result, we believe there is a greater likelihood of a patent dispute than would be expected if our patents were not closely surrounded by other patents. The defense and prosecution, if necessary, of intellectual property suits, interference proceedings and related legal and administrative proceedings would be costly and divert our technical and management personnel from their normal responsibilities. We may not prevail in any of these suits. An adverse determination of any litigation or defense proceedings could put our patents at risk of being invalidated or interpreted narrowly and could put our patent applications at risk of not issuing.

Furthermore, because of the substantial amount of discovery required in connection with intellectual property litigation, there is a risk that some of our confidential information could be compromised by disclosure during this type of litigation. For example, during the course of this kind of litigation, there could be public announcements of the results of hearings, motions or other interim proceedings or developments in the litigation. Securities analysts or investors may perceive these announcements to be negative, which could cause the market price of our stock to decline.

OUR SUCCESS WILL DEPEND PARTLY ON OUR ABILITY TO OPERATE WITHOUT INFRINGING ON OR MISAPPROPRIATING THE INTELLECTUAL PROPERTY RIGHTS OF OTHERS.

We may be sued for infringing on the intellectual property rights of others, including the patent rights, trademarks and trade names of third parties. Intellectual property litigation is costly and the outcome is uncertain. If we do not prevail in any intellectual property litigation, in addition to any damages we might have to pay, we could be required to stop the infringing activity, or obtain a license to or design around the intellectual property in question. If we are unable to obtain a required license on acceptable terms, or are unable to design around any third party patent, we may be unable to sell some of our products and services, which could result in reduced revenue.

AmiKa Corporation, whose assets we purchased in July 2000, has received and responded to correspondence from counsel to a third party competitor regarding the possible infringement by it of a patent and other pending patent applications held by such third party. Because this competitor has not pursued this matter since AmiKa's reply on June 7, 2000 in which AmiKa stated that it did not believe it was infringing on this competitor's patents, we believe that this matter has been concluded. However, we cannot assure you that this third party competitor will not assert these or similar claims in the future. We do not currently derive a significant portion of our revenue from products which depend on the intellectual property related to this alleged infringement.

CHANGES IN ACCOUNTING FOR GOODWILL AMORTIZATION MAY HAVE A MATERIAL ADVERSE AFFECT ON US.

We currently amortize goodwill purchased in our acquisitions on a straight line basis ranging from 5 to 15 years. At September 30, 2000, we had unamortized goodwill of $9.1 million, or 39.4% of total assets. Any changes in accounting rules under generally accepted accounting principles that reduce the period over which we may amortize goodwill may have an adverse effect on our ability to consummate future acquisitions and our financial results. A shorter goodwill amortization period would increase annual amortization expense and reduce our net income over the amortization period. In addition, we continually evaluate whether any portion of the remaining balance of goodwill may not be recoverable. If it is determined in the future that a portion of our goodwill is impaired, we may be required to write off that portion of our goodwill which would have an adverse effect on our net income for the period in which the write off occurs.

WE ARE DEPENDENT UPON OUR LICENSED TECHNOLOGIES AND MAY NEED TO OBTAIN ADDITIONAL LICENSES IN THE FUTURE TO OFFER OUR PRODUCTS AND REMAIN COMPETITIVE.

We have licensed key components of our technologies from third parties. If these agreements were to terminate prematurely or if we breach the terms of any licenses or otherwise fail to maintain our rights to these technologies, we may lose the right to manufacture or sell our products. In addition, we may need to obtain licenses to additional technologies in the future in order to keep our products competitive. If we fail to license or otherwise acquire necessary technologies, we may not be able to develop new products that we need to remain competitive.

MANY OF OUR CURRENT AND POTENTIAL CUSTOMERS ARE FROM THE PHARMACEUTICAL AND BIOTECHNOLOGY INDUSTRIES AND ARE SUBJECT TO RISKS FACED BY THOSE INDUSTRIES.

We derive a substantial portion of our revenues from pharmaceutical and biotechnology companies. We expect that pharmaceutical and biotechnology companies will continue to be our major source of revenues for the foreseeable future. As a result, we are subject to risks and uncertainties that affect the pharmaceutical and biotechnology industries, such as pricing pressures as third-party payers continue challenging the pricing of medical products and services, government regulation, ongoing consolidation and uncertainty of technological change, and to reductions and delays in research and development expenditures by companies in these industries. In particular, several proposals are being contemplated by lawmakers in the United States to extend the federal Medicare program to include reimbursement for prescription drugs. Many of these proposals involve negotiating decreases in prescription drug prices or imposing price controls on prescription drugs. If appropriate reimbursement cannot be obtained, it could result in our customers purchasing fewer products from us as they reduce their research and development expenditures.

In addition, we are dependent, both directly and indirectly, upon general health care spending patterns, particularly in the research and development budgets of the pharmaceutical and biotechnology industries, as well as upon the financial condition of various governments and government agencies. Many of our customers, including universities, government research laboratories, private foundations and other institutions, obtain funding for the purchase of our products from grants by governments or government agencies. There exists the risk of a potential decrease in the level of governmental spending allocated to scientific and medical research which could substantially reduce or even eliminate these grants. If government funding necessary to purchase our products were to decrease, our business and results of operations could be materially adversely affected.

OUR BUSINESS IS SUBJECT TO ECONOMIC, POLITICAL AND OTHER RISKS ASSOCIATED WITH INTERNATIONAL REVENUES AND OPERATIONS.

Since we manufacture and sell our products worldwide, our business is subject to risks associated with doing business internationally. Our revenues from our non-U.S. operations represented approximately 69% of our total revenues for the nine months ended September 30, 2000. We anticipate that revenue from international operations will continue to represent a substantial portion of our total revenues. In addition, a number of our manufacturing facilities and suppliers are located outside the United States. Accordingly, our future results could be harmed by a variety of factors, including:

- changes in foreign currency exchange rates, which resulted in a foreign currency loss of $456,000 for the nine months ended September 30, 2000,

- changes in a specific country's or region's political or economic conditions, including Western Europe, in particular,

- trade protection measures and import or export licensing requirements,

- potentially negative consequences from changes in tax laws affecting our ability to expatriate profits,

- difficulty in staffing and managing widespread operations, and

- unfavorable labor regulations applicable to our European operations, such as the unenforceability of non-competition agreements in the United Kingdom.

WE MAY LOSE MONEY WHEN WE EXCHANGE FOREIGN CURRENCY RECEIVED FROM INTERNATIONAL REVENUES INTO U.S. DOLLARS.

For the nine months ended September 30, 2000, approximately 69% of our business was conducted in currencies other than the U.S. dollar, which is our reporting currency. As a result, currency fluctuations among the U.S. dollar and the currencies in which we do business have caused and will continue to cause foreign currency transaction gains and losses. Currently, we attempt to manage foreign currency risk through the matching of assets and liabilities. In the future, we may undertake to manage foreign currency risk through additional hedging methods. We recognize foreign currency gains or losses arising from our operations in the period incurred. We cannot guarantee that we will be successful in managing foreign currency risk or in predicting the effects of exchange rate fluctuations upon our future operating results because of the number of currencies involved, the variability of currency exposure and the potential volatility of currency exchange rates.

IF WE ENGAGE IN ANY ACQUISITION, WE WILL INCUR A VARIETY OF COSTS, AND MAY NEVER REALIZE THE ANTICIPATED BENEFITS OF THE ACQUISITION.

Our business strategy includes the future acquisition of businesses, technologies, services or products that we believe are a strategic fit with our business. If we do undertake any acquisition, the process of integrating an acquired business, technology, service or product may result in unforeseen operating difficulties and expenditures and may absorb significant management attention that would otherwise be available for ongoing development of our business. Moreover, we may fail to realize the anticipated benefits of any acquisition. Future acquisitions could reduce your ownership and could cause us to incur debt, expose us to future liabilities and result in amortization expenses related to goodwill and other intangible assets.

IF WE FAIL TO RETAIN OUR KEY PERSONNEL AND HIRE, TRAIN AND RETAIN QUALIFIED EMPLOYEES, WE MAY NOT BE ABLE TO COMPETE EFFECTIVELY, WHICH COULD RESULT IN REDUCED REVENUE.

Our success is highly dependent on the continued services of key management, technical and scientific personnel. Our management and other employees may voluntarily terminate their employment with us at any time upon short notice. The loss of the services of any member of our senior management team, including our Chief Executive Officer, Chane Graziano, and our President, David Green, or any of our technical or scientific staff may significantly delay or prevent the achievement of product development and other business objectives. We maintain key person life insurance on Messrs. Graziano and Green. Our future success will also depend on our ability to identify, recruit and retain additional qualified scientific, technical and managerial personnel. Competition for qualified personnel in the technology area is intense, and we operate in several geographic locations where labor markets are particularly competitive, including Boston, Massachusetts and London and Cambridge, England, and where demand for personnel with these skills is extremely high and is likely to remain high. As a result, competition for qualified personnel is intense, particularly in the areas of information technology, engineering and science and the process of hiring suitably qualified personnel is often lengthy. If we are unable to hire and retain a sufficient number of qualified employees, our ability to conduct and expand our business could be seriously reduced.

WE PLAN SIGNIFICANT GROWTH, AND THERE IS A RISK THAT WE WILL NOT BE ABLE TO MANAGE THIS GROWTH.

Our success will depend on the expansion of our operations. Effective growth management will place increased demands on our management, operational and financial resources. To manage our growth, we must expand our facilities, augment our operational, financial and management systems, and hire and train additional qualified personnel. Our failure to manage this growth effectively could impair our ability to generate revenue or could cause our expenses to increase more rapidly than revenue, resulting in operating losses.

OUR EXISTING STOCKHOLDERS WILL HAVE SUBSTANTIAL INFLUENCE OVER MATTERS REQUIRING A STOCKHOLDER VOTE.

Following the completion of this offering, our current stockholders will beneficially own or control approximately 74% of the outstanding shares of our common stock. If all of these stockholders were to vote together as a group, they would have the ability to elect our board of directors and control the outcome of stockholder votes, including votes concerning by-law amendments and possible mergers, corporate control contests and other significant corporate transactions. In addition, this concentration of ownership may delay or prevent a change of control of our company at a premium price if these stockholders oppose it. The interests of these stockholders may not always coincide with our interests as a company or the interests of other stockholders.

BECAUSE OUR STOCK PRICE IS LIKELY TO BE HIGHLY VOLATILE, OUR STOCK PRICE COULD EXPERIENCE SUBSTANTIAL DECLINES AND OUR MANAGEMENT'S ATTENTION MAY BE DIVERTED FROM MORE PRODUCTIVE TASKS.

The market price of our common stock is likely to be volatile and could decline, perhaps substantially, following this offering in response to various factors, many of which are beyond our control, including:

- technological innovations by competitors or in competing technologies,

- revenues and operating results fluctuating or failing to meet the expectations of securities analysts or investors in any quarter,

- downward revisions in securities analysts' estimates,

- conditions or trends in the biotechnology and pharmaceutical industries,

- announcements by us of significant acquisitions or financings or changes in strategic partnerships, and

- a decrease in the demand for our common stock.

In addition, the stock market in general, and the Nasdaq National Market and the biotechnology industry market in particular, have experienced significant price and volume fluctuations that at times have been unrelated or disproportionate to the operating performance of those companies. These broad market and industry factors may seriously harm the market price of our common stock, regardless of our operating performance. In the past, securities class action litigation has often been instituted following periods of volatility in the market price of a company's securities. A securities class action suit against us could result in substantial costs, potential liabilities and the diversion of our management's attention and resources.

PROVISIONS OF DELAWARE LAW AND OF OUR CHARTER AND BY-LAWS MAY MAKE A TAKEOVER MORE DIFFICULT WHICH COULD CAUSE OUR STOCK PRICE TO DECLINE.

Provisions in our certificate of incorporation and by-laws and in the Delaware corporate law may make it difficult and expensive for a third party to pursue a tender offer, change in control or takeover attempt which is opposed by our management and board of directors. Public stockholders who might desire to participate in such a transaction may not have an opportunity to do so. We also have a staggered board of directors which makes it difficult for stockholders to change the composition of the board of directors in any one year. These anti-takeover provisions could substantially impede the ability of public stockholders to change our management and board of directors. Such provisions may also limit the price that investors might be willing to pay for shares of our common stock in the future.

FAILURE TO RAISE ADDITIONAL CAPITAL OR GENERATE THE SIGNIFICANT CAPITAL NECESSARY TO EXPAND OUR OPERATIONS AND INVEST IN NEW PRODUCTS COULD REDUCE OUR ABILITY TO COMPETE AND RESULT IN LOWER REVENUE.

We anticipate that our existing capital resources and the net proceeds from this offering will enable us to maintain currently planned operations for at least the next two years. However, we premise this expectation on our current operating plan, which may change as a result of many factors, including market acceptance of our new products and future opportunities with collaborators. Consequently, we may need additional funding sooner than anticipated. Our inability to raise capital could seriously harm our business and product development efforts.

If we raise additional funds through the sale of equity or convertible debt or equity-linked securities, your percentage ownership in the company will be reduced. In addition, these transactions may dilute the value of our outstanding stock. We may issue securities that have rights, preferences and privileges senior to our common stock. If we raise additional funds through collaborations or licensing arrangements, we may relinquish rights to certain of our technologies or products, or grant licenses to third parties on terms that are unfavorable to us. We may be unable to raise additional funds on terms acceptable to us. If future financing is not available to us or is not available on terms acceptable to us, we may have to curtail or cease operations.

SHARES ELIGIBLE FOR PUBLIC SALE AFTER THIS OFFERING COULD ADVERSELY AFFECT OUR STOCK PRICE.

The market price of our common stock could decline as a result of sales of shares by our existing stockholders after this offering, or the perception that such sales will occur. These sales also might make it difficult for us to sell equity securities in the future at a time and at a price that we deem appropriate. After this offering, we will have 24,782,422 shares of common stock outstanding. Of these shares, all of the shares sold in this offering will be freely tradeable. All of our existing stockholders have executed lock-up agreements. Those lock-up agreements restrict all of our existing stockholders from selling, pledging or otherwise disposing of their shares for a period of 180 days after the date of this prospectus without the prior written consent of Thomas Weisel Partners LLC. However, Thomas Weisel Partners LLC may, in its sole discretion, release all or any portion of the common stock from the restrictions of the lock-up agreements. In addition, after this offering, we also intend to register 3,750,000 shares of common stock for issuance under our 2000 Stock Option and Incentive Plan and 500,000 shares under our Employee Stock Purchase Plan.

WE WILL HAVE BROAD DISCRETION AS TO THE USE OF THE PROCEEDS FROM THIS OFFERING AND MAY USE THE PROCEEDS IN A MANNER WITH WHICH YOU DISAGREE.

Our board of directors and our management will have broad discretion over the use of the net proceeds of this offering. You may disagree with the judgment of our board of directors and our management regarding the application of the proceeds of this offering. We intend to use a majority of the proceeds from this offering for payment of existing debt, redemption of our series A preferred stock, working capital and general corporate purposes and to fund potential acquisitions, if any. Because of the number and variability of factors that determine our use of the net proceeds from this offering, we cannot assure you that our actual use will not vary substantially from our currently planned uses. Initially, we intend to invest the net proceeds from this offering in income producing, investment grade securities.

FUTURE ISSUANCE OF OUR PREFERRED STOCK MAY DILUTE THE RIGHTS OF OUR COMMON STOCKHOLDERS.

Our board of directors has the authority to issue up to 5,000,000 shares of preferred stock and to determine the price, privileges and other terms of these shares. The board of directors may exercise this authority without any further approval of our stockholders. The rights of the holders of common stock may be adversely affected by the rights of future holders of our preferred stock.

YOU WILL NOT RECEIVE CASH DIVIDENDS ON YOUR INVESTMENT IN OUR COMMON STOCK.

We intend to retain all of our earnings to finance the development and expansion of our business and do not anticipate paying any cash dividends in the foreseeable future. Moreover, our ability to declare and pay cash dividends on our common stock is restricted by covenants in our senior credit facility and in the indenture governing our senior subordinated notes. As a result, capital appreciation, if any, of our common stock will be your sole source of gain for the foreseeable future.

AN ACTIVE TRADING MARKET FOR OUR COMMON STOCK MAY NOT DEVELOP.

Prior to this offering, there has been no public market for our common stock. Although we expect our common stock to be quoted on the Nasdaq National Market, an active trading market for our shares may not develop or be sustained following this offering. You may not be able to resell your shares at prices equal to or greater than the initial public offering price. The initial public offering price will be determined through negotiations between us and the underwriters and may not be indicative of the market price for these shares following this offering. You should read "Underwriting" for a discussion of the factors to be considered in determining the initial public offering price.

INFORMATION REGARDING FORWARD-LOOKING STATEMENTS

This prospectus contains forward-looking statements. The forward-looking statements are principally contained in the sections on "Prospectus Summary," "Business" and "Management's Discussion and Analysis of Financial Condition and Results of Operations." These statements involve known and unknown risks, uncertainties and other factors which may cause our actual results, performance or achievements to be materially different from any future results, performance or achievements expressed or implied by the forward-looking statements. Forward-looking statements include, but are not limited to:

- our business strategy,
- the market opportunity for our products, including the willingness of our customers to expand proteomics and ADMET investments,
- our plans for hiring additional personnel,
- our estimates regarding our capital requirements and our needs for additional financing, and
- our plans, objectives, expectations and intentions contained in this prospectus that are not historical facts.

In some cases, you can identify forward-looking statements by terms such as "may," "will," "should," "could," "would," "expects," "plans," "anticipates," "believes," "estimates," "projects," "predicts," "intends," "potential" and similar expressions intended to identify forward-looking statements. These statements reflect our current views with respect to future events and are based on assumptions and subject to risks and uncertainties. Given these uncertainties, you should not place undue reliance on these forward-looking statements. We discuss many of these risks in greater detail under the heading "Risk Factors." Also, these forward-looking statements represent our estimates and assumptions only as of the date of this prospectus.

You should read this prospectus completely and with the understanding that our actual future results may be materially different from what we expect. We may not update these forward-looking statements, even though our situation may change in the future, unless we have obligations under the Federal securities laws to update and disclose material developments related to previously disclosed information. We qualify all of our forward-looking statements by these cautionary statements.

USE OF PROCEEDS

We estimate that the net proceeds we will receive from the sale of 6,250,000 shares of common stock will be approximately $68.3 million, or approximately $78.7 million if the underwriters fully exercise their over-allotment option, at the assumed offering price of $12.00 per share, in each case after deducting estimated underwriting discounts, commissions and offering expenses payable by us. We will not receive any proceeds from the sale of shares by our president as a selling stockholder in this offering.

The principal purposes of this offering are as follows:

- to permit us to repay approximately $665,000 in subordinated debt and $9.6 million under our credit facility,

- to permit us to redeem our series A redeemable preferred stock at a cost of approximately $1.5 million,

- to provide us with funds to complete potential acquisitions and enhance our ability to use our common stock as consideration for potential acquisitions,

- to increase our equity capital and facilitate our future access to public equity markets,

- to increase our working capital, and

- to increase funds available for general corporate purposes.

Except for the payment of existing debt and the redemption of preferred stock listed above, the use of proceeds has not been specifically identified or allocated due to the flexible nature of our planning process and the constantly changing nature of our industry. We will retain broad discretion in the allocation and use of the net proceeds of this offering. Pending the uses described above, we intend to invest the remaining net proceeds from this offering in short-term, investment grade, interest-bearing securities.

Our subordinated debt bears interest at an annual rate of 13.0% and matures upon the consummation of this offering. All of the subordinated debt will be retired out of the proceeds of this offering.

Our credit facility consists of two term loans and a revolving credit line. One term loan and the revolving line of credit mature in January 2002. The other term loan matures in June 2004. The interest rate for the credit facility is equal to our lender's base rate plus 1.0%. This interest rate was 10.5% at October 15, 2000. In July 2000, we increased our borrowings under our credit facility by $2.5 million to finance the acquisition of AmiKa Corporation. All of our outstanding indebtedness under our credit facility will be repaid out of the proceeds of this offering.

DIVIDEND POLICY

We have never declared or paid dividends on our common stock in the past and do not intend to pay dividends on our common stock in the foreseeable future. Any future determination to pay dividends will be at the discretion of our board of directors and will depend on our financial condition, results of operations, capital requirements and other factors the board of directors deems relevant. In addition, our existing credit facility does not permit us to pay cash dividends, and any future credit facilities may not permit us to pay cash dividends.

CAPITALIZATION

The following table describes our capitalization as of September 30, 2000:

- on an actual basis assuming the filing of an amended certificate of incorporation to increase the number of authorized shares of common stock,
- on a pro forma basis to give effect to the conversion of all outstanding shares of convertible preferred stock into an aggregate of 955,935 shares of common stock, the exercise of all outstanding warrants for an aggregate of 8,509,905 shares of common stock upon the closing of this offering and the filing of our amended and restated certificate of incorporation prior to the effective date of this offering, and
- on a pro forma as adjusted basis to reflect the sale of 6,250,000 shares of common stock by us in this offering at an assumed initial offering price of $12.00 per share, after deducting estimated underwriting discounts, commissions and offering expenses payable by us and the application of the net proceeds therefrom.

	AS OF SEPTEMBER 30, 2000		
	ACTUAL	PRO FORMA	PRO FORMA AS ADJUSTED
	(IN THOUSANDS, EXCEPT SHARE DATA)		
Series A redeemable preferred stock, par value $0.01 per share; 469,300 shares authorized, issued and outstanding, actual; 469,300 shares authorized, issued and outstanding, pro forma and no shares issued and outstanding pro forma as adjusted	$ 1,500	$ 1,500	$ --
Series B convertible preferred stock, par value $0.01 per share; 48,500 shares authorized, issued and outstanding, actual; no shares authorized, issued and outstanding, pro forma and pro forma as adjusted	1,000	--	--
Total preferred stock	$ 2,500	$ 1,500	--
Common stock warrants	102,115	--	--
Undesignated preferred stock, par value $0.01 per share; 82,200 shares authorized, no shares issued and outstanding, actual; 5,000,000 shares authorized, no shares issued and outstanding, pro forma and pro forma as adjusted	--	--	--
Common stock, par value $0.01 per share; 80,000,000 shares authorized, 13,727,365 shares issued and outstanding, actual; 80,000,000 shares authorized, 23,193,210 shares issued and outstanding pro forma; 80,000,000 shares authorized, 29,443,210 shares issued and outstanding, pro forma as adjusted	137	232	294
Additional paid-in capital	18,132	121,157	189,345
Treasury stock	(668)	(668)	(668)
Notes receivable	(1,548)	(1,548)	(1,548)
Retained earnings (accumulated deficit)	(112,358)	(112,358)	(112,358)
Accumulated other comprehensive income (loss)	(713)	(713)	(713)
Total stockholders' equity	(97,018)	6,102	74,352
Total capitalization	$ 7,597	$ 7,602	$ 74,352

The above table excludes 598,612 shares of common stock issuable upon exercise of stock options outstanding as of September 30, 2000 at a weighted average exercise price of $1.00 per share. The above table also assumes no exercise of the underwriters' over-allotment option.

DILUTION

Our pro forma net tangible book value as of September 30, 2000, was approximately $(3.0) million, or $(0.19) per share of common stock. Pro forma net tangible book value per share represents the amount of our total pro forma tangible assets less total liabilities divided by the pro forma number of shares of common stock outstanding. After giving effect to the issuance and sale by us of 6,250,000 shares of common stock offered by this prospectus at an assumed initial offering price of $12.00 per share and after deducting estimated underwriting discounts, commissions and offering expenses payable by us, our pro forma net tangible book value as of September 30, 2000 would have been $65 million, or $2.63 per share. This represents an immediate increase in the pro forma net tangible book value of $2.82 per share to existing stockholders and an immediate dilution of $9.37 per share to new stockholders in this offering illustrated by the following table:

Assumed initial public offering price per share.....		$ 12.00
Pro forma net tangible book value per share before this offering.....	$(0.19)	
Increase per share attributable to new stockholders.....	2.82	
Pro forma net tangible book value per share after the offering.....		2.63
Dilution per share to new investors.....		$ 9.37

The following table sets forth on a pro forma basis as of September 30, 2000, the number of shares of common stock purchased from us, the total consideration paid and the average price per share paid by existing and new stockholders before deducting underwriting discounts, commissions and offering expenses payable by us:

	SHARES PURCHASED		TOTAL CONSIDERATION		
	NUMBER	PERCENT	AMOUNT	PERCENT	AVERAGE PRICE PER SHARE
Existing stockholders.....	18,532,422	74.8%	$ 2,558,106	3.3%	$ 0.14
New stockholders.....	6,250,000	25.2	75,000,000	96.7	12.00
Total.....	24,782,422	100.0%	$77,558,106	100.0%	

The foregoing discussion and tables assume no issuance of shares by us pursuant to the underwriters' over-allotment option and no exercise of any stock options outstanding. As of September 30, 2000, there were options outstanding to purchase a total of approximately 598,612 shares of common stock with a weighted average exercise price of $1.00 per share. To the extent that any of these options are exercised, your investment will be further diluted. In addition, we may grant more options in the future under our stock plans.

SELECTED FINANCIAL DATA

You should read the following selected consolidated financial data in conjunction with "Management's Discussion and Analysis of Financial Condition and Results of Operations" and our consolidated financial statements and related notes included elsewhere in this prospectus. The statement of operations data for the years ended December 31, 1997, 1998 and 1999 and for the nine-month period ended September 30, 2000 and the balance sheet data at December 31, 1998 and 1999 and September 30, 2000 are derived from our audited consolidated financial statements appearing elsewhere in this prospectus. The balance sheet data at December 31, 1997 and 1996, and the statement of operations data for the period from March 15, 1996 to December 31, 1996 are derived from our audited consolidated financial statements not included in this prospectus. The statement of operations data for the year ended December 31, 1995 and for the period from January 1, 1996 to March 14, 1996 and the balance sheet data at December 31, 1995 represents data of a predecessor company and are derived from their unaudited consolidated financial statements not included in this prospectus. The interim statement of operations data for the nine-month period ended September 30, 1999 are derived from our unaudited consolidated interim financial statements appearing elsewhere in this prospectus which, in the opinion of management, have been prepared on the same basis as the audited consolidated financial statements and reflect all adjustments necessary for a fair presentation of that data. The data for the nine-month period ended September 30, 2000 are not necessarily indicative of results for the year ending December 31, 2000 or any future period.

	PREDECESSOR COMPANY FISCAL YEAR ENDED DECEMBER 31, 1995	PREDECESSOR COMPANY FOR THE PERIOD FROM JANUARY 1, 1996 TO MARCH 14, 1996	FOR THE PERIOD FROM INCEPTION MARCH 15, 1996 TO DECEMBER 31, 1996
	(UNAUDITED)	(UNAUDITED)	
	(IN THOUSANDS, EXCEPT SHARE AND PER SHARE DATA)		
STATEMENT OF OPERATIONS DATA:			
Revenues	$ 10,032	$ 1,989	$ 8,198
Cost of goods sold	5,286	1,059	4,080
Stock compensation expense	--	--	--
Gross profit	4,746	930	4,118
General and administrative expense	2,435	487	1,834
Marketing and selling expense	1,469	232	1,058
Research and development	348	91	249
Amortization of goodwill	--	--	--
Stock compensation expense	--	--	--
Operating income (loss)	494	120	977
Other (expense) income:			
Foreign currency (loss) gain	23	(4)	108
Common stock warrant interest expense	--	--	--
Interest expense, net	(472)	(90)	(177)
Amortization of deferred financing costs	--	--	--
Other	(85)	(135)	(10)
Other expense, net	(534)	(229)	(79)
(Loss) income before income taxes	(40)	(109)	898
Income taxes	85	--	362
Net (loss) income	$ (125)	$ (109)	$ 536
Preferred stock dividends	--	--	(97)
Net (loss) income available to common shareholders	$ (125)	$ (109)	$ 439
(Loss) income per share:			
Basic	$ (0.01)	$ (0.01)	$ 0.04
Diluted	$ (0.01)	$ (0.01)	$ 0.02
Weighted average common shares:			
Basic	10,259,410	10,259,410	10,259,410
Diluted	10,259,410	10,259,410	20,241,145

FISCAL YEAR ENDED DECEMBER 31,			NINE MONTHS ENDED SEPTEMBER 30,	
1997	1998	1999	1999	2000
			(UNAUDITED)	
(IN THOUSANDS, EXCEPT SHARE AND PER SHARE DATA)				

STATEMENT OF OPERATIONS DATA:					
Revenues	$ 11,464	$ 12,154	$ 26,178	$ 18,470	$ 22,069
Cost of goods sold	5,128	5,351	13,547	9,359	11,462
Stock compensation expense	--	--	--	--	151
Gross profit	6,336	6,803	12,631	9,111	10,456
General and administrative expense	2,338	2,317	4,147	2,927	3,733
Marketing and selling expense	1,672	1,722	2,448	1,842	2,359
Research and development	207	325	1,188	841	1,208
Amortization of goodwill	--	27	368	252	423
Stock compensation expense	--	--	3,284	937	13,181
Operating income (loss)	2,119	2,412	1,196	2,312	(10,448)
Other (expense) income:					
Foreign currency (loss) gain	(96)	21	(48)	61	(456)
Common stock warrant interest expense	(117)	(1,379)	(29,694)	(7,403)	(70,920)
Interest expense, net	(223)	(210)	(657)	(468)	(655)
Amortization of deferred financing costs	--	--	(63)	(44)	(56)
Other	106	10	(17)	(15)	28
Other expense, net	(330)	(1,558)	(30,479)	(7,869)	(72,059)
(Loss) income before income taxes	1,789	854	(29,283)	(5,557)	(82,507)
Income taxes	682	783	137	649	1,354
Net (loss) income	$ 1,107	$ 71	$ (29,420)	$ (6,206)	$ (83,861)
Preferred stock dividends	(122)	(122)	(157)	(115)	(123)
Net (loss) income available to common shareholders	$ 985	$ (51)	$ (29,577)	$ (6,321)	$ (83,984)
(Loss) income per share:					
Basic	$ 0.13	$ (0.01)	$ (5.28)	$ (1.13)	$ (13.11)
Diluted	$ 0.06	$ (0.01)	$ (5.28)	$ (1.13)	$ (13.11)
Weighted average common share					
Basic	7,406,486	5,598,626	5,598,626	5,598,626	6,407,682
Diluted	17,500,194	5,598,626	5,598,626	5,598,626	6,407,682

	AS OF DECEMBER 31,					AS OF
	1995	1996	1997	1998	1999	SEPTEMBER 30, 2000
	(UNAUDITED)					
	(IN THOUSANDS)					
BALANCE SHEET DATA:						
Cash and cash equivalents	$ 1,043	$1,088	$ 707	$ 957	$ 2,396	$ 2,149
Working capital	(4,910)	1,677	1,698	2,205	3,783	1,025
Total assets	11,204	6,397	6,161	7,220	20,610	23,236
Long-term obligations, net of current portion	498	1,112	829	638	5,073	5,730
Preferred stock	--	1,504	1,621	1,500	2,500	2,500
Common stock warrants	--	--	--	1,500	31,194	102,115
Stockholders' equity (deficit)	1,203	516	737	678	(25,711)	(97,018)

MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

YOU SHOULD READ THE FOLLOWING DISCUSSION IN CONJUNCTION WITH OUR CONSOLIDATED FINANCIAL STATEMENTS, THE RELATED NOTES AND OTHER FINANCIAL INFORMATION APPEARING ELSEWHERE IN THIS PROSPECTUS.

OVERVIEW

We are a provider of innovative, enabling tools for drug discovery research at pharmaceutical and biotechnology companies, universities and government research laboratories. We focus on two critical bottlenecks in the drug discovery process, proteomics during the target validation stage of the drug discovery process and ADMET screening during the secondary screening stage of the drug discovery process. Our proteomics products consist of tools that allow our customers to purify and analyze proteins. Our ADMET screening products are tools that enable our customers to test drug candidates to determine their absorption, distribution, metabolism, elimination and toxicology properties prior to conducting costly clinical trials.

In providing tools for drug discovery generally, we have established a significant base business and have achieved brand recognition through our sale of precision pumps, ventilators and tissue/organ systems. Since our reorganization in 1996, we have built upon our base business and brand recognition by adding new technologies within the areas of proteomics and ADMET screening. Specifically, we have acquired the following product lines, businesses and technologies:

- In June 1998, we acquired products for cell injection systems from Medical Systems Corporation for $1.0 million in cash,

- In March 1999, we acquired Biochrom, which develops and manufactures DNA/RNA/protein calculators, spectrophotometers, amino acid analyzers and related consumables in the United Kingdom, from Pharmacia Biotech (Biochrom) Ltd for $7.0 million in cash,

- In March 1999, we entered into an exclusive license for the technology underlying our ScanTox in vitro toxicology testing product for $25,000 in cash and ongoing royalties and licensing fee payments,

- In September 1999, we acquired products for intracellular research from Clark Electromedical Instruments for $349,000 in cash,

- In November 1999, we acquired our NaviCyte diffusion chamber systems product for drug absorption testing from a subsidiary of Trega Biosciences for $390,000 in cash and future royalties,

- In November 1999, we acquired substantially all the assets and certain liabilities of Hugo Sachs Elektronik, consisting primarily of products for organ testing, for $568,000 in cash,

- In May 2000, we acquired certain assets of Biotronik, consisting primarily of products for amino acid analysis, for $469,000 in cash, and

- In July 2000, we acquired substantially all the assets of AmiKa Corporation consisting of purification tips, spin columns, a 96 well drug binding assay and related technology and intellectual property for $3.1 million in cash.

We have also entered into a non-binding letter of intent to acquire substantially all the assets and certain liabilities of a company that produces tools for toxicity testing. The non-binding letter of intent provides for an initial cash payment of $200,000, a second cash payment of $100,000 approximately one month following the initial cash payment and additional contingent payments and royalty payments based on future sales of the acquired products. This non-binding letter of intent will expire on

December 15, 2000. We are working to complete this acquisition by that date although we cannot be certain that this acquisition will be completed by that date or at all.

REVENUES. We generate revenues by selling instruments, devices and consumables through our catalog, our distributors and our website. We distribute our catalog initially in a series of bulk mailings, first to our existing customers, followed by mailings to targeted markets of potential customers. Distribution is then made singly to potential and existing customers through direct mail, trade shows and telephone inquiries over the life of the catalog. From time to time, we provide catalog supplements that promote selected areas of our catalog or new products to targeted subsets of our customer base. Future distributions of our catalog will be determined primarily by the incidence of new product introductions, which cannot be predicted. Our customers are end user research scientists at pharmaceutical and biotechnology companies, universities and government laboratories. Revenue from catalog sales in any period is a function of time elapsed since the last mailing of the catalog, the number of catalogs mailed and the number of new items included in the catalog. Catalog sales tend to increase immediately following a mailing and level off or decline slightly from the increased level until the next mailing, which repeats the cycle. For the nine months ended September 30, 2000, approximately 82% of our revenues were derived from products we manufacture. The remaining 18% of our revenues were derived from complementary products we distribute in order to provide researchers with a single source for all equipment needed to conduct a particular experiment. Approximately one-half of our revenues are derived through catalog sales and through reference to our website, which is an electronic version of our catalog. We do not currently have the capability to accept purchase orders through our website. For the nine months ended September 30, 2000, approximately 69% of our revenues were derived from sales made by our non-U.S. operations. A majority of our international sales during this period consisted of sales to Amersham Pharmacia Biotech, the distributor for our spectrophotometers and amino acid analyzers. Amersham Pharmacia Biotech distributes these products to customers around the world from its distribution center in Upsalla, Sweden, including to many customers located in the United States. As a result, we believe our international sales would have been less as a percentage of our revenues for the nine months ended September 30, 2000 than indicated above if we had shipped our products directly to their end users.

COST OF GOODS SOLD. Cost of goods sold includes material, labor and manufacturing overhead costs, obsolescence charges, packaging costs, warranty costs, shipping charges and royalties. Our costs of goods sold may vary over time based on the mix of products sold. We sell products that we manufacture and products that we purchase from third parties. The products that we purchase from third parties have lower margins because the profit is effectively shared with the original manufacturer. For the nine months ended September 30, 2000, our manufactured products had lower cost of goods sold. We anticipate that our manufactured products will continue to have a lower cost of goods sold for the forseeable future.

GENERAL AND ADMINISTRATIVE EXPENSE. General and administrative expense consists primarily of salaries and other related costs for personnel in executive, finance, accounting, information technology and human relations functions. Other costs include facility costs, professional fees for legal and accounting services, and provision for doubtful accounts.

SALES AND MARKETING EXPENSE. Sales and marketing expense consists primarily of salaries and related expenses for personnel in sales, marketing and customer support functions. We also incur costs for trade shows, demonstration equipment, public relations and marketing materials, consisting primarily of the printing and distribution of our 1,000 page catalog and the maintenance of our web site. We may from time to time in the future expand our marketing efforts by employing additional technical marketing specialists in an effort to increase sales of selected categories of products in our catalog.

RESEARCH AND DEVELOPMENT EXPENSE. Research and development expense consists primarily of salaries and related expenses for personnel and capital resources used to develop and enhance our products. Other research and development expense includes fees paid to consultants and outside service providers, and material costs for prototype and test units. We expense research and development costs as incurred. We believe that significant investment in product development is a competitive necessity and plan to continue this investment in order to realize the potential of our new technologies for proteomics and ADMET.

STOCK COMPENSATION EXPENSE. Stock compensation resulting from stock option grants to our employees represents the difference between the fair market value and the exercise price of the stock options on the date the stock options were granted for those options that are considered fixed awards. Stock compensation expense is also recorded for stock option grants that were considered variable awards as the number of shares to be acquired by employees was indeterminable at the date of grant. Deferred compensation on fixed awards is amortized as a charge to operations over the vesting period of the options. Based on grants in 2000, we incurred deferred compensation of $9.9 million and recognized deferred compensation expense of $3.3 million for the nine months ended September 30, 2000.

Since our reorganization in 1996, we have experienced substantial revenue growth. In the future we intend to introduce new products for proteomics and ADMET research that support emerging and potentially large markets. In order to support the anticipated growth of these new products, we may expand our product development and sales and marketing activities. In the event we pursue activities which increase our product development and sales and marketing expenses, operating results will be adversely affected if revenues do not increase proportionately. If revenues are below expectations, our business, operating results and financial condition are likely to be materially and adversely affected. Net income may be disproportionately affected by a reduction in revenues as a relatively smaller amount of our expenses vary with changes in our revenues. As a result, we believe that period-to-period comparisons of our results of operations are not necessarily meaningful and should not be relied upon as indications of future performance.

NINE MONTHS ENDED SEPTEMBER 30, 2000 COMPARED TO NINE MONTHS ENDED SEPTEMBER 30, 1999

REVENUES. Revenues increased $3.6 million, or 20%, to $22.1 million in 2000 from $18.5 million in 1999. Excluding the impact of changes in foreign currency exchange rates, revenues based on 1999 rates would have been approximately $22.8 million in 2000. Approximately $1.1 million of the $3.6 million increase, or 31%, was attributable to the full period effect of revenues from the acquisition of our Biochrom subsidiary in March 1999 net of exchange rate effects of $508,000. The balance of the increase was attributable to $2.5 million of revenue from product line acquisitions made in the second half of 1999 partially offset by the cyclical nature of catalog sales of traditional products. During the year preceding the mailing of a new catalog in April 2000, traditional products were not promoted because we were concentrating on the acquisition of new products or businesses as well as the development of the new catalog to include these newly acquired products.

COST OF GOODS SOLD. Cost of goods sold increased $2.1 million, or 23%, to $11.5 million in 2000 from $9.4 million in 1999. The increase in cost of goods sold as a percentage of revenues was due to slightly higher cost of goods sold on acquired product lines and for our Biochrom subsidiary acquired in March 1999. Our Biochrom subsidiary experiences lower revenues and correspondingly lower general and administration and sales and marketing expenses relative to cost of goods sold as a consequence of marketing its products primarily through a distributor.

GENERAL AND ADMINISTRATIVE EXPENSE. General and administrative expense increased $807,000, or 28%, to $3.7 million in 2000 from $2.9 million in 1999 due primarily to the full period effect of Biochrom as well as increased support for operations.

SALES AND MARKETING EXPENSE. Sales and marketing expense increased $517,000, or 28%, to $2.4 million in 2000 from $1.8 million in 1999. The increase was primarily due to expenses of acquisitions as well as the addition of marketing personnel and additional catalog costs. As a percentage of revenues, marketing and sales expense was 11% in 2000 and 10% in 1999. This increasing percentage reflects the addition of marketing personnel to promote newly acquired technology. In the future we may add employees to expand selected categories of our catalog as well as to expand the capabilities of our web site and integrate it into our business planning and processes.

RESEARCH AND DEVELOPMENT EXPENSE. Research and development spending increased $367,000, or 44%, to $1.2 million in 2000 from $841,000 in 1999. The increase in research and development expense resulted from expenses of acquisitions, spending on product enhancement and new product development, primarily on ScanTox in vitro toxicology testing and other core technology. As a percentage of revenues, research and development expense was 6% in 2000 and 5% in 1999. This increasing percentage reflects expanded efforts on ADMET testing products.

STOCK COMPENSATION EXPENSE. We recorded $13.3 million of stock compensation expense in the nine months ended September 30, 2000. In connection with the grant of stock options to employees in 2000, we recorded deferred compensation of approximately $3.3 million and will recognize approximately $6.6 million of additional expense over the remaining vesting life of the options. In addition, in the third quarter of 2000, we also recorded $10.0 million of stock compensation expense in connection with options granted in 1996 and 1999. In 1999, we recorded $937,000 of stock compensation expense related to these 1996 and 1999 option grants.

AMORTIZATION OF GOODWILL. Amortization of goodwill was $423,000 in 2000 and $252,000 in 1999. The increase is the result of amortizing additional goodwill incurred in connection with our acquisitions in 2000.

OTHER EXPENSE, NET. Other expense, net, was $72.1 million in 2000 compared to $7.9 million in 1999. Other expense, net, included a non-cash charge for common stock warrant interest expense of $70.9 million in 2000 and $7.4 million in 1999. This amount represents the difference between the fair value of the warrant for financial reporting purposes and its exercise price. This liability represents the right of warrant holders to require us to pay cash equal to the fair market value of the warrants in exchange for the warrants, or any common stock from the exercise of the warrants, beginning March 15, 2002. Effective with this offering, the warrants will be exercised for common stock and the right to be paid cash will terminate. The liability previously recorded will become part of common stock and additional-paid-in capital, and no additional liability will be incurred with respect to these warrants. Net interest expense increased $186,000, or 40%, to $655,000 in 2000 from $468,000 in 1999. The increase resulted primarily from higher debt balances in 2000, which were incurred to finance acquisitions.

INCOME TAXES. The Company's effective income tax rates were 39% for 2000 and 33% for 1999 notwithstanding the impacts for common stock warrant interest expense and stock compensation expense in excess of allowable tax benefits on exercise of options, which are not deductible for income tax purposes. The increase in the rate is principally due to certain blended higher foreign statutory jurisdiction income tax rates. The effective income tax rates may change compared to the remainder of each respective calendar year if operating results differ significantly from the interim results.

YEAR ENDED DECEMBER 31, 1999 COMPARED TO YEAR ENDED DECEMBER 31, 1998

REVENUES. Revenues increased $14.0 million, or 115%, to $26.2 million in 1999 from $12.2 million in 1998. Approximately $12.2 million, or 87%, of the increase was derived from the March 1999 acquisition of Biochrom. Excluding the impact of changes in foreign currency exchange rates, revenues based on 1998 rates would have been approximately $26.3 million in 1999. Revenues from our existing

business increased $1.8 million, or 15%, to $14.0 million in 1999 from $12.2 million in 1998. The increase was attributable to full year revenues of $570,000 from the products acquired from Medical Systems in June 1998, increased sales resulting from our expanded direct marketing efforts on traditional products of $884,000, which included hiring additional marketing staff, producing a CD-ROM of our catalog, and creating and installing an electronic version of our catalog on our website, with the balance due to revenues from product lines acquired in the second half of 1999.

COST OF GOODS SOLD. Cost of goods sold increased $8.2 million, or 153%, to $13.5 million in 1999 from $5.4 million in 1998. As a percentage of revenues, cost of goods sold increased to 52% in 1999 from 44% in 1998. The increase in cost of goods sold in 1999 was primarily the result of the acquisition of Biochrom. The percentage increase was also the result of Biochrom, which experiences higher costs of goods sold as a percentage of revenues due to the marketing of its products primarily through a distributor, which receives a discount to the list price that is calculated to cover the distributor's costs and profits.

GENERAL AND ADMINISTRATIVE EXPENSE. General and administration expense increased $5.1 million, or 221%, to $7.4 million in 1999 from $2.3 million in 1998. Biochrom accounted for $1.1 million, or 22%, of the increase. Also in 1999, $3.3 million was recorded as non-cash compensation expense from options granted in 1996. Excluding the Biochrom acquisition and the compensation expense, expenses increased $800,000, or 35%, to $3.1 million in 1999 from $2.3 million in 1998. The increase was due to the need to support expanding operations. As a percentage of revenues, general and administration expense increased to 28% in 1999 from 19% in 1998.

SALES AND MARKETING EXPENSE. Sales and marketing expense increased $727,000, or 42%, to $2.4 million in 1999 from $1.7 million in 1998. Biochrom accounted for $608,000, or 84%, of the increase. Excluding the Biochrom acquisition, expenses increased $119,000, or 7%, to $1.8 million in 1999 from $1.7 million in 1998. The increase was due to expanded direct marketing efforts and the full year effect of support for the products acquired in June 1998. As a percentage of revenues, sales and marketing expense decreased to 9% in 1999 from 14% in 1998. The decrease in sales and marketing expense as a percentage of revenues was primarily due to the acquisition of Biochrom, which has lower sales and marketing expense because those expenses are primarily borne by its distributor.

RESEARCH AND DEVELOPMENT EXPENSE. Research and development spending increased $863,000 in 1999, or 266%, to $1.2 million from $325,000 in 1998. The acquisition of Biochrom contributed $577,000 to the increase. The balance of the increase was spending for development of our newly licensed ScanTox technology and expansion of our core drug screening products. As a percentage of revenues, research and development expense increased to 5% in 1999 from 3% in 1998. The increase in research and development expense as a percentage of revenues was primarily due to Biochrom, our employment of additional engineers and increased charges for outside services.

AMORTIZATION OF GOODWILL. Amortization of goodwill was $368,000 in 1999 and $28,000 in 1998. The increase is the result of amortizing additional goodwill incurred in connection with our acquisitions in 1999 and the full year effect of the acquisition of the Medical Systems products in June 1998.

OTHER EXPENSE, NET. Other expense, net was $30.5 million in 1999 compared to $1.6 million in 1998. Other expense, net, included a non-cash charge for common stock warrant interest expense of $29.7 million in 1999 and $1.4 million in 1998. Net interest expense increased $447,000, or 214%, to $656,000 in 1999 from $209,000 in 1999. The increase resulted primarily from higher debt balances in 1999, which were incurred to finance acquisitions.

INCOME TAXES. The Company's effective income tax rates were 33% for 1999 and 35% for 1998 notwithstanding the impact for common stock warrant interest expense which is not deductible for

income tax purposes. The decrease in the rate is principally due to certain lower foreign statutory jurisdiction income tax rates, specifically the result of the acquisition of a United Kingdom subsidiary.

YEAR ENDED DECEMBER 31, 1998 COMPARED TO YEAR ENDED DECEMBER 31, 1997

REVENUES. Revenues increased $690,000, or 6%, to $12.2 million in 1998, from $11.5 million in 1997. The increase was due to the introduction of new products from the acquisition of Medical Systems in June 1998, which accounted for $510,000 of the increase, as well as growth in sales of existing products, primarily due to the issuance of two catalog supplements in 1998 compared to one supplement issued in 1997.

COST OF GOODS SOLD. Cost of goods sold increased approximately $224,000, or 4%, to $5.4 million in 1998 from $5.1 million in 1997. As a percentage of revenues, cost of goods sold decreased to 44% in 1998 from 45% in 1997. The decrease was due to spreading manufacturing overhead across increased production relating to the products acquired with the purchase of Medical Systems.

GENERAL AND ADMINISTRATIVE EXPENSE. General and administrative expense remained constant at $2.3 million from 1997 to 1998. As a percentage of revenues, general and administrative expense decreased to 19% in 1998 from 20% in 1997. The decrease in general and administrative expense as a percentage of revenues was primarily due to spreading general and administrative costs over a greater revenue base.

SALES AND MARKETING EXPENSE. Sales and marketing expense increased $49,000, or 3%, to $1.7 million in 1998 from $1.7 million in 1997. As a percentage of revenues, sales and marketing expense decreased to 14% in 1998 from 15% in 1997. The decrease in sales and marketing expense as a percentage of revenues was primarily due to spreading sales and marketing costs over a greater revenue base.

RESEARCH AND DEVELOPMENT EXPENSE. Research and development spending increased $118,000, or 57%, to $325,000 in 1998 from $206,000 in 1997. The increase in spending represented investments in product development and enhancement of the existing family of products. As a percentage of revenues, research and development expense increased to 3% in 1998 from 2% in 1997.

AMORTIZATION OF GOODWILL. Amortization of goodwill consisted of a charge of $28,000 in 1998 resulting from the acquisition of Medical Systems. There was no corresponding charge in 1997.

OTHER EXPENSES, NET. Other expenses, net were $1.6 million in 1998 compared to $330,000 in 1997. The increase was due primarily to a charge of $1.4 million for common stock warrant interest expense.

INCOME TAXES. The Company's effective income tax rates were 35% for 1998 and 36% for 1997 notwithstanding the impact for common stock warrant interest expense which is not deductible for income tax purposes. The change in the tax rate is principally due to certain tax rates in foreign jurisdictions.

LIQUIDITY AND CAPITAL RESOURCES

Historically, we have financed our business through cash provided by operating activities, the issuance of common and preferred stock, and bank borrowings. Our liquidity requirements have arisen primarily from investing activities, including funding of acquisitions, payments on outstanding indebtedness, research and development expenditures, and capital expenditures. As of September 30, 2000, we had cash of $2.1 million. Since our reorganization in March 1996, we have raised $14.2 million, consisting of $2.5 million of preferred and common stock and $11.7 million of debt. As of September 30, 2000, we had $6.8 million in debt under a bank term loan, $478,000 in subordinated debt and $3.1 million outstanding under a $3.8 million revolving credit facility.

Our operating activities generated cash of $2.0 million in the first nine months of 2000, $2.9 million in fiscal 1999, $1.8 million in fiscal 1998 and $1.1 million in fiscal 1997. For all periods presented, operating cash flows were primarily due to operating results, including the full-year effect of acquisitions prior to non-cash charges, partially offset by working capital requirements. Working capital requirements were affected by acquisitions, which increased accounts receivable and inventory carrying amounts partially offset by increased amounts in accounts payable and accrued expenses.

Our investing activities used cash of $4.7 million in the first nine months of 2000, $8.5 million in fiscal 1999, $1.4 million in fiscal 1998 and $653,000 in fiscal 1997. Cash has been used in the following technology and business acquisitions:

- $469,000 for Biotronik's amino acid analysis systems business in May 2000,

- $390,000 for the NaviCyte diffusion chamber systems product line in November 1999,

- $568,000 for Hugo Sachs Elektronik in November 1999,

- $349,000 for intracellular research products from Clark Electromedical Instruments in September 1999,

- $7.0 million for Biochrom in March 1999,

- $1.0 million for Medical Systems Corporation's cell injection systems business in June 1998, and

- $3.1 million for substantially all the assets of AmiKa Corporation in July 2000.

Our financing activities provided cash of $2.5 million for the first nine months of 2000 and $7.0 million in fiscal 1999, and used cash of $105,000 in fiscal 1998 and $874,000 in fiscal 1997. Financing cash flows consisted of borrowings under a revolving credit facility, long-term debt and the issuance of preferred stock. As of September 30, 2000, we had approximately $600,000 available under our revolving credit facility, subject to our ability to maintain compliance with all of the covenants contained in our revolving credit agreement. We were not in compliance with the net income covenants as of September 30, 2000 due to non-cash stock compensation and imputed interest on warrants. Our credit facility was amended to exclude the accounting treatment for stock option compensation and warrant interest expense.

Prior to 1999, we had historically generated sufficient cash flow from operations to fund expenditures on capital equipment, debt service, equity transactions, stock repurchases and preferred dividend payments. In 1999, in connection with the acquisition of Biochrom, we increased our long-term indebtedness by approximately $5.5 million and issued approximately $1.0 million in convertible preferred stock. As a result, the level of debt service required increased substantially compared to historical levels. Upon completion of the offering, we intend to use a portion of the proceeds to redeem our series A redeemable preferred stock in the amount of $1.5 million, and to repay the bank term loan, the subordinated debt and the revolving credit facility.

Based on our operating plans, we expect that proceeds from this offering, available cash, cash generated from operations, and cash available from our revolving credit facility will be sufficient to finance operations and capital expenditures for at least two years from the date of this prospectus. However, we may use a substantial portion of the proceeds from this offering to accelerate product development, expand our sales and marketing activities or consummate acquisitions, although we have no current plans in this regard. Therefore, we may need to raise additional capital, which may be dilutive to existing stockholders. The additional capital may not be available on acceptable terms or at all. Accordingly, there can be no assurance that we will be successful in raising additional capital.

IMPACT OF FOREIGN CURRENCIES

We sell our products in many countries and a substantial portion of our sales, costs and expenses are denominated in foreign currencies, especially the United Kingdom pound sterling and the Euro. In the first nine months of 2000 and in 1999, the U.S. dollar strengthened against these currencies resulting in reduced consolidated revenue growth, as expressed in U.S. dollars. In addition, the currency fluctuations resulted in foreign currency losses of approximately $48,000 in 1999 and $456,000 in the first nine months of 2000.

Historically, we have not hedged our foreign currency position. Currently, we attempt to manage foreign currency risk through the matching of assets and liabilities. However, as our sales expand internationally, we plan to evaluate our currency risks and we may enter into foreign exchange contracts from time to time to mitigate foreign currency exposure.

BACKLOG

Our order backlog was approximately $2.7 million as of September 30, 2000 and $2.1 million as of September 30, 1999. We include in backlog only those orders for which we have received valid purchase orders. Purchase orders may be cancelled at any time prior to shipment. Our backlog as of any particular date may not be representative of actual sales for any succeeding period. We expect to ship substantially all of the September 30, 2000 backlog by December 31, 2000.

ACCOUNTING PRONOUNCEMENTS

In June 1998, the Financial Accounting Standard Board issued Statement of Financial Accounting Standards (SFAS) No. 133, "Accounting for Derivative Instruments and Hedging Activities." SFAS 133 establishes accounting and reporting standards requiring that every derivative instrument be recorded in the balance sheet as either an asset or liability measured at its fair value. SFAS 133, as amended by SFAS 137 and SFAS 138, is effective for years beginning after June 15, 2000. SFAS 133 will be adopted on January 1, 2001. We believe the adoption of this statement will not have a significant impact on our financial position, results of operations or cash flows.

QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

Interest rate risk and foreign currency rate risk are the primary sources of market risk to our operations. As of September 30, 2000, we had aggregate variable rate long-term debt of $6.8 million and revolving credit facility debt of $3.2 million. A 10% change in interest rates would change the annual interest expense on our long-term debt by approximately $68,000 and on our revolving credit facility by approximately $32,000.

OVERVIEW

We are a global provider of innovative, research enabling tools for drug discovery. We provide a broad array of tools designed to accelerate the speed and to reduce the cost at which our customers can introduce new drugs. Since our 1996 reorganization, we have focused on alleviating the protein purification and ADMET screening bottlenecks in drug discovery.

To address these two critical bottlenecks in protein purification and ADMET screening, we recently introduced several new proprietary tools. For protein purification, these tools include specially treated pipette tips, spin columns and micro-dialyzers. For ADMET screening, these tools include NaviCyte diffusion chambers for drug absorption testing, 96 well equilibrium dialysis plates for drug distribution testing and ScanTox in vitro toxicology screening instruments.

We also have an established product base in proteomics, which is the study of gene function through the analysis of protein interactions. This product base consists of DNA/RNA/protein calculators, life science spectrophotometers and amino acid analysis systems, as well as precision infusion pumps, organ testing systems and ventilators used in ADMET screening.

OUR HISTORY

Our business began in 1901 and has grown over the intervening years with the development and evolution of modern drug discovery tools. Our past inventions include the mechanical syringe pump in the 1950s for drug infusion and the microprocessor controlled syringe pump in the 1980s.

In March 1996, a group of investors led by our current management team acquired a majority of the then existing business of our predecessor, Harvard Apparatus. Following this acquisition, we redirected our strategy to focus on high growth areas within drug discovery by acquiring innovative technologies through strategic acquisitions and licensing while continuing to grow our existing business through internal product development and marketing. We have completed five business acquisitions, including Biochrom, the licensing of key new technology for in vitro toxicology assays and drug absorption measurement chambers, the internal development of new product lines, including new generation syringe pumps and DNA/RNA/protein calculators and the mailing of expanded new catalogs.

INDUSTRY OVERVIEW

The life sciences research industry is undergoing fundamental change and growth resulting principally from the explosive growth in gene discovery and the demand for greater efficiency in the drug discovery process. Industry experts estimate that in 2000, the life sciences research industry will spend more than $50 billion on drug discovery research and development. The goal of drug discovery is to find compounds that will bind specifically to a given target without significantly affecting any other molecules in the body. Traditionally, chemists have laboriously synthesized new compounds with potential therapeutic activity one at a time or painstakingly isolated them from natural resources. Today, combinatorial chemistry techniques are used to greatly increase the supply and diversity of such compounds. Libraries of hundreds of thousands, or even millions, of compounds are now available for testing in biological assays against targets.

Until recently, life sciences researchers had identified only a few hundred targets against which to test these compounds. Driven by large-scale DNA sequencing projects, such as the Human Genome Project, life sciences researchers expect to identify tens of thousands of new genes as they decipher the genomes of both humans and disease-causing organisms. When a gene, which is a segment of DNA, is expressed, a copy of the gene sequence is carried in messenger RNA, or mRNA, which is used to direct the manufacture of a protein. Although genes, DNA, mRNA and proteins are all targets for

drug discovery, proteins are by far the most common. Proteins are the molecular machines of the cell that are responsible for performing the majority of cellular functions. Once proteins are identified and validated as potential targets, they need to be screened against hundreds of thousands, if not millions, of compounds in a process known as primary screening.

Drug discovery is a time-consuming and costly process. In the pre-genomics era, the compound development, primary screening and clinical trials stages were bottlenecks in this process. The successes of genomics, combinatorial chemistry and high throughput screening in recent years have alleviated the bottlenecks at the compound development and primary screening stages. However, these bottlenecks have been replaced by bottlenecks at the target validation, assay development and absorption, distribution, metabolism, elimination and toxicology, or ADMET, testing stages. The revolution in genomics is expected to increase the number of targets from 500 to 10,000, which will consequently greatly increase the need for protein purification and analysis. The increase in the number of compounds in libraries from tens of thousands to millions together with the increase in the number of targets is greatly increasing the number of leads requiring ADMET screening.

THE DRUG DISCOVERY PROCESS

The drug discovery process consists of several steps, which are illustrated below.

The diagram that illustrates the drug discovery process is initially split into two parallel tracks which merge into a single track as the diagram moves to the right. The upper track of the diagram is titled "Compound Development" and includes an arrow titled "Compound Libraries." Below the arrow are the words "Combinatorial Chemistry." The lower track of the diagram is titled "Target Discovery" and includes two arrows. The first arrow is titled "Target Identification." Below this arrow is the word "Genomics." The next arrow to the right is titled "Target Validation." Below this arrow is the word "Proteomics." Following the "Compound Libraries" arrow on the upper track and the "Target Validation" arrow on the lower track, the two tracks of the diagram combine and include arrows to illustrate the remaining stages and key bottlenecks in the drug discovery process. The individual arrows from left to right include an arrow titled "Assay Development" followed by an arrow titled "High Throughput Screening." These two arrows in the diagram appear under the title "Primary Screening." To the right of the "High Throughput Screening" arrow is an arrow titled "Lead Optimization" followed by an arrow titled "ADMET Screening." These two arrows in the diagram appear under the title "Secondary Screening." To the right of the "ADMET Screening" arrow is an arrow titled "Clinical Trials," the final arrow in the process flow diagram.

TARGET IDENTIFICATION involves isolating a particular molecule, typically a protein, and evaluating the role that it plays in the body to determine whether it might be a viable target for further investigation. Today, this activity is most often initiated by genomics studies, including DNA sequencing, RNA analysis and genetic mapping.

TARGET VALIDATION involves demonstrating that affecting the function of a particular target has a positive effect on the course of a disease. Target validation employs a variety of methods including RNA analysis, protein analysis and cell biology. Target validation is a more time-consuming process than target identification.

PRIMARY SCREENING involves the large-scale testing of collections of chemical compounds, known as compound libraries, against validated targets. These libraries are tested using high throughput assays. The goal is to find individual compounds that bind to and inhibit or activate a particular target, commonly referred to as a hit. An assay, in the context of screening compounds against a new target, refers to a test a researcher must develop for measuring whether particular compounds in a library interact with the target in a certain manner. An assay must be developed for each target to be screened. The major pharmaceutical companies are moving towards screening up to 100 targets annually with libraries of up to one million compounds each.

SECONDARY SCREENING involves the refinement of hits into leads that can be used in clinical trials. This step consists of lead optimization and ADMET testing. Lead optimization involves conducting successive rounds of chemical alterations and biological tests to find compounds similar to the original compound identified in primary screening which have improved drug properties over the initial compound, particularly efficacy. ADMET testing involves the conducting of various tests on compounds

to ensure that they are safe and have good pharmacological properties such as high adsorption into the blood from the digestive tract and good distribution to the site of the target molecule in the body. This stage also involves the testing of compounds to determine therapeutic activity in animal models of disease and to ensure that the compounds can be manufactured with consistent quality.

CLINICAL TRIALS involve the testing of pharmaceutical compounds in humans to demonstrate their safety and efficacy. Because clinical trials are by far the most expensive part of drug discovery, and undesirable ADMET properties are the most common reasons for failure, pharmaceutical and biotechnology companies can achieve substantial cost savings by identifying drug candidates with poor ADMET properties as early in the drug discovery process as possible. Drugs with successful clinical trials are almost always commercialized.

PROTEOMICS

Proteomics involves the large-scale purification, identification and analysis of proteins. Proteins are manufactured in the body's cells according to the code contained in DNA and are the molecular machines of the cell that are responsible for performing the majority of cellular functions. Proteins are the most common targets in the field of drug discovery because proteins tend to be far more accessible to drugs than either DNA or mRNA which are located in the nucleus of the cell.

Every protein that is identified as a potential target must be analyzed. The trend in protein analysis currently is moving towards the use of mass spectrometry, which is the fastest and most accurate technique for protein analysis. Because mass spectrometers are highly sensitive, they require the use of pure samples in order to properly analyze the protein. Thus, protein purification, the removal of reagents such as salts, detergents and buffers, is essential to target discovery.

In the last few years the revolution in genomics and the completion of the Human Genome Project has vastly increased the number of known targets. Before the Human Genome Project there were only approximately 500 known targets. Some experts believe that the sequencing of the human genome will ultimately lead to the identification of 50,000 to 100,000 genes and over 1,000,000 proteins. Many scientists expect that this will in turn lead to the identification of up to 10,000 targets. Each of these targets, many of which will be proteins, will need to be purified and analyzed many times prior to becoming a validated target for primary screening. As a result of the recent and projected increases in the number of known drug targets, purifying protein samples has been and will continue to be a significant bottleneck in the drug discovery process.

ADMET SCREENING

The goal of ADMET screening is to identify compounds that have toxic side effects or undesirable pharmacological properties. These compounds are then either eliminated or further chemically modified and re-screened. While ADMET screening is traditionally conducted late in the drug discovery process, early application of ADMET screening can be highly beneficial. This is because more than half of the 90% of lead compounds which fail in the costly clinical trial stage of drug discovery fail due to poor pharmacological properties. These important pharmacological properties consist of absorption, distribution, metabolism and elimination which, together with toxicology, are described below:

ABSORPTION. Absorption describes the ability of a drug to pass through the wall of the digestive tract and enter the blood stream. Absorption is an important property of an effective drug because adequate absorption allows a drug to be administered orally rather than by direct injection into the blood. If a lead candidate cannot be absorbed easily from the digestive tract into the blood, its commercial viability will be adversely impacted even if it effectively acts against the target.

DISTRIBUTION. Distribution describes the amount of a drug that different tissues in the body take in from the blood. Distribution of the drug to the tissue containing the target molecule is necessary for the drug to have the desired effect. Moreover, undesirable side effects may occur if the drug is distributed to tissues other than the one containing the target molecule. Effective distribution requires the drug to be transported around the body and released into the tissue containing the target molecule at an appropriate rate. The flow of blood alone is often an effective distribution method. However, while the binding of a drug to blood proteins can increase the proper distribution of a drug, it can cause toxic problems if the bond formed is too strong.

METABOLISM. Metabolism describes the chemical changes that the body makes to a drug. This is an important property of an effective drug for three reasons. First, some drugs must be metabolized in order to become effective. Second, some drugs may have no toxic side effects, but the byproducts of their metabolism, known as metabolites, may be toxic. Third, metabolism usually makes drugs more soluble in water, which in turn makes it easier for the body to eliminate them in the urine.

ELIMINATION. Elimination describes the process by which the body expels a drug. If the blood absorbs a drug, it will be primarily eliminated in the urine either in its native or metabolized forms. Elimination is important because toxicity is primarily a matter of concentration--even common compounds such as aspirin and caffeine are toxic at high enough concentrations. If the body does not eliminate a drug, the drug's concentration will build up with every dose taken, eventually reaching toxic levels.

TOXICOLOGY. Toxicology describes the adverse effects a drug has on the body. These range from nausea to death. All drugs must be shown to be safe to the satisfaction of regulatory authorities prior to commercialization. Toxicology consists of tests designed to determine the likelihood that a drug will cause death or the growth of tumors, disrupt normal reproductive function or the immune system or mutate DNA.

For every 1,000 hits identified through primary screening, only about ten survive secondary screening and make it into clinical trials, the final stage of drug discovery. Of those ten, only one, on average, survives the regulatory process to be commercialized as a new drug.

CURRENT TECHNOLOGIES FOR PROTEIN PURIFICATION AND ADMET SCREENING

PROTEIN PURIFICATION. Protein purification is an essential step in proteomics. Researchers must remove any salts, buffers, detergents and cellular debris prior to analyzing a protein sample. Current technologies for protein purification include packed bed columns and dialysis. In order to isolate a specific protein, two-dimensional gel electrophoresis, or 2DGE, is typically used in advance of running a sample through a packed bed column or dialysis. Two-dimensional gel electrophoresis isolates different types of proteins in a two-stage process using electric currents passed through gels. Each protein migrates to a specific location in the gel. The protein can then be separated from the gel residue using packed bed columns or dialysis.

PACKED BED COLUMNS are small disposable plastic tubes containing chromatography media. A protein sample is typically pipetted into the top of the column, which is then placed in a centrifuge or vacuum manifold to draw the sample through the media. These columns will remove salts, detergents, buffers and 2DGE gel residue, but may retain some of the protein in the media.

DIALYSIS involves the use of a porous membrane which allows small molecules such as salts, detergents, buffers and 2DGE gel residue to pass through but blocks larger molecules such as proteins from passing through. Dialysis involves pipetting the protein sample into a device which consists of a chamber with the porous membrane covering one otherwise open end. The chamber is then placed in a large volume of pure water and stirred for a period of time, which may be minutes or hours.

ADMET SCREENING. ADMET testing at the secondary screening stage has traditionally relied almost exclusively on live animal testing instead of tools. The most common animals used in drug discovery studies are laboratory rats and mice. As a drug compound moves closer to human clinical trials, the United States Food and Drug Administration requires that studies be performed using larger animals, such as rabbits and dogs.

LIMITATIONS OF CURRENT TECHNOLOGIES

PROTEIN PURIFICATION. Current technologies for protein purification in proteomics have the following limitations:

- LOW PRODUCTIVITY. Neither packed bed columns nor dialyzers are easily capable of automated sample handling. Using packed bed columns, either alone or in connection with two-dimensional gel electrophoresis, requires centrifugation or the use of a vacuum to move the sample through the purification media. This means the sample must be physically moved to the centrifuge or vacuum pump, left to run--typically for several minutes--then removed, washed and the protein eluted.

- LOSS OF PROTEIN SAMPLE. Packed bed columns consume a portion of the sample leading to sample loss. The amount of sample lost in the purification process may only be microliters. This is not a significant problem if several milliliters of sample are available, as is common in DNA purification. However, if only a few microliters of sample are available, as is common in protein purification, the loss of even one microliter may be a large percentage of the total. In addition, protein samples are typically expensive and thus sample loss must be minimized.

ADMET SCREENING. Current technologies for ADMET screening have the following limitations:

- HIGH COST. Animal assays are costly because all animals have to be housed and cared for under strict government regulations often in clean room environments and with a significant staff to care for the animals. A standard 14-day range finding study performed using laboratory rats costs approximately $75,000, and a two-year carcinogenicity study carried out with laboratory rats costs approximately $1 million. A later stage 90-day study carried out using dogs typically costs almost twice as much as the same test performed using laboratory rats.

- LABOR INTENSITY. By their nature, animal assays cannot be automated and thus require the time of highly skilled research scientists, such as surgeons and pathologists.

- ETHICAL CONSIDERATIONS. Even though researchers must use the lowest number of the least sentient animals to achieve the scientifically needed information, avoid pain and consider alternatives to the use of live animals, the large number of animals used still creates ethical considerations.

OUR SOLUTIONS

We overcome the limitations of current technologies by providing innovative, enabling tools for protein purification and ADMET screening.

PROTEIN PURIFICATION

Our protein purification technologies are designed to be quick to use and to reduce sample loss.

- HIGHER PRODUCTIVITY. Our purification pipette tips are quicker to use than packed bed columns because a centrifugation or vacuuming step is not necessary. This avoids both the moving of the sample to and from the centrifuge or vacuum pump and the run time in the centrifuge or vacuum pump. We believe our protein purification pipette tips are the only pipette tips capable of being fitted to standard pipetting workstations and thus being used for automated protein

purification. This automation increases our customers' productivity. In addition, our 96 well plate versions of dialyzers and spin columns can be used directly in automated equipment, again increasing our customers' productivity.

- REDUCED SAMPLE LOSS. Our miniaturization of dialyzers and spin columns reduces sample loss in the membrane or column material. Our purification pipette tips contain smaller volumes of material than packed bed columns and thus less sample is retained in the material.

ADMET SCREENING

Our ADMET screening technologies employ novel approaches to obtaining ADMET data while reducing the use of large numbers of live animals.

- LOWER COST. Most of our ADMET screening products use organs, tissue or blood proteins rather than live animals. For example, our in vitro toxicology assay uses the lenses of cows' eyes obtained as a by-product of the beef industry, and our 96 well plate for serum protein binding uses blood proteins in vitro rather than in the bloodstream of live laboratory animals.

- IMPROVED AUTOMATION. Our in vitro toxicology assay can be run in a few minutes of instrument time and a few hours of elapsed time. By contrast, basic toxicology tests in animals typically take days of elapsed time and more advanced tests take weeks or months. Our 96 well plate for serum protein binding, for instance, can be run on automated liquid handling equipment.

- REDUCED ANIMAL USAGE. Our in vitro toxicology assay uses cow eye lenses instead of live animals to detect toxic effects of compounds. Our drug absorption chamber uses cultured human colon cells instead of animal intestinal tissue to simulate the absorption of a drug into the blood from the digestive tract. Our 96 well plate for serum protein binding tests the binding ability of compounds on extracted blood proteins instead of infusing the compounds into the bloodstreams of live test animals.

OUR STRATEGY

Our goal is to become the leading provider of innovative, enabling technologies and products for proteomics and ADMET research in the drug discovery process. Key elements of our strategy are to:

ESTABLISH OUR PROTEOMICS AND ADMET SCREENING PRODUCTS AS INDUSTRY STANDARDS

In order to establish our products as industry standards, we intend to provide a broad selection of products focused on the target validation and ADMET screening stages of the drug discovery process. We have recently introduced several new innovative products designed to reduce the cost and time associated with protein purification and ADMET screening in drug discovery. We have already begun to realize revenue from the sales of our products, including purification pipette tips, spin columns, dialyzers, in vitro toxicology assays and equilibrium dialysis plates. We intend to rapidly increase the market acceptance of these products through the development of new uses for these products, focused, direct marketing campaigns to our extensive customer base and promotions at scientific exhibitions.

LAUNCH A BROAD RANGE OF INNOVATIVE NEW TOOLS FOR DRUG DISCOVERY

Since our reorganization in 1996, we have focused on becoming a leading provider of tools for proteomics and ADMET screening. We believe that our customers are eager to acquire new and innovative tools that reduce drug discovery time and expense. Since 1996, we have introduced several new tools for proteomics and ADMET screening such as our protein and DNA purification pipette tips, protein purification dialyzers, ScanTox in vitro toxicology assay and NaviCyte diffusion chambers. We intend to continue to identify, develop and introduce new tools to alleviate bottlenecks in all stages of the drug discovery process.

LEVERAGE OUR EXISTING DISTRIBUTION AND MARKETING CHANNELS

We intend to leverage the strength of our existing distribution channels to launch new products. Our 1,000 page catalog is currently distributed worldwide to approximately 100,000 researchers engaged in drug discovery and is also accessible on our website. Our customer list consists primarily of research personnel, who are the end-users of our products and largely responsible for initiating the purchase of our products. We also have wholly-owned subsidiaries in the United Kingdom, Germany, France and Canada providing us with an international market presence. In addition, some of our products are sold through a distribution arrangement with Amersham Pharmacia Biotech, or APBiotech, providing us with access to APBiotech's extensive customer base, reputation and support infrastructure. We believe that our extensive existing distribution channels, when combined with our strong reputation for high quality, reliable and durable tools, provides us with a competitive advantage in bringing new products to market quickly and cost effectively.

PROVIDE A SINGLE SOURCE OF TOOLS FOR OUR CUSTOMERS' RESEARCH NEEDS IN PROTEOMICS AND ADMET SCREENING

We seek to provide our customers with all of the tools necessary to conduct a wide variety of proteomic and ADMET experiments that are crucial to the drug discovery process. We believe that being a single source sets us apart from our competitors by increasing the likelihood that our customers will turn to our catalog or website first when looking for help with a particular experiment. Currently, our catalog and website include approximately 10,000 products. In addition, our extensive product selection allows us to leverage the sales of our proprietary products through the simultaneous sale of complementary products.

ACQUIRE COMPLEMENTARY TECHNOLOGIES

We intend to selectively acquire companies and technologies which we believe will strengthen our portfolio of tools for drug discovery, particularly in the areas of proteomics and ADMET screening. Since 1996, we have completed the acquisition of Biochrom, four other acquisitions involving the integration of acquired products and technology into our existing manufacturing base and distribution channel, and three technology acquisition or licensing transactions. In the future, we may pursue acquisitions of new products and technologies through business acquisitions, partnerships or licensing arrangements.

OUR PRODUCTS

Our broad array of products includes the following:

PRODUCT CATEGORY	REPRESENTATIVE PRODUCT AREAS	DESCRIPTION	NUMBER OF PRODUCTS	YEAR OF INTRODUCTION FOR PRODUCT CATEGORY
PROTEOMICS				
Protein Purification	Purification Pipette Tips	Disposable pipette tips - coated with purification media - loaded with purification media	50	1999 (coated) Est. Q4 2000 (loaded)
	Macro Spin Columns	Disposable tubes containing purification media	20	1998
	Ultra Micro Spin Columns	Disposable tubes containing purification media	20	1998
	Dialyzers	Membrane capped plastic chambers - reusable - disposable - plates with 96 wells	45	1996 and prior
	Equilibrium Dialyzers	Membrane separating two plastic chambers - disposable - plates with 96 wells	9	1996-1999
Protein Analysis	Molecular Biology Spectrophotometers	Range of spectrophotometers	6	1970s (initial) 2000 (latest)
	DNA/RNA/Protein Calculators	Spectrophotometers with application software	2	1993 (initial) 2000 (latest)
	Multi-Well Plate Readers	Range of automated readers - absorbance - luminescence - fluorescence	3	Est. Q4 2000 (absorbance) Est. 2001 (luminescence) Est. 2001 (fluorescence)
	Amino Acid Analysis Systems	Ninhydrin-based amino acid detection systems	2	1970s (initial) 2000 (latest)
ADMET SCREENING				
Absorption	NaviCyte Diffusion Chambers	Simulated digestive tract/ blood stream interfaces	6	1995
Distribution	Equilibrium Dialysis Plate	Membrane separating two chambers	9	1996-1999
Metabolism/ Elimination	Organ Testing Systems	Chambers with stimulators, perfusion and recording devices	8	1970s-1999
Toxicology	ScanTox Assay	In vitro toxicology assay	1	2000
	Precision Infusion Pumps	Microprocessor controlled syringe pumps	80	1952 (mechanical) 1986 (microprocessor) 1998 (latest)

PROTEOMICS PRODUCTS--PROTEIN PURIFICATION

PREPTIP PROTEIN PURIFICATION PIPETTE TIPS

Our proprietary PrepTip pipette tips consist of a standard disposable pipette tip coated on the inside with the same chromatography media used in packed bed columns. This coating selectively binds proteins, but not the salts, detergents, electrophoresis gels, buffers and cellular debris that are often mixed in with the proteins. Our PrepTip pipette tip enables customers to rapidly purify proteins by avoiding the time-consuming usage of a centrifuge required when using spin columns. In addition, it is easy to use because the protein solution is handled entirely within the pipette tip and does not have to

be moved through a separate device like a packed bed column or dialyzer. Because our PrepTip pipette tips use the same chromatography media as packed bed columns, they can take advantage of the wide range of existing purification protocols using these media.

PURETIP DNA PURIFICATION PIPETTE TIPS

PureTip pipette tip uses a pipette tip that is similar to the PrepTip pipette tip, but is loaded with a gel rather than coated. This is well suited for performing DNA purification. PureTip pipette tips are more adaptable to automation than spin columns because they fit onto automated pipetting workstations. We expect to launch the PureTip pipette tip later this year.

SPIN COLUMNS

Spin columns are short plastic tubes that contain purification media. Once a sample is placed in the tube, it is typically spun in a centrifuge to move the sample through the media and separate the proteins from the other cellular debris. Our Ultra Micro spin columns, which we provide in both single and 96 well plate versions, contain chromatography media for use in purifying sample volumes as small as five microliters. This is significantly smaller than the sample volume required by columns produced by our largest competitors.

PROTEIN PURIFICATION DIALYZERS

Dialyzers are small chambers with an open end covered with a membrane. The membrane allows small molecules to pass through but not large molecules. Because proteins are large molecules and most contaminants are small molecules, this is an effective way to purify proteins. We make single- and double-sided reusable and disposable dialyzers.

DISPOSABLE EQUILIBRIUM DIALYZERS

Our proprietary disposable equilibrium dialyzers are effective cost-efficient products for protein binding studies and can handle sample sizes as small as 75 microliters. These disposable products are particularly useful for binding studies involving radioactively labeled compounds because the dialyzer does not require cleaning after use.

PROTEOMICS PRODUCTS--PROTEIN ANALYSIS

MOLECULAR BIOLOGY SPECTROPHOTOMETERS

A spectrophotometer is an instrument widely used in molecular biology and cell biology to quantify the amount of a compound in a sample by shining a beam of white light through a prism or grating to divide it into component wavelengths. Each wavelength in turn is shone through a liquid sample and the spectrophotometer measures the amount of light absorbed at each wavelength. This enables the quantification of the amount of a compound in a sample. We sell a wide range of spectrophotometers under the names UltroSpec and NovaSpec. These products are manufactured by our Biochrom subsidiary and sold primarily through our distribution arrangement with Amersham Pharmacia Biotech.

DNA/RNA/PROTEIN CALCULATORS

A DNA/RNA/protein calculator is a bench top instrument dedicated to quantifying the amount of DNA, RNA or protein in a sample. It uses a process similar to that of a molecular biology spectrophotometer. These are sold under the names GeneQuant and GeneQuantPro. Launched in 1993, we believe that we were the first company to sell such an instrument. These products are manufactured by our Biochrom subsidiary and sold primarily through Amersham Pharmacia Biotech.

MULTI-WELL PLATE READERS

Multi-well plate readers are widely used for high throughput screening assays in the drug discovery process. The most common format is 96 wells. They use light to detect chemical interactions. We plan to introduce a range of these products beginning with absorbance readers in the fourth quarter of 2000

and luminescence and fluorescence readers in 2001 primarily for distribution through Amersham Pharmacia Biotech.

AMINO ACID ANALYSIS SYSTEMS

An amino acid analysis system uses chromatography to separate the amino acids in a sample and then uses a chemical reaction to detect each one in turn as they flow out of the chromatography column. Amino acids are the building blocks of proteins. In June 2000, we acquired substantially all of the amino acid analysis systems business of the Biotronik subsidiary of Eppendorf-Netheler-Hinz GmbH and integrated it with the existing amino acid analysis systems business in our Biochrom subsidiary.

ADMET SCREENING PRODUCTS

We have traditionally sold products for ADMET testing that are based upon animal models. However, as a result of a series of acquisitions and licensing transactions, we have begun to develop and manufacture organ testing systems, tissue testing systems and serum protein binding assays for early toxicology testing.

NAVICYTE DIFFUSION CHAMBERS

A diffusion chamber is a small plastic chamber with a membrane separating the two halves of the chamber used to measure the absorption of a drug into the bloodstream. The membrane can either be tissue such as intestinal tissue or a cultured layer of cells such as human colon cells. This creates a miniaturized model of intestinal absorption. We entered this market with our 1999 acquisition of the assets of NaviCyte Inc. a wholly owned subsidiary of Trega Biosciences.

96 WELL EQUILIBRIUM DIALYSIS PLATE FOR SERUM PROTEIN BINDING ASSAYS

Our 96 well equilibrium dialysis plate operates in a similar way to the equilibrium dialyzers for target validation described above. The difference is that both chambers on either side of the membrane are capped. The protein target is placed on one side of the membrane and the drug on the other. The small molecule drug diffuses through the membrane. If it binds to the target, it cannot diffuse back again. If it does not bind, it will diffuse back and forth until an equilibrium is established. Thus, measuring the drug concentration determines the strength of binding. This product is principally used for ADMET screening to determine if a drug binds to blood proteins. A certain level of reversible binding is advantageous in order to promote good distribution of a drug through the human body. However, if the binding is too strong, it may impair normal protein function and cause toxic effects.

ORGAN TESTING SYSTEMS

Organ testing systems use glass or plastic chambers together with stimulators and recording electrodes to study organ function. Organ testing systems enable either whole organs or strips of tissue from organs such as hearts, livers and lungs to be kept functioning outside the body while researchers perform experiments with them. They are typically used in place of live animals. We have sold basic versions of these systems for many years, but have significantly expanded our product offerings through our November 1999 acquisition of Hugo Sachs Elektronik. Studies on isolated livers are useful in determining metabolism and studies on kidneys are useful in determining elimination.

SCANTOX IN VITRO TOXICOLOGY SCREENING

Our proprietary ScanTox in vitro toxicology screening system uses a living organ system, a bovine eye lens, to detect the toxic effect of compounds by measuring the refraction of laser light passing through the eye lens. A healthy lens focuses light to a point, but when a toxic compound is added to

the lens environment, the lens reacts by defocusing. The extent of defocusing is measured and analyzed by the instrument. Its advantages include:

- higher relevance to whole body toxicology than a cell-based assay, without the complicated support and measurement apparatus needed for other organs such as hearts or lungs,

- higher sensitivity and reproducibility than live animal assays,

- higher sensitivity than other tissue assays, and

- easier operation than other animal or tissue assays because the data is collected and analyzed automatically.

PRECISION INFUSION PUMPS

Infusion pumps, typically syringe pumps, are used to accurately infuse very small quantities of liquid, commonly drugs. Infusion pumps are typically used for long-term toxicology testing of drugs by infusion into animals, typically laboratory rats. We sell 80 types of syringe pumps.

OTHER PRODUCTS

CELL INJECTION SYSTEMS

Cell injection systems use extremely fine bore glass capillaries to penetrate and inject drugs into or around individual cells. Cell injection systems are used to study the effects of drugs on single cells. Injection is accomplished either with air pressure or, if the drug molecule is electrically charged, by applying an electric current. We entered this market with our 1998 acquisition of the research products of Medical Systems Corporation.

VENTILATORS

Ventilators use a piston driven air pump to inflate the lungs of an anesthestised animal. Ventilators are typically used in surgical procedures common in drug discovery. Our advanced Inspira ventilators have significant safety and ease of use features, such as default safety settings, not found on other ventilators.

CPK ATOMIC MODELS

CPK atomic models use colored plastic parts to accurately model molecular structures, such as DNA. We offer a wide range of components and assembled models.

STRONGHOLD LABORATORY CLAMPS

Stronghold laboratory clamps are made from glass reinforced nylon. Our clamps resist rusting which is a common problem with steel clamps. We provide a wide variety of clamps, stands and lattices.

OEM PRODUCTS

Our reputation for quality, durability and reliability has led to the formation of a number of original equipment manufacturer, or OEM, relationships with major life science instrument companies. These relationships are conducted through purchase orders and are not contractual. A good example of these relationships is with respect to our syringe pumps. Our syringe pumps are capable of delivering flow rates as low as 0.001 microliters per hour while maintaining high accuracy. We have adapted, in conjunction with our OEMs, the core technology embodied in our syringe pumps to make specialized sample injectors for many of the major mass spectrometry manufacturers.

DISTRIBUTED PRODUCTS

In addition to the manufactured products described above, we buy and resell through our catalog products made by other manufacturers. We have negotiated supply agreements with the majority of the companies that provide our distributed products. These supply agreements specify pricing only and contain no minimum purchase commitments. None of these agreements represents more than two percent of our revenues. Distributed products accounted for approximately 18% of our revenues for the nine months ended September 30, 2000. These distributed products enable us to provide our customers with a single source for their experimental needs. These complementary products consist of a large variety of devices, instruments and consumable items used in experiments involving animals and biological tissue in the fields of proteomics, physiology, pharmacology, neuroscience, cell biology, molecular biology and toxicology. Our manufactured products are often leaders in their fields, but researchers often need complementary products in order to conduct their particular experiments. Most of these complementary products come from small companies without our extensive distribution and marketing channel.

OUR CUSTOMERS

Our customers are primarily end user research scientists at pharmaceutical and biotechnology companies, universities and government laboratories, such as the U.S. National Institutes of Health, or NIH. Our largest customers in the United States include Baylor College of Medicine, Bristol-Myers Squibb Company, Eli Lilly and Company, Johns Hopkins University, Merck & Co., Inc., NIH, Parke-Davis, Pfizer Inc., Schering-Plough Corporation, SmithKline Beecham plc and the University of California.

We conduct direct sales in the United States, the United Kingdom, Germany, France and Canada. We also maintain distributors in other countries. Aggregate sales to our largest customer, Amersham Pharmacia Biotech, as a distributor with end users similar to ours, accounted for approximately 39% of our revenue for the nine months ended September 30, 2000, and 44% of our revenue for the fiscal year ended December 31, 1999. We have several thousand customers worldwide and no other customer accounted for more than five percent of our revenue for such periods.

SALES AND MARKETING

DIRECT SALES

We periodically produce and mail approximately 100,000 copies of our 1,000-page catalog, which contains approximately 10,000 items. We distribute the majority of our products ordered from our catalog through our worldwide subsidiaries. Our manufactured products accounted for approximately 82% of our revenues for the nine months ended September 30, 2000. The complete catalog is also available as a CD-ROM and can be accessed on our website, www.harvardbioscience.com. Our significant positions in many of our manufactured products create traffic to the catalog and web site which enables cross-selling and facilitates the introduction of new products. In addition to the comprehensive catalog, we create and mail abridged catalogs which focus on specific product areas along with direct mailers which introduce or promote new products.

AMERSHAM PHARMACIA BIOTECH DISTRIBUTOR

Since the 1970s, our Biochrom subsidiary has used Amersham Pharmacia Biotech, or APBiotech, and its predecessors as its primary marketing and distribution channel. When we acquired Biochrom from Pharmacia and Upjohn in 1999, we signed a distribution, marketing and new product development agreement with APBiotech. Under the terms of this agreement, APBiotech serves as the exclusive distributor, marketer and seller of a majority of the products of our Biochrom subsidiary. During the term of this agreement, APBiotech has agreed to purchase a minimum number of our products for an

annual amount of $12.5 million, subject to adjustment for price increases and product sales volume. We have certain affirmative duties under the agreement to assist APBiotech in the sale of our products. For example, we have agreed to cooperate with APBiotech in its sales and marketing program and to provide sales, demonstration and support training for APBiotech. This agreement may be terminated early under specified circumstances. For example, if we breach the exclusivity, pricing or shipping provisions of the agreement and fail to remedy the breach within 30 days of receiving written notice of the breach from APBiotech, then the agreement may be terminated. In addition, we may terminate the agreement under specified circumstances. For example, failure by APBiotech to place certain information in escrow, to pay for products or to purchase a minimum number of products each year enables us to terminate the agreement unless APBiotech remedies the breach within 30 days of receiving written notice of the breach from us. This agreement may be terminated by either party upon 18 months' prior written notice. This agreement does not have a finite term, but remains in effect until terminated by either us or APBiotech.

RESEARCH AND DEVELOPMENT

Our principal research and development mission is to develop a broad portfolio of technologies, products and core competencies in drug discovery tools, particularly for application in the areas of proteomics and ADMET.

Our development expenditures were $206,000 in 1997, $325,000 in 1998 and $1.2 million in 1999. We anticipate that we will continue to make significant development expenditures. We plan to continue to pursue a balanced development portfolio strategy of originating new products from internal research and development programs and business and technology acquisitions.

We maintain development staff in each of our manufacturing facilities to design and develop new products. In-house development is focused on our current technologies. For new technologies, our strategy has been to license or acquire proven technology from universities and biotechnology companies and then develop the technology into commercially viable products.

MANUFACTURING

We manufacture and test the majority of our products in our four principal manufacturing facilities located in the United States, the United Kingdom and Germany. We have considerable manufacturing flexibility at our various facilities, and each facility can manufacture multiple products at the same time. We maintain in-house key manufacturing know-how, technologies and resources. We seek to maintain multiple suppliers for key components that are not manufactured in-house.

Our manufacturing operations are essentially to assemble and test. Our manufacturing of syringe pumps, ventilators, cell injectors and protein purification products takes place in Holliston, Massachusetts. Our manufacturing of spectrophotometers and amino acid analysis systems takes place in Cambridge, England. Our manufacturing of surgery-related products and teaching products takes place in Edenbridge, England. Our manufacturing of complete organ testing systems takes place in March-Hugstetten, Germany. Our Cambridge, England facility is certified to ISO 9001.

COMPETITION

The markets into which we sell our products are highly competitive, and we expect the intensity of competition to increase. We compete with many companies engaged in developing and selling tools for drug discovery. Many of our competitors have greater financial, operational, sales and marketing resources, and more experience in research and development and commercialization than we have. Moreover, competitors may have greater name recognition than we do, and many offer discounts as a competitive tactic. These competitors and other companies may have developed or could in the future develop new technologies that compete with our products or which could render our products obsolete.

We cannot assure you that we will be able to make the enhancements to our technologies necessary to compete successfully with newly emerging technologies. We are not aware of any significant products sold by us which are currently obsolete.

We believe that we offer one of the broadest selections of protein purification and ADMET technologies to companies engaged in drug discovery. We are not aware of any competitor which offers a product line of comparable breadth within the protein purification and ADMET product markets. We have numerous competitors on a product line basis. We believe that we compete favorably with our competitors on the basis of product performance, including quality, reliability and speed, technical support, price and delivery time. We compete with several companies that provide instruments for proteomics and ADMET screening. In the DNA/RNA/protein calculator area, we compete with PerkinElmer Instruments, Inc. and Bio-Rad Laboratories, Inc. In the molecular biology spectrophotometer area, we compete with Beckman Coulter, Inc. and PerkinElmer Instruments, Inc. In the protein sample preparation area, we compete with Millipore Corporation, Pierce Chemical Company and Spectrum Medical. In the ADMET screening area, we compete with KD Scientific, Razel Scientific Instruments, Inc., Experimetria Ltd., Kent Scientific Corporation, Warner Instruments, General Valve Company, Eppendorf-Netheler-Hinz GmbH, Ugo Basile and Becton, Dickinson and Company. In the area of OEM products, we face competition primarily from the in-house engineering teams of our OEM customers.

INTELLECTUAL PROPERTY

To establish and protect our proprietary technologies and products, we rely on a combination of patent, copyright, trademark and trade-secret laws, as well as confidentiality provisions in our contracts. Most of our new technology is covered by patents or patent applications. Most of our base business is protected by trade names and trade secrets only.

We have implemented a patent strategy designed to provide us with freedom to operate and facilitate commercialization of our current and future products. We currently own ten issued U.S. patents and have four pending applications. We also hold exclusive licenses for the technologies used in our ScanTox in vitro toxicology products, our NaviCyte drug absorption products and our PureTip pipette tip products. In addition to these licenses, our principal technologies are covered by issued patents for our dialyzers and our Ultra Micro spin columns and by pending applications for our PrepTip pipette tips. Furthermore, international patent applications are pending in connection with one of our U.S. patent applications and one of our licensed patents.

Generally, U.S. patents have a term of 17 years from the date of issue for patents issued from applications filed with the U.S. Patent Office prior to June 8, 1995, and 20 years from the application filing date or earlier claimed priority date in the case of patents issued from applications filed on or after June 8, 1995. Our issued US patents will expire between 2011 and 2018. Our success depends to a significant degree upon our ability to develop proprietary products and technologies. We intend to continue to file patent applications as we develop new products and technologies.

Patents provide some degree of protection for our intellectual property. However, the assertion of patent protection involves complex legal and factual determinations and is therefore uncertain. The scope of any of our issued patents may not be sufficiently broad to offer meaningful protection. In addition, our issued patents or patents licensed to us may be successfully challenged, invalidated, circumvented or unenforceable so that our patent rights would not create an effective competitive barrier. Moreover, the laws of some foreign countries may not protect our proprietary rights to the same extent as do the laws of the United States. In addition, the laws governing patentability and the scope of patent coverage continue to evolve, particularly in areas of interest to us. As a result, there can be no assurance that patents will issue from any of our patent applications or from applications

licensed to us. In view of these factors, our intellectual property positions bear some degree of uncertainty.

We also rely in part on trade-secret protection of our intellectual property. We attempt to protect our trade secrets by entering into confidentiality agreements with third parties, employees and consultants. Our employees and consultants also sign agreements requiring that they assign to us their interests in patents and copyrights arising from their work for us. Many of our U.S. employees have signed agreements not to compete unfairly with us during their employment and after termination of their employment, through the misuse of confidential information, soliciting employees, soliciting customers and the like. However, it is possible that these agreements may be breached or invalidated and if so, there may not be an adequate corrective remedy available. Despite the measures we have taken to protect our intellectual property, we cannot assure you that third parties will not independently discover or invent competing technologies, or reverse engineer our trade secrets or other technologies. Therefore, the measures we are taking to protect our proprietary rights may not be adequate.

We do not believe that our products infringe on the intellectual property rights of any third party. We cannot assure you, however, that third parties will not claim such infringement by us or our licensors with respect to current or future products. We expect that product developers in our market will increasingly be subject to such claims as the number of products and competitors in our market segment grows and the product functionality in different market segments overlaps. In addition, patents on production and business methods are becoming more common and we expect that more patents will issue in our technical field. Any such claims, with or without merit, could be time-consuming, result in costly litigation and diversion of management's attention and resources, cause product shipment delays or require us to enter into royalty or licensing agreements. Moreover, such royalty or licensing agreements, if required, may not be on terms acceptable to us, or at all, which could seriously harm our business or financial condition.

GOVERNMENT REGULATION

We are not subject to direct governmental regulation other than the laws and regulations generally applicable to businesses in the domestic and foreign jurisdictions in which we operate. In particular, we are not subject to regulatory approval by the United States Food and Drug Administration as none of our products are sold for use in diagnostic procedures or on human clinical patients. In addition, we believe we are in compliance with all relevant environmental laws.

EMPLOYEES

As of October 15, 2000, we had 127 full-time employees and 6 part-time employees, 38 of whom resided in the United States, 77 of whom resided in the United Kingdom, 11 of whom resided in Germany, 3 of whom resided in France and 4 of whom resided in Canada. None of our employees is subject to any collective bargaining agreement. We believe that our relationship with our employees is good.

FACILITIES

Our four principal facilities incorporate manufacturing, development, sales and marketing and administration functions. Our facilities consist of:

- a leased 20,000 square foot facility in Holliston, Massachusetts, which is our corporate headquarters,
- a leased 28,000 square foot facility in Cambridge, England,
- an owned 15,500 square foot facility in Edenbridge, England, and

- a leased 9,000 square foot facility in March-Hugstetten, Germany.

We lease additional facilities for sales and administrative support in Les Ulix, Paris France and Montreal, Quebec Canada.

LEGAL PROCEEDINGS

On November 7, 2000, we received correspondence from counsel to Harvard University claiming that our use of the term "Harvard Bioscience" and other terms containing or consisting of the term "Harvard" constitutes trademark infringement, false designation of origin, unfair competition and cybersquatting. Counsel to Harvard University has also threatened us with legal action if we do not cease and permanently refrain from using these terms. We do not currently intend to take such steps, and we believe it is likely that Harvard University will pursue this matter against us. We believe that these claims are without merit, and we will vigorously seek to protect our rights regarding such claims. While we are still investigating the matter, we do not believe that the matter will have a material adverse effect on our business, financial position or results of operations.

From time to time, we may be involved in various other claims and legal proceedings arising in the ordinary course of business. We are not currently a party to any other claims or proceedings which, we believe, if decided adversely to us, would either individually or in the aggregate have a material adverse effect on our business, financial condition or results of operations.

EXECUTIVE OFFICERS AND DIRECTORS

The following table shows information about our executive officers and directors as of October 15, 2000.

NAME	AGE	POSITION
Chane Graziano	62	Chief Executive Officer and Director
David Green	36	President and Director
James Warren	55	Chief Financial Officer
Mark Norige	46	Chief Operating Officer
John House	56	Managing Director, Biochrom Ltd
Susan Luscinski	44	Vice President of Finance and Administration
Christopher W. Dick	46	Director
Robert Dishman	56	Director
John F. Kennedy	51	Director
Richard C. Klaffky, Jr	54	Director
Earl R. Lewis	56	Director

Messrs. Dick and Klaffky are members of our compensation committee.

Messrs. Kennedy, Klaffky and Lewis are members of our audit committee.

CHANE GRAZIANO has served as our Chief Executive Officer and as a member of our board of directors since March 1996. Prior to joining Harvard Bioscience, Mr. Graziano served as the President of Analytical Technology Inc., an analytical electrochemistry instruments company, from 1993 to 1996 and as the President and Chief Executive Officer of its predecessor, Analytical Technology Inc.-Orion, an electrochemistry instruments and laboratory products company, from 1990 until 1993. Mr. Graziano served as the President of Waters Corporation, an analytical instrument manufacturer, from 1985 until 1989. Mr. Graziano has over 36 years experience in the laboratory products and analytical instruments industry.

DAVID GREEN has served as our President and as a member of our board of directors since March 1996. Prior to joining Harvard Bioscience, Mr. Green was a strategy consultant with Monitor Company, a strategy consulting company, in Cambridge, Massachusetts and Johannesburg, South Africa from June 1991 until September 1995 and a brand manager for household products with Unilever PLC, a packaged consumer goods company, in London from September 1985 to February 1989. Mr. Green graduated from Oxford University with a B.A. Honors degree in physics and holds a M.B.A. degree with distinction from Harvard Business School.

JAMES WARREN has served as our Chief Financial Officer since July 2000. Prior to joining Harvard Bioscience, Mr. Warren served as the Chief Financial Officer of Aquila Biopharmaceuticals, Inc., a life sciences company, from January 1998 until July 2000 and as the Corporate Controller of Genzyme Corporation, a biotechnology company, from 1991 until January 1998. Mr. Warren holds a M.B.A. degree from Boston University.

MARK NORIGE has served as our Chief Operating Officer since January 2000 and in various other positions with us since September 1996. Prior to joining Harvard Bioscience, Mr. Norige served as a Business Unit Manager at QuadTech, Inc., an impedance measuring instrument manufacturer, from May 1995 until September 1996. Mr. Norige worked at Waters Corporation from 1977 until May 1995.

JOHN HOUSE has served as Managing Director of our Biochrom Ltd subsidiary since July 2000. Prior to joining Biochrom, Mr. House was retired from January 1995 until July 2000 and engaged during that period primarily in charitable activities. Mr. House served in various positions with, and most recently as a Managing Director of, Unicam Ltd., a manufacturer of analytical instruments, from 1987 until January 1995.

SUSAN LUSCINKSI has served as our Vice President of Finance and Administration since May 1999. Ms. Luscinski served as our Corporate Controller from May 1988 until May 1999 and has served in various other positions at our company and its predecessor since January 1985.

CHRISTOPHER W. DICK has served as a director of Harvard Bioscience since March 1996. Mr. Dick has served as Managing Director of Ascent Venture Management, Inc., a private equity firm, since March 1999. Mr. Dick has served as a Managing Member or General Partner of Ascent Venture Partners, L.P. fund and Ascent Venture Partners II, L.P. fund since 1999. Prior to joining Ascent Venture Management, Inc., Mr. Dick served as General Partner of Pioneer Capital Corporation, a private equity management firm, from 1991 until March 1999. Mr. Dick is a graduate of Cornell University and holds a M.B.A. degree from Babson College.

ROBERT DISHMAN has served as a director of Harvard Bioscience since October 2000. Since 1994, Mr. Dishman has served in various positions with, and most recently as an Executive Vice President and Director of Dyax Corp. (formerly Biotage, Inc.), a commercial physical and biological research company. Mr. Dishman holds a Ph.D. in Analytical Chemistry from the University of Massachusetts-Amherst.

JOHN F. KENNEDY has served as a director of Harvard Bioscience since October 2000. Mr. Kennedy has served as the Senior Vice President, Finance, Chief Financial Officer and Treasurer of RSA Security Inc., an e-business security company, since August 1999. Prior to joining RSA Security, Mr. Kennedy was Chief Financial Officer of decalog, NV, a developer of enterprise investment management software, from 1998 to 1999. From 1993 to 1998, Mr. Kennedy served as Vice President of Finance, Chief Financial Officer and Treasurer of Natural MicroSystems Corporation, a telecommunications company. Mr. Kennedy holds a M.S.B.A. in Accounting from the University of Massachusetts-Amherst.

RICHARD C. KLAFFKY, JR. has served as a director of Harvard Bioscience since March 1996. Since 1987, Mr. Klaffky has served as President of FINEC Corp., the corporate general partner of two private equity partnerships, First New England Capital L.P. and First New England Capital 2 L.P., based in Hartford, Connecticut. Mr. Klaffky also serves as a director of Centrum Industries, a manufacturing company in the metal forming, material handling and motor production industries. Mr. Klaffky is a graduate of Brown University and holds a M.B.A. degree from Columbia University.

EARL R. LEWIS has served as a director of Harvard Bioscience since October 2000. Mr. Lewis has served in various capacities with Thermo Instrument Systems (now merged into Thermo Electron Corporation) since 1986 and was subsequently named President in 1997 and Chief Executive Officer in 1998. ThermoElectron Corporation develops, manufactures and markets measuring and controlling devices. Mr. Lewis is Chairman of Thermo BioAnalysis Corporation, Thermo Vision Corporation, Thermo Optek Corporation, ThermoQuest Corporation, each of which is a developer of laboratory analytical instruments, and ONIX Systems, Inc., a developer of measuring and controlling devices. Mr. Lewis is a director of SpectRx, Inc., an electromedical and electrotherapeutic company, Metrika Systems Corporation, a developer of industrial instruments for measurement, display and control, and ThermoSpectra Corporation, a developer of instruments for measuring and testing of electricity and electric signals.

BOARD COMPOSITION

Following the closing of this offering, our board of directors will be divided into three classes, each of whose members will serve for a staggered three-year term. Our board of directors will consist of Messrs. Dick, Dishman and Klaffky as Class I directors, whose term of office will continue until the 2001 annual meeting of stockholders, Messrs. Green and Kennedy as Class II directors, whose term of office will continue until the 2002 annual meeting of stockholders, and Messrs. Graziano and Lewis as Class III directors, whose term of office will continue until the 2003 annual meeting of stockholders. At each annual meeting of stockholders, a class of directors will be elected for a three-year term to succeed the directors of the same class whose terms are then expiring.

BOARD COMMITTEES

Effective upon the closing of this offering, our board of directors will reconstitute the audit committee and compensation committee.

AUDIT COMMITTEE. The members of the audit committee will be responsible for recommending to the board of directors the engagement of our outside auditors and reviewing our accounting controls and the results and scope of audits and other services provided by our auditors. Our audit committee will consist of three independent directors.

COMPENSATION COMMITTEE. The members of the compensation committee, a majority of whom will be independent directors, will be responsible for approving or recommending to the board of directors the amount and type of consideration to be paid to senior management, administering our stock option plans and establishing and reviewing general policies relating to compensation and benefits of employees.

DIRECTOR COMPENSATION

We reimburse our non-employee directors for their expenses incurred in connection with attending board and committee meetings but do not provide cash compensation for their services as board or committee members. Directors are eligible to participate in our 2000 Stock Option and Incentive Plan. Each of our non-employee directors, other than Messrs. Dick and Klaffky, will receive a one-time option grant of 10,000 shares vesting annually over three years upon joining the board and an annual option grant of 2,500 shares vesting annually over three years on the date of each annual meeting of stockholders following the closing of this offering. The exercise price for each of these option grants will be equal to the fair market value of the underlying shares of our common stock on the date of grant.

EXECUTIVE COMPENSATION

The following table sets forth the total compensation paid or accrued in the fiscal year ended December 31, 1999 to our Chief Executive Officer and the three other executive officers whose aggregate compensation exceeded $100,000.

SUMMARY COMPENSATION TABLE

NAME AND POSITION	ANNUAL COMPENSATION SALARY	ANNUAL COMPENSATION BONUS	LONG-TERM COMPENSATION NUMBER OF SECURITIES UNDERLYING OPTIONS GRANTED	ALL OTHER COMPENSATION
Chane Graziano ..... Chief Executive Officer	$219,000	$232,000	458,257	$19,592(1)
David Green ..... President	175,000	186,000	458,257	15,507(2)
Mark A. Norige ..... Chief Operating Officer	108,000	35,000	--	5,447(3)
Susan M. Luscinski ..... Vice President of Finance and Administration	95,000	47,500	--	4,832(3)

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(1) Includes $7,357 in automobile lease payments, $7,520 in contributions by us to Mr. Graziano's 401(k) account and $4,715 representing life insurance purchased for Mr. Graziano's benefit.

(2) Includes $7,687 in automobile lease payments, $7,165 in contributions by us to Mr. Green's 401(k) account and $655 representing life insurance purchased for Mr. Green's benefit.

(3) Represents contributions by us to the executive officers' 401(k) accounts.

OPTION GRANTS IN LAST FISCAL YEAR AND OPTION VALUES AT FISCAL YEAR END

The following table provides information regarding stock options granted to the named executive officers during the fiscal year ended December 31, 1999.

OPTION GRANTS IN FISCAL YEAR 1999

	INDIVIDUAL GRANTS					POTENTIAL REALIZABLE VALUE AT ASSUMED ANNUAL RATE OF STOCK PRICE APPRECIATION FOR OPTION TERM(3)	
NAME	DATE OF GRANT	NUMBER OF SECURITIES UNDERLYING OPTIONS GRANTED(1)	PERCENT OF TOTAL OPTIONS GRANTED TO EMPLOYEES IN FISCAL YEAR(2)	EXERCISE PRICE PER SHARE	EXPIRATION DATE	5%	10%
Chane Graziano.....	3/2/1999	458,257	50%	$1.0461	3/2/2009	$301,480	$764,009
David Green.....	3/2/1999	458,257	50%	1.0461	3/2/2009	301,480	764,009

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(1) The options, as amended in September 2000, vest upon the sale of all or substantially all of our assets or capital stock for a price per share of common stock of at least $2.09, or if our fair market value at any time prior to December 31, 2000 results in a per share valuation, on a fully-diluted basis, of not less than $2.09 per share. The exercise price of the options is equal to the fair market value of our common stock on the date of grant.

(2) Based on an aggregate of 916,514 options granted in fiscal 1999.

(3) The amounts shown as potential realizable value illustrate what might be realized upon exercise immediately prior to expiration of the option term using the 5% and 10% appreciation rates compounded annually as established in regulations of the Securities and Exchange Commission.

The following table sets forth the potential realizable value of the options granted to the listed executive officers using our assumed initial public offering price of $12.00 per share:

	NUMBER OF SECURITIES UNDERLYING OPTIONS GRANTED	POTENTIAL REALIZABLE VALUE AT ASSUMED ANNUAL RATES OF STOCK PRICE APPRECIATION FOR OPTION TERM	
		5%	10%
Chane Graziano	458,257	$8,478,047	$13,783,827
David Green	458,257	$8,478,047	$13,783,827

The potential realizable value is not intended to predict future appreciation of the price of our common stock. The values shown do not consider non-transferability, vesting or termination of the options upon termination of the employee's employment relationship with us.

FISCAL YEAR-END OPTION VALUES

The following table sets forth information concerning the number and value of unexercised options to purchase common stock held as of December 31, 1999 by the executive officers listed in the Summary Compensation Table. There was no public trading market for our common stock as of December 31, 1999. Accordingly, the values of the unexercised in-the-money options have been calculated on the basis of the estimated fair value of our common stock at December 31, 1999 of $3.67, less the applicable exercise price multiplied by the number of shares which may be acquired on exercise. None of the executive officers listed in the Summary Compensation Table exercised any stock options in fiscal 1999.

AGGREGATE OPTION AMOUNTS AND FISCAL YEAR-END OPTION VALUES

	NUMBER OF SECURITIES UNDERLYING UNEXERCISED OPTIONS AT FISCAL YEAR-END		VALUE OF UNEXERCISED IN-THE-MONEY OPTIONS AT FISCAL YEAR-END	
NAME	EXERCISABLE	UNEXERCISABLE	EXERCISABLE	UNEXERCISABLE
Chane Graziano	783,808	570,229	$2,872,746	$1,610,825
David Green	783,808	570,229	2,872,746	1,610,825
Mark A. Norige	55,976	55,996	204,366	204,438
Susan M. Luscinski	83,965	28,007	307,742	102,653

BENEFIT PLANS

2000 STOCK OPTION AND INCENTIVE PLAN. Our board of directors has adopted the 2000 Stock Option and Incentive Plan, subject to stockholder approval. The 2000 Stock Option and Incentive Plan will be submitted to our stockholders for approval in November 2000. The 2000 Stock Option and Incentive Plan allows for the issuance of up to 3,750,000 shares of common stock plus an additional amount equal to 15% of any net increase in the total number of shares of common stock outstanding after this offering. Our compensation committee will administer the 2000 Stock Option and Incentive Plan.

Under the 2000 Stock Option and Incentive Plan, our compensation committee may:

- grant incentive stock options,
- grant non-qualified stock options,
- grant stock appreciation rights,
- issue or sell common stock with vesting or other restrictions, or without restrictions,

- grant rights to receive common stock in the future with or without vesting,

- grant common stock upon the attainment of specified performance goals, and

- grant dividend rights in respect of common stock.

These grants and issuances may be made to our officers, employees, directors, consultants, advisors and other key persons.

Our compensation committee has the right, in its discretion, to select the individuals eligible to receive awards, determine the terms and conditions of the awards granted, accelerate the vesting schedule of any award and generally administer and interpret the plan.

The exercise price of options granted under the 2000 Stock Option and Incentive Plan is determined by our compensation committee. Under present law, incentive stock options and options intended to qualify as performance-based compensation under Section 162(m) of the Internal Revenue Code of 1986 may not be granted at an exercise price less than the fair market value of the common stock on the date of grant, or less than 110% of the fair market value in the case of incentive stock options granted to optionees holding more than 10% of the voting power.

Non-qualified stock options may be granted at prices which are less than the fair market value of the underlying shares on the date granted. Options are typically subject to vesting schedules, terminate 10 years from the date of grant and may be exercised for specified periods after the termination of the optionee's employment or other service relationship with us. Upon the exercise of options, the option exercise price must be paid in full either in cash or by certified or bank check or other instrument acceptable to the committee or, in the sole discretion of the committee, by delivery of shares of common stock that have been owned by the optionee free of restrictions for at least six months.

The 2000 Stock Option and Incentive Plan and all awards issued under the plan will terminate upon a merger, reorganization or consolidation, the sale of all or substantially all of our assets or all of our outstanding capital stock or a liquidation or other similar transaction, unless Harvard Bioscience and the other parties to such transactions have agreed otherwise. All participants under the 2000 Stock Option and Incentive Plan will be permitted to exercise for a period of 30 days before any such termination all awards held by them which are then exercisable or will become exercisable upon the closing of the transaction.

EMPLOYEE STOCK PURCHASE PLAN. The Employee Stock Purchase Plan was adopted by our board of directors in October 2000 subject to stockholder approval. The Employee Stock Purchase Plan will be submitted to stockholders in November 2000. Up to 500,000 shares of our common stock may be issued under the Employee Stock Purchase Plan. The Employee Stock Purchase Plan is administered by our compensation committee.

The first offering under the Employee Stock Purchase Plan will commence on January 1, 2001 and end on June 30, 2001. Subsequent offerings will commence on each January 1 and July 1 thereafter and will have a duration of six months. Generally, all employees who are customarily employed for more than 20 hours per week as of the first day of the applicable offering period are eligible to participate in the Employee Stock Purchase Plan. Any employee who owns or is deemed to own shares of stock representing in excess of 5% of the combined voting power of all classes of our stock may not participate in the Employee Stock Purchase Plan.

During each offering, an employee may purchase shares under the Employee Stock Purchase Plan by authorizing payroll deductions of up to 10% of his cash compensation during the offering period. Unless the employee has previously withdrawn from the offering, his accumulated payroll deductions will be used to purchase shares of our common stock on the last business day of the period at a price equal to 85% of the fair market value of our common stock on the first or last day of the offering period, whichever is lower. Under applicable tax rules, an employee may purchase no more than

$25,000 worth of our common stock in any calendar year under the Employee Stock Purchase Plan. We have not issued any shares to date under the Employee Stock Purchase Plan.

1996 STOCK OPTION AND GRANT PLAN. Our 1996 Stock Option and Grant Plan was initially approved by our board of directors and was approved by our stockholders in March 1996. Our 1996 Stock Option and Grant Plan provides for the issuance of 4,072,480 shares of our common stock. As of October 15, 2000, options to purchase 599,096 shares of our common stock were outstanding under our 1996 Stock Option and Grant Plan. Options granted under our 1996 Stock Option and Grant Plan generally vest over four years and terminate on the tenth anniversary of the date of grant. We will not make any additional grants under our 1996 Stock Option and Grant Plan after the completion of this offering.

EMPLOYMENT ARRANGEMENTS

We anticipate entering into employment agreements with each of Messrs. Graziano, Green and Warren. Each proposed agreement is for a period of two years, other than Mr. Warren's agreement which is for one year. Messrs. Graziano and Green's agreement automatically extends for two additional years on the second anniversary date and Mr. Warren's agreement automatically extends for one additional year on the anniversary date unless either party has given notice that it does not wish to extend the agreement. Each agreement provides for the payment of base salary and incentive compensation and for the provision of certain fringe benefits to the executive. Under their respective employment agreements, the annual salary for Mr. Graziano is $275,000, the annual salary for Mr. Green is $225,000 and the annual salary for Mr. Warren is $185,000. The agreements require our executive officers to refrain from competing with us and from soliciting our employees for a period of 12 months following termination for any reason. Each agreement also provides for certain payments and benefits for an executive officer should his or her employment with us be terminated because of death or disability, by the executive for good reason or by us without cause, as further defined in the agreements. In general, in the case of a termination by the executive officer for good reason, or by us without cause, the executive officer will receive up to two years' salary and bonus in the cases of Messrs. Graziano and Green and one years' salary and bonus in the case of Mr. Warren, an extension of benefits for one year and an acceleration of vesting for stock options and restricted stock which otherwise would vest during the next twenty-four months. Upon a change of control, as defined in the agreements, the executive officer is eligible for payment of up to three years' salary and bonus in the cases of Messrs. Graziano and Green and one-and-a-half years' salary and bonus in the case of Mr. Warren, an extension of benefits for one year and an acceleration of vesting for all outstanding stock options and restricted stock.

COMPENSATION COMMITTEE INTERLOCKS AND INSIDER PARTICIPATION

Messrs. Dick and Klaffky are the members of our compensation committee. Neither Mr. Dick nor Mr. Klaffky is an executive officer of our company or has received any compensation from us within the last three years other than in his capacity as a director.

RELATIONSHIPS AND RELATED PARTY TRANSACTIONS

STOCK REDEMPTIONS AND LOAN REPAYMENTS WITH STOCKHOLDERS

In March 1996, our business was acquired by a group that was led by our current management team of Chane Graziano, our Chief Executive Officer, and David Green, our President, and that also included Paul Grindle, a former member of our board of directors, Ascent Venture Partners, L.P. (formerly known as Pioneer Venture Limited Partnership), Ascent Venture Partners II, L.P. (formerly known as Pioneer Venture Limited Partnership II) and First New England Capital, L.P. In connection with this acquisition, we issued redeemable preferred stock for an aggregate purchase price of $1.5 million and subordinated debentures with an aggregate principal amount of $1.0 million to our investors. The redeemable preferred stock pays cumulative dividends at the rate of $0.26 per share quarterly in arrears and the subordinated debentures bear interest at an annual rate of 13% payable quarterly in arrears. The terms of the redeemable preferred stock and the subordinated debentures require us to redeem or repay these instruments upon the completion of this offering. A portion of the proceeds of this offering will be used to retire the redeemable preferred stock and the subordinated debentures. The redemption of the preferred stock and the retirement of the subordinated debentures will result in payments of approximately $167,000 to Mr. Graziano, our Chief Executive Officer and a member of our board of directors, $500,000 to Ascent Venture Partners, L.P., $1.0 million to Ascent Venture Partners II, L.P. and $500,000 to First New England Capital, L.P. Christopher W. Dick, a member of our board of directors, is a Managing Director of Ascent Venture Management, Inc., the general partner of Ascent Venture Partners, L.P., and Ascent Management SBIC Corp., the general partner of Ascent Venture Partners II, L.P., and Richard C. Klaffky, Jr., a member of our board of directors, is the President of FINEC Corp., the general partner of First New England Capital, L.P.

TRANSACTIONS WITH AN AFFILIATE OF AN EXECUTIVE OFFICER

In March 1996, we acquired our business from a company now known as Harvard Clinical Technology Inc. Following this acquisition, we entered into several transition-related transactions with Harvard Clinical. In 1997, we sold Harvard Clinical several items of furniture, fixtures, appliances and equipment, leased Harvard Clinical office space on the same terms as the underlying lease with the third-party landlord, provided transition support services and assumed Harvard Clinical's obligations to pay $10,000 in professional fees in exchange for 1,529,180 shares of our common stock held by a principal stockholder of Harvard Clinical at an agreed upon value of $0.11 per share. The assets purchased by Harvard Clinical had an aggregate purchase price of approximately $93,000, which reflected their estimated fair market value as determined by Mr. Graziano, our Chief Executive Officer, and the value at which they were recorded on our balance sheet. We originally purchased these assets as part of the March 1996 acquisition of our business. We believe that each of these transactions was consummated on terms at least as favorable to us as could have been obtained from unaffiliated parties. Diane Green, who is an officer, director and stockholder of Harvard Clinical, is the spouse of Mr. Green, our President and a member of our board of directors.

LOANS TO OFFICERS IN CONNECTION WITH OPTION EXERCISES

In October 2000, Mr. Graziano, our Chief Executive Officer, and Mr. Green, our President, each exercised options to purchase 740,228 shares of our common stock. Each of these officers paid substantially all of the exercise price for these shares by issuing promissory notes to the Company. The aggregate loans to Mr. Graziano are $789,000 and to Mr. Green are $789,000 pursuant to these promissory notes. Each of these promissory notes is due in October 2003 and bears interest at an annual rate of 10%. These promissory notes are secured by a pledge of all of the shares for which the exercise price was paid with the respective promissory notes as well as additional shares held by each of these officers.

PRINCIPAL AND SELLING STOCKHOLDERS

The following table sets forth information regarding the beneficial ownership of Harvard Bioscience common stock as of October 15, 2000 and on an as adjusted basis to reflect the sale of the common stock offered hereby by:

- all persons known by us to own beneficially 5% or more of the common stock,
- each of our directors,
- the executive officers listed in the summary compensation table,
- the stockholder selling shares in this offering, and
- all of our directors and executive officers as a group.

The number of shares beneficially owned by each stockholder is determined under rules issued by the Securities and Exchange Commission and includes voting or investment power with respect to securities. Under these rules, beneficial ownership includes any shares as to which the individual or entity has sole or shared voting power or investment power and includes any shares as to which the individual or entity has the right to acquire beneficial ownership within 60 days after October 15, 2000 through the exercise of any warrant, stock option or other right. The inclusion in this prospectus of such shares, however, does not constitute an admission that the named stockholder is a direct or indirect beneficial owner of such shares. Unless otherwise indicated, the address of all listed stockholders is c/o Harvard Bioscience, Inc., 84 October Hill Road, Holliston, MA 01746-1371.

	BENEFICIAL OWNERSHIP PRIOR TO OFFERING(1)			BENEFICIAL OWNERSHIP AFTER OFFERING(1)	
NAME OF BENEFICIAL OWNER	SHARES	PERCENT	SHARES TO BE SOLD	SHARES	PERCENT
Christopher W. Dick(2) ..... 255 State Street Boston, MA 02109	6,465,037	34.9%	--	6,465,037	26.1%
Chane Graziano(3)	5,089,929	27.5%	--	5,089,929	20.5%
Ascent Venture Partners II, L.P.(4) ..... 255 State Street Boston, MA 02109	3,927,651	21.2%	--	3,927,651	15.8%
David Green	3,479,386	18.8%	172,450	3,306,936	13.3%
Ascent Venture Partners, L.P.(5) ..... 255 State Street Boston, MA 02109	2,537,386	13.7%	--	2,537,386	10.2%
First New England Capital, L.P.(6) ..... 100 Pearl Street Hartford, CT 06103	1,963,825	10.6%	--	1,963,825	7.9%
Richard C. Klaffky(7) ..... 100 Pearl Street Hartford, CT 06103	1,963,825	10.6%	--	1,963,825	7.9%
NEGF, II, L.P.(8) ..... One Boston Place Suite 2100 Boston, MA 02108	955,935	5.2%	--	955,935	3.9%
Susan M. Luscinski	111,972	*	--	111,972	*
Mark A. Norige	83,964	*	--	83,964	*
Robert Dishman	--	*	--	--	*
John F. Kennedy	--	*	--	--	*
Earl R. Lewis	--	*	--	--	*
All executive officers and directors, as a group (9 persons)	17,194,113	92.8%	172,450	17,021,663	68.7%

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* Represents less than 1% of the outstanding shares of common stock.

(1) All percentages assume the underwriters do not elect to exercise the over-allotment option to purchase an additional 937,500 shares of common stock. The number of shares of common stock set forth herein includes shares to be issued upon completion of this offering pursuant to the conversion of all outstanding shares of our series B convertible preferred stock into shares of common stock and the exercise of all outstanding warrants to purchase shares of our common stock.

(2) Consists solely of the shares described in notes (4) and (5) below, of which Mr. Dick may be considered the beneficial owner. Mr. Dick disclaims beneficial ownership of such shares, except to the extent of his pecuniary interest therein.

(3) Includes 1,291,004 shares held by two trusts for the benefit of Mr. Graziano's children, of which Mr. Graziano is a trustee.

(4) Ascent Management SBIC Corp. is the general partner of Ascent Venture Management II, L.P., which is the general partner of Ascent Venture Partners II, L.P., which exercises sole voting and investment power with respect to all of the shares held of record by Ascent Venture Partners II, L.P. Mr. Dick, a member of our board of directors, is the Managing Director of Ascent Management SBIC Corp. Mr. Dick disclaims any beneficial ownership of the shares held by Ascent Venture Partners II, L.P., except to the extent of his pecuniary interest therein.

(5) Ascent Venture Management, Inc. is the general partner of Ascent Venture Partners, L.P., which exercises sole voting and investment power with respect to all of the shares held of record by Ascent Venture Partners, L.P. Mr. Dick, a member of our board of directors, is the Managing Director of Ascent Venture Management, Inc. Mr. Dick disclaims any beneficial ownership of the shares held by Ascent Venture Partners, L.P., except to the extent of his pecuniary interest therein.

(6) FINEC Corp. is the general partner of First New England Capital, L.P., which exercises sole voting and investment power with respect to all of the shares held of record by First New England Capital, L.P. Mr. Klaffky, a member of our board of directors, is the President of FINEC Corp. Mr. Klaffky disclaims any beneficial ownership of the shares held by First New England Capital, L.P., except to the extent of his pecuniary interest therein.

(7) Consists solely of the shares described in note (6) above, of which Mr. Klaffky may be considered the beneficial owner. Mr. Klaffky disclaims beneficial ownership of such shares, except to the extent of his pecuniary interest therein.

(8) NEGF Ventures, Inc. is the general partner of New England Partners, II, L.P., which is the general partner of NEGF II, L.P. NEGF Ventures, Inc. exercises sole voting and investment power with respect to all of the shares held of record by NEGF II, L.P. Individually, no stockholder, director or officer of NEGF Ventures, Inc. is deemed to have or share such voting or investment power.

DESCRIPTION OF CAPITAL STOCK

Following this offering, our authorized capital stock will consist of 80,000,000 shares of common stock and 5,000,000 shares of undesignated preferred stock, issuable in one or more series designated by our board of directors. No other class of capital stock will be authorized. Prior to this offering, our common stock was held by seven stockholders of record. The following information relates only to our certificate of incorporation and by-laws, as they will exist after this offering.

COMMON STOCK

VOTING RIGHTS. The holders of our common stock have one vote per share. Holders of our common stock are not entitled to vote cumulatively for the election of directors. Generally, all matters to be voted on by stockholders must be approved by a majority, or, in the case of election of directors, by a plurality, of the votes cast at a meeting at which a quorum is present, voting together as a single class, subject to any voting rights granted to holders of any then outstanding preferred stock.

DIVIDENDS. Holders of common stock will share ratably in any dividends declared by our board of directors, subject to the preferential rights of any preferred stock then outstanding. Dividends consisting of shares of common stock may be paid to holders of shares of common stock.

OTHER RIGHTS. Upon our liquidation, dissolution or winding up, all holders of common stock are entitled to share ratably in any assets available for distribution to holders of shares of common stock. No shares of common stock are subject to redemption or have preemptive rights to purchase additional shares of common stock.

PREFERRED STOCK

Our certificate of incorporation provides that 5,000,000 shares of preferred stock may be issued from time to time in one or more series. Our board of directors is authorized to fix the voting rights, if any, designations, powers, preferences, qualifications, limitations and restrictions thereof, applicable to the shares of each series. Our board of directors may, without stockholder approval, issue preferred stock with voting and other rights that could adversely affect the voting power and other rights of the holders of the common stock and could have anti-takeover effects, including preferred stock or rights to acquire preferred stock in connection with implementing a shareholder rights plan. We have no present plans to issue any shares of preferred stock. The ability of our board of directors to issue preferred stock without stockholder approval could have the effect of delaying, deferring or preventing a change of control with respect to our company or the removal of existing management.

WARRANTS

As of October 15, 2000, we had outstanding warrants to purchase 8,509,905 shares of common stock at an exercise price of $0.0005 per share. The warrants will expire on March 15, 2003. These warrants will be exercised in connection with this offering.

REGISTRATION RIGHTS

Following this offering, the holders of 17,208,101 shares of our common stock will have rights with respect to registration of these shares under the Securities Act of 1933. These rights are provided under the terms of a securityholders agreement between us and certain of the holders of registrable securities. Under these registration rights, holders of registrable securities holding 30% or more of the then outstanding registrable securities held by all holders of registrable securities may require on two occasions that we register their shares for public resale. In addition, certain holders of registrable securities may require that we register their shares for public resale on Form S-3 or similar short-form registration, if we are eligible to use Form S-3 or similar short form registration and the value of the

securities to be registered is at least $2,000,000. If we elect to register any of our shares of common stock for any public offering, the holders of registrable securities are entitled to include shares of common stock in the registration. However, we may reduce the number of shares proposed to be registered in view of market conditions. We will pay all expenses in connection with any registration, other than underwriting discounts and commissions.

INDEMNIFICATION MATTERS

Prior to the offering, we will have entered into indemnification agreements with each of our directors. The form of indemnification agreement provides that we will indemnify our directors for expenses incurred because of their status as a director to the fullest extent permitted by Delaware law, our certificate of incorporation and our by-laws.

Our certificate of incorporation contains a provision permitted by Delaware law that generally eliminates the personal liability of directors for monetary damages for breaches of their fiduciary duty, including breaches involving negligence or gross negligence in business combinations, unless the director has breached his or her duty of loyalty, failed to act in good faith, engaged in intentional misconduct or a knowing violation of law, paid a dividend or approved a stock repurchase in violation of the Delaware General Corporation Law or obtained an improper personal benefit. This provision does not alter a director's liability under the federal securities laws and does not affect the availability of equitable remedies, such as an injunction or rescission, for breach of fiduciary duty. Our by-laws provide that directors and officers shall be, and in the discretion of our board of directors, non-officer employees may be, indemnified by us to the fullest extent authorized by Delaware law, as it now exists or may in the future be amended, against all expenses and liabilities reasonably incurred in connection with service for or on behalf of us. Our by-laws also provide for the advancement of expenses to directors and, in the discretion of our board of directors, to officers and non-officer employees. In addition, our by-laws provide that the right of directors and officers to indemnification shall be a contract right and shall not be exclusive of any other right now possessed or hereafter acquired under any by-law, agreement, vote of stockholders or otherwise. We also have directors' and officers' insurance against certain liabilities. We believe that the indemnification agreements, together with the limitation of liability and indemnification provisions of our certificate of incorporation and by-laws and directors' and officers' insurance will assist us in attracting and retaining qualified individuals to serve as our directors and officers.

Insofar as indemnification for liabilities arising under the Securities Act of 1933 may be provided to directors, officers or persons controlling us as described above, we have been advised that in the opinion of the Securities and Exchange Commission such indemnification is against public policy as expressed in the Securities Act and is therefore unenforceable. At present, there is no pending material litigation or proceeding involving any of our directors, officers, employees or agents in which indemnification will be required or permitted.

PROVISIONS OF OUR CERTIFICATE OF INCORPORATION AND BY-LAWS THAT MAY HAVE ANTI-TAKEOVER EFFECTS

Certain provisions of our certificate of incorporation and by-laws described below, as well as the ability of our board of directors to issue shares of preferred stock and to set the voting rights, preferences and other terms thereof, may be deemed to have an anti-takeover effect and may discourage takeover attempts not first approved by our board of directors, including takeovers which particular stockholders may deem to be in their best interests. These provisions also could have the effect of discouraging open market purchases of our common stock because they may be considered disadvantageous by a stockholder who desires subsequent to such purchases to participate in a business combination transaction with us or to elect a new director to our board.

NO STOCKHOLDER ACTION BY WRITTEN CONSENT

Our certificate of incorporation provides that any action required or permitted to be taken by our stockholders at an annual or special meeting of stockholders must be effected at a duly called meeting and may not be taken or effected by a written consent of stockholders.

SPECIAL MEETINGS OF STOCKHOLDERS

Our certificate of incorporation and by-laws provide that a special meeting of stockholders may be called only by our board of directors. Our by-laws provide that only those matters included in the notice of the special meeting may be considered or acted upon at that special meeting unless otherwise provided by law.

ADVANCE NOTICE OF DIRECTOR NOMINATIONS AND STOCKHOLDER PROPOSALS

Our by-laws include advance notice and informational requirements and time limitations on any director nomination or any new proposal which a stockholder wishes to make at an annual meeting of stockholders. For the first annual meeting following the completion of this offering, a stockholder's notice of a director nomination or proposal will be timely if delivered to our secretary at our principal executive offices not later than the close of business on the later of the 75th day prior to the scheduled date of such annual meeting or the 10th day following the day on which public announcement of the date of such annual meeting is made by us.

AMENDMENT OF THE CERTIFICATE OF INCORPORATION

As required by Delaware law, any amendment to our certificate of incorporation must first be approved by a majority of our board of directors and, if required by law, thereafter approved by a majority of the outstanding shares entitled to vote with respect to such amendment, except that any amendment to the provisions relating to stockholder action by written consent, directors, limitation of liability and the amendment of our certificate of incorporation must be approved by not less than 75% of the outstanding shares entitled to vote with respect to such amendment.

AMENDMENT OF BY-LAWS

Our certificate of incorporation and by-laws provide that our by-laws may be amended or repealed by our board of directors or by the stockholders. Such action by the board of directors requires the affirmative vote of a majority of the directors then in office. Such action by the stockholders requires the affirmative vote of at least 75% of the shares present in person or represented by proxy at an annual meeting of stockholders or a special meeting called for such purpose unless our board of directors recommends that the stockholders approve such amendment or repeal at such meeting, in which case such amendment or repeal only requires the affirmative vote of a majority of the shares present in person or represented by proxy at the meeting.

STATUTORY BUSINESS COMBINATION PROVISION

Following the offering, we will be subject to Section 203 of the Delaware General Corporation Law, which prohibits a publicly-held Delaware corporation from consummating a "business combination," except under certain circumstances, with an "interested stockholder" for a period of three years after the date such person became an "interested stockholder" unless:

- before such person became an interested stockholder, the board of directors of the corporation approved the transaction in which the interested stockholder became an interested stockholder or approved the business combination;

- upon the closing of the transaction that resulted in the interested stockholder becoming such, the interested stockholder owned at least 85% of the voting stock of the corporation outstanding at the time the transaction commenced, excluding shares held by directors who are also officers of the corporation and shares held by employee stock plans; or

- following the transaction in which such person became an interested stockholder, the business combination is approved by the board of directors of the corporation and authorized at a meeting of stockholders by the affirmative vote of the holders of at least two-thirds of the outstanding voting stock of the corporation not owned by the interested stockholder.

The term "interested stockholder" generally is defined as a person who, together with affiliates and associates, owns, or, within the prior three years, owned, 15% or more of a corporation's outstanding voting stock. The term "business combination" includes mergers, consolidations, asset sales involving 10% or more of a corporation's assets and other similar transactions resulting in a financial benefit to an interested stockholder. Section 203 makes it more difficult for an "interested stockholder" to effect various business combinations with a corporation for a three-year period. A Delaware corporation may "opt out" of Section 203 with an express provision in its original certificate of incorporation or an express provision in its certificate of incorporation or by-laws resulting from an amendment approved by holders of at least a majority of the outstanding voting stock. Neither our certificate of incorporation nor our by-laws contain any such exclusion.

TRADING ON THE NASDAQ NATIONAL MARKET SYSTEM

We have applied to have our common stock approved for quotation on the Nasdaq National Market under the symbol "HBIO."

NO PREEMPTIVE RIGHTS

No holder of any class of our stock has any preemptive right to purchase any of our securities.

TRANSFER AGENT AND REGISTRAR

The transfer agent and registrar for our common stock will be Registrar and Transfer Company.

SHARES ELIGIBLE FOR FUTURE SALE

Upon consummation of the offering, we will have outstanding 24,782,422 shares of common stock or 25,719,922 shares if the underwriters' over-allotment option is exercised in full, in each case excluding shares underlying outstanding options. Of these shares, all of the shares sold in this offering (6,422,450 shares, or 7,359,950 shares if the underwriters' over-allotment option is exercised in full) will be freely tradeable without restriction or further registration under the Securities Act except for any shares purchased by an "affiliate," which will be subject to the limitations of Rule 144 of the Securities Act. As defined in Rule 144, an "affiliate" of an issuer is a person that directly, or indirectly through one or more intermediaries, controls, is controlled by or is under common control with the issuer. The remaining outstanding shares of common stock will be "restricted securities" as defined in Rule 144 and may not be resold in the absence of registration under the Securities Act or pursuant to an exemption from such registration, including exemptions provided by Rule 144.

In addition, our executive officers, directors, and existing stockholders, who own all of the shares of our capital stock outstanding prior to this offering, have signed lock-up agreements in which they have agreed not to offer, sell, contract to sell or otherwise dispose of any common stock or any securities convertible into or exchangeable for common stock for a period of 180 days after the date of this prospectus without the prior written consent of Thomas Weisel Partners LLC. Immediately following this offering, the shares subject to the lock-up agreements will represent approximately 74% of the then outstanding shares of common stock (71% if the underwriters' over-allotment option is exercised in full). While the underwriters have indicated no present intention to waive these restrictions, were they to do so, up to approximately an additional 18,359,972 shares of our common stock could be available for sale during the period following the offering, which could harm our stock price or make it more difficult to sell our shares. Historically, factors that have led underwriters to waive lock-up restrictions on a case by case basis include bona fide gifts to charitable institutions and other small waivers which underwriters reasonably believe will have minimal effect on the trading price of the common stock of the applicable company.

RULE 144

In general, under Rule 144, beginning 90 days after the date of this prospectus, a person who has beneficially owned restricted shares for at least one year, including persons who are affiliates, would be entitled to sell within any three-month period a number of shares that does not exceed the greater of:

- 1% of the then outstanding shares of our common stock, approximately 247,824 shares immediately after this offering; or

- the reported average weekly trading volume of our common stock during the four calendar weeks preceding a sale by such person.

Sales under Rule 144 are also subject to manner-of-sale provisions, notice requirements and the availability of current public information.

RULE 144(k)

Under Rule 144(k), a person who has not been one of our affiliates during the 90 days preceding a sale, and who has beneficially owned the shares proposed to be sold for at least two years, is free to sell such shares without regard to the volume, manner-of-sale or certain other limitations contained in Rule 144. Upon completion of this offering, no holders of shares of our common stock will be eligible to freely sell shares under Rule 144(k).

Prior to this offering, there has been no public market for our common stock and we can make no predictions about the effect, if any, that market sales of shares or the availability of shares for sale will have on the market price of our common stock prevailing from time to time. Future sales of substantial

amounts of our common stock in the public market, or the perception that such sales may occur, may cause the market prices of our common stock to decline.

REGISTRATION RIGHTS

After the 180-day period following the closing of this offering, the holders of 17,208,101 shares of our common stock will have rights which require us to register their shares for sale. See "Description of Capital Stock--Registration Rights."

OPTIONS

As of October 15, 2000, options to purchase 599,096 shares of our common stock were outstanding. At some time following the effectiveness of the offering chosen by the board of directors in its discretion, we intend to file a registration statement on Form S-8 under the Securities Act to register all of the shares of our common stock reserved for issuance under our 2000 Stock Option and Incentive Plan, our Employee Stock Purchase Plan and our 1996 Stock Option and Grant Plan. The filing of this registration statement will allow these shares, other than those held by members of management who are deemed to be affiliates, to be eligible for resale without restriction, subject to the lock-up period related to this offering, or further registration upon issuance to participants. After the effective date of the registration statement on Form S-8 and, if applicable, the expiration of the lock-up period related to this offering, shares purchased upon exercise of options granted pursuant to these plans, generally will be available for resale in the public market by non-affiliates without restriction. Sales by our affiliates of shares registered on this registration statement are subject to all of the Rule 144 restrictions except for the one-year minimum holding period requirement.

In addition to possibly being able to sell option shares without restriction under a Form S-8 registration statement when effective, persons other than our affiliates are allowed under Rule 701 of the Securities Act to sell shares of our common stock issued upon exercise of stock options beginning 90 days after the date of this prospectus, subject only to the manner of sale provisions of Rule 144 and to the lock-up period related to this offering. Our affiliates may also begin selling option shares beginning 90 days after the date of this prospectus but are subject to all of the Rule 144 restrictions except for the one-year holding period requirement and to the 180-day lock-up period related to this offering.

UNDERWRITING

GENERAL

Subject to the terms and conditions set forth in an agreement among the underwriters and us, each of the underwriters named below, through their representatives, Thomas Weisel Partners LLC, Dain Rauscher Incorporated and ING Barings LLC have severally agreed to purchase from us the aggregate number of shares of common stock set forth opposite its name below:

UNDERWRITERS	NUMBER OF SHARES
Thomas Weisel Partners LLC	
Dain Rauscher Incorporated	
ING Barings LLC	
Total	6,422,450

Of the 6,422,450 shares to be purchased by the underwriters, 6,250,000 shares will be purchased from us and 172,450 shares will be purchased from our president as a selling stockholder.

The underwriting agreement provides that the obligations of the several underwriters are subject to various conditions. The nature of the underwriters' obligations commits them to purchase and pay for all of the shares of common stock listed above if any are purchased.

The underwriting agreement provides that we and the selling stockholder will indemnify the underwriters against liabilities specified in the underwriting agreement under the Securities Act or will contribute to payments that the underwriters may be required to make relating to these liabilities.

Thomas Weisel Partners LLC expects to deliver the shares of common stock to purchasers on , 2000.

OVER-ALLOTMENT OPTION

We have granted a 30-day over-allotment option to the underwriters to purchase up to a total of 937,500 additional shares of our common stock from us at the initial public offering price, less the underwriting discounts and commissions payable by us, as set forth on the cover page of this prospectus. If the underwriters exercise this option in whole or in part, then each of the underwriters will be separately committed, subject to conditions described in the underwriting agreement, to purchase the additional shares of our common stock in proportion to their respective commitments set forth in the table above.

DETERMINATION OF OFFERING PRICE

Prior to this offering, there has been no public market for our common stock. The initial public offering price will be determined through negotiations between us and the representatives. In addition to prevailing market conditions, the factors to be considered in determining the initial public offering price will include:

- the valuation multiples of publicly-traded companies that the representatives believe are comparable to us,
- our financial information,

- our history and prospects and the outlook for our industry,

- an assessment of our management, our past and present operations, and the prospects for, and timing of, our future revenues,

- the present state of our development and the progress of our business plan, and

- the above factors in relation to market values and various valuation measures of other companies engaged in activities similar to ours.

We cannot assure you that an active or orderly trading market will develop for our common stock or that our common stock will trade in the public markets subsequent to this offering at or above the initial offering price.

COMMISSIONS AND DISCOUNTS

The underwriters propose to offer the shares of common stock directly to the public at the public offering price set forth on the cover page of this prospectus, and at this price less a concession not in excess of $ per share of common stock to other dealers specified in a master agreement among underwriters who are members of the National Association of Securities Dealers, Inc. The underwriters may allow, and the other dealers specified may reallow, concessions, not in excess of $ per share of common stock to these other dealers. After this offering, the offering price, concessions and other selling terms may be changed by the underwriters. Our common stock is offered subject to receipt and acceptance by the underwriters and to other conditions, including the right to reject orders in whole or in part.

The following table summarizes the compensation to be paid to the underwriters by us and the expenses payable by us:

		TOTAL	
		WITHOUT	WITH
	PER SHARE	OVER-ALLOTMENT	OVER-ALLOTMENT
Public offering price	$	$	$
Underwriting discount			
Proceeds, before expenses, to us			
Proceeds, before expenses, to our president as a selling stockholder			

INDEMNIFICATION OF THE UNDERWRITERS

We and the selling stockholder will indemnify the underwriters against some civil liabilities, including liabilities under the Securities Act and liabilities arising from breaches of our representations and warranties contained in the underwriting agreement. If we are unable to provide this indemnification, we will contribute to payments the underwriters may be required to make in respect of those liabilities.

RESERVED SHARES

The underwriters, at our request, have reserved for sale at the initial public offering price up to 300,000 shares of common stock to be sold in this offering for sale to our employees and other persons designated by us. The number of shares available for sale to the general public will be reduced to the extent that any reserved shares are purchased. Any reserved shares not purchased in this manner will be offered by the underwriters on the same basis as the other shares offered in this offering.

NO SALES OF SIMILAR SECURITIES

Our directors, officers, selling stockholder and other stockholders holding all of the outstanding shares of our capital stock prior to this offering have agreed or have a contractual obligation to agree, subject to specified exceptions, not to offer, sell, agree to sell, directly or indirectly, or otherwise dispose of any shares of common stock or any securities convertible into or exchangeable for shares of common stock without the prior written consent of Thomas Weisel Partners LLC for a period of 180 days after the date of this prospectus.

We have agreed that for a period of 180 days after the date of this prospectus we will not, without the prior written consent of Thomas Weisel Partners LLC, offer, sell, or otherwise dispose of any shares of common stock, except for the shares of common stock offered in the offering and the shares of common stock issuable upon exercise of outstanding options and warrants on the date of this prospectus.

INFORMATION REGARDING THOMAS WEISEL PARTNERS LLC

Thomas Weisel Partners LLC, one of the representatives of the underwriters, was organized and registered as a broker-dealer in December 1998. Since December 1998, Thomas Weisel Partners LLC has been named as a lead or co-manager on 148 completed transactions and has acted as a syndicate member in an additional 129 public offerings of equity securities. Thomas Weisel Partners LLC does not have any material relationship with us or any of our officers, directors or other controlling persons, except with respect to its contractual relationship with us pursuant to the underwriting agreement entered into in connection with this offering.

NASDAQ NATIONAL MARKET LISTING

We have applied to have our common stock approved for quotation on the Nasdaq National Market under the symbol "HBIO."

DISCRETIONARY ACCOUNTS

The underwriters do not expect sales of shares of common stock offered by this prospectus to any accounts over which they exercise discretionary authority to exceed five percent of the shares offered.

SHORT SALES, STABILIZING TRANSACTIONS AND PENALTY BIDS

In order to facilitate this offering, persons participating in this offering may engage in transactions that stabilize, maintain or otherwise affect the price of our common stock during and after this offering. Specifically, the underwriters may engage in the following activities in accordance with the rules of the U.S. Securities and Exchange Commission.

SHORT SALES. Short sales involve the sale by the underwriters of a greater number of shares than they are required to purchase in the offering. "Covered" short sales are sales made in an amount not greater than the underwriters' option to purchase additional shares from the issuer in the offering. The underwriters may close out any covered short position by either exercising their option to purchase shares or purchasing shares in the open market. In determining the source of shares to close out the covered short position, the underwriters will consider, among other things, the price of shares available for purchase in the open market as compared to the price at which they may purchase shares through the over-allotment option. "Naked" short sales are any sales in excess of such over-allotment option. The underwriters must close out any naked short position by purchasing shares in the open market. A naked short position is more likely to be created if the underwriters are concerned that there may be downward pressure on the price of the common stock in the open market after pricing that could adversely affect investors who purchase in the offering.

STABILIZING TRANSACTIONS. The underwriters may make bids for or purchases of the shares for the purpose of pegging, fixing or maintaining the price of the shares, so long as stabilizing bids do not exceed a specified maximum.

PENALTY BIDS. If the underwriters purchase shares in the open market in a stabilizing transaction or syndicate covering transaction, they may reclaim a selling concession from the underwriters and selling group members who sold those shares as part of this offering. Stabilization and syndicate covering transactions may cause the price of the shares to be higher than it would be in the absence of these transactions. The imposition of a penalty bid might also have an effect on the price of the shares if it discourages resales of the shares.

The transactions above may occur on the Nasdaq National Market or otherwise. Neither we nor the underwriters make any representation or prediction as to the effect that the transactions described above may have on the price of the shares. If these transactions are commenced, they may be discontinued without notice at any time.

LEGAL MATTERS

The validity of the shares of common stock offered hereby will be passed upon for us by Goodwin, Procter & Hoar LLP, Boston, Massachusetts. Various legal matters related to the sale of the common stock offered hereby will be passed upon for the underwriters by Mintz, Levin, Cohn, Ferris, Glovsky and Popeo, P.C., Boston, Massachusetts.

EXPERTS

The consolidated financial statements of Harvard Apparatus, Inc. and subsidiaries as of December 31, 1998, 1999 and September 30, 2000, and for each of the years ended December 31, 1997, 1998 and 1999, and for the nine months ended September 30, 2000, have been included herein and in the registration statement in reliance upon the report of KPMG LLP, independent certified public accountants, appearing elsewhere herein, and the authority of said firm as experts in auditing and accounting.

The audited consolidated financial statements of Pharmacia & Upjohn (Cambridge) Limited as of December 31, 1997 and 1998, and for each of the years ended December 31, 1997 and 1998, have been included herein and in the registration statement in reliance upon the report of PricewaterhouseCoopers, independent chartered accountants, appearing elsewhere herein, and the authority of said firm as experts in auditing and accounting.

WHERE YOU CAN FIND MORE INFORMATION

We have filed with the Securities and Exchange Commission, or SEC, a registration statement on Form S-1 (including the exhibits and schedules thereto) under the Securities Act and the rules and regulations thereunder, for the registration of the common stock offered hereby. This prospectus is part of the registration statement. This prospectus does not contain all the information included in the registration statement because we have omitted certain parts of the registration statement as permitted by the SEC rules and regulations. For further information about us and our common stock, you should refer to the registration statement. Statements contained in this prospectus as to any contract, agreement or other document referred to are not necessarily complete. Where the contract or other document is an exhibit to the registration statement, each statement is qualified by the provisions of that exhibit.

You can inspect and copy the registration statement at the public reference facility maintained by the SEC at Room 1024, 450 Fifth Street, N.W., Washington, D.C. 20549, and at the SEC's regional offices at Seven World Trade Center, 13th Floor, New York, New York 10048 and 500 West Madison

Street, Suite 1400, Chicago, Illinois 60661. You may call the SEC at 1-800-732-0330 for further information about the operation of the public reference rooms. Copies of all or any portion of the registration statement can be obtained from the Public Reference Section of the SEC, 450 Fifth Street, N.W., Washington, D.C. 20549, at prescribed rates. In addition, the registration statement is publicly available through the SEC's site on the Internet's World Wide Web, located at http://www.sec.gov.

We will also file annual, quarterly and current reports, proxy statements and other information with the SEC. You can also request copies of these documents, for a copying fee, by writing to the SEC. We intend to furnish to our stockholders annual reports containing audited financial statements for each fiscal year.

INDEX TO CONSOLIDATED FINANCIAL STATEMENTS

HARVARD APPARATUS, INC. AND SUBSIDIARIES

PHARMACIA & UPJOHN (CAMBRIDGE) LIMITED

When the stock split referred to in note 20 of the notes to the consolidated financial statements has been consummated, we will be in a position to render the following report:

INDEPENDENT AUDITORS' REPORT

The Board of Directors
Harvard Apparatus, Inc.:

We have audited the accompanying consolidated balance sheets of Harvard Apparatus, Inc. and subsidiaries (the "Company") as of September 30, 2000, December 31, 1999 and 1998, and the related consolidated statements of operations, stockholders' equity (deficit) and comprehensive income (loss), and cash flows for the nine months ended September 30, 2000 and for each of the years in the three-year period ended December 31, 1999. These consolidated financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these consolidated financial statements based on our audits.

We conducted our audits in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the consolidated financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall consolidated financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the consolidated financial position of Harvard Apparatus, Inc. and subsidiaries at September 30, 2000, December 31, 1999 and 1998, and the results of their operations and their cash flows for the nine months ended September 30, 2000 and for each of the years in the three-year period ended December 31, 1999, in conformity with accounting principles generally accepted in the United States of America.

KPMG LLP
October 19, 2000, except as to
note 20 which is
as of October 25, 2000
Boston, Massachusetts

HARVARD APPARATUS, INC. AND SUBSIDIARIES

CONSOLIDATED BALANCE SHEETS

	DECEMBER 31, 1998	DECEMBER 31, 1999	SEPTEMBER 30, 2000
ASSETS (NOTES 6 AND 7)			
Current assets:			
Cash and cash equivalents	$ 956,771	$ 2,396,053	$ 2,148,880
Trade accounts receivable, net of reserve for uncollectible accounts of $61,004 and $87,642 at December 31, 1998 and 1999, respectively, and $88,648 at September 30, 2000	1,659,766	4,191,850	3,878,152
Other receivables and other assets	49,716	201,946	223,090
Inventories (note 4)	1,656,318	2,849,670	3,679,735
Catalog costs	450,087	66,829	394,558
Prepaid expenses	202,916	593,348	265,340
Deferred tax asset (note 13)	96,736	987,853	344,714
Total current assets	5,072,310	11,287,549	10,934,469
Property, plant and equipment, net (notes 5 and 10)	969,905	1,559,922	1,513,098
Other assets:			
Catalog costs, less current portion	163,497	165,419	193,712
Deferred tax asset (note 13)	28,182	432,797	344,304
Deferred initial public offering costs	--	--	596,365
Goodwill, net of accumulated amortization of $27,661, $395,896 and $902,891 at December 31, 1998 and 1999 and September 30, 2000, respectively (note 3)	925,973	6,583,354	9,148,744
Other assets (notes 3 and 12)	60,626	580,829	505,387
Total other assets	$1,178,278	$ 7,762,399	$10,788,512
	$7,220,493	$20,609,870	$23,236,079

See accompanying notes to consolidated financial statements.

HARVARD APPARATUS, INC. AND SUBSIDIARIES

CONSOLIDATED BALANCE SHEETS

	DECEMBER 31, 1998	DECEMBER 31, 1999	SEPTEMBER 30, 2000
Current liabilities:			
Short-term debt (note 6)	$1,050,000	$ 2,200,000	$ 3,150,000
Current installments of long-term debt (note 7)	190,389	794,173	1,556,618
Trade accounts payable	751,338	1,880,246	2,107,838
Accrued income taxes payable (note 13)	162,726	957,834	638,862
Accrued expenses (note 17)	586,289	1,399,523	2,266,547
Other liabilities	101,271	272,731	183,478
Current deferred income tax liability	24,524	--	6,011
Total current liabilities	2,866,537	7,504,507	9,909,354
Long-term debt, less current installments (note 7)	638,466	5,072,941	5,730,313
Deferred income tax liability (note 13)	37,601	48,649	--
Total long-term liabilities	676,067	5,121,590	5,730,313
Commitments and contingencies (notes 8, 9, 10, 11, and 18)			
Preferred stock, 600,000 shares authorized (note 8);			
Redeemable series "A" 469,300 shares issued and outstanding	1,500,000	1,500,000	1,500,000
Convertible and redeemable series "B" 48,500 shares issued and outstanding	--	1,000,000	1,000,000
Common stock warrants (note 9)	1,500,352	31,194,371	102,114,613
Total redeemable preferred stock and common stock warrants	3,000,352	33,694,371	104,614,613
Stockholders' equity (deficit) (notes 9 and 14):			
Common stock, par value $.01 per share, 80,000,000 shares authorized; 10,259,410 shares issued and outstanding at December 31, 1998 and 1999, 13,727,365 shares issued and outstanding at September 30, 2000	102,604	102,604	137,274
Accumulated other comprehensive loss	(34,720)	(54,690)	(713,265)
Additional paid-in capital--stock options	--	3,283,164	3,292,593
Additional paid-in capital--common stock	--	--	14,838,792
Retained earnings (accumulated deficit)	1,277,398	(28,373,931)	(112,357,900)
Notes receiveable	--	--	(1,547,950)
Treasury stock, 4,660,784 common shares, at cost	(667,745)	(667,745)	(667,745)
Total stockholders' equity (deficit)	677,537	(25,710,598)	(97,018,201)
	$7,220,493	$ 20,609,870	$ 23,236,079

See accompanying notes to financial statements.

HARVARD APPARATUS, INC. AND SUBSIDIARIES

CONSOLIDATED STATEMENTS OF OPERATIONS

	YEARS ENDED DECEMBER 31,			NINE MONTHS ENDED SEPTEMBER 30,	
	1997	1998	1999	1999	2000
				(UNAUDITED)	
Revenues (notes 15 and 19)	$11,464,157	$12,154,025	$ 26,177,814	$18,469,913	$ 22,069,026
Cost of goods sold	5,127,709	5,351,271	13,546,933	9,359,160	11,461,610
Stock compensation expense (note 14)	--	--	--	--	151,200
Gross profit	6,336,448	6,802,754	12,630,881	9,110,753	10,456,216
General and administrative expense	2,338,423	2,317,021	4,146,564	2,926,818	3,733,613
Sales and marketing expense	1,672,388	1,721,606	2,448,505	1,841,771	2,358,965
Research and development	206,497	324,792	1,187,584	840,767	1,207,522
Stock compensation expense (note 14)	--	--	3,283,164	937,138	13,180,743
Amortization of goodwill (note 3)	--	27,661	368,235	251,843	423,126
Operating (loss) income	2,119,140	2,411,674	1,196,829	2,312,416	(10,447,753)
Other (expense) income:					
Foreign currency (loss) gain	(96,549)	21,418	(47,982)	60,967	(456,393)
Common stock warrant interest expense (note 9)	(116,574)	(1,379,460)	(29,694,019)	(7,402,457)	(70,920,242)
Interest expense	(238,669)	(221,932)	(679,122)	(484,330)	(689,066)
Interest income	16,176	12,567	22,767	16,159	34,536
Amortization of deferred financing costs	--	--	(63,442)	(44,437)	(56,102)
Other	106,013	10,067	(17,468)	(14,813)	27,830
Other expense, net	(329,603)	(1,557,340)	(30,479,266)	(7,868,911)	(72,059,437)
(Loss) income before income taxes	1,789,537	854,334	(29,282,437)	(5,556,495)	(82,507,190)
Income taxes (note 13)	682,329	783,192	137,480	649,392	1,354,351
Net (loss) income	1,107,208	71,142	(29,419,917)	(6,205,887)	(83,861,541)
Preferred stock dividends	(121,668)	(121,666)	(156,586)	(115,444)	(122,428)
Net (loss) income available to common shareholders	$ 985,540	$ (50,524)	$(29,576,503)	$(6,321,331)	$(83,983,969)
(Loss) income per share (note 16):					
Basic	$ 0.13	$ (0.01)	$ (5.28)	$ (1.13)	$ (13.11)
Diluted	$ 0.06	$ (0.01)	$ (5.28)	$ (1.13)	$ (13.11)
Weighted average common shares:					
Basic	7,406,486	5,598,626	5,598,626	5,598,626	6,407,682
Diluted	17,500,194	5,598,626	5,598,626	5,598,626	6,407,682

See accompanying notes to consolidated financial statements.

HARVARD APPARATUS, INC. AND SUBSIDIARIES

CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY (DEFICIT) AND COMPREHENSIVE INCOME (LOSS)

	COMMON STOCK	ACCUMULATED OTHER COMPREHENSIVE LOSS	ADDITIONAL PAID-IN CAPITAL--STOCK OPTIONS	ADDITIONAL PAID-IN CAPITAL--COMMON STOCK	RETAINED EARNINGS (ACCUMULATED DEFICIT)	NOTES RECEIVABLE	TREASURY STOCK	TOTAL STOCKHOLDERS' EQUITY (DEFICIT)
Balance at December 31, 1996	$102,604	$ 71,183	$ --	$ --	$ 342,382	$ --	$ --	$ 516,169
Preferred stock dividends	--	--	--	--	(121,668)	--	--	(121,668)
Purchase of treasury stock	--	--		--	--	--	(667,745)	(667,745)
Comprehensive income (loss):								
Net income	--	--	--	--	1,107,208	--	--	1,107,208
Translation adjustments	--	(97,444)	--	--	--	--	--	(97,444)
Total comprehensive income								1,009,764
Balance at December 31, 1997	102,604	(26,261)	--	--	1,327,922	--	(667,745)	736,520
Preferred stock dividends	--	--	--	--	(121,666)	--	--	(121,666)
Comprehensive income (loss):								
Net income	--	--	--	--	71,142	--	--	71,142
Translation adjustments	--	(8,459)	--	--	--	--	--	(8,459)
Total comprehensive income								62,683
Balance at December 31, 1998	102,604	(34,720)	--	--	1,277,398	--	(667,745)	677,537
Preferred stock dividends	--	--	--	--	(156,586)	--	--	(156,586)
Preferred stock issuance costs	--	--	--	--	(74,826)	--	--	(74,826)
Stock compensation expense	--	--	3,283,164	--	--	--	--	3,283,164
Comprehensive income (loss):								
Net loss	--	--	--	--	(29,419,917)	--	--	(29,419,917)
Translation adjustments	--	(19,970)	--	--	--	--	--	(19,970)
Total comprehensive income (loss)								(29,439,887)
Balance at December 31, 1999	102,604	(54,690)	3,283,164	--	(28,373,931)	--	(667,745)	(24,710,598)
Preferred stock dividends	--	--	--	--	(122,428)	--	--	(122,428)
Issuance of common stock	34,670	--	(13,322,514)	14,838,792	--	(1,547,950)	--	--
Stock compensation expense	--	--	13,331,943	--	--	--	--	13,331,943
Comprehensive income (loss):								
Net loss	--	--	--	--	(83,861,541)	--	--	(83,861,541)
Translation adjustments	--	(658,575)	--	--	--	--	--	(658,575)
Total comprehensive income (loss)								(84,520,116)
Balance at September 30, 2000	$137,274	$(713,265)	$ 3,292,593	$14,838,792	$(112,357,900)	$(1,547,950)	$(667,745)	$(97,018,201)

Total comprehensive income (loss).....		(29,439,887)
Balance at December 31, 1999.....	(667,745)	(25,710,598)
Preferred stock dividends.....		(122,428)
Issuance of common stock.....	--	2,998
Stock compensation expense.....	--	13,331,943
Comprehensive income (loss):		
Net loss.....	--	(83,861,541)
Translation adjustments.....	--	(658,575)
Total comprehensive income (loss).....		(84,520,116)
Balance at September 30, 2000.....	$ (667,745)	$(97,018,201)

See accompanying notes to consolidated financial statements.

HARVARD APPARATUS, INC. AND SUBSIDIARIES

CONSOLIDATED STATEMENTS OF CASH FLOWS

	YEARS ENDED DECEMBER 31,			NINE MONTHS ENDED SEPTEMBER 30,	
	1997	1998	1999	1999	2000
				(UNAUDITED)	
Cash flows from operating activities:					
Net (loss) income	$1,107,208	$ 71,142	$(29,419,917)	$(6,205,887)	$(83,861,541)
Adjustments to reconcile net (loss) income to net cash provided by operating activities:					
Common stock warrant interest expense	116,574	1,379,460	29,694,019	7,402,457	70,920,242
Stock compensation expense	--	--	3,283,164	937,138	13,331,943
Depreciation	127,555	154,776	331,822	219,965	284,747
Amortization of catalog costs	328,713	525,600	493,428	481,488	228,978
Loss (gain) on sale of fixed assets	(33,980)	(4,075)	7,584	(7,584)	--
Provision for bad debts	14,321	(41,388)	26,877	2,901	2,480
Amortization of goodwill	--	27,661	368,235	226,250	423,126
Amortization of deferred financing costs	--	--	63,442	44,437	56,102
Deferred income taxes	(106,321)	(16,277)	(1,310,325)	(504,188)	669,584
Changes in operating assets and liabilities, net of effects of business acquisition:					
(Increase) decrease in accounts receivable	(193,547)	46,214	(2,282,344)	(1,758,222)	22,884
(Increase) decrease in other receivables	(2,741)	57,711	(113,949)	(134,915)	(40,785)
(Increase) decrease in inventories	58,631	80,430	215,152	165,203	(777,071)
(Increase) decrease in prepaid expenses and other assets	(19,306)	(5,514)	(260,285)	(115,048)	304,718
(Increase) decrease in other assets	112,716	(184,534)	(202,460)	(162,220)	74,237
Increase (decrease) in trade accounts payable	(211,303)	(115,065)	541,065	371,739	351,636
Increase (decrease) in accrued income taxes payable	27,247	(191,013)	797,633	488,632	(224,673)
Increase (decrease) in accrued expense	(178,965)	19,874	666,637	406,952	366,788
Increase (decrease) in other liabilities	(30,881)	1,388	26,663	(23,912)	(106,253)
Net cash provided by operating activities	1,115,921	1,806,390	2,926,441	1,835,186	2,027,142
Cash flows from investing activities:					
Additions to property, plant and equipment	(389,543)	(87,405)	(332,474)	(247,748)	(363,716)
Additions to catalog costs	(429,207)	(250,183)	(121,644)	(73,853)	(606,069)
Proceeds from sales of fixed assets	165,528	8,173	34,566	41,946	--
Acquisition of businesses, net of cash acquired	--	(1,090,553)	(8,126,656)	(7,164,454)	(3,682,482)
Net cash used in investing activities	(653,222)	(1,419,968)	(8,546,208)	(7,444,109)	(4,652,267)
Cash flows from financing activities:					
Proceeds from short-term debt	275,000	600,000	2,300,000	1,050,000	1,350,000
Repayments of short-term debt	--	(300,000)	(1,150,000)	(650,000)	(400,000)
Proceeds from long-term debt	--	--	5,500,000	5,500,000	2,000,000
Repayments of long-term debt	(263,050)	(283,433)	(460,663)	(336,313)	(282,778)
Dividends paid	(218,667)	(121,666)	(121,666)	(91,000)	(91,000)
Net proceeds from issuance of preferred stock	--	--	925,174	925,174	--
Treasury stock purchase	(667,745)	--	--	--	--
Issuance of common stock	--	--	--	--	2,998
Deferred initial public offering costs paid	--	--	--	--	(63,905)
Net cash provided by (used in) financing activities	(874,462)	(105,099)	6,992,845	6,397,861	2,515,315
Effect of exchange rate changes on cash	30,572	(31,505)	66,204	(57,867)	(137,363)
Increase (decrease) in cash and cash equivalents	(381,191)	249,818	1,439,282	731,071	(247,173)
Cash and cash equivalents at beginning of period	1,088,144	706,953	956,771	956,771	2,396,053
Cash and cash equivalents at end of period	$ 706,953	$ 956,771	$ 2,396,053	$1,687,842	$ 2,148,880
Supplemental disclosures of cash flow information:					
Cash paid for interest	$ 227,747	$ 241,002	$ 671,452	$ 392,414	$ 634,089
Cash paid for income taxes	$ 761,251	$ 1,128,929	$ 686,675	$ 617,076	$ 697,049

See accompanying notes to consolidated financial statements.

(1) ORGANIZATION

On March 15, 1996, HAI Acquisition Corp. and its subsidiary, Guell Limited, purchased certain assets and assumed certain liabilities of the former Harvard Apparatus, Inc. and its subsidiary in the United Kingdom, Harvard Apparatus, Ltd. (the "Purchase"). For cash consideration of approximately $3,342,000 (including $342,000 of acquisition related expenses). The costs of the acquisition were allocated based on the fair market value of the assets acquired. The assets acquired consisted principally of cash of $441,000, accounts receivable of $1,397,000, inventories of $1,661,000, miscellaneous prepaid assets of $241,000, fixed assets of $846,000, and catalog costs of $366,000. The Company assumed liabilities of approximately $1,605,000. The acquisition was financed principally by issuing preferred stock of $1,500,000 and debt of $1,750,000. Assets acquired at the time of the purchase included 79% of the capital stock of Ealing Scientific Ltd. (Canada) and Ealing S.A.R.L., now Harvard Apparatus S.A.R.L. (France). The remainder of the capital stock of Ealing Scientific Ltd. and Ealing S.A.R.L. was also acquired directly from the stockholder at the time of the Purchase. After the date of the Purchase, HAI Acquisition Corp. and Guell Limited legally changed their names to Harvard Apparatus, Inc. and Harvard Apparatus, Ltd., respectively.

The Company manufactures and distributes syringe pumps, ventilators, cell injectors, diffusion chambers and other products principally used in the toxicology, metabolism and efficacy testing of new drugs, as well as spectrophotometers and amino acid analyzers primarily used in molecular biology which are manufactured by Biochrom Ltd., a wholly owned subsidiary acquired during 1999.

(2) SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

(A) PRINCIPLES OF CONSOLIDATION

The consolidated financial statements include the accounts of Harvard Apparatus, Inc. and its subsidiaries. All intercompany balances and transactions have been eliminated in consolidation.

(B) INTERIM CONSOLIDATED FINANCIAL STATEMENTS

The interim consolidated financial statements for the nine months ended September 30, 1999 are unaudited. In the opinion of management, all adjustments, consisting only of normal recurring adjustments, necessary for the fair presentation of the financial position and results of operations have been included in such unaudited consolidated financial statements. The results of operations for the nine months ended September 30, 2000 are not necessarily indicative of the results to be expected for the entire year.

(C) CASH AND CASH EQUIVALENTS

For purposes of the consolidated statements of cash flows, the Company considers all highly liquid instruments with original maturities of three months or less to be cash equivalents.

(D) INVENTORIES

Inventories are stated at the lower of cost or market. Cost is determined using a standard costing system which approximates the first-in, first-out (FIFO) method.

(2) SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (CONTINUED)

(E) PROPERTY, PLANT AND EQUIPMENT

Property, plant and equipment are stated at cost. Equipment under capital leases is stated at the present value of the minimum lease payments at the lease agreement date. Property, plant and equipment is depreciated using the straight-line method over the estimated useful lives of the assets as follows:

Buildings	40 years
Machinery and equipment	3-10 years
Computer equipment	3-7 years
Furniture and fixtures	5-10 years
Automobiles	4-6 years

(F) CATALOG COSTS

Significant costs of product catalog design, development and production are capitalized and amortized over the expected useful life of the catalog (usually two to three years). Costs of drawings and design that were acquired at the purchase on March 15, 1996 are being amortized over their estimated useful life of six years.

(G) INCOME TAXES

Income taxes are accounted for under the asset and liability method. Deferred tax assets and liabilities are recognized for the future tax consequences attributable to differences between the financial statement carrying amounts of existing assets and liabilities and their respective tax bases. Deferred tax assets and liabilities are measured using enacted tax rates expected to be applied to taxable income in the years in which those temporary differences are expected to be recovered or settled. The effect on deferred tax assets and liabilities of a change in tax rates is recognized in income in the period that includes the enactment date.

(H) FOREIGN CURRENCY TRANSLATION

All assets and liabilities of the Company's foreign subsidiaries are translated at exchange rates in effect at year-end. Income and expenses are translated at rates which approximate those in effect on the transaction dates. The resulting translation adjustment is recorded as a separate component of stockholders' equity in other comprehensive income.

(I) STOCK OPTIONS

The Company accounts for stock options granted to employees in accordance with the requirements of Statement of Financial Accounting Standards (SFAS) No. 123, ACCOUNTING FOR STOCK-BASED COMPENSATION. As is permitted by this Statement, the Company has elected to account for stock options in accordance with the provisions of APB Opinion No. 25, ACCOUNTING FOR STOCK ISSUED TO EMPLOYEES and provide the additional disclosures that are required by SFAS No. 123.

(2) SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (CONTINUED)

(J) USE OF ESTIMATES

The preparation of financial statements in conformity with generally accepted accounting principles requires the use of management's estimates. Such estimates include the determination and establishment of certain accruals and provisions, including those for inventory obsolescence, catalog cost amortization and reserves for bad debts. Actual results could differ from those estimates.

(K) REVENUE RECOGNITION

The Company recognizes revenue from product sales at the time of shipment. Product returns are estimated and provided for based on historical experience.

(L) GOODWILL

Goodwill, which represents the excess of purchase price over fair value of net assets acquired, is amortized on a straight-line basis over the expected periods to be benefited, ranging from 5 to 15 years. The Company continually evaluates whether events or circumstances have occurred that indicate that the remaining useful life of goodwill may warrant revision or that the remaining balance may not be recoverable. When factors indicate that goodwill should be evaluated for possible impairment, the Company estimates the undiscounted cash flow of the business segment, net of tax, over the remaining life of the asset in determining whether the asset is recoverable. Charges for impairment of goodwill would be recorded to the extent unamortized book value exceeds the related future discounted cash flow, net of tax. The discount factor would be the long-term debt rate currently obtainable by the Company.

(M) IMPAIRMENT OF LONG-LIVED ASSETS AND LONG-LIVED ASSETS TO BE DISPOSED OF

The Company uses the provisions of SFAS No. 121, ACCOUNTING FOR THE IMPAIRMENT OF LONG-LIVED ASSETS AND FOR LONG-LIVED ASSETS TO BE DISPOSED OF. This statement requires that long-lived assets and certain identifiable intangibles be reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount of an asset may not be recoverable. Recoverability of assets to be held and used is measured by a comparison of the carrying amount of an asset to undiscounted future net cash flows expected to be generated by the asset. If such assets are considered to be impaired, the impairment to be recognized is measured by the amount by which the carrying amount of the assets exceeds the fair value of the assets. Assets to be disposed of are reported at the lower of the carrying amount or fair value less costs to sell.

(N) EFFECT OF ACCOUNTING CHANGES

In 1998, the Financial Accounting Standards Board issued SFAS 133, ACCOUNTING FOR DERIVATIVE INSTRUMENTS AND HEDGING ACTIVITIES. SFAS 133, which was deferred through the issuance of SFAS 137 and subsequently amended by SFAS 138, is effective for fiscal years beginning after June 15, 2000. SFAS 133 will be adopted on January 1, 2001. Its impact on the consolidated financial statements is still being evaluated, but is not expected to be material.

(2) SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (CONTINUED)

(O) FAIR VALUE OF FINANCIAL INSTRUMENTS

The carrying value of the Company's cash and cash equivalents, trade accounts receivable, trade accounts payable and accrued expenses approximate their fair values because of the short maturities of those instruments. The carrying value of the Company's debt approximates its fair value because of the short maturities and/or interest rates which are comparable to those available to the Company on similar terms.

(3) ACQUISITION OF BUSINESSES

On June 30, 1998, the Company acquired certain assets of Medical Systems Corporation, a manufacturer and product developer of research medical equipment. Cash consideration of approximately $1,000,000 plus certain acquisition costs was paid for the assets. The costs of the acquisition were allocated on the basis of the estimated fair market value of the assets acquired. The net purchase price resulted in an allocation of $784,047 to goodwill and $281,506 to tangible net assets.

On February 26, 1999, the Company acquired substantially all of the assets and certain liabilities of Pharmacia Biotech (Biochrom) Ltd. ("Biochrom"), a UK manufacturer and developer of spectrophotometers, amino acid analyzers and other related research equipment. Cash consideration of approximately $6,981,000 (including $502,000 of acquisition related expenses) was paid for the assets. The costs of the acquisition allocated on the basis of estimated fair market value of the assets acquired using the purchase method of accounting resulted in an allocation of $5,446,000 to goodwill and other intangibles. The assets acquired consisted of approximately $61,000 of accounts receivable, $1,039,000 of inventory, $100,000 of prepaid expenses, $612,000 of fixed assets, $372,000 of pension assets and liabilities assumed totaled approximately $649,000.

On September 10, 1999, the Company acquired certain assets of Clark Electromedical Instruments, a manufacturer of glass capillaries and distributor of research equipment. Cash consideration of approximately $349,000 was paid for the assets. The costs of the acquisition allocated on the basis of estimated fair market value of the assets acquired using the purchase method of accounting resulted in an allocation of $288,000 to goodwill and other intangibles.

On November 19, 1999, the Company acquired the NaviCyte diffusion chamber systems product line from NaviCyte, a wholly-owned subsidiary of Trega Biosciences, Inc. Cash consideration of approximately $390,000 (including $33,000 of acquisition related expenses) was paid for the assets. The costs of the acquisition allocated on the basis of estimated fair market value of the assets acquired and the purchase method of accounting resulted in an allocation of $333,000 to goodwill and other intangibles.

On November 30, 1999, the Company acquired substantially all of the assets and certain liabilities of Hugo Sachs Elektronik a developer and manufacturer of perfusion systems for research. Cash consideration of approximately $568,000 was paid for the assets, net of cash acquired of $31,000. The costs of the acquisition allocated on the basis of estimated fair market value of the assets acquired and the purchase method of accounting resulted in an allocation of $89,000 to goodwill and other intangibles.

(3) ACQUISITION OF BUSINESSES (CONTINUED)

On May 19, 2000, the Company acquired substantially all of the assets of Biotronik, a manufacturer of Amino Acid Analyzers. Cash consideration of approximately $469,000 was paid for the assets (including approximately $12,000 of acquisition related expenses). The cost of the acquisition was allocated on the basis of fair market value of the assets acquired and the purchase method of accounting resulted in an allocation of $335,000 to goodwill.

On July 14, 2000, the Company acquired substantially all of the assets of Amika Corporation, a manufacturer and distributor of sample preparation devices and consumables. Cash consideration of $3,096,000 was paid for the assets including approximately $61,000 of acquisition related expenses. The cost of the acquisition allocated on the basis of fair market value of the assets acquired and the purchase method of accounting resulted in an allocation of $3,011,000 to goodwill and other intangibles. The assets acquired consisted of approximately $85,000 of inventory. In addition, the Company acquired the right of first refusal to all new technologies developed and offered for sale by the predecessor Company for a period of four years on a fair value licensing arrangement.

All acquisitions have been accounted for by the purchase method of accounting for business combinations. Accordingly, the accompanying consolidated statements of operations do not include any revenues or expenses related to these acquisitions prior to the respective acquisition dates.

The following unaudited pro forma results of operations gives effect to the acquisition of Biochrom as if it had occurred at the beginning of fiscal 1998 (the effect of the other acquisitions are considered insignificant). Such pro forma information reflects certain adjustments including amortization of goodwill, interest expense, income tax effect and an increase in the number of weighted average shares outstanding. The pro forma information does not necessarily reflect the results of operations that would have occurred had the acquisition taken place as described and is not necessarily indicative of results that may be obtained in the future.

	YEARS ENDED DECEMBER 31,	
	1998	1999
	(UNAUDITED)	
Pro forma revenues	$23,942,973	$ 27,590,714
Pro forma net earnings (loss)	$ (120,186)	$(29,415,046)
Pro forma basic net earnings (loss) per share:		
Basic	$ (0.04)	$ (5.25)
Diluted	$ (0.04)	$ (5.25)
Pro forma weighted average common shares:		
Basic	5,598,626	5,598,626
Diluted	5,598,626	5,598,626

(4) INVENTORIES

Inventories consist of the following:

	DECEMBER 31,		SEPTEMBER 30,
	1998	1999	2000
Finished goods	$ 686,555	$ 857,202	$1,194,810
Work in process	335,150	359,505	448,744
Raw materials	634,613	1,632,963	2,036,181
	$1,656,318	$2,849,670	$3,679,735

(5) PROPERTY, PLANT AND EQUIPMENT

Property, plant and equipment consists of the following:

	DECEMBER 31,		SEPTEMBER 30,
	1998	1999	2000
Land and buildings	$ 654,172	$ 636,250	$ 576,366
Machinery and equipment	126,891	726,933	913,617
Computer equipment	103,218	378,400	398,639
Furniture and fixtures	234,882	326,978	348,022
Automobiles	190,354	123,113	122,051
	1,309,517	2,191,674	2,358,695
Less accumulated depreciation	339,612	631,752	845,597
	$ 969,905	$1,559,922	$1,513,098

(6) SHORT-TERM DEBT

At September 30, 2000, December 31, 1999 and 1998, short-term debt consisted of an amount outstanding under a bank line of credit that is secured by a first priority security interest in all assets of the Company and a pledge of 65% of the capital stock of the Company's subsidiaries. Interest on the line of credit is payable monthly, in arrears, at the related bank's "base rate" plus 1% (10.5%, 9.5% and 8.75% at September 30, 2000, December 31, 1999 and 1998, respectively). Borrowings under the line of credit are limited to an available amount determined by an accounts receivable and inventory based formula, $3,750,000, $3,750,000 and $2,000,000 at September 30, 2000, December 31, 1999 and 1998, respectively. This line of credit is due to mature on January 29, 2002. At September 30, 2000, December 31, 1999 and 1998, borrowings under the line of credit were $3,150,000, $2,200,000 and $700,000, respectively.

At December 31, 1998, short-term debt also included a note from the same bank in the amount of $350,000 with interest payable monthly, in arrears at the bank's "base rate" plus 1.5% (9.25%). This debt was rolled into long-term debt on March 2, 1999 as part of the financing arrangement to acquire Biochrom in March 1999 (see notes 3 and 7).

(7) LONG-TERM DEBT

Long-term debt consists of the following:

	DECEMBER 31,		SEPTEMBER 30,
	1998	1999	2000
Subordinated debentures, at 13%, payable in quarterly installments through March 15, 2003	$787,500	$ 727,500	$ 477,500
Notes payable	--	5,125,000	6,800,000
Capital lease obligations (note 10)	41,355	14,614	9,431
	828,855	5,867,114	7,286,931
Less current installments	190,389	794,173	1,556,618
	$638,466	$5,072,941	$ 5,730,313

On March 2, 1999, the Company entered into two loan agreements with two banks to borrow up to $5.5 million. The purpose of the loan agreements was to partially finance the acquisition of Biochrom (see note 3). Principal and interest are being paid in quarterly installments, with the final payment due in January 2002. The interest rate is determined by one of the banks base rate plus 1%, (10.5% and 9.5% at September 30, 2000 and December 31, 1999, respectively). The loans are secured by substantially all of the Company's assets. The loan agreements contain covenants relating to net income, debt service coverage and cash flow coverage. At September 30, 2000 and December 31, 1999, the Company was not in compliance with certain of its covenants. The Company has either received waivers from its banks or had the covenants amended by its banks.

Financing costs of $221,074 were incurred in 1999. These costs were capitalized and are being amortized over the term of the loans. Amortization expense was $56,102 for the nine months ended September 30, 2000 and $63,442 for the year ended December 31, 1999.

Aggregate annual principal payments on all long-term debt, excluding capital lease obligations, for the next five years and thereafter at September 30, 2000 are as follows:

2001	$ 1,550,004
2002	4,449,996
2003	777,500
2004	500,000
Thereafter	--
	$ 7,277,500

(8) CONVERTIBLE AND REDEEMABLE PREFERRED STOCK

During 1999, 48,500 shares of Series B convertible and redeemable preferred stock were issued to partially finance the acquisition of Biochrom (note 3). The net proceeds from this issuance were $925,174. The Company's Series B convertible redeemable preferred stock has a dividend preference over the Series A preferred stock, and as a result, no dividends shall be paid in respect of shares of

(8) CONVERTIBLE AND REDEEMABLE PREFERRED STOCK (CONTINUED)
Series A preferred stock unless all accrued dividends that become payable in respect of Series B preferred stock have been paid. The Series B redeemable convertible preferred stock is convertible at the option of the holder, at any time, into shares of common stock of the Company at a conversion rate of 19.71 shares of common stock for each share of Series B redeemable convertible preferred stock, subject to adjustment for subdivision of Series B preferred stock or any issuance of additional shares of Series B preferred stock.

Redeemable preferred Series A stock pays quarterly cumulative dividends in arrears at a rate of approximately $0.26 per share. On March 3, 2000, convertible and redeemable preferred "B" stock started to accrue dividends at a rate of $1.44 that will be payable a year in arrears on March 3, 2001, and thereafter quarterly in arrears.

In the event of any liquidation of the Company, the holders of the Company's redeemable preferred stock are entitled to be paid from the assets available for distribution to holders of the Company's capital stock $2,500,000, plus any related dividends that are accrued but unpaid at such time, prior to other stock distributions.

Mandatory redemption requirements for the preferred stock are as follows:

	SERIES "A"	SERIES "B"
March 15, 2002	$ 500,000	$ 333,320
March 15, 2003	500,000	333,320
March 15, 2004	500,000	333,320
	$1,500,000	$1,000,000

(9) COMMON STOCK WARRANTS

At September 30, 2000, December 31, 1999 and 1998, there were outstanding 8,509,905 warrants, which enable the holders to purchase a like amount of the Company's common stock for $0.0005 per share. The warrants were issued in connection with the issuance of Series A redeemable preferred stock (6,046,510 warrants) and subordinated debentures (2,463,395 warrants) that occurred on March 15, 1996.

Commencing on March 15, 2002, the holders of the warrants may at any time require the Company to repurchase the warrants, or any common shares previously acquired from exercise of the warrants, for their fair market value as determined in good faith by the Company's board of directors. Such repurchase price would be repaid in 12 equal quarterly installments beginning on the first business day of the month following the surrender of the warrants or applicable shares of common stock. In 1999, 1998 and 1997 and for the nine months ended September 30, 2000 and 1999, $29,694,019, $1,379,460, $116,574, $70,920,242 and $7,402,457, respectively, has been recorded as interest expense to accrue the estimated amount of this potential liability in accordance with EITF 96-13, ACCOUNTING FOR DERIVATIVE FINANCIAL INSTRUMENTS INDEXED TO AND POTENTIALLY SETTLED IN, A COMPANY'S OWN STOCK. Future changes in the fair value of common stock warrants will also be recorded as interest expense.

In September 2000, the holders of the warrants agreed to automatically terminate the requirement of the Company to repurchase the warrants in the event of an initial public offering of the Company's Common Stock.

(10) LEASES

The Company leases automobiles under various leases that are classified as capital leases. The carrying value of automobiles under capital leases at September 30, 2000, December 31, 1999 and 1998 was $9,502, $14,532 and $40,795, respectively, which is net of $48,871, $68,602 and $76,352, respectively, of accumulated depreciation.

The Company has noncancelable operating leases for office and warehouse space expiring at various dates through 2009. Rent expense for the nine months ended September 30, 2000 and for the years ended December 31, 1999, 1998 and 1997 was approximately $439,000, $484,000, $134,000 and $151,262, respectively.

Future minimum lease payments for both capital and operating leases, with initial or remaining terms in excess of one year at September 30, 2000, are as follows:

	CAPITAL LEASES	OPERATING LEASES
2001	$ 9,116	$ 660,861
2002	1,157	417,710
2003	--	372,238
2004	--	352,806
2005 and thereafter	--	--
Net minimum lease payments	10,273	$1,803,615
Less amount representing interest	842	
Present value of net minimum lease payments	$ 9,431	

(11) RELATED PARTY TRANSACTIONS

The Company paid an annual consulting fee to a former stockholder who formerly served on its board of directors and, by written agreement, provided no less than five days of consulting services each month. The agreement was scheduled to expire on March 15, 2001 or at the time of any initial public offering of the Company's stock or other sale of a material portion of the Company's stock or assets, if such a transaction occurred before that date. As of September 30, 2000, the agreement with the former stockholder was rescinded. The related consulting expense amounted to $294,583 for the nine months ended September 30, 2000 and $258,437, $262,040 and $268,030 for the years ended December 31, 1999, 1998 and 1997, respectively.

(12) EMPLOYEE BENEFIT PLANS

The Company sponsors a profit sharing retirement plan for its U.S. employees, which includes an employee savings plan established under Section 401(k) of the U.S. Internal Revenue Code. The plan covers substantially all full-time employees who meet certain eligibility requirements. Contributions to the profit sharing retirement plan are at the discretion of management. For the nine months ended September 30, 2000 and for the years ended December 31, 1999, 1998 and 1997, the Company contributed approximately $60,000, $67,000, $41,000 and $27,000, respectively, to the plan.

(12) EMPLOYEE BENEFIT PLANS (CONTINUED)

Certain of the Company's subsidiaries in the United Kingdom (UK), Harvard Apparatus Limited, and Biochrom Limited maintain contributory, defined benefit pension plans for substantially all of their employees.

The components of the Company's pension expense, primarily for Biochrom, for the nine months ended September 30, 2000 and for the year ended December 31, 1999 follow:

	DECEMBER 31, 1999	SEPTEMBER 30, 2000
Components of net periodic benefit cost:		
Service cost	$ 288,640	$ 182,376
Interest cost	250,437	197,263
Expected return on plan assets	(364,684)	(291,771)
Net amortization gain	6,965	(9,364)
Net periodic benefit cost	$ 181,358	$ 78,504

(12) EMPLOYEE BENEFIT PLANS (CONTINUED)

The funded status of the Company's defined benefit pension plans and the amount recognized in the balance sheet at September 30, 2000 and December 31, 1999 follow:

	DECEMBER 31, 1999	SEPTEMBER 30, 2000
Change in benefit obligation:		
Balance at beginning of period	$1,215,000	$5,829,403
Acquisitions	4,848,552	--
Service cost	288,640	182,376
Interest cost	250,437	197,263
Participants' contributions	60,745	45,931
Actuarial (gain)/loss	(824,672)	571,532
Benefits paid	(9,299)	(42,993)
Currency translation adjustment	--	(594,437)
Balance at end of period	5,829,403	6,189,075
Change in fair value of plan assets:		
Balance at beginning of period	1,158,138	7,062,645
Acquisitions	5,231,470	--
Actual return on plan assets	440,606	(39,627)
Participants' contributions	60,745	45,931
Employer contributions	180,985	153,275
Benefits paid	(9,299)	(42,993)
Currency translation adjustment	--	(673,592)
Balance at end of period	7,062,645	6,505,639
Funded status:		
Plan assets greater than benefit obligation	1,233,242	316,564
Unrecognized (gain) loss	(881,299)	73,808
Prepaid pension expense in consolidated balance sheet	$ 351,943	$ 390,372

The weighted average assumptions used in determining the net pension cost for the Company's plans follows:

	DECEMBER 31, 1999	SEPTEMBER 30, 2000
Weighted average assumptions:		
Discount rate	5.5%	6.5-8.5%
Expected return on assets	7.0-8.0%	7.0-8.0%
Rate of compensation increase	3.8-4.0%	4.5%

(13) INCOME TAXES

The significant components of the Company's deferred tax assets and liabilities at September 30, 2000, December 31, 1999 and 1998 are as follows:

	DECEMBER 31,		SEPTEMBER 30,
	1998	1999	2000
Deferred tax assets:			
Accounts receivable	$ --	$ 31,755	$ 31,755
Inventory	111,676	129,097	141,113
Operating loss carryforward	28,182	34,417	387,188
Accrued expenses	(14,940)	1,196,338	135,398
Goodwill	--	37,679	46,567
Catalog costs	--	8,503	--
Total deferred tax assets	124,918	1,437,789	742,021
Deferred tax liabilities:			
Catalog costs	24,524	--	6,011
Pension fund asset	15,051	18,461	16,725
Property, plant and equipment	22,053	42,632	36,278
Other	497	4,695	--
Total deferred tax liabilities	62,125	65,788	59,014
Net deferred tax assets	$ 62,793	$1,372,001	$ 683,007

In assessing the realizability of deferred tax assets, management considers whether it is more likely than not that some portion or all of the deferred tax assets will not be realized. Based upon the level of historical taxable income and projections for future taxable income over the periods during which deferred tax assets are deductible, management believes it is more likely than not that the Company will realize the benefits of these deductible differences.

Income tax expense is based on the following pre-tax income (loss) for the nine months ended September 30, 2000 and for the years ended December 31, 1999, 1998 and 1997:

	DECEMBER 31,			SEPTEMBER 30,
	1997	1998	1999	2000
Domestic	$1,253,916	$115,418	$(32,040,219)	$(83,771,998)
Foreign	535,621	738,916	2,757,782	1,264,808
	$1,789,537	$854,334	$(29,282,437)	(82,507,190)

(13) INCOME TAXES (CONTINUED)

Income tax expense (benefit) for the nine months ended September 30, 2000 and for the years ended December 31, 1999, 1998 and 1997 consisted of:

	DECEMBER 31,			SEPTEMBER 30,
	1997	1998	1999	2000
Current income tax expense:				
Federal and state	$ 584,239	$579,152	$ 403,149	$ --
Foreign	208,103	214,112	1,043,539	506,532
	792,342	793,264	1,446,688	506,532
Deferred income tax (benefit) expense:				
Federal and state	(56,939)	(19,380)	(1,238,399)	840,106
Foreign	(53,074)	9,308	(70,809)	7,713
	(110,013)	(10,072)	(1,309,208)	847,819
Total income tax expense	$ 682,329	$783,192	$ 137,480	$ 1,354,351

(13) INCOME TAXES (CONTINUED)

Income tax expense for the nine months ended September 30, 2000 and for the years ended December 31, 1999, 1998 and 1997 differed from the amount computed by applying the U.S. federal income tax rate of 34% to pretax income as a result of the following:

	DECEMBER 31,			SEPTEMBER 30,
	1997	1998	1999	2000
Computed "expected" income tax (benefit) expense.....	$608,443	$ 290,474	$ (9,956,029)	$(28,052,445)
Increase (decrease) in income taxes resulting from:				
Foreign tax rate and regulation differential.....	(3,625)	(27,811)	35,804	85,909
State income taxes, net of federal income tax benefit.....	73,757	86,068	(154,569)	130,804
Interest expense (common stock warrants).....	39,564	469,002	10,254,946	24,177,992
Foreign Subsidiary Corporation tax benefits.....	--	(27,804)	(28,761)	(32,876)
Other.....	9,220	(6,737)	(13,911)	7,698
Stock compensation expense in excess of allowable tax benefits on exercise of options.....	--	--	--	5,037,269
Decrease in deferred tax valuation allowance.....	(45,030)	--	--	--
Total.....	$682,329	$ 783,192	$ 137,480	$ 1,354,351

Undistributed earnings of the Company's foreign subsidiaries amounted to approximately $4,013,000, $3,185,000 and $1,565,000 at September 30, 2000, December 31, 1999 and 1998, respectively. Those earnings are considered to be indefinitely reinvested and, accordingly, no related provision for U.S federal and state income taxes has been provided. Upon distribution of those earnings in the form of dividends or otherwise, the Company will be subject to both U.S. income taxes (subject to an adjustment for foreign tax credits) and withholding taxes in the various foreign countries.

(14) STOCK OPTION PLAN

The Company has adopted a stock option plan (the "Plan") pursuant to which the Company's Board of Directors may grant stock options to employees. The Plan authorizes grants of options to purchase up to 4,072,480 shares of authorized but unissued stock.

For the nine months ended September 30, 2000, and for the years ended December 31, 1999 and 1998, 2,254,272, 1,119,725 and 1,119,725 "Incentive Stock Options," and 1,812,295, 1,812,295 and 895,780 "Non-qualified Stock Options," respectively, had been granted to employees. The Incentive Stock Options become fully vested over a four year period, on a pro rata basis. The Non-qualified

(14) STOCK OPTION PLAN (CONTINUED)

Stock Options granted prior to 1999 only become vested if, prior to the end of the year 2000: a sale of substantially all of the Company's assets or capital stock occurs; or an initial public offering of the Company's common stock at a net price of not less than $1.42 per share; or the fair market value of the Company's common stock is otherwise determined to be, on a fully diluted basis, not less than $1.42 per common share. For non-qualified options granted under the plan during 1999, prior to an amendment to the plan dated September 29, 2000, the options were deemed to be vested and exercisable upon either (i) the sale of all or substantially all of the assets or capital stock of the Company for an actual or implied price per share of not less than $2.09 or (ii) an initial public offering of the Company's stock with a price per share of not less than $2.09 and gross proceeds to the Company of at least $15 million. On September 29, 2000, the vesting schedule was amended so that the options are vested and exercisable upon either (i) a sale of all or substantially all of the assets or capital stock of the Company for an actual or implied net price per share of Common Stock of not less than $2.09 or (ii) if the fair market value of the Company at any time prior to December 31, 2000 results in a per share valuation, on a fully diluted basis, of not less than $2.09 per share. As a result of the Plan amendment, the related options vested immediately as a per share valuation of $2.09 was attained.

The Company applies APB Opinion No. 25 in accounting for the Plan. APB No. 25 requires no recognition of compensation expense for stock option awards when on the date of grant the exercise price is equal to the estimated fair market value of the Company's common stock and the number of options granted is fixed. During the nine months ended September 30, 2000, 1,134,547 stock options were granted to employees at an exercise price of $1.05 which was estimated to be less than the fair market value of the Company's common stock on the date of grant. Accordingly, compensation expense of $3,292,593 was recognized on these stock option grants. Additional compensation expense will be recognized in future periods over the four year vesting period of the options. The Company's 1996 and 1999 Non-qualified Stock Option awards are considered variable awards as the number of shares to be acquired by the employees is indeterminable at the date of grant. Accordingly, in 1999 and for the nine months ended September 30, 1999, the Company recognized compensation expense of $3,283,164 and $937,138, respectively, on the non-qualified Stock Options granted in 1996. At December 31, 1999, all non-qualified stock options granted in 1996 were fully vested because a per share valuation of $1.42 was attained. For the nine months ended September 30, 2000, the Company recognized compensation expense of $10,039,350 on the non-qualified options granted in 1999.

On September 29, 2000, two employees exercised 563,942 non-vested options that were granted during 2000 for 563,942 shares of restricted common shares for cash consideration of $286 and two promissory notes amounting to $589,652 payable to the Company. The notes have a three-year maturity and a fixed interest rate of 10% per annum, compounded annually. The restricted stock becomes fully vested over a four-year period, on a pro rata basis. The estimated fair market value of the shares awarded on the original option date grant and on the date of exercise was estimated to be $6,767,310 of which $2,412,865 has been recognized as stock compensation expense for the nine months ended September 30, 2000. The remaining unearned compensation is being amortized to expense over the four year vesting period. Also on September 29, 2000, two employees of the Company exercised 916,514 fully vested options for cash of $465 and two promissory notes amounting to $958,298 payable to the Company. The notes have a three-year maturity and a fixed interest rate of 10% per annum, compounded annually.

(14) STOCK OPTION PLAN (CONTINUED)

The following is a summary of stock option activity.

	EMPLOYEE STOCK OPTIONS	
	OPTIONS OUTSTANDING	WEIGHTED AVERAGE EXERCISE PRICE
Balance at December 31, 1996	1,903,533	$0.0005
Options granted	111,972	0.0147
Balance at December 31, 1997	2,015,505	0.0152
Options granted	--	--
Balance at December 31, 1998	2,015,505	0.0152
Options granted	916,515	1.0462
Balance at December 31, 1999	2,932,020	0.3278
Options exercised	(3,467,955)	0.4475
Options granted	1,134,547	1.0462
Balance at September 30, 2000	598,612	$0.9980

During 1999, 1998 and 1997 and the first nine months of 2000, there were no other additional options exercised, canceled, expired or forfeited, or changes in any option terms, including exercise prices. The weighted-average fair value of options granted during the nine months ended September 30, 2000 and fiscal 1999 and 1997 was $9.73, $1.05 and $0.01, respectively. No options were granted during 1998.

The following is a summary of information relating to stock options outstanding at September 30, 2000 (no options were exercisable at September 30, 2000):

	OPTIONS OUTSTANDING		
RANGE OF EXERCISE PRICE	NUMBER OUTSTANDING AT SEPTEMBER 30, 2000	WEIGHTED-AVERAGE REMAINING CONTRACTUAL LIFE	WEIGHTED AVERAGE EXERCISE PRICE
$ 0.01	28,008	6.3 years	$ 0.01
$ 1.05	570,605	9.5 years	1.05
$ 0.01-$1.05	598,613	9.4 years	$ 1.00

(14) STOCK OPTION PLAN (CONTINUED)

Had the Company determined compensation cost based on the fair value of the options at the grant date, as is permitted by SFAS No. 123, the Company's net income would have been as follows:

	YEARS ENDED DECEMBER 31,			NINE MONTHS ENDED SEPTEMBER 30,
	1997	1998	1999	2000
Net income (loss) as reported	$1,107,208	$71,142	$(29,419,917)	$(83,861,541)
Pro forma net income (loss)	$1,106,988	$70,922	$(29,420,033)	$(83,926,155)
Basic net income (loss) per share	$ 0.13	$ (0.01)	$ (5.28)	$ (13.11)
Pro forma basic net income (loss) per share	$ 0.13	$ (0.01)	$ (5.28)	$ (13.12)
Diluted net income (loss) per share	$ 0.06	$ (0.01)	$ (5.28)	$ (13.11)
Diluted pro forma net income (loss) per share	$ 0.06	$ (0.01)	$ (5.28)	$ (13.12)

The fair value of each option grant for the Company's plans is estimated on the date of the grant using the minimum value pricing model, with the following weighted average assumptions used for grants in 2000, 1999 and 1997. There were no grants of options in 1998.

	DECEMBER 31,		SEPTEMBER 30,
	1997	1999	2000
Risk free interest rates	6.4%	5.6%	6.1%
Expected option lives	7 years	7 years	2 years
Expected dividend yields	0%	0%	0%

(15) SEGMENT AND RELATED INFORMATION

The Company operates in one significant business segment.

Revenues by geographic area consists of the following:

	YEARS ENDED			NINE MONTHS ENDED	
	DECEMBER 31, 1997	DECEMBER 31, 1998	DECEMBER 31, 1999	SEPTEMBER 30, 1999	SEPTEMBER 30, 2000
				(UNAUDITED)	
United States	$ 6,263,264	$ 7,347,907	$ 8,169,470	$ 6,266,620	$ 6,867,515
United Kingdom	2,668,300	2,458,772	15,353,761	10,344,187	11,549,083
Canada and Europe	2,532,593	2,347,346	2,654,583	1,859,106	3,652,428
	$11,464,157	$12,154,025	$26,177,814	$18,469,913	$22,069,026

(15) SEGMENT AND RELATED INFORMATION (CONTINUED)

Long lived assets by geographic area consists of the following:

	DECEMBER 31, 1998	DECEMBER 31, 1999	SEPTEMBER 30, 2000
United States	$260,977	$ 307,286	$ 259,430
United Kingdom	677,889	1,189,269	1,197,896
Canada and Europe	31,039	63,367	55,772
	$969,905	$1,559,922	$1,513,098

(16) INCOME (LOSS) PER SHARE

Basic income (loss) per share is based upon net income less dividends on preferred stock divided by the weighted average common shares outstanding during each year. The calculation of diluted net income (loss) per share assumes conversion of convertible preferred stock, stock options and common stock warrants into common stock, and also adjusts net income (loss) for the effect of converting convertible preferred stock and common stock warrants into common stock. Net income (loss) and shares used to compute net income per share, basic and diluted, are reconciled below:

	YEARS ENDED			NINE MONTHS ENDED	
	DECEMBER 31, 1997	DECEMBER 31, 1998	DECEMBER 31, 1999	SEPTEMBER 30, 1999	SEPTEMBER 30, 2000
				(UNAUDITED)	
Net income (loss) available to common shareholders	$ 985,540	$ (50,524)	$(29,576,503)	$(6,321,331)	$(83,983,969)
Effect of dilutive securities:					
Common stock warrants	116,574	--	--	--	--
Net income (loss), assuming dilution	$1,102,114	$ (50,524)	$(29,576,503)	$(6,321,331)	$(83,983,969)
Weighted average common shares outstanding during the year	7,406,486	5,598,626	5,598,626	5,598,626	6,407,682
Effect of dilutive securities:					
Common stock warrants	8,509,911	--	--	--	--
Common stock options	1,583,797	--	--	--	--
	17,500,194	5,598,626	5,598,626	5,598,626	6,407,682

For the years ended December 31, 1999 and 1998, and for the nine months ended September 30, 2000 and 1999, common equivalent shares of 11,378,110, 9,688,766, 10,628,401 and 11,446,996, respectively, resulting from stock options, warrants and restricted stock were not included in the computation of diluted earnings per share because to do so would have been antidilutive.

(17) ACCRUED EXPENSES

Accrued expenses consist of:

	DECEMBER 31,		SEPTEMBER 30,
	1998	1999	2000
Accrued compensation and payroll	$392,066	$ 736,021	$ 955,543
Accrued interest	8,062	158,101	153,682
Accrued legal and professional fees	128,812	251,926	720,599
Other	57,349	253,475	436,723
	$586,289	$1,399,523	$2,266,547

(18) CONTINGENCIES

The Company is subject to legal proceedings and claims arising out of its normal course of business. Management, after review and consultation with counsel, considers that amounts accrued for in connection therewith are adequate.

(19) CONCENTRATION OF CREDIT RISK

One commercial customer accounted for 44% of revenues for the year ended December 31, 1999 and 39% and 41% for the nine months ended September 30, 2000 and 1999, respectively. At September 30, 2000 and 1999, and December 31, 1999, one customer accounted for 41%, 46% and 48% of accounts receivable, respectively. Except as noted above, no other individual customer accounted for more than 10% of revenues for the nine months ended September 30, 2000 and 1999 and for the years ended December 31, 1999, 1998, and 1997. In addition, except as noted above, no other individual customer accounted for more than 10% of account receivable at September 30, 2000, December 31, 1999 and December 31, 1998.

(20) STOCK SPLIT

On October 25, 2000, the Board of Directors approved a merger, subject to stockholder approval, of the Company with and into its wholly-owned subsidiary, Harvard Bioscience, Inc., to be effected prior to the consummation of the anticipated initial public offering ("IPO"). In the merger each share of common stock of the Company will be exchanged for one share of Harvard Bioscience, Inc. The Board of Directors of Harvard Bioscience, Inc. has approved a 19.71:1 stock split effective immediately after consummation of the merger. All common stock share and per share data have been restated in these financial statements for all periods presented to reflect this split.

(21) SUBSEQUENT EVENT

Subsequent to September 30, 2000, 5,913 stock options were granted to employees resulting in deferred compensation of approximately $65,000.

(22) UNASSERTED LEGAL CLAIM (UNAUDITED)

On November 7, 2000 the Company received correspondence from counsel to Harvard University claiming that the Company's use of the term "Harvard Bioscience" and other terms containing or consisting of the term "Harvard" constitutes trademark infringement, false designation of origin, unfair competition and cybersquatting. Counsel to Harvard University has threatened legal action if the Company does not take certain steps, including ceasing and permanently refraining from using these terms. Management denies the allegations contained in the above correspondence, and intends to vigorously seek to protect the Company's rights should such claims be asserted against the Company.

PHARMACIA & UPJOHN (CAMBRIDGE) LIMITED
FORMERLY
PHARMACIA BIOTECH (BIOCHROM) LIMITED

REPORT OF THE DIRECTORS

FOR THE YEAR ENDED 31ST DECEMBER 1998

The Directors present their report and the audited financial statements for the year ended 31st December 1998.

TRADING RESULTS FOR THE YEAR AND OUTLOOK

The trading results for the year are set out on page F-29 of the accounts. The year was satisfactory.

Following the Company's disposal of the majority of its net assets on the 26th February 1999, (note 23), the Company will cease to trade.

PRINCIPAL ACTIVITIES

During the year the Company developed, manufactured and marketed scientific instruments and associated chemicals.

DIRECTORS

The Directors throughout the year were as listed below. None of the Directors holds any beneficial interest in the share capital of the Company.

W.B. Brown	--	Managing	Resigned	01/03/99
J.G. Lee	--		Joined	23/12/98
K.T. Krzywicki	--		Joined	23/12/98

YEAR 2000 AND EUROPEAN MONETARY UNION

As the Company ceased to trade on the 26th February 1999 the directors are satisfied that there are no risks associated with the impact of the Year 2000 date change or European Monetary Union.

RESEARCH AND DEVELOPMENT

It is the Company's policy to carry out research and development to develop products in the fields of spectrophotometry and amino acid analysis. Our objective is the rapid creation of products utilising Biochrom's strengths in electronic, software, optical and mechanical design plus production skills.

Expenditure on research and development is set out in the profit and loss accounts on page F-29.

CLOSE COMPANY PROVISIONS

As far as the Directors are aware the close company provisions of the Income and Corporation Taxes Act 1988 as amended do not apply to the Company. There has been no change in this respect since the end of the financial year.

POST BALANCE SHEET EVENT

Effective 26th February 1999, the Company sold the majority of its net assets to Biochrom Limited.

(See note 23).

PHARMACIA & UPJOHN (CAMBRIDGE) LIMITED
FORMERLY
PHARMACIA BIOTECH (BIOCHROM) LIMITED

REPORT OF THE DIRECTORS

FOR THE YEAR ENDED 31ST DECEMBER 1998

AUDITORS

Our auditors, Coopers & Lybrand, merged with Price Waterhouse on 1 July 1998, following which Coopers & Lybrand resigned and the directors appointed the new firm, PricewaterhouseCoopers, as auditors.

A resolution to reappoint PricewaterhouseCoopers as auditors to the company will be proposed at the annual general meeting.

BY ORDER OF THE BOARD

J.G. LEE
DIRECTOR

PHARMACIA & UPJOHN (CAMBRIDGE) LIMITED

FORMERLY

PHARMACIA BIOTECH (BIOCHROM) LIMITED

YEAR ENDED 31ST DECEMBER 1998

STATEMENT OF DIRECTORS' RESPONSIBILITIES

Company law requires the directors to prepare financial statements for each financial year which give a true and fair view of the state of affairs of the company and of the profit or loss of the company for that period. In preparing these financial statements, the directors are required to:

* Select suitable accounting policies and then apply them consistently;

* Make judgements and estimates that are reasonable and prudent;

* State whether applicable accounting standards have been followed, subject to any material departures disclosed and explained in the financial statements;

* Prepare the financial statements on the going concern basis unless it is inappropriate to presume that the company will continue in business.

The directors are responsible for keeping proper accounting records which disclose with reasonable accuracy at any time the financial position of the company and to enable them to ensure that the financial statements comply with the Companies Act 1985. They are also responsible for safeguarding the assets of the company and hence for taking reasonable steps for the prevention and detection of fraud and other irregularities.

BY ORDER OF THE BOARD

/s/ J.G. Lee
- ---------------------------- Director

9 April 1999
- ---------------------------- Date

REPORT OF THE AUDITORS TO THE MEMBERS OF
PHARMACIA & UPJOHN (CAMBRIDGE) LIMITED

FORMERLY

PHARMACIA BIOTECH (BIOCHROM) LIMITED

REPORT OF INDEPENDENT ACCOUNTANTS

To the Directors of Pharmacia & Upjohn (Cambridge) Limited:

In our opinion, the accompanying balance sheet, profit and loss account and statement of cash flows present fairly, in all material respects, the financial position of Pharmacia & Upjohn (Cambridge) Limited as at 31 December 1997 and 1998 and the profit and loss accounts and cash flows for the years ended 31 December 1997 and 1998 in conformity with generally accepted accounting principles in the United Kingdom, which differ in certain respects from those accepted in the United States (see note 24 to the financial statements).

These financial statements are the responsibility of Pharmacia & Upjohn (Cambridge) Limited's management. Our responsibility is to express an opinion on these financial statements based on our audits.

We conducted our audit of these statements in accordance with generally accepted auditing standards in the United Kingdom and the United States. These standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements, assessing the accounting principles used and significant estimates made by management and evaluating the overall financial statements presentation. We believe that our audit provides a reasonable basis for the opinion expressed above.

PRICEWATERHOUSECOOPERS
Chartered Accountants and Registered Auditors
Cambridge, England
February 26, 1998 (year ended December 31, 1997)
and April 9, 1999 (year ended December 31, 1998),
except for Note 24, which is as of September 15, 2000.

PHARMACIA & UPJOHN (CAMBRIDGE) LIMITED
FORMERLY
PHARMACIA BIOTECH (BIOCHROM) LIMITED
PROFIT AND LOSS ACCOUNT
YEAR ENDED 31ST DECEMBER 1998

		1998		1997	
	NOTES	L	L	L	L
TURNOVER	2		7,101,776		8,699,944
Cost of sales			(5,160,296)		(6,252,278)
GROSS PROFIT			1,941,480		2,447,666
Distribution costs		(457,939)		(421,254)	
Administration costs		(604,918)		(493,374)	
Research and Development costs		(395,569)		(418,000)	
		(1,458,426)		(1,332,628)	
Other operating income	4	48,808		61,019	
NET OPERATING EXPENSES			(1,409,618)		(1,271,609)
OPERATING PROFIT	3		531,862		1,176,057
Interest receivable	5		83,095		114,392
PROFIT ON ORDINARY ACTIVITIES BEFORE TAXATION			614,957		1,290,449
Tax on profit on ordinary activities	6		(194,935)		(444,323)
PROFIT FOR THE YEAR			420,022		846,126
Dividend Paid Net			--		(2,349,827)
PROFIT(LOSS) RETAINED FOR THE YEAR			L420,022		L(1,503,701)

Reserves statement see note 15

All activities are discontinued (note 23).

The company has no recognised gains and losses other than those included in the profits above, and therefore no separate statement of total recognised gains and losses has been presented.

There is no difference between the profit on ordinary activities before taxation and the retained profit for the year stated above and historical cost equivalents.

PHARMACIA & UPJOHN (CAMBRIDGE) LIMITED

FORMERLY

PHARMACIA BIOTECH (BIOCHROM) LIMITED

BALANCE SHEET

31ST DECEMBER 1998

	NOTES	1998		1997	
		L	L	L	L
FIXED ASSETS					
Tangible assets	9		415,900		455,504
CURRENT ASSETS					
Stock	10	636,556		706,141	
Debtors	11	1,603,559		1,537,499	
Cash at bank and in hand		1,545,230		1,026,766	
		3,785,345		3,270,406	
CREDITORS: Amounts falling due within one year	12	888,747		804,784	
NET CURRENT ASSETS			2,896,598		2,465,622
TOTAL ASSETS LESS CURRENT LIABILITIES			L3,312,498		L2,921,126
PROVISIONS FOR LIABILITIES AND CHARGES	13		46,350		75,000
NET ASSETS			L3,266,148		L2,846,126
CAPITAL AND RESERVES					
Called up share capital	14		2,000,000		2,000,000
Profit and loss account	15		1,266,148		846,126
EQUITY SHAREHOLDERS' FUNDS	16		L3,266,148		L2,846,126

The financial statements on pages F-29 to F-43 were approved by the Board of Directors on 9 April 1999 and were signed on its behalf by:

/s/ J.G. Lee
- ---------- Director

9 April 1999
- ---------- Date

PHARMACIA & UPJOHN (CAMBRIDGE) LIMITED

FORMERLY

PHARMACIA BIOTECH (BIOCHROM) LIMITED

CASH FLOW STATEMENT FOR THE YEAR ENDED 31ST DECEMBER 1998

See note 19	1998	1997
	L	L
Operating Activities		
Net cash in flow from operating activities	742,243	1,355,841
RETURNS ON INVESTMENTS AND SERVICING OF FINANCE		
Interest received	81,764	118,918
TAXATION		
UK Corporation Tax paid	(160,915)	(576,323)
Advance Corporation Tax paid	--	(587,457)
	(160,915)	(1,163,780)
CAPITAL EXPENDITURE AND FINANCIAL INVESTMENT		
Purchase of tangible fixed assets	(144,628)	(123,966)
Sale of tangible fixed assets	--	350
	(144,628)	(123,616)
Equity Dividends Paid Net	--	(2,349,827)
INCREASE/(DECREASE) IN CASH IN THE PERIOD	518,464	(2,162,464)

PHARMACIA & UPJOHN (CAMBRIDGE) LIMITED

FORMERLY

PHARMACIA BIOTECH (BIOCHROM) LIMITED

NOTES TO THE ACCOUNTS

YEAR ENDED 31ST DECEMBER 1998

1. ACCOUNTING POLICIES

(a) BASIS OF ACCOUNTING

Although it is intended that the Company shall cease to trade following the sale of its net assets on the 26th February 1999 (note 23), the accounts have been prepared on the going concern basis. This is because in the directors' opinion there is no material difference between the recoverable amounts of the assets and liabilities and their values in the balance sheet. The accounts have been prepared on the historical cost basis and in accordance with applicable Accounting Standards in the United Kingdom. A summary of the more important accounting policies which have been applied consistently is set out below:

(b) DEPRECIATION OF TANGIBLE FIXED ASSETS

The cost of fixed assets is their purchase cost, together with any incidental costs of acquisition.

Depreciation is calculated using the straight line method to write off the fixed assets over their estimated useful lives as follows:

Leasehold improvements	--	7 years
Plant, machinery, equipment and tooling	--	3-7 years
Computer equipment	--	5 years

(c) DEFERRED TAXATION

Provision is made using the liability method for the tax effect of all material timing differences between profits computed for taxation purposes and those stated in the accounts, except insofar as the timing differences are expected to continue for the foreseeable future.

(d) FOREIGN CURRENCY

Assets and liabilities in foreign currencies are translated to sterling at the rates of exchange ruling at the end of the financial year. Exchange differences resulting from changes in foreign currency rates are written off to the profit and loss account.

(e) RESEARCH AND DEVELOPMENT EXPENDITURE

Expenditure on research and development is written off to the profit and loss account during the year in which it is incurred.

(f) OPERATING LEASES

Costs in respect of operating leases are charged on a straight line basis in arriving at the operating profit.

PHARMACIA & UPJOHN (CAMBRIDGE) LIMITED

FORMERLY

PHARMACIA BIOTECH (BIOCHROM) LIMITED

NOTES TO THE ACCOUNTS

YEAR ENDED 31ST DECEMBER 1998

1. ACCOUNTING POLICIES (CONTINUED)

(g) STOCKS AND WORK IN PROGRESS

Stocks are stated at the lower of cost and net realisable value. Cost in this context includes all attributable costs in getting each item to its present location and condition and, for finished goods and work in progress, a proportion of attributable overheads based on a normal level of activity. Net realisable value is the price at which stock can be sold in the normal course of business after allowing for the costs of realisation, and where appropriate, the costs of conversion from their existing state to a finished condition. Provision is made for obsolete, slow moving and defective stocks.

(h) PENSION COSTS

The Company operates a funded defined benefit pension scheme which is contracted out of the state scheme. The fund is valued every three years by a professionally qualified independent actuary, the rates of contribution payable being determined by the actuary. Pension costs are accounted for on the basis of charging the expected cost of providing pensions over the period during which the company benefits from the employees' services. The effects of variations from regular cost are spread over the expected average remaining service lives of members of the scheme.

2. TURNOVER

Turnover represents the invoiced value of goods and services supplied during the year, less trade discounts and trade commissions, excluding Value Added Tax.

Turnover arises from the principal activity of the Company and was derived from the following geographical areas by destination:

	1998	1997
	L	L
Europe	4,519,415	5,280,673
Asia and Australasia	831,277	978,144
The Americas	1,693,897	2,301,527
Middle East and Africa	57,187	139,600
Turnover is all UK by origin	7,101,776	8,699,944

PHARMACIA & UPJOHN (CAMBRIDGE) LIMITED

FORMERLY

PHARMACIA BIOTECH (BIOCHROM) LIMITED

NOTES TO THE ACCOUNTS

YEAR ENDED 31ST DECEMBER 1998

3. OPERATING PROFIT

	1998	1997
	L	L
Operating profit has been arrived at after charging:-		
Auditors remuneration--audit services	22,030	19,350
--non audit services	13,325	15,175
Operating lease rentals:-		
Machinery, equipment and vehicles	51,753	58,987
Premises	231,333	227,000
Depreciation	190,915	212,740

4. OTHER OPERATING INCOME

	1998	1997
	L	L
Miscellaneous income	48,808	61,019
	L48,808	L61,019

5. INTEREST RECEIVABLE

	1998	1997
	L	L
On bank current account cash balance	83,095	114,392
	L83,095	L114,392

6. TAXATION

	1998	1997
	L	L
United Kingdom corporation tax at 31%		
Current	193,000	439,000
Under provision in respect of prior years;		
Current	1,935	5,323
	L194,935	L444,323

PHARMACIA & UPJOHN (CAMBRIDGE) LIMITED

FORMERLY

PHARMACIA BIOTECH (BIOCHROM) LIMITED

NOTES TO THE ACCOUNTS

YEAR ENDED 31ST DECEMBER 1998

7. EMPLOYEES

	1998	1997
	NO.	NO.
The average number of employees, (including the executive Director) was made up as follows:		
Manufacturing, production and development	48	48
Distribution	7	8
Administration	5	5
	60	61
	L	L
Staff costs, including full time working Directors amounted to:		
Salaries and bonuses	1,308,728	1,368,189
National insurance	105,959	107,986
Pension costs	127,348	118,317
	L1,542,035	L1,594,492

8. DIRECTORS` EMOLUMENTS

	1998	1997
	L	L
Emoluments of Directors of Pharmacia & Upjohn (Cambridge) Limited		
Fees	--	--
Other emoluments--salary, bonus and benefits in kind	73,705	68,244
	73,705	68,244

Retirement benefits are accruing to one Director under a defined benefit scheme (1997:one).

9. TANGIBLE FIXED ASSETS

	COMPUTER EQUIPMENT	LEASEHOLD BUILDING IMPROVEMENTS	PLANT MACHINERY EQUIPMENT & TOOLING	TOTAL
	L	L	L	L
COST				
At 1st January 1998	428,534	227,692	1,263,370	1,919,596
Disposals during year	(45,949)	--	(12,929)	(58,878)
Additions	42,429	--	108,882	151,311
At 31st December 1998	425,014	227,692	1,359,323	2,012,029
DEPRECIATION				
At 1st January 1998	323,582	203,176	937,334	1,464,092
Disposals during year	(45,949)	--	(12,929)	(58,878)
Charge for the year	43,780	6,475	140,660	190,915
At 31st December 1998	321,413	209,651	1,065,065	1,596,129
NET BOOK VALUE				
At 31st December 1998	103,601	18,041	294,258	415,900
At 31st December 1997	104,952	24,516	326,036	455,504

10. STOCK

	1998	1997
	L	L
Components, materials and supplies	528,408	636,259
Work in progress	32,002	3,053
Finished goods	76,146	66,829
	L636,556	L706,141

The Directors do not believe that the current replacement cost of stock is materially different from its historical cost.

11. DEBTORS

	1998	1997
	L	L
Advance Corporation Tax Recoverable	307,437	306,187
Trade debtors	1,093,118	1,038,502
Amounts owed by holding company and fellow subsidiaries	4,145	2,814
Other debtors and prepayments	198,859	189,996
	L1,603,559	L1,537,499

12. CREDITORS--AMOUNTS FALLING DUE WITHIN ONE YEAR

	1998	1997
	L	L
Trade creditors	484,770	526,387
Other creditors	181,806	86,986
Other taxation and social security	29,171	33,681
Corporation tax	193,000	157,730
	888,747	L804,784

13.(A) PROVISIONS FOR LIABILITIES AND CHARGES

	1998	1997
	L	L
Pension fund liability	46,350	--

Following the net asset sale dated 26th February 1999 a pension fund liability may crystalise when the Company's pension fund transfers scheme assets to Biochrom Limited's new pension scheme in 1999.

	1998	1997
	L	L
Building lease dilapidation provision	--	75,000

The dilapidation provision was released to the Profit and Loss account in the light of the surrender without penalty of the building lease on the sale of net assets of the Company described in note 23.

13.(B) DEFERRED TAXATION

The provision for deferred taxation, and the full potential asset, are made up as follows:-

	1998		1997	
	FULL POTENTIAL (ASSET)/LIABILITY	PROVISION MADE	FULL POTENTIAL (ASSET)/LIABILITY	PROVISION MADE
	L	L	L	L
Accelerated capital allowances	(45,713)	--	(43,881)	--
Short term timing differences	(738)	--	(22,499)	--
	L(46,451)	L--	L(66,380)	L--

14. CALLED UP SHARE CAPITAL

	1998	1997
AUTHORISED		
Ordinary shares of L1 each	L2,000,000	L2,000,000
ALLOTTED, CALLED UP AND FULLY PAID		
Ordinary shares of L1 each	L2,000,000	L2,000,000

15. STATEMENT OF RESERVES

	1998	1997
	L	L
At 1st January 1998	846,126	2,349,827
Retained Profit/(Loss) for the year	420,022	(1,503,701)
At 31st December 1998	1,266,148	846,126

16. RECONCILIATION OF MOVEMENTS IN SHAREHOLDERS' FUNDS

	1998	1997
	L	L
Profit for the year	420,022	846,126
Appropriation, net dividend on ordinary shares	--	(2,349,827)
Net addition/(reduction) to shareholders' funds	420,022	(1,503,701)
Opening shareholders' funds	2,846,126	4,349,827
Closing shareholders' funds	3,266,148	2,846,126

17. CAPITAL COMMITMENTS

	1998	1997
	L	L
Future capital expenditure contracted, but not provided for:.....	--	--

18. CONTINGENT LIABILITIES AND FINANCIAL COMMITMENTS

	1998	1997
	L	L
Amount of performance bonds.....	944	944
Guarantee given to H.M. Customs & Excise in respect of import duty & VAT.....	120,000	120,000
	L120,944	L120,944

a) The Directors do not expect liabilities to arise from the performance bonds issued.

b) The company has entered into a composite accounting agreement with Barclays Bank PLC., along with other members of the Pharmacia & Upjohn Limited group. As a member of the Pharmacia & Upjohn Limited group cash pool, the company has a contingent liability of L10 million (1997 L10 million) in respect of overdrafts of the other members in the group cash pool.

c) At 31st December 1998, the Company had financial commitments in respect of operating leases for vehicles, equipment and premises, terminating in 1999 and thereafter. The total amount payable in the next year under these leases is as follows:-

	1998		1997	
	LAND AND BUILDINGS	OTHER	LAND AND BUILDINGS	OTHER
	L	L	L	L
Leases expiring between				
Less than one year.....	170,250	3,870	--	2,894
One to two years.....	--	2,497	227,000	4,992
Two and five years inclusive.....	--	42,048	--	34,356
	L170,250	L48,415	L227,000	L42,242

19. CASH FLOW STATEMENT

(a) Reconciliation of operating profit to net cash inflow from operating activities:

	1998	1997
	L	L
Operating profit	531,862	1,176,057
Depreciation charges	190,915	212,740
(Gain) on sale of tangible fixed assets	--	(215)
Decrease/(Increase) in stocks	69,585	59,566
(Increase) in debtors	(63,479)	(63,377)
Increase/(Decrease) in creditors	13,360	(28,930)
Net cash inflow from operating activities	L742,243	L1,355,841

(b) Analysis of changes in net funds and movement during the year

	1998	1997
	L	L
Balance at 1st January 1998	1,026,766	3,189,230
Net cash inflow/(outflow)	518,464	(2,162,464)
Balance at 31st December 1998	L1,545,230	L1,026,766

(c) Analysis of the balances of cash shown in the balance sheet

	1998	1997	CHANGE IN YEAR
	L	L	L
Cash at bank and in hand	1,545,230	1,026,766	518,464

20. PENSION OBLIGATIONS

The Company participates in a pension fund operated by Pharmacia Biotech UK, a branch office of Pharmacia Biotech Europe GmbH (previously Pharmacia Limited) providing benefits based on final pensionable pay. The assets of the fund are held separately from those of the Company being invested with investment managers in a managed fund.

20. PENSION OBLIGATIONS (CONTINUED)

The total pension cost for the company is set out in note 7. The pension cost is assessed in accordance with the advice of an independent qualified actuary using the projected unit method. The most recent actuarial valuation adopted by the Trustees of the Pharmacia Limited Staff Superannuation Fund was as at 1 January 1997. The assumptions which had the most significant effect on the results of the valuation were those relating to:

a) the future rate of investment return on the fund;

b) the future rate at which members' salaries would increase;

c) the rate of withdrawal from service.

It was assumed that the long term rate of investment return would be at an average of 9% per annum and the rate of future salary increases would be at 7.5% per annum. The rate of withdrawal from service was selected at a rate slightly less than the rate experienced over the inter-valuation period.

The most recent actuarial valuation adopted by the Trustees showed that the market value of the fund's assets was L5,564,000 and that the actuarial value of those assets represented 112% of the benefits that had accrued to members, after allowing for expected future increases in basic salary.

The existing pension fund was formed in 1986 by the amalgamation of the Pharmacia Biotech Limited and Pharmacia LKB Biochrom Limited schemes. Following the net asset sale on 26 February 1999 (note 23), all Pharmacia Biotech active members (staff formerly employed by Pharmacia Biotech Limited) will transfer into the Nycomed Amersham Scheme. The remaining "Biochrom" active members will have the choice to transfer into the new Biochrom Limited pension scheme. All current and deferred members will remain in the Pharmacia Biotech UK Pension Fund which will be administered by Pharmacia & Upjohn at Milton Keynes.

21. RELATED PARTY TRANSACTIONS

As a wholly owned subsidiary, whose results are included in the consolidated financial statements of Pharmacia & Upjohn, Inc. (see note 22), the company is exempt from the requirement to disclose details of transactions with other group companies.

The Director regards Amersham Pharmacia Biotech AB ("APB") as a related party by virtue of the fact that the company's ultimate parent undertaking Pharmacia & Upjohn Inc. holds a 45% interest in APB and that there are certain common directorships. Sales to APB group companies amounted to L6,608,485 and the company was owed L1,010,761 as at 31 December 1998 in relation to trading balances.

22. ULTIMATE AND IMMEDIATE PARENT UNDERTAKING

The directors regard Pharmacia & Upjohn, Inc, a company incorporated in the USA, as the ultimate parent and controlling undertaking. Copies of the ultimate parent's consolidated financial statements may be obtained from:

Pharmacia & Upjohn, Inc
7000 Portage Road, Kalamazoo
Michigan 49001, USA

According to the register kept by the company, Pharmacia & Upjohn Limited, a company registered in England and Wales, has a 100% interest in the equity capital of the company at 31 December 1998.

23. POST BALANCE SHEET EVENTS

On the 26th February 1999, the Company sold the majority of its net assets to Biochrom Limited for a consideration of US Dollars 6,362,574. Following this, the Company will cease to trade.

24. SUMMARY OF DIFFERENCES BETWEEN UK AND US GENERALLY ACCEPTED ACCOUNTING PRINCIPLES ("GAAP")

The company has prepared financial statements in accordance with UK GAAP. There are no reconciling differences between US and UK GAAP related to the equity shareholders' funds as of 31 December 1997 and 1998 and the net income for the years ended 31 December 1997 and 1998. The financial statements reflect all costs of doing business including costs incurred by other group companies on behalf of the Company. As of 31 December 1997 and 1998 the following other differences exist:

DEFERRED TAXATION

Under UK GAAP, provision for deferred tax is only required to the extent that it is probable that a taxation liability or asset will crystallise, in the foreseeable future, as a result of timing differences between taxable profits and accounting profit, with provision made at the known tax rate.

Under US GAAP, full provision for deferred tax is required to the extent that accounting profit differs from taxable profit due to temporary differences. Provision is made at the tax rate in effect at the time the difference is likely to reverse. A valuation adjustment is made against deferred tax assets when it is more likely than not that a deferred tax asset will not be realised. As such, provision for the taxable losses carried forward of L46,451 would be provided with a valuation allowance for the full amount, resulting in no net impact on the profit and loss account or shareholders' equity, as of 31 December 1998. Provision for the taxable losses carried forward of L66,380 would be provided with a valuation allowance for the full amount, resulting in no net impact on the profit and loss account or shareholders' equity, as of 31 December 1997.

24. SUMMARY OF DIFFERENCES BETWEEN UK AND US GENERALLY ACCEPTED ACCOUNTING PRINCIPLES ("GAAP") (CONTINUED)

CASH FLOW STATEMENTS

The cash flow statement is prepared in accordance with United Kingdom Financial Reporting Standard 1 "FRS 1 (Revised 1996)", whose objective and principles are similar to those set out in SFAS No.95, "Statement of Cash Flows". The principal differences between the standards relate to classification. Under FRS 1 (Revised 1996), the company presents its cash flows for (a) operating activities, (b) returns on investments and servicing of finance, (c) taxation, (d) capital expenditure and financial investment, (e) equity dividends paid, (f) management of liquid resources and (g) financing. SFAS No.95 requires only three categories of cash flow activity being (a) operating, (b) investing and (c) financing.

Cash flows from taxation and returns on investments and servicing of finance under FRS 1 (Revised 1996) would be included as operating activities under SFAS No.95, capital expenditure and financial investment would be included as investing activities, and equity dividends paid would be included as a financing activity under SFAS No.95. Under FRS 1 (Revised 1996) cash comprises cash in hand and deposits repayable on demand, less overdrafts repayable on demand, and liquid resources comprise current asset investments held as readily disposable stores of value. Under SFAS No.95 cash equivalents, comprising short-term highly liquid investments, generally with original maturities of three months or less, are grouped together with cash. Cash equivalents exclude overdrafts. There are no differences between cash as stated under UK GAAP and cash and cash equivalents as stated under US GAAP at 31 December 1997 and 1998.

Set out below, for illustrative purposes, is a summary of cash flows under US GAAP.

	YEAR ENDED 31 DECEMBER	
	1998	1997
	L'000	L'000
Net cash provided by operating activities	663,092	310,979
Net cash used in investing activities	(144,628)	(123,616)
Net cash used in financing activities	--	(2,349,827)
Net increase/(decrease) in cash and cash equivalents	518,464	(2,612,464)
Cash and cash equivalents at beginning of period	1,026,766	3,639,230
Cash and cash equivalents at end of period	1,545,230	1,026,766
Supplement cash flow information:		
Cash paid for interest	--	--
Cash paid for income taxes	(160,915)	(1,163,780)

PROSPECTUS ,2000

[THOMAS WEISEL PARTNERS LLC LOGO]

[HARVARD BIOSCIENCE LOGO]

6,422,450 SHARES
COMMON STOCK

THOMAS WEISEL PARTNERS LLC
DAIN RAUSCHER WESSELS
ING BARINGS

- ---

Neither we nor any of the underwriters have authorized anyone to provide information different from that contained in this prospectus. When you make a decision about whether to invest in our common stock, you should not rely upon any information other than the information in this prospectus. Neither the delivery of this prospectus nor the sale of our common stock means that information contained in this prospectus is correct after the date of this prospectus. This prospectus is not an offer to sell or solicitation of an offer to buy these shares of common stock in any circumstances under which the offer or solicitation is unlawful.

Until , 2000 (25 days after commencement of this offering), all dealers that buy, sell or trade these shares of common stock, whether or not participating in this offering, may be required to deliver a prospectus. This is an addition to the dealers' obligation to deliver a prospectus when acting as underwriters and with respect to their unsold allotments or subscriptions.

PART II
INFORMATION NOT REQUIRED IN PROSPECTUS

ITEM 13. OTHER EXPENSES OF ISSUANCE AND DISTRIBUTION

The following table sets forth the estimated expenses payable by us in connection with the offering (excluding underwriting discounts and commissions):

NATURE OF EXPENSE	AMOUNT
SEC Registration Fee	$ 25,260
NASD Filing Fee	8,000
Nasdaq National Market Listing Fee	95,000
Accounting Fees and Expenses	550,000
Legal Fees and Expenses	600,000
Printing Expenses	200,000
Blue Sky Qualification Fees and Expenses	5,000
Transfer Agent's Fee	5,000
Miscellaneous	11,740
TOTAL	$1,500,000

The amounts set forth above, except for the Securities and Exchange Commission, National Association of Securities Dealers, Inc. and Nasdaq National Market fees, are in each case estimated.

ITEM 14. INDEMNIFICATION OF DIRECTORS AND OFFICERS

In accordance with Section 145 of the Delaware General Corporation Law, Article VII of our certificate of incorporation provides that none of our directors will be personally liable to us or our stockholders for monetary damages for breach of fiduciary duty as a director, except for liability (1) for any breach of the director's duty of loyalty to us or our stockholders, (2) for acts or omissions not in good faith or which involve intentional misconduct or a knowing violation of law, (3) in respect of unlawful dividend payments or stock redemptions or repurchases, or (4) for any transaction from which the director derived an improper personal benefit. In addition, our certificate of incorporation provides that if the Delaware General Corporation Law is amended to authorize the further elimination or limitation of the liability of directors, then the liability of a director of the corporation shall be eliminated or limited to the fullest extent permitted by the Delaware General Corporation Law, as so amended.

Article V of our by-laws provides for our indemnification of our officers and certain non-officer employees under certain circumstances against expenses, including attorneys' fees, judgments, fines and amounts paid in settlement, reasonably incurred in connection with the defense or settlement of any threatened, pending or completed legal proceeding in which any such person is involved by reason of the fact that such person is or was an officer or employee of the registrant if such person acted in good faith and in a manner he or she reasonably believed to be in or not opposed to our best interests, and, with respect to criminal actions or proceedings, if such person had no reasonable cause to believe his or her conduct was unlawful.

Prior to the offering, we will have entered into indemnification agreements with each of our directors. The form of indemnification agreement provides that we will indemnify our directors for expenses incurred because of their status as a director to the fullest extent permitted by Delaware law, our certificate of incorporation and our by-laws.

ITEM 15. RECENT SALES OF UNREGISTERED SECURITIES

Set forth in chronological order below is information regarding the number of shares of capital stock issued by us since October 15, 1997. Also included is the consideration, if any, received by us for such shares. There was no public offering in any such transaction and we believe that each transaction was exempt from the registration requirements of the Securities Act of 1933 by reason of Section 4(2) thereof, based on the private nature of the transactions and the financial sophistication of the purchasers, all of whom had access to complete information concerning us and acquired the securities for investment and not with a view to the distribution thereof. In addition, we believe that the transactions described below with respect to issuances and option grants to our employees and directors were exempt from the registration requirements of said Act by reason of Section 4(2) of said Act or Rule 701 promulgated thereunder.

(a) ISSUANCE OF CAPITAL STOCK

(i) In 1999, we issued an aggregate of 48,500 shares of our series B convertible preferred stock to Ascent Venture Partners, L.P. (formerly known as Pioneer Capital Corp.) and Citizens Capital, Inc. for an aggregate purchase price of $1,000,000.

(ii) In March 2000, we issued 1,091,716 shares of our common stock upon the exercise of previously granted stock options at an aggregate exercise price of $1,792.14.

(iii) In September 2000, we issued 2,376,236 shares of our common stock upon the exercise of previously granted stock options at an aggregate exercise price of $1,549,155.40.

(b) GRANTS OF STOCK OPTIONS

(i) As of October 15, 2000, options to purchase 599,096 shares of common stock were outstanding under our 1996 Stock Option and Grant Plan. None of these options is exercisable within 60 days of such date. All such options were granted between March 1996 and October 2000 to our officers, directors, employees and consultants.

ITEM 16. EXHIBITS AND FINANCIAL STATEMENT SCHEDULES

(A) EXHIBITS. The following is a complete list of exhibits filed or incorporated by reference as part of this Registration Statement.

*1.1	Form of Underwriting Agreement.
**2.1	Asset Purchase Agreement dated March 2, 1999 by and among Biochrom Limited and Pharmacia Biotech Limited and Pharmacia & Upjohn, Inc. and Harvard Apparatus, Inc. (Excluding schedules and exhibits which Registrant agrees to furnish supplementally to the Commission upon request.)
**2.2	Asset Purchase Agreement dated July 14, 2000 by and between Harvard Apparatus, Inc., AmiKa Corporation and Ashok Shukla. (Excluding schedules and exhibits which Registrant agrees to furnish supplementally to the Commission upon request.)
3.1	Form of Amended and Restated Certificate of Incorporation of the Registrant.
3.2	Form of Second Amended and Restated Certificate of Incorporation of the Registrant.
3.3	Form of Amended and Restated By-laws of the Registrant.
4.1	Specimen certificate for shares of Common Stock, $0.01 par value, of the Registrant.

**4.2	Amended and Restated Securityholders' Agreement dated as of March 2, 1999 by and among Harvard Apparatus, Inc., Pioneer Ventures Limited Partnership, Pioneer Ventures Limited Partnership II, Pioneer Capital Corp., First New England Capital, L.P. and Citizens Capital, Inc. and Chane Graziano and David Green.
5.1	Opinion of Goodwin, Procter & Hoar LLP as to the legality of the securities offered.
**10.1	Harvard Apparatus, Inc. 1996 Stock Option and Grant Plan.
10.2	Harvard Bioscience, Inc. 2000 Stock Option and Incentive Plan.
10.3	Harvard Bioscience, Inc. Employee Stock Purchase Plan.
+10.4	Distribution Agreement dated March 2, 1999 by and between Biochrom Limited and Amersham Pharmacia Biotech AB.
10.5	Form of Employment Agreement between Harvard Bioscience and Chane Graziano.
10.6	Form of Employment Agreement between Harvard Bioscience and David Green.
10.7	Form of Employment Agreement between Harvard Bioscience and James L. Warren.
**10.8	Form of Director Indemnification Agreement.
10.9	Lease Agreement dated December 16, 1996 between Seven October Hill LLC and Harvard Apparatus, Inc.
10.10	First Amendment to Lease dated November 13, 1998 to Lease Agreement dated December 16, 1996 between Seven October Hill LLC and Harvard Apparatus, Inc.
10.11	Lease of Unit 22 Phase I Cambridge Science Park, Milton Road, Cambridge dated March 3, 1999 between The Master Fellows and Scholars of Trinity College Cambridge, Biochrom Limited and Harvard Apparatus, Inc.
10.12	Lease Agreement for Commercial Premises dated November 26, 1999 made between Mr. Heinz Dehnert, Grunstrabe 1, 79232 March-Hugstetten, Lessor and the Company of Harvard Apparatus GmbH, Lessee.
**21.1	Subsidiaries of the Registrant.
23.1	Consent of Goodwin, Procter & Hoar LLP (included in Exhibit 5.1 hereto).
23.2	Consent of KPMG LLP.
23.3	Consent of PricewaterhouseCoopers.
**24.1	Powers of Attorney for Messrs. Graziano, Warren, Green, Dick and Klaffky.
24.2	Powers of Attorney for Messrs. Dishman, Kennedy and Lewis (included on page II-6).
**27.1	Financial Data Schedule.
**99.1	Consent of Robert Dishman to be named as a person to be appointed a director of Registrant in this Registration Statement.
**99.2	Consent of Earl R. Lewis to be named as a person to be appointed a director of Registrant in this Registration Statement.
99.3	Consent of John F. Kennedy to be named as a person to be appointed a director of Registrant in this Registration Statement.

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* To be filed by amendment to this registration statement.

** Previously filed.

+ Confidential treatment requested as to this exhibit.

(B) FINANCIAL STATEMENT SCHEDULES

All schedules have been omitted because they are not required or because the required information is given in the consolidated financial statements or notes to those statements.

ITEM 17. UNDERTAKINGS

The undersigned registrant hereby undertakes to provide to the underwriters at the closing specified in the Underwriting Agreement certificates in such denominations and registered in such names as required by the underwriters to permit prompt delivery to each purchaser.

Insofar as indemnification for liabilities arising under the Securities Act of 1933 may be permitted to directors, officers and controlling persons of the registrant pursuant to the foregoing provisions, or otherwise, the registrant has been advised that in the opinion of the Securities and Exchange Commission such indemnification is against public policy as expressed in the Act and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the registrant of expenses incurred or paid by a director, officer or controlling person of the registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Act and will be governed by the final adjudication of such issue.

The undersigned registrant hereby undertakes that:

(1) For purposes of determining any liability under the Securities Act of 1933, the information omitted from the form of prospectus filed as part of this registration statement in reliance upon Rule 430A and contained in a form of prospectus filed by the registrant pursuant to Rule 424(b)(1) or (4) or 497(h) under the Securities Act shall be deemed to be part of this registration statement as of the time it was declared effective.

(2) For the purpose of determining any liability under the Securities Act of 1933, each post-effective amendment that contains a form of prospectus shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial BONA FIDE offering thereof.

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, the Registrant has duly caused this Registration Statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Boston, on November 8, 2000.

HARVARD BIOSCIENCE, INC.

By: /s/ JAMES WARREN
James Warren
CHIEF FINANCIAL OFFICER

Pursuant to the requirements of the Securities Act of 1933, this Registration Statement has been signed below by the following persons in the capacities and on the dates indicated.

SIGNATURE	TITLE	DATE
*	Chief Executive Officer and Director (Principal Executive Officer)	November 8, 2000
Chane Graziano		
/s/ JAMES WARREN	Chief Financial Officer (Principal Financial Officer and Principal Accounting Officer)	November 8, 2000
James Warren		
*	President and Director	November 8, 2000
David Green		
*	Director	November 8, 2000
Christopher W. Dick		
*	Director	November 8, 2000
Richard C. Klaffky, Jr.		

*By: /s/ JAMES WARREN
James Warren
Attorney-in-fact

POWER OF ATTORNEY

KNOW ALL MEN BY THESE PRESENTS that each individual whose signature appears below constitutes and appoints each of Chane Graziano and James Warren such person's true and lawful attorney-in-fact and agent with full power of substitution and resubstitution, for such person and in such person's name, place and stead, in any and all capacities, to sign any and all amendments (including post-effective amendments) to this Registration Statement (or to any other registration statement for the same offering that is to be effective upon filing pursuant to Rule 462(b) under the Securities Act), and to file the same, with all exhibits thereto, and all documents in connection therewith, with the Securities and Exchange Commission, granting unto each said attorney-in-fact and agent full power and authority to do and perform each and every act and thing requisite and necessary to be done in and about the premises, as fully to all intents and purposes as such person might or could do in person, hereby ratifying and confirming all that any said attorney-in-fact and agent, or any substitute or substitutes of any of them, may lawfully do to cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Act of 1933, this Registration Statement has been signed below by the following persons in the capacities and on the dates indicated.

SIGNATURE	TITLE	DATE
/s/ ROBERT DISHMAN Robert Dishman	Director	November 8, 2000
/s/ JOHN F. KENNEDY John F. Kennedy	Director	November 8, 2000
/s/ EARL R. LEWIS Earl R. Lewis	Director	November 8, 2000

EXHIBIT INDEX

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- ------------------------

* To be filed by amendment to this registration statement.

** Previously filed.

+ Confidential treatment requested as to this exhibit.

Exhibit 3.1

FORM OF
AMENDED AND RESTATED

CERTIFICATE OF INCORPORATION

OF

HARVARD BIOSCIENCE, INC.

Harvard Bioscience, Inc., a corporation organized and existing under the laws of the State of Delaware (the "Corporation"), hereby certifies as follows:

1. The name of the Corporation is Harvard Bioscience, Inc. The date of the filing of its original Certificate of Incorporation with the Secretary of State of the State of Delaware was September 8, 2000 (the "Original Certificate"). The name under which the Corporation filed the Original Certificate was Harvard Bioscience, Inc.

2. This Amended and Restated Certificate of Incorporation (the "Certificate") amends, restates and integrates the provisions of the Original Certificate, and was duly adopted in accordance with the provisions of Sections 242 and 245 of the Delaware General Corporation Law (the "DGCL").

3. The text of the Original Certificate is hereby amended and restated in its entirety to provide as herein set forth in full.

ARTICLE I

The name of the Corporation is Harvard Bioscience, Inc.

ARTICLE II

The address of the Corporation's registered office in the State of Delaware is c/o The Corporation Trust Company, 1209 Orange Street in the City of Wilmington, County of New Castle. The name of its registered agent at such address is The Corporation Trust Company.

ARTICLE III

The purpose of the Corporation is to engage in any lawful act or activity for which corporations may be organized under the DGCL.

ARTICLE IV

CAPITAL STOCK

The total number of shares of capital stock which the Corporation shall have authority to issue is eighty-five million five hundred seventeen thousand eight hundred (85,517,800)

shares, of which (i) eighty million (80,000,000) shares shall be a class designated as common stock, par value $.01 per share (the "Common Stock"), (ii) four hundred sixty-nine thousand three hundred (469,300) shares shall be a class designated as Series A Redeemable Preferred Stock, par value $.01 per share (the "Series A Preferred Stock"), (iii) forty-eight thousand five hundred (48,500) shares shall be a class designated as Series B Convertible Preferred Stock, par value $.01 per share (the "Series B Preferred Stock") and (iv) five million (5,000,000) shares shall be a class designated as undesignated preferred stock, par value $.01 per share (the "Undesignated Preferred Stock" and, together with the Series A Preferred Stock and the Series B Preferred Stock, the "Preferred Stock").

The number of authorized shares of the class of Undesignated Preferred Stock may from time to time be increased or decreased (but not below the number of shares outstanding) by the affirmative vote of the holders of a majority of the outstanding shares of Common Stock entitled to vote, without a vote of the holders of the Preferred Stock (subject to the terms of the Series A Preferred Stock and the Series B Preferred Stock and except as otherwise provided in any certificate of designations of any series of Undesignated Preferred Stock).

The powers, preferences and rights of, and the qualifications, limitations and restrictions upon, each class or series of stock shall be determined in accordance with, or as set forth below in, this Article IV.

A. COMMON STOCK

Subject to all the rights, powers and preferences of the Preferred Stock and except as provided by law or in this Article IV (or in any certificate of designations of any series of Undesignated Preferred Stock):

(a) the holders of the Common Stock shall have the exclusive right to vote for the election of directors of the Corporation (the "Directors") and on all other matters requiring stockholder action, each outstanding share entitling the holder thereof to one vote on each matter properly submitted to the stockholders of the Corporation for their vote; PROVIDED, HOWEVER, that, except as otherwise required by law, holders of Common Stock, as such, shall not be entitled to vote on any amendment to this Certificate (or on any amendment to a certificate of designations of any series of Undesignated Preferred Stock) that alters or changes the powers, preferences, rights or other terms of one or more outstanding series of Undesignated Preferred Stock if the holders of such affected series are entitled to vote, either separately or together with the holders of one or more other such series, on such amendment pursuant to this Certificate (or pursuant to a certificate of designations of any series of Undesignated Preferred Stock) or pursuant to the DGCL;

(b) dividends may be declared and paid or set apart for payment upon the Common Stock out of any assets or funds of the Corporation legally available for the payment of

dividends, but only when and as declared by the Board of Directors of the Corporation (the "Board of Directors") or any authorized committee thereof; and

(c) upon the voluntary or involuntary liquidation, dissolution or winding up of the Corporation, the net assets of the Corporation shall be distributed pro rata to the holders of the Common Stock.

B. SERIES A REDEEMABLE PREFERRED STOCK AND SERIES B CONVERTIBLE PREFERRED STOCK.

1. DESIGNATION; NUMBER OF SHARES. A total of 469,300 shares of the Corporation's Preferred Stock shall be designated as Series A Redeemable Preferred Stock, $0.01 par value per share (the "Series A Preferred Stock"). A total of 48,500 shares of the Corporation's Preferred Stock shall be designated as Series B Convertible Preferred Stock, $0.01 par value per share (the "Series B Preferred Stock") (the Series A Preferred Stock and the Series B Preferred Stock are hereinafter sometimes referred to collectively in this Section B as the "Preferred Stock"). The relative rights, preferences, restrictions and other matters relating to the Preferred Stock are as follows:

2. DIVIDENDS.

(a) CUMULATIVE; RATE. The holders of the outstanding shares of Preferred Stock shall be entitled to receive cash dividends, when, as and if declared by the Board of Directors, out of assets which are legally available for the payment of such dividends and contingent upon and limited to the extent of earnings. Dividends shall be cumulative and will accrue: (i) on each share of Series A Preferred Stock from the date of issue thereof and (ii) on each share of Series B Preferred Stock from the later of (x) the date of issue thereof and (y) March 3, 2000, in each case, whether or not earned or declared by the Board of Directors. Except as otherwise set forth herein, the annual dividend rate per share: (1) of Series A Preferred Stock shall be $.25569998 (which amount shall be subject to equitable adjustment whenever there shall occur a stock dividend, stock split, combination, reorganization, recapitalization, reclassification or other similar event involving a change in the capital structure of the Corporation (hereinafter an "Equitable Adjustment")) and (2) of Series B Preferred Stock shall be $1.443 (subject to Equitable Adjustment). Dividends on the Preferred Stock shall be payable on each January 1, April 1, July 1 and October 1 in each year; PROVIDED, HOWEVER, that no dividend shall be payable until: (i) in the case of the Series A Preferred Stock, March 15, 1997 and (ii) in the case of the Series B Preferred Stock, March 3, 2001. In addition, the Series B Preferred Stock shall rank senior to the Series A Preferred Stock with respect to dividends, and as a result, no dividend shall be paid in respect of shares of the Series A Preferred Stock unless all accrued dividends that have become payable in respect of the Series B Preferred Stock shall have been paid. In the event a dividend is not paid when due (the "Dividend Payment Date") the annual dividend rate per share: (a) of the Series A Preferred Stock shall be $.319624976 (which amount shall be subject to Equitable

Adjustment) and (b) of the Series B Preferred Stock shall be $1.80375 (which amount shall be subject to Equitable Adjustment), in each case accruing from the first day of the dividend period immediately succeeding the dividend period in which such unpaid dividend accrued and continuing until all accrued dividends on such series of Preferred Stock have been paid in full, whereupon the dividend rate shall return to the rate specified in clause (1) or (2) above, as applicable. Dividends payable on the Preferred Stock for any period less than a full quarter shall be computed on the basis of the actual number of days elapsed and a 360-day year, consisting of four 90-day quarters. Notwithstanding anything to the contrary contained herein, all accrued and unpaid dividends shall be payable upon liquidation, dissolution or winding up of the Corporation within the meaning of Section B.3 hereof or upon redemption as provided in Section B.5 hereof.

(b) RESTRICTIONS.

(i) SERIES A PREFERRED STOCK. Unless all accrued dividends on each share of the Series A Preferred Stock shall have been paid, no dividend shall be paid or declared, and no distribution shall be made on any Series A Junior Stock (as defined below) (other than a stock dividend on Common Stock solely in the form of additional shares of Common Stock). Furthermore, except to the extent in any instance written approval is provided by the holders of at least a majority of the outstanding shares of Series A Preferred Stock (the "Majority A Holders"), the Corporation shall not declare or pay any dividends, or purchase, redeem, retire, or otherwise acquire for value any of its capital stock ranking junior to the Series A Preferred Stock (or rights, options or warrants to purchase such shares), now or hereafter outstanding (collectively, "Series A Junior Stock"), return any capital to any stockholders holding any Series A Junior Stock as such, or make any distribution of assets on such Series A Junior Stock, or permit any subsidiary to do any of the foregoing, except that wholly-owned subsidiaries may declare and make payment of cash and stock dividends, return capital and make distributions of assets to the Corporation.

(ii) SERIES B PREFERRED STOCK. Unless all accrued dividends on each share of the Series B Preferred Stock shall have been paid, no dividend shall be paid or declared, and no distribution shall be made on any Series B Junior Stock (as defined below) (other than a stock dividend on Common Stock solely in the form of additional shares of Common Stock). Furthermore, except to the extent in any instance written approval is provided by the holders of at least a majority of the outstanding shares of Series B Preferred Stock (the "Majority B Holders"), the Corporation shall not declare or pay any dividends, or purchase, redeem, retire, or otherwise acquire for value any of its capital stock ranking junior to the Series B Preferred Stock, including for all purposes unless otherwise specifically set forth herein, the Series A Preferred Stock (or rights, options or warrants to purchase such shares) now or hereafter outstanding (collectively, "Series B Junior Stock"), return any capital to any stockholders holding any Series B Junior Stock as such, or make any distribution of assets on such Series B Junior Stock, or permit any subsidiary to do any of the foregoing, except that wholly-owned subsidiaries may declare and make payment of cash and stock dividends, return capital and make distributions of assets to the Corporation.

(iii) GENERAL. Nothing in this Section B.2(b) shall prevent the Corporation from:

(1) effecting a stock split or declaring or paying any dividend consisting of shares of any class of capital stock to the holders of shares of such class of capital stock; or

(2) complying with any specific term or provision of the Preferred Stock, or any other class or series of the Corporation's capital stock ranking senior to or on parity with the Preferred Stock; or

(3) repurchasing any security issued to any officer, employee, director or consultant of the Corporation pursuant to the Corporation's 1996 Stock Option and Grant Plan, or any other stock option plan approved by the Majority A Holders and the Majority B Holders, pursuant to any rights of first refusal or repurchase rights of the Corporation under such plan(s); or

(4) repurchasing any security required to be repurchased pursuant to and in accordance with the provisions of the Amended and Restated Securityholders' Agreement among the Corporation and certain stockholders of the Corporation named therein dated as of March 2, 1999 (as amended, modified and supplemented from time to time, the "Securityholders' Agreement"); or

(5) complying with any specific term or provision of the warrants (the "Warrants") purchased pursuant to the Investment and Stockholders' Agreement dated March 15, 1996 among the Corporation and certain stockholders of the Corporation (the "Investment Agreement") OTHER THAN the repurchase of the Warrants or any other payment in respect thereof; or

(6) paying dividends on, purchasing, redeeming, retiring or otherwise acquiring for value any shares of the Series B Preferred Stock, which Series B Preferred Stock, except as specifically set forth herein, shall rank senior to the Series A Preferred Stock with respect to dividends, liquidation and/or redemption.

3. LIQUIDATION, DISSOLUTION OR WINDING UP.

(a) TREATMENT AT LIQUIDATION, DISSOLUTION OR WINDING UP. Subject to the rights and preferences of any class or series of Preferred Stock senior to, or on parity with, the Series A Preferred Stock and/or the Series B Preferred Stock with respect to liquidation preferences, in the event of any liquidation, dissolution or winding up of the Corporation, whether voluntary or involuntary, or in the event of its insolvency, before any distribution or

payment is made to any holders of: (i) Series B Junior Stock, the holders of each share of Series B Preferred Stock shall be entitled to be paid out of the assets of the Corporation available for distribution to the holders of the Corporation's capital stock, whether such assets are capital, surplus or earnings, an amount equal to $20.6185567 per share of Series B Preferred Stock (which amount shall be subject to Equitable Adjustment) plus all accrued and unpaid dividends thereon, whether or not earned or declared, up to and including the date full payment shall be tendered to the holders of the Series B Preferred Stock with respect to such liquidation, dissolution or winding up and (ii) Series A Junior Stock, the holders of each share of Series A Preferred Stock shall be entitled to be paid out of the assets of the Corporation available for distribution to holders of the Corporation's capital stock, whether such assets are capital, surplus or earnings, an amount equal to $3.19624976 per share of Series A Preferred Stock (which amount shall be subject to Equitable Adjustment) plus all accrued and unpaid dividends thereon, whether or not earned or declared, up to and including the date full payment shall be tendered to the holders of the Series A Preferred Stock with respect to such liquidation, dissolution or winding up.

After payment shall have been made in full to the holders of the Preferred Stock as set forth above, or funds necessary for such payment shall have been irrevocably set aside by the Corporation in trust for the account of holders of the Preferred Stock so as to be available for such payment, the remaining assets available for distribution shall be distributed ratably among the holders of the Common Stock and any other class of Series A Junior Stock. If, in connection with any such liquidation, dissolution or winding up, the funds of the Corporation legally available to be paid to the holders of Preferred Stock are insufficient to pay in full the liquidation preference owing to the holders of a series of Preferred Stock, the holders of shares of any such series shall share ratably in funds available to be paid in respect of such series of Preferred Stock (in the priority set forth above in the preceding paragraph) according to the respective amounts which would be payable with respect to the number of shares owned by them if all the shares of such series were paid the full amount of the liquidation preference of such series.

(b) In the event that the Corporation undertakes any transaction, the result of which is: (i) a consolidation or merger of the Corporation with or into another corporation or entity (other than a wholly-owned subsidiary) in which an unaffiliated third-party owns a majority of the outstanding capital stock of the surviving corporation or entity, (ii) the sale, transfer or other disposition of all or substantially all of the assets or all or a majority of the outstanding capital stock of the Corporation to an unaffiliated third party, or (iii) the consummation of a public offering of the Common Stock pursuant to an effective registration statement filed pursuant to the Securities Act in a transaction that does not meet the criteria of a "Qualified Public Offering" as set forth in Section B.9(c) hereof (each of (i), (ii) and (iii), a "Liquidation Event"), then pursuant to Section B.5(a)(iv) hereof, any holder of Series B Preferred Stock may elect to treat such Liquidation Event as a liquidation, dissolution or winding up within the meaning of Section B.3(a) above, and as a result of any such election, such holder of Series B Preferred Stock shall be entitled to the amount set forth in Section B.3(a) above in respect of each of its shares of Series B Preferred Stock.

(c) DISTRIBUTIONS OTHER THAN CASH. Whenever the distribution provided for in this Section B.3 shall be payable in property other than cash, the value of such distribution shall be the fair market value of such property, as determined in good faith by two-thirds of the members of the Board of Directors of the Corporation. Any dispute that arises in connection with the Board of Directors' determination of fair market value shall be resolved as set forth in Section B.10.

4. VOTING RIGHTS.

(a) Except as otherwise expressly provided herein or as required by law, each holder of: (i) Series A Preferred Stock shall be entitled to one vote for each share of Series A Preferred Stock held of record by such holder, as if such share were a share of Common Stock and (ii) Series B Preferred Stock shall be entitled to the number of votes per share of Series B Preferred Stock as shall equal the number of shares of Common Stock into which such share of Series B Preferred Stock is then convertible. Notwithstanding the foregoing, with respect to the Series A Preferred Stock, if (i) the sum of (x) the total number of shares of Series A Preferred Stock issued to any original holder thereof (the "Original Holder Shares") pursuant to the Investment Agreement PLUS (y) the aggregate number of shares of Common Stock issued by the Corporation upon exercise of any Warrant issued by the Corporation to such original holder pursuant to the Investment Agreement (whether or not subsequently transferred by the original holder), exceeds (ii) the maximum number of shares of Common Stock, in the aggregate, as adjusted, theretofore issued and thereafter issuable to such holder upon exercise of such Warrant (the "Maximum Voting Limit"), then the number of votes to which any holder of such Original Holder Shares (including the original holder and any transferee of such shares) is entitled shall be reduced by the amount of such excess on a share for share basis (and if there is more than one holder of the Original Holder Shares, such reduction shall be effected on a pro-rata basis).

(b) Except as otherwise expressly provided herein or as required by law, the holders of Series A Preferred Stock, Series B Preferred Stock and Common Stock shall vote together as a single class on all matters (with each share of Preferred Stock having such number of votes as are specified above in subparagraph (a)).

(c) Fractional votes shall not be permitted and any fractional voting rights resulting from any of the above shall be rounded to the nearest whole number (with one-half being rounded upward).

5. REDEMPTION.

(a) REDEMPTION EVENTS.

(i) SCHEDULED REDEMPTION OF SERIES A PREFERRED STOCK AND SERIES B PREFERRED STOCK. On March 15 in each of 2002, 2003 and 2004, the Corporation shall redeem the number of then outstanding shares of Series A Preferred Stock set forth below (subject to

Equitable Adjustment) for the Series A Redemption Price (as defined below) and the number of then outstanding shares of Series B Preferred Stock set forth below (subject to Equitable Adjustment) for the Series B Redemption Price (as defined below). For the purposes of any redemption of Preferred Stock pursuant to this Section B.5(a)(i), the Series A Preferred Stock shall be on parity with the Series B Preferred Stock and shall not be included within the term "Series B Junior Stock."

DATE OF REDEMPTION	NUMBER OF SHARES OF SERIES A PREFERRED STOCK OUTSTANDING TO BE REDEEMED	NUMBER OF SHARES OF SERIES B PREFERRED STOCK OUTSTANDING TO BE REDEEMED
March 15, 2002	156,433	16,166
March 15, 2003	156,433	16,167
March 15, 2004	156,434	16,167

(ii) AUTOMATIC REDEMPTION OF SERIES A PREFERRED STOCK UPON IPO. Immediately prior to and conditioned upon the consummation of the effectiveness of a public offering pursuant to an effective registration statement filed pursuant to the Securities Act of 1933, as amended, covering the offer and sale of Common Stock for the account of the Corporation, the Corporation shall redeem each outstanding share of Series A Preferred Stock for the Series A Redemption Price.

(iii) AUTOMATIC REDEMPTION OF SERIES A PREFERRED STOCK UPON MERGER OR REORGANIZATION. Immediately prior to and conditioned upon the consummation of the closing of (A) any acquisition of the Corporation by means of a merger or other form of corporate reorganization in which the outstanding shares of the Corporation are exchanged for securities or other consideration issued or paid, or caused to be issued or paid, by the acquiring company or its subsidiary and following which the stockholders of the Corporation own, in the aggregate, less than fifty percent (50%) of the total issued and outstanding voting capital stock of the surviving entity, or (B) any sale of all or substantially all of the assets of the Corporation and its subsidiaries, or (C) any sale of a material and substantial asset or group of assets of the Corporation or of any subsidiary of the Corporation other than in the ordinary course of business (including, without limitation, any sale of the capital stock of any subsidiary of the Corporation), whether in one transaction or in a series of transactions, in which the aggregate consideration paid to the Corporation by the purchaser or purchasers of such asset or group of assets exceeds $2,000,000, the Corporation shall redeem each outstanding share of Series A Preferred Stock for the Series A Redemption Price.

(iv) OPTIONAL REDEMPTION BY ANY HOLDER OF SERIES B PREFERRED STOCK UPON MERGER, REORGANIZATION OR NON-QUALIFIED IPO. Any Liquidation Event (as defined in Section B.3(b) above) shall, at the election of a holder of Series B Preferred Stock, be deemed to be a liquidation, dissolution or winding up within the meaning of Section B.3(a), and as a result of any such election, such holder of Series B Preferred Stock shall be entitled to the

amount set forth in Section B.3(a) above in respect of each of its shares of Series B Preferred Stock.

(b) EVENTS OF DEFAULT; CONTROL OF THE BOARD OF DIRECTORS. If any Event of Default (as hereinafter defined) shall have occurred and be continuing, the Majority A Holders and/or the Majority B Holders may give the Corporation a written notice (an "Event of Default Notice") requiring: (i) the Corporation to repurchase the outstanding shares of Series A Preferred Stock for the Series A Redemption Price, and/or the outstanding shares of Series B Preferred Stock for the Series B Redemption Price, as applicable, in each case plus interest at the rate of ten percent (10%) per annum on any accrued and unpaid dividends outstanding as of the date of such Event of Default Notice, accruing from the date on which such dividend was payable, and/or (ii) the Board of Directors be reconstituted as provided in the immediately succeeding sentence. If the Corporation fails to repurchase outstanding shares of either class of Preferred Stock as required under Section B.5(a) above or fails to repurchase the shares of either class of Preferred Stock pursuant to this Section B.5(b) within thirty (30) days following its receipt of the Event of Default Notice from the Majority A Holders and/or the Majority B Holders, as the case may be, or in the event the Event of Default Notice so requires, the holders of the Series A Preferred Stock and Series B Preferred Stock, voting together as a single class (in accordance with Section B.4(a) above) shall be entitled to elect the smallest number of directors which shall constitute a majority of the authorized number of directors of the Corporation, and the holders of Common Stock shall be entitled to elect the remaining directors.

Within two (2) business days after the failure of the Corporation to repurchase the outstanding shares of either class of Preferred Stock as aforesaid, or in the event the Event of Default Notice so requires, the Corporation shall call a special meeting of stockholders for the election of directors to be held as promptly as practicable. At such meeting and at any other meeting held while the holders of the Preferred Stock have such class voting rights, the holders of a majority of the voting power of the Preferred Stock (as set forth in the preceding paragraph) present in person or by proxy shall be sufficient to constitute a quorum for the election of directors as herein provided.

In the case of any vacancy in the office of a director elected by a class of stock under this Section B.5(b), the remaining directors elected by such class may elect a successor to fill the vacancy. Any director elected pursuant to this Section B.5(b) may, at a meeting called for the purposes, be removed with or without cause by the vote of the holders of a majority of the shares of the class of stock that elected such director.

Any of the following shall constitute an Event of Default hereunder:

(i) The failure by the Corporation to pay any dividend in accordance with the terms of the Series A Preferred Stock or Series B Preferred Stock when due, which failure is not remedied within sixty (60) days after the Corporation's receipt of written notice

thereof from the Majority A Holders or the Majority B Holders, as applicable ("Default Notice").

(ii) The failure of the Corporation to observe or perform any covenant or agreement contained in any of Sections 8.2, 8.3, 8.4, 8.5 or 8.6 of the Securityholders' Agreement, which failure is not remedied within thirty (30) days after the Corporation's receipt of a Default Notice with respect thereto, provided, however, in the case of Section 8.2 of the Securityholders' Agreement, it shall not be an Event of Default hereunder for so long as the Corporation is using commercially reasonable efforts to satisfy such Section 8.2;

(iii) The failure of the Corporation to observe or perform any covenant or agreement contained in any of Articles IV, VI or VII or Sections 8.1 or 8.7 of the Securityholders' Agreement; PROVIDED, HOWEVER, if any such failure is subject to cure within ten (10) business days of such failure, then it shall not be an Event of Default hereunder, until the expiration of such ten (10) business days so long as the Corporation is diligently seeking to cure such failure during such period;

(iv) The breach by the Corporation of any material covenant or agreement (other than a breach described in clause (i) above, or clause (v) below) contained in these Restated Articles of Organization, including, without limitation, the failure to redeem any shares of either series of Preferred Stock required to be redeemed as provided in this Section B.5;

(v) The breach by the Corporation of any covenant or agreement contained in these Restated Articles of Organization (other than a breach described in clause (i) or (iv) above) which such breach is not remedied within thirty (30) days after the Corporation's receipt of a Default of Notice with respect thereto from the Majority A Holders or the Majority B Holders, as applicable;

(vi) In the event (A) Chane Graziano (1) dies, (2) is disabled for a period of time in excess of six (6) months and is unable to perform his duties for the Corporation in all material respects or (3) ceases to be an employee of the Corporation for any reason (any of clauses (1), (2) or (3), a "Triggering Event") and (B) either (I) a replacement for Mr. Graziano mutually acceptable to the Corporation, the Majority A Holders and the Majority B Holders is not installed within ninety (90) days of the Triggering Event or (II) a replacement for Mr. Graziano acceptable to the Majority A Holders and the Majority B Holders is not installed within one-hundred and twenty (120) days of the Triggering Event;

(vii) The failure by the Corporation to repurchase any securities (including without limitation any warrants) required to be so repurchased in accordance with the terms thereof; PROVIDED THAT it shall not be an Event of Default hereunder if such failure by the Corporation is a result of any provision in these Restated Articles of Organization or the lack of consent by the holders of Series A Preferred Stock and/or Series B Preferred Stock; or

(viii) An Event of Default (as defined in the Securityholders' Agreement) shall have occurred.

Notwithstanding anything contained herein to the contrary, the rights of the holders of the Preferred Stock as aforesaid to elect a majority of the Board of Directors hereunder shall not preclude such holders from seeking and obtaining any other remedy, legal or equitable, with respect to their rights of redemption set forth hereunder.

(c) OPTIONAL REDEMPTION BY THE CORPORATION OF PREFERRED STOCK. All or any of the shares of Preferred Stock shall be redeemable at any time or from time to time after issuance, in whole or in part, at the option of the Corporation by vote or approval of (i) two-thirds of the members of the Board of Directors, (ii) the Majority A Holders and (iii) the Majority B Holders. Any such redemption of Preferred Stock by the Corporation under this Section B.5(c) shall be made pro-rata among all outstanding shares of Series A Preferred Stock and Series B Preferred Stock on a combined basis (unless, with respect to shares of Series B Preferred Stock only, such redemption is waived in accordance with Section B.5(g) hereof), and for the purposes of any redemption of Preferred Stock pursuant to this Section B.5(c), the Series A Preferred Stock shall be on parity with the Series B Preferred Stock and shall not be included within the term "Series B Junior Stock." Any redemption of Series A Preferred Stock under this Section B.5(c) shall be at the Series A Redemption Price. Any Redemption of Series B Preferred Stock under this Section B.5(c) shall be at the price specified in Section B.3(a) above.

(d) PRO RATA. If any redemption of either series of Preferred Stock shall be of less than all of the then outstanding shares of such series of Preferred Stock, such redemption shall be made so that the number of shares of such series of Preferred Stock held by each registered owner shall be reduced in an amount which shall bear the same ratio to the total number of shares of such series of Preferred Stock being so redeemed as the number of shares of such series of Preferred Stock then held by such registered owner bears to the aggregate number of shares of such series of Preferred Stock then outstanding; PROVIDED, HOWEVER, that the Corporation shall not be required to redeem fractional shares, and the shares of a series of Preferred Stock to be redeemed from any holder thereof may be rounded to the nearest full share.

(e) (i) SERIES A REDEMPTION PRICE. The redemption price for each share of Series A Preferred Stock (the "Series A Redemption Price") redeemed pursuant to this Section B.5 shall be $3.19624976 (which amount shall be subject to Equitable Adjustment) plus all accrued and unpaid dividends thereon, if any, whether or not earned or declared, on such shares up to and including the date fixed for redemption.

(ii) SERIES B REDEMPTION PRICE. The redemption price for each share of Series B Preferred Stock (the "Series B Redemption Price") redeemed pursuant to Section B.5(a)(i) or B.5(b) above (but not B.5(a)(iv) or B.5(c) above for which the price specified in Section B.3(a) shall apply) shall be equal to the greater of (1) $20.6185567 (which amount

shall be subject to Equitable Adjustment) plus all accrued and unpaid dividends thereon, if any, whether or not earned or declared, on such shares up to and including the date fixed for redemption or (2) the amount per share that would be received if each share of Series B Preferred Stock were converted into Common Stock and such Common Stock were redeemed at its fair market value, as determined in good faith by two-thirds of the members of the Board of Directors of the Corporation, but without any discount for lack of control. Any dispute between the Corporation and any holder or holders representing at least 10% of the outstanding shares of Series B Preferred Stock that arises in connection with such determination of fair market value shall be resolved as set forth in Section B.10.

(f) REDEMPTION NOTICE. At least thirty (30) days but no more than sixty (60) days prior to each date fixed for redemption (the "Redemption Date") pursuant to Section B.5(a) or B.5(c) hereof, or promptly following the Corporation's receipt of the Event of Default Notice pursuant to Section B.5(b), the Corporation shall mail, postage prepaid, written notice (the "Redemption Notice") to each holder of record of the each series of Preferred Stock, at its address shown on the records of the Corporation; PROVIDED, HOWEVER, that the Corporation's failure to give such Redemption Notice shall in no way affect its obligation to redeem the shares of Preferred Stock as provided in Sections B.5(a) and B.5(b) hereof. The Redemption Notice shall contain the following information:

(i) the number of shares of each series of Preferred Stock held by the holder which shall be redeemed by the Corporation and the total number of shares of each series of Preferred Stock held by all holders to be so redeemed;

(ii) the Redemption Date, the Series A Redemption Price and the Series B Redemption Price; and

(iii) that the holder is to surrender to the Corporation, at the place designated therein, its certificate or certificates representing the shares of Preferred Stock to be redeemed.

(g) WAIVER OF REDEMPTION.

(i) SERIES A PREFERRED STOCK. The Corporation's obligation to redeem all or any portion of the shares of Series A Preferred Stock pursuant to Sections B.5(a) or B.5(b) may be waived in whole or in part (such partial waiver to apply on a pro rata basis to all holders of shares of Series A Preferred Stock) by the written consent of the Majority A Holders. Such waiver shall be in writing and delivered to the Corporation before the Redemption Date applicable thereto and such waiver shall be on the terms and conditions specified therein.

(ii) SERIES B PREFERRED STOCK. The Corporation's obligation to redeem all or any portion of any holder's shares of Series B Preferred Stock may be waived in whole or in part by such holder. Such waiver shall be in writing and delivered to the

Corporation before the Redemption Date applicable thereto and such waiver shall be on the terms and conditions specified therein.

(h) SURRENDER OF CERTIFICATES. Each holder of shares of Preferred Stock to be redeemed shall surrender the certificate(s) representing such shares to the Corporation at the place designated in the Redemption Notice, and thereupon the redemption price for such shares as set forth in this Section B.5 shall be paid to the order of the person whose name appears on such certificate(s) and each surrendered certificate shall be canceled and retired. In the event some but not all of the shares of either series of Preferred Stock represented by a certificate(s) surrendered by a holder are being redeemed, the Corporation shall execute and deliver to or to the order of the holder, at the expense of the Corporation, a new certificate representing the number of shares of such series of Preferred Stock which were not redeemed.

(i) DIVIDENDS AFTER REDEMPTION. From and after the Redemption Date, unless there shall have been a default in payment of the Redemption Price therefor, no shares of Preferred Stock subject to redemption shall be entitled to any further dividends pursuant to Section B.2 hereof or any other rights hereunder.

(j) NO REISSUANCE OF PREFERRED STOCK. No share or shares of Preferred Stock (of either series) acquired by the Corporation by reason of redemption, purchase or otherwise shall be reissued, and all such shares shall be canceled, retired and eliminated from the shares which the Corporation shall be authorized to issue. The Corporation shall from time to time take such appropriate corporate action as may be necessary to reduce the authorized number of shares of each series Preferred Stock.

(k) INSUFFICIENT FUNDS FOR REDEMPTION. If the funds of the Corporation legally available for redemption of Preferred Stock pursuant to Section B.5(a)(i) or Section B.5(c) only on any Redemption Date are insufficient to redeem in full all of the Preferred Stock to be so redeemed on such Redemption Date, the holders of such shares of Preferred Stock to be so redeemed shall share ratably in any funds legally available for redemption of such shares according to the respective amounts which would be payable with respect to the number of shares owned by them if the shares to be so redeemed on such Redemption Date were redeemed in full. If the funds of the Corporation legally available for redemption of Preferred Stock other than pursuant to Section B.5(a)(i) or B.5(c) on any Redemption Date are insufficient to redeem in full all of the Preferred Stock to be so redeemed on such Redemption Date, then until the Series B Redemption Price is paid in full, the holders of shares of Series B Preferred Stock shall share ratably in any funds legally available for redemption of such shares according to the respective amounts which would be payable with respect to the number of shares of Series B Preferred Stock owned by them if the shares of Series B Preferred Stock to be so redeemed on such Redemption Date were redeemed in full; thereafter, the holders of shares of Series A Preferred Stock shall share ratably in any funds legally available for redemption of such shares according to the respective amounts which would be payable with respect to the number of shares of Series A Preferred Stock owned by them if the shares to be so redeemed on such Redemption Date were redeemed in full. The shares of either series of

Preferred Stock not redeemed shall remain outstanding and entitled to all rights and preferences provided herein so long as such amounts remain unpaid, notwithstanding Section B.5(i) above. At any time thereafter when additional funds of the Corporation are legally available for the redemption of such shares of Preferred Stock, such funds will be used, immediately, to redeem the balance of such shares, or such portion thereof for which funds are then legally available, on the basis set forth above.

6. RESTRICTIONS AND LIMITATIONS.

(a) AMENDMENTS TO CHARTER; CORPORATE ACTION-CONSENT OF ALL PREFERRED STOCK. Notwithstanding anything to the contrary contained herein, the Corporation shall not amend its Articles of Organization without the approval by vote or written consent of the Majority A Holders and the Majority B Holders. In addition, the Corporation will not take any other corporate action without such approval or consent of the Majority A Holders and the Majority B Holders, if such corporate action would:

(i) authorize or issue, or obligate the Corporation to authorize or issue, additional shares of Preferred Stock or other class of security senior to or on a parity with the Series A Preferred Stock or Series B Preferred Stock with respect to liquidation preferences, dividend rights, voting rights (other than voting rights of Common Stock with one (1) vote per share), redemption rights; or

(ii) merge or consolidate the Corporation with, or sell, assign, lease or otherwise dispose of or voluntarily part with the control of (whether in one transaction or in a series of transactions) all, or substantially all, of its assets or capital stock (whether now owned or hereinafter acquired) or sell, assign or otherwise dispose of (whether in one transaction or in a series of transactions) any asset or group of assets which is material to the business or operations of the Corporation and its subsidiaries, taken as a whole, or permit any subsidiary to do any of the foregoing, except for sales or other dispositions of assets in the ordinary course of business and except that (1) any subsidiary may merge into or consolidate with or transfer assets to any other subsidiary and (2) any subsidiary may merge into or transfer assets to the Corporation; or

(iii) acquire or obligate the Corporation to acquire the stock or assets of any entity (other than a wholly-owned subsidiary of the Corporation) for consideration in excess of $10,000 in the aggregate in one or a series of related transactions; PROVIDED, HOWEVER, that investments in short-term U.S. government securities, bank certificates of deposit or other similar investments shall not be deemed a breach of this clause (iii).

(b) CORPORATE ACTION-REQUIRED CONSENT OF SERIES B PREFERRED STOCK. In addition to the provisions of subparagraph (a), above, the Corporation will not take any corporate action without the approval of each of the holders of Series B Preferred Stock if such corporate action would:

(i) reduce the amount payable to the holders of Series B Preferred Stock upon the voluntary or involuntary liquidation, dissolution or winding up of the Corporation; or

(ii) adversely affect the liquidation preferences, dividend rights, voting rights, redemption rights, conversion rights or other rights of the holders of Series B Preferred Stock.

(c) CORPORATE ACTION-REQUIRED CONSENT OF SERIES A PREFERRED STOCK. In addition, the Corporation will not take any corporate action without the approval of the Majority A Holders if such corporate action would:

(i) reduce the amount payable to the holders of Series A Preferred upon the voluntary or involuntary liquidation, dissolution or winding up of the Corporation; or

(ii) adversely affect the liquidation preferences, dividend rights, voting rights or redemption rights of the holders of Series A Preferred Stock.

7. NO IMPAIRMENT. The Corporation will not, by amendment of its Articles of Organization or through any reorganization, transfer of capital stock or assets, consolidation, merger, dissolution, issue or sale of securities or any other voluntary action, avoid or seek to avoid the observance or performance of any of the terms of either series of Preferred Stock set forth herein, but will at all times in good faith assist in the carrying out of all such terms and in the taking of all such action as may be necessary or appropriate in order to protect the rights of the holders of the Preferred Stock against impairment. Without limiting the generality of the foregoing the Corporation will not transfer all or substantially all of its properties and assets to any other person (corporate or otherwise), or consolidate with or merge into any other person or permit any such person to consolidate with or merge into the Corporation (if the Corporation is not the surviving person), unless such transaction is effected in accordance with Section B.6 and such other person shall expressly assume in writing and will be bound by all the terms of each series of Preferred Stock set forth herein.

8. NOTICES OF RECORD DATE. In the event of

(a) any taking by the Corporation of a record of the holders of any class of securities for the purpose of determining the holders thereof who are entitled to receive any dividend or other distribution, or any right to subscribe for, purchase or otherwise acquire any shares of capital stock of any class or any other securities or property, or to receive any other right, or

(b) any capital reorganization of the Corporation, any reclassification or recapitalization of the capital stock of the Corporation, any merger or consolidation of the Corporation, or any transfer of all or substantially all of the assets of the Corporation or any subsidiary of the Corporation or any material and substantial asset or group of assets of the

Corporation or of any subsidiary of the Corporation to any other company, or any other entity or person, or

(c) any voluntary or involuntary dissolution, liquidation or winding up of the Corporation, then and in each such event the Corporation shall mail or cause to be mailed to each holder of Series A Preferred Stock and each holder of Series B Preferred Stock, a notice specifying (i) the date on which any such record is to be taken for the purpose of such dividend, distribution or right and a description of such dividend, distribution or right, (ii) the date on which any such reorganization, reclassification, recapitalization, transfer, consolidation, merger, dissolution, liquidation or winding up is expected to become effective, and (iii) the time, if any, that is to be fixed, as to when the holders of record of Common Stock (or other securities) shall be entitled to exchange their shares of Common Stock (or other securities) for securities or other property deliverable upon such reorganization, reclassification, recapitalization, transfer, consolidation, merger, dissolution, liquidation or winding up. Such notice shall be delivered by hand, sent by reputable overnight courier service or electronic facsimile transmission (return receipt requested or mailed by first class mail, postage prepaid, at least thirty (30) days prior to the date specified in such notice on which such action is to be taken.

9. CONVERSION RIGHTS. The holders of Series B Preferred Stock shall have conversion rights as follows:

(a) RIGHT TO CONVERT. Subject to and in compliance with the provisions of this Section B.9, any shares of Series B Preferred Stock may be converted at any time and from time to time into fully-paid and non-assessable shares of Common Stock. The number of shares of Common Stock to which each share of the Series B Preferred Stock shall be converted shall be computed by multiplying the number of shares of Series B Preferred Stock to be converted by $20.6185567 (which amount shall be subject to adjustment upon any subdivision of shares of Series B Preferred Stock or any issuance of additional shares of Series B Preferred Stock as a dividend or other distribution on outstanding Series B Preferred Stock) and dividing the result by the applicable Conversion Price then in effect. The initial Conversion Price shall be $20.6185567, subject to adjustment from time to time pursuant to this Section B.9.

(b) VOLUNTARY CONVERSION.

(i) At any time and from time to time, upon the written election of any holder of Series B Preferred Stock, all or any part of the shares of Series B Preferred Stock of such holder may be converted into a number of shares of Common Stock calculated in accordance with Section B.9(a) above.

(ii) At any time, upon the written election of holders of at least seventy percent (70%) in interest of the then outstanding shares of Series B Preferred Stock, all of the shares of Series B Preferred Stock then outstanding shall be converted into a number of shares of Common Stock calculated in accordance with Section B.9(a) above.

(c) AUTOMATIC CONVERSION. Each share of Series B Preferred Stock outstanding shall automatically be converted into the number of shares of Common Stock into which such shares are convertible pursuant to the formula set forth in Section B.9(a) above at the then effective Conversion Price immediately upon the closing of an underwritten public offering (a "Qualified Public Offering") pursuant to an effective registration statement under the Securities Act of 1933, as amended, covering the offer and sale of Common Stock of the Corporation of which the aggregate net proceeds attributable to sales for the account of the Corporation exceed $15,000,000 at a per share price to the public (as set forth in the final prospectus in connection with such public offering) equal to at least $41.2371134 (which amount shall be subject to Equitable Adjustment).

(d) CONVERSION PROCEDURES.

(i) Upon the occurrence of an event specified in subparagraphs (b)(ii) or (c) above, the outstanding shares of Series B Preferred Stock shall be converted automatically without any further action by the holders of such shares and whether or not the certificates representing such shares are surrendered to the Corporation or its transfer agent; PROVIDED, HOWEVER, that the Corporation shall not be obligated to issue certificates evidencing the shares of Common Stock issuable upon such conversion unless certificates evidencing such shares of the Series B Preferred Stock being converted are delivered to the Corporation or any transfer agent, or the holder notifies the Corporation or any transfer agent that such certificates have been lost, stolen or destroyed and executes an agreement reasonably satisfactory to the Corporation to indemnify the Corporation from any loss incurred by it in connection therewith.

(ii) Upon surrender at the principal executive office of the Corporation or the offices of the transfer agent for the Series B Preferred Stock or such office or offices in the continental United States of an agent for conversion as may from time to time be designated by notice to the holders of the Series B Preferred Stock by the Corporation, of either (x) the certificate or certificates representing the Series B Preferred Stock being converted, duly assigned or endorsed for transfer to the Corporation (or accompanied by duly executed stock powers relating thereto) or (y) an affidavit certifying that such certificate(s) has been lost, stolen or destroyed (along with an agreement reasonably satisfactory to the Corporation to indemnify the Corporation from any loss incurred by it in connection therewith), in either case accompanied by written notice of conversion and the payment to the Corporation of a sum sufficient to cover any tax or governmental charge imposed with respect to the issuance of Common Stock in a name other than that of the holder of the Series B Preferred Stock being converted, the Corporation shall issue and send by hand delivery, by courier or by first class mail (postage prepaid) to the holder thereof or to such holder's designee, at the address designated by such holder, a certificate or certificates for the number

of shares of Common Stock to which such holder shall be entitled upon conversion, and the Corporation shall pay to the holder of the Series B Preferred Stock being converted an amount equal to all accrued and unpaid dividends thereon, whether or not earned or declared, up to and including the effective date of conversion.

(e) EFFECTIVE DATE OF CONVERSION. The issuance by the Corporation of shares of Common Stock upon a conversion of Series B Preferred Stock into shares of Common Stock shall be effective as to any holder upon the earliest of the date that holders of at least seventy percent (70%) of the then outstanding shares of Series B Preferred Stock or such holder of Series B Preferred Stock shall have elected conversion pursuant to Section B.9(b) hereof by notice to the Corporation to such effect or immediately prior to the closing of a Qualified Public Offering, as applicable. On and after the effective date of conversion, the person or persons entitled to receive the Common Stock issuable upon such conversion shall be treated for all purposes as the record holder or holders of such shares of Common Stock.

(f) FRACTIONAL SHARES. The Corporation shall not be obligated to deliver to holders of Series B Preferred Stock any fractional share of Common Stock issuable upon any conversion of such Series B Preferred Stock, but in lieu thereof may make a cash payment in respect thereof in any manner permitted by law.

(g) RESERVATION OF COMMON STOCK. The Corporation shall at all times reserve and keep available out of its authorized and unissued Common Stock, solely for issuance upon the conversion of Series B Preferred Stock as herein provided, free from any preemptive rights or other obligations, such number of shares of Common Stock as shall from time to time be issuable upon the conversion of all the Series B Preferred Stock then outstanding, provided that the shares of Common Stock so reserved shall not be reduced or affected in any manner whatsoever so long as any shares of Series B Preferred Stock are outstanding. The Corporation shall prepare and shall use its best efforts to obtain and keep in force such governmental or regulatory permits or other authorizations as may be required by law, and shall comply with all requirements as to registration, qualification or listing of the Common Stock, in order to enable the Corporation lawfully to issue and deliver to each holder of record of Series B Preferred Stock such number of shares of its Common Stock as shall from time to time be sufficient to effect the conversion of all Series B Preferred Stock then outstanding and convertible into shares of Common Stock.

(h) ADJUSTMENTS TO CONVERSION PRICE. The Conversion Price in effect from time to time shall be subject to adjustment, regardless of whether any shares of Series B Preferred Stock are then issued and outstanding, as follows:

(i) STOCK DIVIDENDS, SUBDIVISIONS AND COMBINATIONS. Upon the issuance of additional shares of Common Stock as a dividend or other distribution on outstanding Common Stock or other capital stock, the subdivision of outstanding shares of Common Stock into a greater number of shares of Common Stock, or the combination of outstanding shares of Common Stock into a smaller number of shares of the Common Stock,

the Conversion Price shall, simultaneously with the happening of such dividend, subdivision or split be adjusted by multiplying the then effective Conversion Price by a fraction, the NUMERATOR of which shall be the number of shares of Common Stock outstanding immediately prior to such event and the DENOMINATOR of which shall be the number of shares of Common Stock outstanding immediately after such event. An adjustment made pursuant to this Section B.9(h)(i) shall be given effect, upon payment of such a dividend or distribution, as of the record date for the determination of stockholders entitled to receive such dividend or distribution (on a retroactive basis) and in the case of a subdivision or combination shall become effective immediately as of the effective date thereof.

(ii) SALE OF COMMON STOCK. In the event the Corporation shall at any time, or from time to time, issue, sell or exchange any shares of Common Stock (including shares held in the Corporation's treasury but excluding (i) up to 206,620 shares of Common Stock (as appropriately adjusted for stock splits, stock dividends and the like) issued or to be issued to officers, directors, employees, consultants or agents of the Corporation or upon the exercise of options or other rights issued or to be issued to such officers, directors, employees, consultants or agents pursuant to the Corporation's 1996 Stock Option and Grant Plan, (ii) up to 431,756 shares of Common Stock (as appropriately adjusted for stock splits, stock dividends and the like) issuable upon exercise or conversion of the Warrants and (iii) the shares of Common Stock issuable upon conversion of the Series B Preferred Stock (collectively, (the "Excluded Shares")), for a consideration per share less than the Conversion Price in effect immediately prior to the issuance, sale or exchange of such shares, then, and thereafter successively upon each such issuance, sale or exchange, the Conversion Price in effect immediately prior to the issuance, sale or exchange of such shares shall forthwith be reduced to an amount determined by multiplying such Conversion Price by a fraction:

(1) the NUMERATOR of which shall be (i) the number of shares of Common Stock outstanding immediately prior to the issuance of such additional shares of Common Stock (excluding treasury shares but including all shares of Common Stock issuable upon conversion, exchange or exercise of any outstanding Preferred Stock, options, warrants, rights or other convertible or exchangeable securities), plus (ii) the number of shares of Common Stock which the net aggregate consideration received by the Corporation for the total number of such additional shares of Common Stock so issued would purchase at the Conversion Price (prior to adjustment), and

(2) the DENOMINATOR of which shall be (i) the number of shares of Common Stock outstanding immediately prior to the issuance of such additional shares of Common Stock (excluding treasury shares but including all shares of Common Stock issuable upon conversion or exercise of any outstanding Preferred Stock, options, warrants, rights or other convertible or exchangeable securities), plus (ii) the number of such additional shares of Common Stock so issued.

(iii) SALE OF OPTIONS, RIGHTS OR CONVERTIBLE SECURITIES. In the event the Corporation shall at any time or from time to time, issue options, warrants or rights to subscribe for shares of Common Stock (other than any options for Excluded Shares), or issue any securities convertible into or exchangeable for shares of Common Stock (or any options, warrants, or rights to subscribe for such convertible or exchangeable securities), for a consideration per share (determined by dividing the Net Aggregate Consideration (as determined below) by the aggregate number of shares of Common Stock that would be issued if all such options, warrants, rights or convertible or exchangeable securities were exercised, converted or exchanged to the fullest extent permitted by their terms) less than the Conversion Price in effect immediately prior to the issuance of such options or rights or convertible or exchangeable securities, the Conversion Price in effect immediately prior to the issuance of such options, warrants or rights or convertible or exchangeable securities shall forthwith be reduced to an amount determined by multiplying such Conversion Price by a fraction:

(1) the NUMERATOR of which shall be (i) the number of shares of Common Stock outstanding immediately prior to the issuance of such options, rights or convertible securities (excluding treasury shares but including all shares of Common Stock issuable upon conversion or exercise of any outstanding Preferred Stock, options, warrants, rights or other convertible or exchangeable securities), plus (ii) the number of shares of Common Stock which the net aggregate amount of consideration received by the Corporation for the issuance of such options, warrants, rights or other convertible or exchangeable securities, plus the minimum amount set forth in the terms of such security as payable to the Corporation upon the exercise, exchange or conversion thereof (the "Net Aggregate Consideration") would purchase at the Conversion Price (prior to adjustment), and

(2) the DENOMINATOR of which shall be (i) the number of shares of Common Stock outstanding immediately prior to the issuance of such options, warrants, rights or convertible or exchangeable securities (excluding treasury shares but including all shares of Common Stock issuable upon conversion, exchange or exercise of any outstanding Preferred Stock, options, warrants, rights or other convertible or exchangeable securities), plus (ii) the aggregate number of shares of Common Stock that would be issued if all such options, warrants, rights or other convertible or exchangeable securities were exercised, exchanged or converted.

(iv) EXPIRATION OR CHANGE IN PRICE OR NUMBER OF SHARES. If the consideration per share and/or the number of shares issuable provided for in any options or rights to subscribe for shares of Common Stock or any securities exchangeable for or convertible into shares of Common Stock (other than options, warrants or convertible securities for Excluded Shares), changes at any time (other than in connection with a transaction provided for elsewhere in this Section B.9 and for which adjustment has been made pursuant to this Section B.9), the Conversion Price in effect at the time of such change shall be

readjusted to the Conversion Price which would have been in effect at such time had such options, rights or exchangeable or convertible securities provided for such changed consideration and/or changed number of shares issuable per share (determined as provided in Section B.9(h)(iii) hereof), at the time initially granted, issued or sold (subject to any intervening adjustments); PROVIDED, that such adjustment of the Conversion Price will be made only as and to the extent that the Conversion Price effective upon such adjustment remains less than or equal to the Conversion Price that would be in effect if such options, rights or securities had not been issued. No adjustment of the Conversion Price shall be made under this Section B.9 upon the issuance of any shares of Common Stock which are issued pursuant to the exercise of any warrants, options or other subscription or purchase rights or pursuant to the exercise of any conversion or exchange rights in any convertible securities if an adjustment shall previously have been made upon the issuance of such warrants, options or other rights. Any adjustment of the Conversion Price shall be disregarded and rescinded if (but only to the extent), as, and when the rights to acquire shares of Common Stock upon exercise or conversion of the warrants, options, rights or convertible securities which gave rise to such adjustment expire or are canceled without having been exercised, so that the Conversion Price effective immediately upon such cancellation or expiration shall be equal to the Conversion Price in effect at the time of the issuance of the expired or canceled warrants, options, rights or convertible securities (subject to any intervening adjustments), with such additional adjustments as would have been made to that Conversion Price had the expired or canceled warrants, options, rights or convertible securities not been issued.

(i) MERGERS AND OTHER REORGANIZATIONS. If at any time or from time to time there shall be a capital reorganization of the Common Stock (other than a subdivision, combination, reclassification or exchange of shares provided for elsewhere in this Section B.9) or a merger or consolidation of the Corporation with or into another corporation or the sale of all or substantially all of the Corporation's properties and assets to any other person, then, as a part of and as a condition to the effectiveness of such reorganization, merger, consolidation or sale, lawful and adequate provision shall be made so that the holders of the Series B Preferred Stock shall thereafter be entitled to receive upon conversion of the Series B Preferred Stock the kind and amount of shares of stock or other securities or property resulting from such merger or consolidation or sale, to which a holder of Common Stock deliverable upon such conversion would have been entitled on such capital reorganization, merger, consolidation, or sale. In any such case, appropriate provisions shall be made with respect to the rights of the holders of the Series B Preferred Stock after the reorganization, merger, consolidation or sale to the end that the provisions of this Section B.9 (including without limitation provisions for adjustment of the Conversion Price and the number of shares purchasable upon conversion of the Series B Preferred Stock) shall thereafter be applicable, as nearly as may be, with respect to any shares of stock, securities or assets to be deliverable thereafter upon the conversion of the Series B Preferred Stock.

Upon the occurrence of a Liquidation Event (as defined in Section B.3(b)), each holder of Series B Preferred Stock shall have the option, upon written election of such holder, of

having its shares of Series B Preferred Stock treated under either this Section B.9(i) or Section B.5(a)(iv) hereof.

(j) OTHER ADJUSTMENTS. In the event the Corporation shall make or issue, or fix a record date for the determination of holders of Common Stock entitled to receive, a dividend or other distribution payable in securities of the Corporation other than shares of Common Stock, then and in each such event lawful and adequate provision shall be made so that the holders of Series B Preferred Stock shall receive upon conversion thereof in addition to the number of shares of Common Stock receivable thereupon, the number of securities of the Corporation which they would have received had their Series B Preferred Stock been converted into Common Stock on the date of such event and had they thereafter, during the period from the date of such event to and including the effective date of the conversion, retained such securities receivable by them as aforesaid during such period, giving application to all adjustments called for during such period under this Section B.9 as applied to such distributed securities.

If the Common Stock issuable upon the conversion of the Series B Preferred Stock shall be changed into the same or different number of shares of any class or classes of stock, whether by reclassification or otherwise (other than a subdivision or combination of shares or stock dividend provided for above, or a reorganization, merger, consolidation or sale of assets provided for elsewhere in this Section B.9), then and in each such event the holder of each share of Series B Preferred Stock shall have the right thereafter to convert such share of Series B Preferred Stock into the kind and amount of shares of stock and other securities and property receivable upon such reorganization, reclassification or other change, by holders of the number of shares of Common Stock into which such shares of Series B Preferred Stock might have been converted immediately prior to such reorganization, reclassification or change, all subject to further adjustment as provided herein.

(k) NOTICES. In each case of an adjustment or readjustment of the Conversion Price, the Corporation will furnish each holder of Series B Preferred Stock with a certificate, prepared by the Chief Financial Officer of the Corporation, showing such adjustment or readjustment, and stating in detail the facts upon which such adjustment or readjustment is based. In the event of any dispute between the Corporation and holders representing at least 10% of the outstanding Series B Preferred Stock regarding such adjustment or readjustment, the Corporation and such holders of the Series B Preferred Stock shall first use their best efforts to resolve such dispute among themselves or to agree upon the selection of the firm of independent certified public accountants of recognized standing (each, an "Independent Accounting Firm"), to make a final and binding determination of the adjustment or readjustment. If the parties are unable to resolve the dispute or to agree upon an Independent Accounting Firm within 30 calendar days after the commencement of efforts to resolve the dispute, a majority-in-interest of such holders, on one hand, and the Corporation, on the other hand, shall each select an Independent Accounting Firm within 30 days after the conclusion of such initial 30 day period. Within 10 days after such selection, each such Independent Accounting Firm shall select a third Independent Accounting Firm to make a final and binding

determination of such adjustment or readjustment. Each of the Corporation, on the one hand, and such holders of the Series B Preferred Stock, on the other hand, shall be responsible for the fees and expenses of the Independent Accounting Firm selected by such party(ies). The determination of the Independent Accounting Firm selected by agreement of the parties or selected by their respective Independent Accounting Firms shall be final and binding on the Corporation and the holders and the expenses of such Independent Accounting Firm shall be borne one-half by the Corporation and one-half by such holders, pro rata in proportion to the number of shares of Series B Preferred Stock owned by each such holder.

(l) OTHER DILUTIVE EVENTS. If any other transaction or event (other than those explicitly referred to in this Section B.9) shall occur as to which the other provisions of this Section B.9 are not strictly applicable but the failure to make any adjustment to the Conversion Price or any of the other terms of the Series B Preferred Stock would not fairly protect the conversion or other rights of the holders of the Series B Preferred Stock set forth herein in accordance with the essential intent and principles hereof, then, and as a condition to the consummation of any such transaction or event, and in each such case, the Corporation and the Majority B Holders shall appoint an Independent Accounting Firm (in the manner provided in the preceding subparagraph (k)) which shall give its opinion as to the adjustment, if any, on a basis consistent with the essential intent and principle established in this Section B.9(l), necessary to preserve, without dilution, the rights of the holders of the Series B Preferred Stock.

10. DISPUTES AS TO FAIR MARKET VALUE. In the event of any dispute between the Corporation and any holder or holders representing at least 10% of the outstanding shares of any class of Preferred Stock regarding the determination of fair market value of any property or security, the Corporation and such holders of such class of Preferred Stock shall first use their best efforts to resolve such dispute among themselves or to agree upon the selection of an independent, non-affiliated appraiser of recognized standing with at least five (5) years of experience in the relevant industry (each an "Independent Appraiser") to make a final and binding determination of the fair market value of such property or security (without any discount for lack of control, if applicable). If the parties are unable to resolve the dispute or to agree upon an Independent Appraiser within thirty (30) calendar days after the commencement of efforts to resolve the dispute, a majority-in-interest of such holders of such class of Preferred Stock and the Corporation each shall select an Independent Appraiser within thirty (30) days after the conclusion of such initial thirty (30) day period. Within ten (10) days after such selection, such Independent Appraisers shall select a third non-affiliated appraiser of recognized standing with at least five (5) years experience in the relevant industry (the "Third Appraiser") to make a final and binding determination of the fair market value of such property or security (without any discount for lack of control, if applicable). Each of the Corporation, on the one hand, and such holders of the shares of such class of Preferred Stock, on the other hand, shall be responsible for the fees and expenses of the Independent Appraiser selected by such party(ies). The determination of the Independent Appraiser selected by agreement of the parties or the Third Appraiser selected as provided above (as the case may be) shall be final and binding on the Corporation and the holders, and the expenses of such

agreed upon Independent Appraiser or Third Appraiser (as the case may be) shall be borne one-half by the Corporation and one-half by such holders, pro-rata in proportion to the number of shares of such class of Preferred Stock owned by each such holder.

C. UNDESIGNATED PREFERRED STOCK

The Board of Directors or any authorized committee thereof is expressly authorized, to the fullest extent permitted by law, to provide for the issuance of the shares of Undesignated Preferred Stock in one or more series of such stock, and by filing a certificate pursuant to applicable law of the State of Delaware, to establish or change from time to time the number of shares of each such series, and to fix the designations, powers, including voting powers, full or limited, or no voting powers, preferences and the relative, participating, optional or other special rights of the shares of each series and any qualifications, limitations and restrictions thereof.

ARTICLE V

STOCKHOLDER ACTION

1. ACTION WITHOUT MEETING. Except as otherwise provided herein, any action required or permitted to be taken by the stockholders of the Corporation at any annual or special meeting of stockholders of the Corporation must be effected at a duly called annual or special meeting of stockholders and may not be taken or effected by a written consent of stockholders in lieu thereof.

2. SPECIAL MEETINGS. Except as otherwise required by statute and subject to the rights, if any, of the holders of any series of Undesignated Preferred Stock, special meetings of the stockholders of the Corporation may be called only by the Board of Directors acting pursuant to a resolution approved by the affirmative vote of a majority of the Directors then in office. Only those matters set forth in the notice of the special meeting may be considered or acted upon at a special meeting of stockholders of the Corporation.

ARTICLE VI

DIRECTORS

1. GENERAL. The business and affairs of the Corporation shall be managed by or under the direction of the Board of Directors except as otherwise provided herein or required by law.

2. ELECTION OF DIRECTORS. Election of Directors need not be by written ballot unless the By-laws of the Corporation (the "By-laws") shall so provide.

3. NUMBER OF DIRECTORS; TERM OF OFFICE. The number of Directors of the Corporation shall be fixed solely and exclusively by resolution duly adopted from time to time by the Board of Directors. The Directors, other than those who may be elected by the holders of any series or class of Preferred Stock, shall be classified, with respect to the term for which they severally hold office, into three classes, as nearly equal in number as reasonably possible. The initial Class I Directors of the Corporation shall be Christopher W. Dick, Robert Dishman and Richard C. Klaffky, Jr.; the initial Class II Directors of the Corporation shall be David Green and John F. Kennedy; and the initial Class III Directors of the Corporation shall be Chane Graziano and Earl R. Lewis. The initial Class I Directors shall serve for a term expiring at the annual meeting of stockholders to be held in 2001, the initial Class II Directors shall serve for a term expiring at the annual meeting of stockholders to be held in 2002, and the initial Class III Directors shall serve for a term expiring at the annual meeting of stockholders to be held in 2003. At each annual meeting of stockholders, Directors elected to succeed those Directors whose terms expire shall be elected for a term of office to expire at the third succeeding annual meeting of stockholders after their election. Notwithstanding the foregoing, the Directors elected to each class shall hold office until their successors are duly elected and qualified or until their earlier resignation or removal.

Notwithstanding the foregoing, whenever, pursuant to the provisions of Article IV of this Certificate, the holders of any one or more series or class of Preferred Stock shall have the right, voting separately as a series or together with holders of other such series, to elect Directors at an annual or special meeting of stockholders, the election, term of office, filling of vacancies and other features of such directorships shall be governed by the terms of this Certificate and any certificate of designations applicable thereto.

4. VACANCIES. Subject to the rights, if any, of the holders of any series or class of Preferred Stock to elect Directors and to fill vacancies in the Board of Directors relating thereto, any and all vacancies in the Board of Directors, however occurring, including, without limitation, by reason of an increase in size of the Board of Directors, or the death, resignation, disqualification or removal of a Director, shall be filled solely and exclusively by the affirmative vote of a majority of the remaining Directors then in office, even if less than a quorum of the Board of Directors, and not by the stockholders. Any Director appointed in accordance with the preceding sentence shall hold office for the remainder of the full term of the class of Directors in which the new directorship was created or the vacancy occurred and until such Director's successor shall have been duly elected and qualified or until his or her earlier resignation or removal. Subject to the rights, if any, of the holders of any series or class of Preferred Stock to elect Directors, when the number of Directors is increased or decreased, the Board of Directors shall, subject to Article VI.3 hereof, determine the class or classes to which the increased or decreased number of Directors shall be apportioned; PROVIDED, HOWEVER, that no decrease in the number of Directors shall shorten the term of any incumbent Director.

5. REMOVAL. Subject to the rights, if any, of any series or class of Preferred Stock to elect Directors and to remove any Director whom the holders of any such stock have the

right to elect, any Director (including persons elected by Directors to fill vacancies in the Board of Directors) may be removed from office (i) only with cause and (ii) only by the affirmative vote of the holders of 75% or more of the shares then entitled to vote at an election of Directors. At least forty-five (45) days prior to any meeting of stockholders at which it is proposed that any Director be removed from office, written notice of such proposed removal and the alleged grounds thereof shall be sent to the Director whose removal will be considered at the meeting.

ARTICLE VII

LIMITATION OF LIABILITY

A Director of the Corporation shall not be personally liable to the Corporation or its stockholders for monetary damages for breach of fiduciary duty as a Director, except for liability (a) for any breach of the Director's duty of loyalty to the Corporation or its stockholders, (b) for acts or omissions not in good faith or which involve intentional misconduct or a knowing violation of law, (c) under Section 174 of the DGCL or (d) for any transaction from which the Director derived an improper personal benefit. If the DGCL is amended after the effective date of this Certificate to authorize corporate action further eliminating or limiting the personal liability of Directors, then the liability of a Director of the Corporation shall be eliminated or limited to the fullest extent permitted by the DGCL, as so amended.

Any repeal or modification of this Article VII by either of (i) the stockholders of the Corporation or (ii) an amendment to the DGCL, shall not adversely affect any right or protection existing at the time of such repeal or modification with respect to any acts or omissions occurring before such repeal or modification of a person serving as a Director at the time of such repeal or modification.

ARTICLE VIII

AMENDMENT OF BY-LAWS

1. AMENDMENT BY DIRECTORS. Except as otherwise provided by law, the By-laws of the Corporation may be amended or repealed by the Board of Directors by the affirmative vote of a majority of the Directors then in office.

2. AMENDMENT BY STOCKHOLDERS. The By-laws of the Corporation may be amended or repealed at any annual meeting of stockholders, or special meeting of stockholders called for such purpose as provided in the By-laws, by the affirmative vote of at least 75% of the shares present in person or represented by proxy at such meeting and entitled to vote on such amendment or repeal, voting together as a single class; PROVIDED, HOWEVER, that if the Board of Directors recommends that stockholders approve such amendment or repeal at such meeting of stockholders, such amendment or repeal shall only require the affirmative vote of the majority

of the shares present in person or represented by proxy at such meeting and entitled to vote on such amendment or repeal, voting together as a single class.

ARTICLE IX

AMENDMENT OF CERTIFICATE OF INCORPORATION

The Corporation reserves the right to amend or repeal this Certificate in the manner now or hereafter prescribed by statute and this Certificate, and all rights conferred upon stockholders herein are granted subject to this reservation. Whenever any vote of the holders of voting stock is required to amend or repeal any provision of this Certificate, and in addition to any other vote of holders of voting stock that is required by this Certificate or by law, such amendment or repeal shall require the affirmative vote of the majority of the outstanding shares entitled to vote on such amendment or repeal, and the affirmative vote of the majority of the outstanding shares of each class entitled to vote thereon as a class, at a duly constituted meeting of stockholders called expressly for such purpose; PROVIDED, HOWEVER, that the affirmative vote of not less than 75% of the outstanding shares entitled to vote on such amendment or repeal, and the affirmative vote of not less than 75% of the outstanding shares of each class entitled to vote thereon as a class, shall be required to amend or repeal any provision of Article V, Article VI, Article VII or Article IX of this Certificate.

[End of Text]

THIS AMENDED AND RESTATED CERTIFICATE OF INCORPORATION is executed as of this ____ day of _____, 2000

HARVARD BIOSCIENCE, INC.

By:

Name:

Title:

Exhibit 3.2

FORM OF
SECOND AMENDED AND RESTATED

CERTIFICATE OF INCORPORATION

OF

HARVARD BIOSCIENCE, INC.

Harvard Bioscience, Inc., a corporation organized and existing under the laws of the State of Delaware (the "Corporation"), hereby certifies as follows:

1. The name of the Corporation is Harvard Bioscience, Inc. The date of the filing of its original Certificate of Incorporation with the Secretary of State of the State of Delaware was September 8, 2000 (the "Original Certificate"). The name under which the Corporation filed the Original Certificate was Harvard Bioscience, Inc.

2. This Second Amended and Restated Certificate of Incorporation (the "Certificate") amends, restates and integrates the provisions of the Amended and Restated Certificate of Incorporation that was filed with the Secretary of State of the State of Delaware on [INSERT DATE] (the "Amended and Restated Certificate"), and was duly adopted in accordance with the provisions of Sections 242 and 245 of the Delaware General Corporation Law (the "DGCL").

3. The text of the Amended and Restated Certificate is hereby amended and restated in its entirety to provide as herein set forth in full.

ARTICLE I

The name of the Corporation is Harvard Bioscience, Inc.

ARTICLE II

The address of the Corporation's registered office in the State of Delaware is c/o The Corporation Trust Company, 1209 Orange Street in the City of Wilmington, County of New Castle. The name of its registered agent at such address is The Corporation Trust Company.

ARTICLE III

The purpose of the Corporation is to engage in any lawful act or activity for which corporations may be organized under the DGCL.

ARTICLE IV

CAPITAL STOCK

The total number of shares of capital stock which the Corporation shall have authority to issue is eighty-five million (85,000,000) shares, of which (i) eighty million (80,000,000) shares shall be a class designated as common stock, par value $.01 per share (the "Common Stock"), and (ii) five million (5,000,000) shares shall be a class designated as undesignated preferred stock, par value $.01 per share (the "Undesignated Preferred Stock").

The number of authorized shares of the class of Undesignated Preferred Stock may from time to time be increased or decreased (but not below the number of shares outstanding) by the affirmative vote of the holders of a majority of the outstanding shares of Common Stock entitled to vote, without a vote of the holders of the Undesignated Preferred Stock (except as otherwise provided in any certificate of designations of any series of Undesignated Preferred Stock).

The powers, preferences and rights of, and the qualifications, limitations and restrictions upon, each class or series of stock shall be determined in accordance with, or as set forth below in, this Article IV.

A. COMMON STOCK

Subject to all the rights, powers and preferences of the Undesignated Preferred Stock and except as provided by law or in this Article IV (or in any certificate of designations of any series of Undesignated Preferred Stock):

(a) the holders of the Common Stock shall have the exclusive right to vote for the election of directors of the Corporation (the "Directors") and on all other matters requiring stockholder action, each outstanding share entitling the holder thereof to one vote on each matter properly submitted to the stockholders of the Corporation for their vote; PROVIDED, HOWEVER, that, except as otherwise required by law, holders of Common Stock, as such, shall not be entitled to vote on any amendment to this Certificate (or on any amendment to a certificate of designations of any series of Undesignated Preferred Stock) that alters or changes the powers, preferences, rights or other terms of one or more outstanding series of Undesignated Preferred Stock if the holders of such affected series are entitled to vote, either separately or together with the holders of one or more other such series, on such amendment pursuant to this Certificate (or pursuant to a certificate of designations of any series of Undesignated Preferred Stock) or pursuant to the DGCL;

(b) dividends may be declared and paid or set apart for payment upon the Common Stock out of any assets or funds of the Corporation legally available for the payment of dividends, but only when and as declared by the Board of Directors of the Corporation (the "Board of Directors") or any authorized committee thereof; and

(c) upon the voluntary or involuntary liquidation, dissolution or winding up of the Corporation, the net assets of the Corporation shall be distributed pro rata to the holders of the Common Stock.

B. UNDESIGNATED PREFERRED STOCK

The Board of Directors or any authorized committee thereof is expressly authorized, to the fullest extent permitted by law, to provide for the issuance of the shares of Undesignated Preferred Stock in one or more series of such stock, and by filing a certificate pursuant to applicable law of the State of Delaware, to establish or change from time to time the number of shares of each such series, and to fix the designations, powers, including voting powers, full or limited, or no voting powers, preferences and the relative, participating, optional or other special rights of the shares of each series and any qualifications, limitations and restrictions thereof.

ARTICLE V

STOCKHOLDER ACTION

1. ACTION WITHOUT MEETING. Except as otherwise provided herein, any action required or permitted to be taken by the stockholders of the Corporation at any annual or special meeting of stockholders of the Corporation must be effected at a duly called annual or special meeting of stockholders and may not be taken or effected by a written consent of stockholders in lieu thereof.

2. SPECIAL MEETINGS. Except as otherwise required by statute and subject to the rights, if any, of the holders of any series of Undesignated Preferred Stock, special meetings of the stockholders of the Corporation may be called only by the Board of Directors acting pursuant to a resolution approved by the affirmative vote of a majority of the Directors then in office. Only those matters set forth in the notice of the special meeting may be considered or acted upon at a special meeting of stockholders of the Corporation.

ARTICLE VI

DIRECTORS

1. GENERAL. The business and affairs of the Corporation shall be managed by or under the direction of the Board of Directors except as otherwise provided herein or required by law.

2. ELECTION OF DIRECTORS. Election of Directors need not be by written ballot unless the By-laws of the Corporation (the "By-laws") shall so provide.

3. NUMBER OF DIRECTORS; TERM OF OFFICE. The number of Directors of the Corporation shall be fixed solely and exclusively by resolution duly adopted from time to time by the Board of Directors. The Directors, other than those who may be elected by the holders of any series of Undesignated Preferred Stock, shall be classified, with respect to the term for which they severally hold office, into three classes, as nearly equal in number as reasonably possible. The initial Class I Directors of the Corporation shall be Christopher W. Dick, Robert Dishman and Richard C. Klaffky, Jr.; the initial Class II Directors of the Corporation shall be David Green and John F. Kennedy; and the initial Class III Directors of the Corporation shall be Chane Graziano and Earl R. Lewis. The initial Class I Directors shall serve for a term expiring at the annual meeting of stockholders to be held in 2001, the initial Class II Directors shall serve for a term expiring at the annual meeting of stockholders to be held in 2002, and the initial Class III Directors shall serve for a term expiring at the annual meeting of stockholders to be held in 2003. At each annual meeting of stockholders, Directors elected to succeed those Directors whose terms expire shall be elected for a term of office to expire at the third succeeding annual meeting of stockholders after their election. Notwithstanding the foregoing, the Directors elected to each class shall hold office until their successors are duly elected and qualified or until their earlier resignation or removal.

Notwithstanding the foregoing, whenever, pursuant to the provisions of Article IV of this Certificate, the holders of any one or more series of Undesignated Preferred Stock shall have the right, voting separately as a series or together with holders of other such series, to elect Directors at an annual or special meeting of stockholders, the election, term of office, filling of vacancies and other features of such directorships shall be governed by the terms of this Certificate and any certificate of designations applicable thereto.

4. VACANCIES. Subject to the rights, if any, of the holders of any series of Undesignated Preferred Stock to elect Directors and to fill vacancies in the Board of Directors relating thereto, any and all vacancies in the Board of Directors, however occurring, including, without limitation, by reason of an increase in size of the Board of Directors, or the death, resignation, disqualification or removal of a Director, shall be filled solely and exclusively by the affirmative vote of a majority of the remaining Directors then in office, even if less than a quorum of the Board of Directors, and not by the stockholders. Any Director appointed in accordance with the preceding sentence shall hold office for the remainder of the full term of the class of Directors in which the new directorship was created or the vacancy occurred and until such Director's successor shall have been duly elected and qualified or until his or her earlier resignation or removal. Subject to the rights, if any, of the holders of any series of Undesignated Preferred Stock to elect Directors, when the number of Directors is increased or decreased, the Board of Directors shall, subject to Article VI.3 hereof, determine the class or classes to which the increased or decreased number of Directors shall be apportioned; PROVIDED, HOWEVER, that no decrease in the number of Directors shall shorten the term of any incumbent Director. In the event of a vacancy in the Board of Directors, the remaining Directors, except as otherwise provided by law, shall exercise the powers of the full Board of Directors until the vacancy is filled.

5. REMOVAL. Subject to the rights, if any, of any series of Undesignated Preferred Stock to elect Directors and to remove any Director whom the holders of any such stock have the right to elect, any Director (including persons elected by Directors to fill vacancies in the Board of Directors) may be removed from office (i) only with cause and (ii) only by the affirmative vote of the holders of 75% or more of the shares then entitled to vote at an election of Directors. At least forty-five (45) days prior to any meeting of stockholders at which it is proposed that any Director be removed from office, written notice of such proposed removal and the alleged grounds thereof shall be sent to the Director whose removal will be considered at the meeting.

ARTICLE VII

LIMITATION OF LIABILITY

A Director of the Corporation shall not be personally liable to the Corporation or its stockholders for monetary damages for breach of fiduciary duty as a Director, except for liability (a) for any breach of the Director's duty of loyalty to the Corporation or its stockholders, (b) for acts or omissions not in good faith or which involve intentional misconduct or a knowing violation of law, (c) under Section 174 of the DGCL or (d) for any transaction from which the Director derived an improper personal benefit. If the DGCL is amended after the effective date of this Certificate to authorize corporate action further eliminating or limiting the personal liability of Directors, then the liability of a Director of the Corporation shall be eliminated or limited to the fullest extent permitted by the DGCL, as so amended.

Any repeal or modification of this Article VII by either of (i) the stockholders of the Corporation or (ii) an amendment to the DGCL, shall not adversely affect any right or protection existing at the time of such repeal or modification with respect to any acts or omissions occurring before such repeal or modification of a person serving as a Director at the time of such repeal or modification.

ARTICLE VIII

AMENDMENT OF BY-LAWS

1. AMENDMENT BY DIRECTORS. Except as otherwise provided by law, the By-laws of the Corporation may be amended or repealed by the Board of Directors by the affirmative vote of a majority of the Directors then in office.

2. AMENDMENT BY STOCKHOLDERS. The By-laws of the Corporation may be amended or repealed at any annual meeting of stockholders, or special meeting of stockholders called for such purpose as provided in the By-laws, by the affirmative vote of at least 75% of the shares present in person or represented by proxy at such meeting and entitled to vote on such amendment or repeal, voting together as a single class; PROVIDED, HOWEVER, that if the Board of

Directors recommends that stockholders approve such amendment or repeal at such meeting of stockholders, such amendment or repeal shall only require the affirmative vote of the majority of the shares present in person or represented by proxy at such meeting and entitled to vote on such amendment or repeal, voting together as a single class.

ARTICLE IX

AMENDMENT OF CERTIFICATE OF INCORPORATION

The Corporation reserves the right to amend or repeal this Certificate in the manner now or hereafter prescribed by statute and this Certificate, and all rights conferred upon stockholders herein are granted subject to this reservation. Whenever any vote of the holders of voting stock is required to amend or repeal any provision of this Certificate, and in addition to any other vote of holders of voting stock that is required by this Certificate or by law, such amendment or repeal shall require the affirmative vote of the majority of the outstanding shares entitled to vote on such amendment or repeal, and the affirmative vote of the majority of the outstanding shares of each class entitled to vote thereon as a class, at a duly constituted meeting of stockholders called expressly for such purpose; PROVIDED, HOWEVER, that the affirmative vote of not less than 75% of the outstanding shares entitled to vote on such amendment or repeal, and the affirmative vote of not less than 75% of the outstanding shares of each class entitled to vote thereon as a class, shall be required to amend or repeal any provision of Article V, Article VI, Article VII or Article IX of this Certificate.

[End of Text]

THIS SECOND AMENDED AND RESTATED CERTIFICATE OF INCORPORATION is executed as of this _____ day of _____, 2000.

HARVARD BIOSCIENCE, INC.

By:

Name:

Title:

Exhibit 3.3

FORM OF
AMENDED AND RESTATED

BY-LAWS

OF

HARVARD BIOSCIENCE, INC.
(the "Corporation")

ARTICLE I

STOCKHOLDERS

SECTION 1. ANNUAL MEETING. The annual meeting of stockholders (any such meeting being referred to in these By-laws as an "Annual Meeting") shall be held at the hour, date and place within or without the United States which is fixed by the Board of Directors, which time, date and place may subsequently be changed at any time by vote of the Board of Directors. If no Annual Meeting has been held for a period of thirteen months after the Corporation's last Annual Meeting, a special meeting in lieu thereof may be held, and such special meeting shall have, for the purposes of these By-laws or otherwise, all the force and effect of an Annual Meeting. Any and all references hereafter in these By-laws to an Annual Meeting or Annual Meetings also shall be deemed to refer to any special meeting(s) in lieu thereof.

SECTION 2. NOTICE OF STOCKHOLDER BUSINESS AND NOMINATIONS.

(a) ANNUAL MEETINGS OF STOCKHOLDERS.

(1) Nominations of persons for election to the Board of Directors of the Corporation and the proposal of business to be considered by the stockholders may be made at an Annual Meeting (a) pursuant to the Corporation's notice of meeting, (b) by or at the direction of the Board of Directors or (c) by any stockholder of the Corporation who was a stockholder of record at the time of giving of notice provided for in this By-law, who is entitled to vote at the meeting, who is present (in person or by proxy) at the meeting and who complies with the notice procedures set forth in this By-law. In addition to the other requirements set forth in this By-law, for any proposal of business to be considered at an Annual Meeting, it must be a proper subject for action by stockholders of the Corporation under Delaware law.

(2) For nominations or other business to be properly brought before an Annual Meeting by a stockholder pursuant to clause (c) of paragraph (a)(1) of this By-law, the stockholder must have given timely notice thereof in writing to the Secretary of the Corporation. To be timely, a stockholder's notice shall be delivered to the Secretary at the principal executive offices of the Corporation not later than the close of

business on the 90th day nor earlier than the close of business on the 120th day prior to the first anniversary of the preceding year's Annual Meeting; provided, however, that in the event that the date of the Annual Meeting is advanced by more than 30 days before or delayed by more than 60 days after such anniversary date, notice by the stockholder to be timely must be so delivered not earlier than the close of business on the 120th day prior to such Annual Meeting and not later than the close of business on the later of the 90th day prior to such Annual Meeting or the 10th day following the day on which public announcement of the date of such meeting is first made. Notwithstanding anything to the contrary provided herein, for the first Annual Meeting following the initial public offering of common stock of the Corporation, a stockholder's notice shall be timely if delivered to the Secretary at the principal executive offices of the Corporation not later than the close of business on the later of the 90th day prior to the scheduled date of such Annual Meeting or the 10th day following the day on which public announcement of the date of such Annual Meeting is first made or sent by the Corporation. Such stockholder's notice shall set forth (a) as to each person whom the stockholder proposes to nominate for election or reelection as a director, all information relating to such person that is required to be disclosed in solicitations of proxies for election of directors in an election contest, or is otherwise required, in each case pursuant to Regulation 14A under the Securities Exchange Act of 1934, as amended (the "Exchange Act") and Rule 14a-11 thereunder (including such person's written consent to being named in the proxy statement as a nominee and to serving as a director if elected); (b) as to any other business that the stockholder proposes to bring before the meeting, a brief description of the business desired to be brought before the meeting, the reasons for conducting such business at the meeting, any material interest in such business of such stockholder and the beneficial owner, if any, on whose behalf the proposal is made, and the names and addresses of other stockholders known by the stockholder proposing such business to support such proposal, and the class and number of shares of the Corporation's capital stock beneficially owned by such other stockholders; and (c) as to the stockholder giving the notice and the beneficial owner, if any, on whose behalf the nomination or proposal is made (i) the name and address of such stockholder, as they appear on the Corporation's books, and of such beneficial owner, and (ii) the class and number of shares of the Corporation which are owned beneficially and of record by such stockholder and such beneficial owner.

(3) Notwithstanding anything in the second sentence of paragraph (a)(2) of this By-law to the contrary, in the event that the number of directors to be elected to the Board of Directors of the Corporation is increased and there is no public announcement naming all of the nominees for director or specifying the size of the increased Board of Directors made by the Corporation at least 85 days prior to the first anniversary of the preceding year's Annual Meeting, a stockholder's notice required by this By-law shall also be considered timely, but only with respect to nominees for any new positions created by such increase, if it shall be delivered to the Secretary at the principal

executive offices of the Corporation not later than the close of business on the 10th day following the day on which such public announcement is first made by the Corporation.

(b) GENERAL.

(1) Only such persons who are nominated in accordance with the provisions of this By-law shall be eligible for election and to serve as directors and only such business shall be conducted at an Annual Meeting as shall have been brought before the meeting in accordance with the provisions of this By-law. The Board of Directors or a designated committee thereof shall have the power to determine whether a nomination or any business proposed to be brought before the meeting was made in accordance with the provisions of this By-law. If neither the Board of Directors nor such designated committee makes a determination as to whether any stockholder proposal or nomination was made in accordance with the provisions of this By-law, the presiding officer of the Annual Meeting shall have the power and duty to determine whether the stockholder proposal or nomination was made in accordance with the provisions of this By-law. If the Board of Directors or a designated committee thereof or the presiding officer, as applicable, determines that any stockholder proposal or nomination was not made in accordance with the provisions of this By-law, such proposal or nomination shall be disregarded and shall not be presented for action at the Annual Meeting.

(2) For purposes of this By-law, "public announcement" shall mean disclosure in a press release reported by the Dow Jones News Service, Associated Press or comparable national news service or in a document publicly filed by the Corporation with the Securities and Exchange Commission pursuant to Section 13, 14 or 15(d) of the Exchange Act.

(3) Notwithstanding the foregoing provisions of this By-law, a stockholder shall also comply with all applicable requirements of the Exchange Act and the rules and regulations thereunder with respect to the matters set forth in this By-law. Nothing in this By-law shall be deemed to affect any rights of (i) stockholders to request inclusion of proposals in the Corporation's proxy statement pursuant to Rule 14a-8 under the Exchange Act or (ii) the holders of any series of Undesignated Preferred Stock to elect directors under specified circumstances.

SECTION 3. SPECIAL MEETINGS. Except as otherwise required by statute and subject to the rights, if any, of the holders of any series of Undesignated Preferred Stock, special meetings of the stockholders of the Corporation may be called only by the Board of Directors acting pursuant to a resolution approved by the affirmative vote of a majority of the Directors then in office. Only those matters set forth in the notice of the special meeting may be considered or acted upon at a special meeting of stockholders of the Corporation.

SECTION 4. NOTICE OF MEETINGS; ADJOURNMENTS. A written notice of each Annual Meeting stating the hour, date and place of such Annual Meeting shall be given not less than 10 days nor more than 60 days before the Annual Meeting, to each stockholder entitled to vote thereat by delivering such notice to such stockholder or by mailing it, postage prepaid, addressed to such stockholder at the address of such stockholder as it appears on the Corporation's stock transfer books. Such notice shall be deemed to be given when hand delivered to such address or deposited in the mail so addressed, with postage prepaid.

Notice of all special meetings of stockholders shall be given in the same manner as provided for Annual Meetings, except that the written notice of all special meetings shall state the purpose or purposes for which the meeting has been called.

Notice of an Annual Meeting or special meeting of stockholders need not be given to a stockholder if a written waiver of notice is signed before or after such meeting by such stockholder or if such stockholder attends such meeting, unless such attendance was for the express purpose of objecting at the beginning of the meeting to the transaction of any business because the meeting was not lawfully called or convened. Neither the business to be transacted at, nor the purpose of, any Annual Meeting or special meeting of stockholders need be specified in any written waiver of notice.

The Board of Directors may postpone and reschedule any previously scheduled Annual Meeting or special meeting of stockholders and any record date with respect thereto, regardless of whether any notice or public disclosure with respect to any such meeting has been sent or made pursuant to Section 2 of this Article I of these By-laws or otherwise. In no event shall the public announcement of an adjournment, postponement or rescheduling of any previously scheduled meeting of stockholders commence a new time period for the giving of a stockholder's notice under Section 2 of this Article I of these By-laws.

When any meeting is convened, the presiding officer may adjourn the meeting if (a) no quorum is present for the transaction of business, (b) the Board of Directors determines that adjournment is necessary or appropriate to enable the stockholders to consider fully information which the Board of Directors determines has not been made sufficiently or timely available to stockholders, or (c) the Board of Directors determines that adjournment is otherwise in the best interests of the Corporation. When any Annual Meeting or special meeting of stockholders is adjourned to another hour, date or place, notice need not be given of the adjourned meeting other than an announcement at the meeting at which the adjournment is taken of the hour, date and place to which the meeting is adjourned; provided, however, that if the adjournment is for more than 30 days, or if after the adjournment a new record date is fixed for the adjourned meeting, notice of the adjourned meeting shall be given to each stockholder of record entitled to vote thereat and each stockholder who, by law or under the Certificate of Incorporation of the Corporation (as the same may hereafter be amended and/or restated, the "Certificate") or these By-laws, is entitled to such notice.

SECTION 5. QUORUM. A majority of the shares entitled to vote, present in person or represented by proxy, shall constitute a quorum at any meeting of stockholders. If less than a quorum is present at a meeting, the holders of voting stock representing a majority of the voting power present at the meeting or the presiding officer may adjourn the meeting from time to time, and the meeting may be held as adjourned without further notice, except as provided in Section 5 of this Article I. At such adjourned meeting at which a quorum is present, any business may be transacted which might have been transacted at the meeting as originally noticed. The stockholders present at a duly constituted meeting may continue to transact business until adjournment, notwithstanding the withdrawal of enough stockholders to leave less than a quorum.

SECTION 6. VOTING AND PROXIES. Stockholders shall have one vote for each share of stock entitled to vote owned by them of record according to the stock ledger of the Corporation, unless otherwise provided by law or by the Certificate. Stockholders may vote either (i) in person, (ii) by written proxy or (iii) by a transmission permitted by Section 212(c) of the Delaware General Corporation Law ("DGCL"). Any copy, facsimile telecommunication or other reliable reproduction of the writing or transmission permitted by Section212(c) of the DGCL may be substituted for or used in lieu of the original writing or transmission for any and all purposes for which the original writing or transmission could be used, provided that such copy, facsimile telecommunication or other reproduction shall be a complete reproduction of the entire original writing or transmission. Proxies shall be filed in accordance with the procedures established for the meeting of stockholders. Except as otherwise limited therein or as otherwise provided by law, proxies authorizing a person to vote at a specific meeting shall entitle the persons authorized thereby to vote at any adjournment of such meeting, but they shall not be valid after final adjournment of such meeting. A proxy with respect to stock held in the name of two or more persons shall be valid if executed by or on behalf of any one of them unless at or prior to the exercise of the proxy the Corporation receives a specific written notice to the contrary from any one of them.

SECTION 7. ACTION AT MEETING. When a quorum is present at any meeting of stockholders, any matter before any such meeting (other than an election of a director or directors) shall be decided by a majority of the votes properly cast for and against such matter, except where a larger vote is required by law, by the Certificate or by these By-laws. Any election of directors by stockholders shall be determined by a plurality of the votes properly cast on the election of directors. The Corporation shall not directly or indirectly vote any shares of its own stock; provided, however, that the Corporation may vote shares which it holds in a fiduciary capacity to the extent permitted by law.

SECTION 8. STOCKHOLDER LISTS. The Secretary or an Assistant Secretary (or the Corporation's transfer agent or other person authorized by these By-laws or by law) shall prepare and make, at least 10 days before every Annual Meeting or special meeting of stockholders, a complete list of the stockholders entitled to vote at the meeting, arranged in alphabetical order, and showing the address of each stockholder and the number of shares

registered in the name of each stockholder. Such list shall be open to the examination of any stockholder, for any purpose germane to the meeting, during ordinary business hours, for a period of at least 10 days prior to the meeting, either at a place within the city where the meeting is to be held, which place shall be specified in the notice of the meeting, or, if not so specified, at the place where the meeting is to be held. The list shall also be produced and kept at the hour, date and place of the meeting during the whole time thereof, and may be inspected by any stockholder who is present.

SECTION 9. PRESIDING OFFICER. The Chairman of the Board, if one is elected, or if not elected or in his or her absence, the President, shall preside at all Annual Meetings or special meetings of stockholders and shall have the power, among other things, to adjourn such meeting at any time and from time to time, subject to Sections 5 and 6 of this Article I. The order of business and all other matters of procedure at any meeting of the stockholders shall be determined by the presiding officer.

SECTION 10. INSPECTORS OF ELECTIONS. The Corporation shall, in advance of any meeting of stockholders, appoint one or more inspectors to act at the meeting and make a written report thereof. The Corporation may designate one or more persons as alternate inspectors to replace any inspector who fails to act. If no inspector or alternate is able to act at a meeting of stockholders, the presiding officer shall appoint one or more inspectors to act at the meeting. Any inspector may, but need not, be an officer, employee or agent of the Corporation. Each inspector, before entering upon the discharge of his or her duties, shall take and sign an oath faithfully to execute the duties of inspector with strict impartiality and according to the best of his or her ability. The inspectors shall perform such duties as are required by the DGCL, including the counting of all votes and ballots. The inspectors may appoint or retain other persons or entities to assist the inspectors in the performance of the duties of the inspectors. The presiding officer may review all determinations made by the inspectors, and in so doing the presiding officer shall be entitled to exercise his or her sole judgment and discretion and he or she shall not be bound by any determinations made by the inspectors. All determinations by the inspectors and, if applicable, the presiding officer, shall be subject to further review by any court of competent jurisdiction.

ARTICLE II

DIRECTORS

SECTION 1. POWERS. The business and affairs of the Corporation shall be managed by or under the direction of the Board of Directors except as otherwise provided by the Certificate or required by law.

SECTION 2. NUMBER AND TERMS. The number of directors of the Corporation shall be fixed solely and exclusively by resolution duly adopted from time to time by the Board of Directors. The directors shall hold office in the manner provided in the Certificate.

SECTION 3. QUALIFICATION. No director need be a stockholder of the Corporation.

SECTION 4. VACANCIES. Vacancies in the Board of Directors shall be filled in the manner provided in the Certificate.

SECTION 5. REMOVAL. Directors may be removed from office in the manner provided in the Certificate.

SECTION 6. RESIGNATION. A director may resign at any time by giving written notice to the Chairman of the Board, if one is elected, the President or the Secretary. A resignation shall be effective upon receipt, unless the resignation otherwise provides.

SECTION 7. REGULAR MEETINGS. The regular annual meeting of the Board of Directors shall be held, without notice other than this Section 7, on the same date and at the same place as the Annual Meeting following the close of such meeting of stockholders. Other regular meetings of the Board of Directors may be held at such hour, date and place as the Board of Directors may by resolution from time to time determine and publicize by means of reasonable notice given to any director who is not present at the meeting at which such resolution is adopted.

SECTION 8. SPECIAL MEETINGS. Special meetings of the Board of Directors may be called, orally or in writing, by or at the request of a majority of the directors, the Chairman of the Board, if one is elected, or the President. The person calling any such special meeting of the Board of Directors may fix the hour, date and place thereof.

SECTION 9. NOTICE OF MEETINGS. Notice of the hour, date and place of all special meetings of the Board of Directors shall be given to each director by the Secretary or an Assistant Secretary, or in case of the death, absence, incapacity or refusal of such persons, by the Chairman of the Board, if one is elected, or the President or such other officer designated by the Chairman of the Board, if one is elected, or the President. Notice of any special meeting of the Board of Directors shall be given to each director in person, by telephone, or by facsimile, electronic mail or other form of electronic communication, sent to his or her business or home address, at least 24 hours in advance of the meeting, or by written notice mailed to his or her business or home address, at least 48 hours in advance of the meeting. Such notice shall be deemed to be delivered when hand delivered to such address, read to such director by telephone, deposited in the mail so addressed, with postage thereon prepaid if mailed, dispatched or transmitted if faxed, telexed or telecopied, or when delivered to the telegraph company if sent by telegram.

A written waiver of notice signed before or after a meeting by a director and filed with the records of the meeting shall be deemed to be equivalent to notice of the meeting. The attendance of a director at a meeting shall constitute a waiver of notice of such meeting, except where a director attends a meeting for the express purpose of objecting at the beginning of the meeting to the transaction of any business because such meeting is not lawfully called or convened. Except as otherwise required by law, by the Certificate or by these By-laws, neither the business to be transacted at, nor the purpose of, any meeting of the Board of Directors need be specified in the notice or waiver of notice of such meeting.

SECTION 10. QUORUM. At any meeting of the Board of Directors, a majority of the total number of directors shall constitute a quorum for the transaction of business, but if less than a quorum is present at a meeting, a majority of the directors present may adjourn the meeting from time to time, and the meeting may be held as adjourned without further notice, except as provided in Section 9 of this Article II. Any business which might have been transacted at the meeting as originally noticed may be transacted at such adjourned meeting at which a quorum is present. For purposes of this section, the total number of directors includes any unfilled vacancies on the Board of Directors.

SECTION 11. ACTION AT MEETING. At any meeting of the Board of Directors at which a quorum is present, the vote of a majority of the directors present shall constitute action by the Board of Directors, unless otherwise required by law, by the Certificate or by these By-laws.

SECTION 12. ACTION BY CONSENT. Any action required or permitted to be taken at any meeting of the Board of Directors may be taken without a meeting if all members of the Board of Directors consent thereto in writing. Such written consent shall be filed with the records of the meetings of the Board of Directors and shall be treated for all purposes as a vote at a meeting of the Board of Directors.

SECTION 13. MANNER OF PARTICIPATION. Directors may participate in meetings of the Board of Directors by means of conference telephone or similar communications equipment by means of which all directors participating in the meeting can hear each other, and participation in a meeting in accordance herewith shall constitute presence in person at such meeting for purposes of these By-laws.

SECTION 14. COMMITTEES. The Board of Directors, by vote of a majority of the directors then in office, may elect from its number one or more committees, including, without limitation, an Executive Committee, a Compensation Committee, a Stock Option Committee and an Audit Committee, and may delegate thereto some or all of its powers except those which by law, by the Certificate or by these By-laws may not be delegated. Except as the Board of Directors may otherwise determine, any such committee may make rules for the conduct of its business, but unless otherwise provided by the Board of Directors or in such rules, its business shall be conducted so far as possible in the same manner as is provided by

these By-laws for the Board of Directors. All members of such committees shall hold such offices at the pleasure of the Board of Directors. The Board of Directors may abolish any such committee at any time. Any committee to which the Board of Directors delegates any of its powers or duties shall keep records of its meetings and shall report its action to the Board of Directors.

SECTION 15. COMPENSATION OF DIRECTORS. Directors shall receive such compensation for their services as shall be determined by a majority of the Board of Directors, or a designated committee thereof, provided that directors who are serving the Corporation as employees and who receive compensation for their services as such, shall not receive any salary or other compensation for their services as directors of the Corporation.

ARTICLE III

OFFICERS

SECTION 1. ENUMERATION. The officers of the Corporation shall consist of a President, a Treasurer, a Secretary and such other officers, including, without limitation, a Chairman of the Board of Directors, a Chief Executive Officer and one or more Vice Presidents (including Executive Vice Presidents or Senior Vice Presidents), Assistant Vice Presidents, Assistant Treasurers and Assistant Secretaries, as the Board of Directors may determine.

SECTION 2. ELECTION. At the regular annual meeting of the Board of Directors following the Annual Meeting, the Board of Directors shall elect the President, the Treasurer and the Secretary. Other officers may be elected by the Board of Directors at such regular annual meeting of the Board of Directors or at any other regular or special meeting.

SECTION 3. QUALIFICATION. No officer need be a stockholder or a director. Any person may occupy more than one office of the Corporation at any time. Any officer may be required by the Board of Directors to give bond for the faithful performance of his or her duties in such amount and with such sureties as the Board of Directors may determine.

SECTION 4. TENURE. Except as otherwise provided by the Certificate or by these By-laws, each of the officers of the Corporation shall hold office until the regular annual meeting of the Board of Directors following the next Annual Meeting and until his or her successor is elected and qualified or until his or her earlier resignation or removal.

SECTION 5. RESIGNATION. Any officer may resign by delivering his or her written resignation to the Corporation addressed to the President or the Secretary, and such resignation shall be effective upon receipt unless it is specified to be effective at some other time or upon the happening of some other event.

SECTION 6. REMOVAL. Except as otherwise provided by law, the Board of Directors may remove any officer with or without cause by the affirmative vote of a majority of the directors then in office.

SECTION 7. ABSENCE OR DISABILITY. In the event of the absence or disability of any officer, the Board of Directors may designate another officer to act temporarily in place of such absent or disabled officer.

SECTION 8. VACANCIES. Any vacancy in any office may be filled for the unexpired portion of the term by the Board of Directors.

SECTION 9. PRESIDENT. The President shall, subject to the direction of the Board of Directors, have general supervision and control of the Corporation's business. If there is no Chairman of the Board or if he or she is absent, the President shall preside, when present, at all meetings of stockholders and of the Board of Directors. The President shall have such other powers and perform such other duties as the Board of Directors may from time to time designate.

SECTION 10. CHAIRMAN OF THE BOARD. The Chairman of the Board, if one is elected, shall preside, when present, at all meetings of the stockholders and of the Board of Directors. The Chairman of the Board shall have such other powers and shall perform such other duties as the Board of Directors may from time to time designate.

SECTION 11. CHIEF EXECUTIVE OFFICER. The Chief Executive Officer, if one is elected, shall have such powers and shall perform such duties as the Board of Directors may from time to time designate.

SECTION 12. VICE PRESIDENTS AND ASSISTANT VICE PRESIDENTS. Any Vice President (including any Executive Vice President or Senior Vice President) and any Assistant Vice President shall have such powers and shall perform such duties as the Board of Directors or the Chief Executive Officer may from time to time designate.

SECTION 13. TREASURER AND ASSISTANT TREASURERS. The Treasurer shall, subject to the direction of the Board of Directors and except as the Board of Directors or the Chief Executive Officer may otherwise provide, have general charge of the financial affairs of the Corporation and shall cause to be kept accurate books of account. The Treasurer shall have custody of all funds, securities, and valuable documents of the Corporation. He or she shall have such other duties and powers as may be designated from time to time by the Board of Directors or the Chief Executive Officer.

Any Assistant Treasurer shall have such powers and perform such duties as the Board of Directors or the Chief Executive Officer may from time to time designate.

SECTION 14. SECRETARY AND ASSISTANT SECRETARIES. The Secretary shall record all the proceedings of the meetings of the stockholders and the Board of Directors (including committees of the Board) in books kept for that purpose. In his or her absence from any such meeting, a temporary secretary chosen at the meeting shall record the proceedings thereof. The Secretary shall have charge of the stock ledger (which may, however, be kept by any transfer or other agent of the Corporation). The Secretary shall have custody of the seal of the Corporation, and the Secretary, or an Assistant Secretary, shall have authority to affix it to any instrument requiring it, and, when so affixed, the seal may be attested by his or her signature or that of an Assistant Secretary. The Secretary shall have such other duties and powers as may be designated from time to time by the Board of Directors or the Chief Executive Officer. In the absence of the Secretary, any Assistant Secretary may perform his or her duties and responsibilities.

Any Assistant Secretary shall have such powers and perform such duties as the Board of Directors or the Chief Executive Officer may from time to time designate.

SECTION 15. OTHER POWERS AND DUTIES. Subject to these By-laws and to such limitations as the Board of Directors may from time to time prescribe, the officers of the Corporation shall each have such powers and duties as generally pertain to their respective offices, as well as such powers and duties as from time to time may be conferred by the Board of Directors or the Chief Executive Officer.

ARTICLE IV

CAPITAL STOCK

SECTION 1. CERTIFICATES OF STOCK. Each stockholder shall be entitled to a certificate of the capital stock of the Corporation in such form as may from time to time be prescribed by the Board of Directors. Such certificate shall be signed by the Chairman of the Board of Directors, the President or a Vice President and by the Treasurer or an Assistant Treasurer, or the Secretary or an Assistant Secretary. The Corporation seal and the signatures by the Corporation's officers, the transfer agent or the registrar may be facsimiles. In case any officer, transfer agent or registrar who has signed or whose facsimile signature has been placed on such certificate shall have ceased to be such officer, transfer agent or registrar before such certificate is issued, it may be issued by the Corporation with the same effect as if he or she were such officer, transfer agent or registrar at the time of its issue. Every certificate for shares of stock which are subject to any restriction on transfer and every certificate issued when the Corporation is authorized to issue more than one class or series of stock shall contain such legend with respect thereto as is required by law.

SECTION 2. TRANSFERS. Subject to any restrictions on transfer and unless otherwise provided by the Board of Directors, shares of stock may be transferred only on the books of

the Corporation by the surrender to the Corporation or its transfer agent of the certificate theretofore properly endorsed or accompanied by a written assignment or power of attorney properly executed, with transfer stamps (if necessary) affixed, and with such proof of the authenticity of signature as the Corporation or its transfer agent may reasonably require.

SECTION 3. RECORD HOLDERS. Except as may otherwise be required by law, by the Certificate or by these By-laws, the Corporation shall be entitled to treat the record holder of stock as shown on its books as the owner of such stock for all purposes, including the payment of dividends and the right to vote with respect thereto, regardless of any transfer, pledge or other disposition of such stock, until the shares have been transferred on the books of the Corporation in accordance with the requirements of these By-laws.

SECTION 4. RECORD DATE. In order that the Corporation may determine the stockholders entitled to notice of or to vote at any meeting of stockholders or any adjournment thereof or entitled to receive payment of any dividend or other distribution or allotment of any rights, or entitled to exercise any rights in respect of any change, conversion or exchange of stock or for the purpose of any other lawful action, the Board of Directors may fix a record date, which record date shall not precede the date upon which the resolution fixing the record date is adopted by the Board of Directors, and which record date: (a) in the case of determination of stockholders entitled to vote at any meeting of stockholders, shall, unless otherwise required by law, not be more than sixty nor less than ten days before the date of such meeting and (b) in the case of any other action, shall not be more than sixty days prior to such other action. If no record date is fixed: (i) the record date for determining stockholders entitled to notice of or to vote at a meeting of stockholders shall be at the close of business on the day next preceding the day on which notice is given, or, if notice is waived, at the close of business on the day next preceding the day on which the meeting is held and (ii) the record date for determining stockholders for any other purpose shall be at the close of business on the day on which the Board of Directors adopts the resolution relating thereto.

SECTION 5. REPLACEMENT OF CERTIFICATES. In case of the alleged loss, destruction or mutilation of a certificate of stock, a duplicate certificate may be issued in place thereof, upon such terms as the Board of Directors may prescribe.

ARTICLE V

INDEMNIFICATION

SECTION 1. DEFINITIONS. For purposes of this Article:

(a) "Corporate Status" describes the status of a person who is serving or has served (i) as a Director of the Corporation, (ii) as an Officer of the Corporation, or (iii) as a director, partner, trustee, officer, employee or agent of any other corporation, partnership, joint venture, trust, employee benefit plan or other enterprise which such person is or was serving at the request of the Corporation. For purposes of this Section 1(a), an Officer or Director of the Corporation who is serving or has served as a director, partner, trustee, officer, employee or agent of a Subsidiary shall be deemed to be serving at the request of the Corporation;

(b) "Director" means any person who serves or has served the Corporation as a director on the Board of Directors of the Corporation;

(c) "Disinterested Director" means, with respect to each Proceeding in respect of which indemnification is sought hereunder, a Director of the Corporation who is not and was not a party to such Proceeding;

(d) "Expenses" means all reasonable attorneys' fees, retainers, court costs, transcript costs, fees of expert witnesses, private investigators and professional advisors (including, without limitation, accountants and investment bankers), travel expenses, duplicating costs, printing and binding costs, costs of preparation of demonstrative evidence and other courtroom presentation aids and devices, costs incurred in connection with document review, organization, imaging and computerization, telephone charges, postage, delivery service fees, and all other disbursements, costs or expenses of the type customarily incurred in connection with prosecuting, defending, preparing to prosecute or defend, investigating, being or preparing to be a witness in, settling or otherwise participating in, a Proceeding;

(e) "Non-Officer Employee" means any person who serves or has served as an employee or agent of the Corporation, but who is not or was not a Director or Officer;

(f) "Officer" means any person who serves or has served the Corporation as an officer appointed by the Board of Directors of the Corporation;

(g) "Proceeding" means any threatened, pending or completed action, suit, arbitration, alternate dispute resolution mechanism, inquiry, investigation, administrative hearing or other proceeding, whether civil, criminal, administrative, arbitrative or investigative; and

(h) "Subsidiary" shall mean any corporation, partnership, limited liability company, joint venture, trust or other entity of which the Corporation owns (either directly or through or together with another Subsidiary of the Corporation) either (i) a general partner, managing member or other similar interest or (ii) (A) 50% or more of the voting power of the voting capital equity interests of such corporation, partnership, limited liability company, joint venture or other entity, or (B) 50% or more of the outstanding voting capital stock or other voting equity interests of such corporation, partnership, limited liability company, joint venture or other entity.

SECTION 2. INDEMNIFICATION OF DIRECTORS AND OFFICERS. Subject to the operation of Section 4 of this Article V of these By-laws, each Director and Officer shall be indemnified and held harmless by the Corporation to the fullest extent authorized by the DGCL, as the same exists or may hereafter be amended (but, in the case of any such amendment, only to the extent that such amendment permits the Corporation to provide broader indemnification rights than such law permitted the Corporation to provide prior to such amendment) against any and all Expenses, judgments, penalties, fines and amounts reasonably paid in settlement that are incurred by such Director or Officer or on such Director's or Officer's behalf in connection with any threatened, pending or completed Proceeding or any claim, issue or matter therein, which such Director or Officer is, or is threatened to be made, a party to or participant in by reason of such Director's or Officer's Corporate Status, if such Director or Officer acted in good faith and in a manner such Director or Officer reasonably believed to be in or not opposed to the best interests of the Corporation and, with respect to any criminal proceeding, had no reasonable cause to believe his or her conduct was unlawful. The rights of indemnification provided by this Section 2 shall continue as to a Director or Officer after he or she has ceased to be a Director or Officer and shall inure to the benefit of his or her heirs, executors, administrators and personal representatives. Notwithstanding the foregoing, the Corporation shall indemnify any Director or Officer seeking indemnification in connection with a Proceeding initiated by such Director or Officer only if such Proceeding was authorized by the Board of Directors of the Corporation, unless such Proceeding was brought to enforce an Officer or Director's rights to Indemnification or, in the case of Directors, advancement of Expenses under these By-laws in accordance with the provisions set forth herein.

SECTION 3. INDEMNIFICATION OF NON-OFFICER EMPLOYEES. Subject to the operation of Section 4 of this Article V of these By-laws, each Non-Officer Employee may, in the discretion of the Board of Directors of the Corporation, be indemnified by the Corporation to the fullest extent authorized by the DGCL, as the same exists or may hereafter be amended, against any or all Expenses, judgments, penalties, fines and amounts reasonably paid in settlement that are incurred by such Non-Officer Employee or on such Non-Officer Employee's behalf in connection with any threatened, pending or completed Proceeding, or any claim, issue or matter therein, which such Non-Officer Employee is, or is threatened to be made, a party to or participant in by reason of such Non-Officer Employee's Corporate Status, if such Non-Officer Employee acted in good faith and in a manner such Non-Officer Employee reasonably believed to be in or not opposed to the best interests of the Corporation and, with

respect to any criminal proceeding, had no reasonable cause to believe his or her conduct was unlawful. The rights of indemnification provided by this Section 3 shall exist as to a Non-Officer Employee after he or she has ceased to be a Non-Officer Employee and shall inure to the benefit of his or her heirs, personal representatives, executors and administrators. Notwithstanding the foregoing, the Corporation may indemnify any Non-Officer Employee seeking indemnification in connection with a Proceeding initiated by such Non-Officer Employee only if such Proceeding was authorized by the Board of Directors of the Corporation.

SECTION 4. GOOD FAITH. Unless ordered by a court, no indemnification shall be provided pursuant to this Article V to a Director, to an Officer or to a Non-Officer Employee unless a determination shall have been made that such person acted in good faith and in a manner such person reasonably believed to be in or not opposed to the best interests of the Corporation and, with respect to any criminal Proceeding, such person had no reasonable cause to believe his or her conduct was unlawful. Such determination shall be made by (a) a majority vote of the Disinterested Directors, even though less than a quorum of the Board of Directors, (b) a committee comprised of Disinterested Directors, such committee having been designated by a majority vote of the Disinterested Directors (even though less than a quorum), (c) if there are no such Disinterested Directors, or if a majority of Disinterested Directors so directs, by independent legal counsel in a written opinion, or (d) by the stockholders of the Corporation.

SECTION 5. ADVANCEMENT OF EXPENSES TO DIRECTORS PRIOR TO FINAL DISPOSITION.

(a) The Corporation shall advance all Expenses incurred by or on behalf of any Director in connection with any Proceeding in which such Director is involved by reason of such Director's Corporate Status within ten (10) days after the receipt by the Corporation of a written statement from such Director requesting such advance or advances from time to time, whether prior to or after final disposition of such Proceeding. Such statement or statements shall reasonably evidence the Expenses incurred by such Director and shall be preceded or accompanied by an undertaking by or on behalf of such Director to repay any Expenses so advanced if it shall ultimately be determined that such Director is not entitled to be indemnified against such Expenses.

(b) If a claim for advancement of Expenses hereunder by a Director is not paid in full by the Corporation within 10 days after receipt by the Corporation of documentation of Expenses and the required undertaking, such Director may at any time thereafter bring suit against the Corporation to recover the unpaid amount of the claim and if successful in whole or in part, such Director shall also be entitled to be paid the expenses of prosecuting such claim. The failure of the Corporation (including its Board of Directors or any committee thereof, independent legal counsel, or stockholders) to make a determination concerning the permissibility of such advancement of Expenses under this Article V shall not be a defense to the action and shall not create a presumption that such advancement is not permissible. The

burden of proving that a Director is not entitled to an advancement of expenses shall be on the Corporation.

(c) In any suit brought by the Corporation to recover an advancement of expenses pursuant to the terms of an undertaking, the Corporation shall be entitled to recover such expenses upon a final adjudication that the Director has not met any applicable standard for indemnification set forth in the DGCL.

SECTION 6. ADVANCEMENT OF EXPENSES TO OFFICERS AND NON-OFFICER EMPLOYEES PRIOR TO FINAL DISPOSITION.

(a) The Corporation may, at the discretion of the Board of Directors of the Corporation, advance any or all Expenses incurred by or on behalf of any Officer and Non-Officer Employee in connection with any Proceeding in which such is involved by reason of the Corporate Status of such Officer or Non-Officer Employee upon the receipt by the Corporation of a statement or statements from such Officer or Non-Officer Employee requesting such advance or advances from time to time, whether prior to or after final disposition of such Proceeding. Such statement or statements shall reasonably evidence the Expenses incurred by such Officer and Non-Officer Employee and shall be preceded or accompanied by an undertaking by or on behalf of such to repay any Expenses so advanced if it shall ultimately be determined that such Officer or Non-Officer Employee is not entitled to be indemnified against such Expenses.

(b) In any suit brought by the Corporation to recover an advancement of expenses pursuant to the terms of an undertaking, the Corporation shall be entitled to recover such expenses upon a final adjudication that the Officer or Non-Officer Employee has not met any applicable standard for indemnification set forth in the DGCL.

SECTION 7. CONTRACTUAL NATURE OF RIGHTS.

(a) The foregoing provisions of this Article V shall be deemed to be a contract between the Corporation and each Director and Officer entitled to the benefits hereof at any time while this Article V is in effect, and any repeal or modification thereof shall not affect any rights or obligations then existing with respect to any state of facts then or theretofore existing or any Proceeding theretofore or thereafter brought based in whole or in part upon any such state of facts.

(b) If a claim for indemnification of Expenses hereunder by a Director or Officer is not paid in full by the Corporation within 60 days after receipt by the Corporation of a written claim for indemnification, such Director or Officer may at any time thereafter bring suit against the Corporation to recover the unpaid amount of the claim, and if successful in whole or in part, such Director or Officer shall also be entitled to be paid the expenses of prosecuting

such claim. The failure of the Corporation (including its Board of Directors or any committee thereof, independent legal counsel, or stockholders) to make a determination concerning the permissibility of such indemnification under this Article V shall not be a defense to the action and shall not create a presumption that such indemnification is not permissible. The burden of proving that a Director or Officer is not entitled to indemnification shall be on the Corporation.

(c) In any suit brought by a Director or Officer to enforce a right to indemnification hereunder, it shall be a defense that such Director or Officer has not met any applicable standard for indemnification set forth in the DGCL.

SECTION 8. NON-EXCLUSIVITY OF RIGHTS. The rights to indemnification and advancement of Expenses set forth in this Article V shall not be exclusive of any other right which any Director, Officer, or Non-Officer Employee may have or hereafter acquire under any statute, provision of the Certificate or these By-laws, agreement, vote of stockholders or Disinterested Directors or otherwise.

SECTION 9. INSURANCE. The Corporation may maintain insurance, at its expense, to protect itself and any Director, Officer or Non-Officer Employee against any liability of any character asserted against or incurred by the Corporation or any such Director, Officer or Non-Officer Employee, or arising out of any such person's Corporate Status, whether or not the Corporation would have the power to indemnify such person against such liability under the DGCL or the provisions of this Article V.

ARTICLE VI

MISCELLANEOUS PROVISIONS

SECTION 1. FISCAL YEAR. The fiscal year of the Corporation shall be determined by the Board of Directors.

SECTION 2. SEAL. The Board of Directors shall have power to adopt and alter the seal of the Corporation.

SECTION 3. EXECUTION OF INSTRUMENTS. All deeds, leases, transfers, contracts, bonds, notes and other obligations to be entered into by the Corporation in the ordinary course of its business without director action may be executed on behalf of the Corporation by the Chairman of the Board, if one is elected, the President or the Treasurer or any other officer, employee or agent of the Corporation as the Board of Directors or Executive Committee may authorize.

SECTION 4. VOTING OF SECURITIES. Unless the Board of Directors otherwise provides, the Chairman of the Board, if one is elected, the President or the Treasurer may waive notice of and act on behalf of this Corporation, or appoint another person or persons to act as proxy

or attorney in fact for this Corporation with or without discretionary power and/or power of substitution, at any meeting of stockholders or shareholders of any other corporation or organization, any of whose securities are held by this Corporation.

SECTION 5. RESIDENT AGENT. The Board of Directors may appoint a resident agent upon whom legal process may be served in any action or proceeding against the Corporation.

SECTION 6. CORPORATE RECORDS. The original or attested copies of the Certificate, By-laws and records of all meetings of the incorporators, stockholders and the Board of Directors and the stock transfer books, which shall contain the names of all stockholders, their record addresses and the amount of stock held by each, may be kept outside the State of Delaware and shall be kept at the principal office of the Corporation, at the office of its counsel or at an office of its transfer agent or at such other place or places as may be designated from time to time by the Board of Directors.

SECTION 7. CERTIFICATE. All references in these By-laws to the Certificate shall be deemed to refer to the Amended and Restated Certificate of Incorporation of the Corporation, as amended and in effect from time to time.

SECTION 8. AMENDMENT OF BY-LAWS.

(a) AMENDMENT BY DIRECTORS. Except as provided otherwise by law, these By-laws may be amended or repealed by the Board of Directors by the affirmative vote of a majority of the directors then in office.

(b) AMENDMENT BY STOCKHOLDERS. These By-laws may be amended or repealed at any Annual Meeting, or special meeting of stockholders called for such purpose, by the affirmative vote of at least 75% of the shares present in person or represented by proxy at such meeting and entitled to vote on such amendment or repeal, voting together as a single class; provided, however, that if the Board of Directors recommends that stockholders approve such amendment or repeal at such meeting of stockholders, such amendment or repeal shall only require the affirmative vote of the majority of the shares present in person or represented by proxy at such meeting and entitled to vote on such amendment or repeal, voting together as a single class. Notwithstanding the foregoing, stockholder approval shall not be required unless mandated by the Certificate, these By-laws, or other applicable law.

Adopted _____, 2000 and effective as of _____, 2000.

EXHIBIT 4.1

[LOGO]

NUMBER SHARES

HBIO

HARVARD BIOSCIENCE, INC.

INCORPORATED UNDER THE LAWS OF THE STATE OF DELAWARE

THIS CERTIFICATE IS TRANSFERABLE IN BOSTON, MA OR NEW YORK, NY

CUSIP 416906 10 5
COMMON STOCK

THIS CERTIFIES that

SEE REVERSE FOR CERTAIN DEFINITIONS

is the owner of

FULLY PAID AND NON-ASSESSABLE SHARES OF COMMON STOCK, PAR VALUE $.01 PER SHARE, OF

- ------------------------- HARVARD BIOSCIENCE, INC. -------------------------

(herein called the "Corporation"), transferable on the books of the Corporation in person or by duly authorized attorney upon surrender of this Certificate properly endorsed. This Certificate and the shares represented hereby are issued and held subject to the laws of the State of Delaware and to the Certificate of Incorporation and the By-laws of the Corporation, as amended from time to time.

This Certificate is not valid until countersigned and registered by the Transfer Agent and Registrar.

IN WITNESS WHEREOF, the Corporation has caused this Certificate to be executed by the facsimile signatures of its duly authorized officers and sealed with the facsimile seal of the Corporation.

Dated:

[SEAL]

/s/ James Warren
CHIEF FINANCIAL OFFICER AND TREASURER

/s/ Chane Graziano
CHIEF EXECUTIVE OFFICER AND SECRETARY

COUNTERSIGNED AND REGISTERED:
REGISTRAR AND TRANSFER COMPANY

TRANSFER AGENT AND REGISTRAR

BY /s/ SIGNATURE
AUTHORIZED SIGNATURE

HARVARD BIOSCIENCE, INC.

The Corporation is authorized to issue more than one class or series of stock. Upon written request the Corporation will furnish without charge to each stockholder a copy of the powers, designations, preferences and relative, participating, optional or other special rights of each class of stock or series thereof and the qualifications, limitations or restrictions of such preferences and/or rights.

The following abbreviations, when used in the inscription on the face of this Certificate, shall be construed as though they were written out in full according to applicable laws or regulations:

TEN COM	-as tenants in common	UNIF GIFT MIN ACT-	_____Custodian _____
TEN ENT	-as tenants by the entireties		(Cust) (Minor)
JT TEN	-as joint tenants with right of survivorship and not as tenants in common		under Uniform Gifts to Minors Act_____ (State)

Additional abbreviations may also be used though not in the above list.

FOR VALUE RECEIVED, _____ HEREBY SELL, ASSIGN AND TRANSFER UNTO

PLEASE INSERT SOCIAL SECURITY OR OTHER IDENTIFYING NUMBER OF ASSIGNEE

_____

(PLEASE PRINT OR TYPEWRITE NAME AND ADDRESS, INCLUDING ZIP CODE OF ASSIGNEE)

_____

_____

_____ SHARES

OF THE COMMON STOCK REPRESENTED BY THE WITHIN CERTIFICATE, AND DO HEREBY IRREVOCABLY CONSTITUTE AND APPOINT

_____ ATTORNEY

TO TRANSFER THE SAID STOCK ON THE BOOKS OF THE WITHIN NAMED COMPANY WITH FULL POWER OF SUBSTITUTION IN THE PREMISES.

DATED _____

_____

NOTICE: THE SIGNATURE TO THIS ASSIGNMENT MUST CORRESPOND WITH THE NAME AS WRITTEN UPON THE FACE OF THE CERTIFICATE IN EVERY PARTICULAR, WITHOUT ALTERATION OR ENLARGEMENT OR ANY CHANGE WHATEVER.

SIGNATURE(S) GUARANTEED: _____

THE SIGNATURE(S) SHOULD BE GUARANTEED BY AN ELIGIBLE GUARANTOR INSTITUTION (BANKS, STOCKBROKERS, SAVINGS AND LOAN ASSOCIATIONS AND CREDIT UNIONS WITH MEMBERSHIP IN AN APPROVED SIGNATURE GUARANTEE MEDALLION PROGRAM). PURSUANT TO S.E.C. RULE 17Ad-15.

Exhibit 5.1

GOODWIN, PROCTER & HOAR LLP

COUNSELLORS AT LAW
EXCHANGE PLACE
BOSTON, MASSACHUSETTS 02109-2881

November 8, 2000

Harvard Bioscience, Inc.
84 October Hill Road
Holliston, Massachusetts 01746-1371

Ladies and Gentlemen:

Re: REGISTRATION STATEMENT ON FORM S-1

This opinion is delivered in our capacity as special counsel to Harvard Bioscience, Inc. (the "Company") in connection with the preparation and filing with the Securities and Exchange Commission under the Securities Act of 1933 of a Registration Statement on Form S-1 (the "Registration Statement") relating to 7,359,950 shares of Common Stock, par value $.01 per share (the "Registered Shares"), including 6,250,000 primary shares to be sold by the Company (the "Primary Shares"), and 937,500 shares to be sold by the Company which the underwriters have an option to purchase solely for the purpose of covering over-allotments (the "Company Option Shares" and, together with the Primary Shares, the "Company Shares") and 172,450 shares to be sold by a stockholder of the Company named in the Registration Statement (the "Stockholder Shares"). The Registered Shares are to be sold to the several underwriters (the "Underwriters") of which Thomas Weisel Partners LLC, Dain Rauscher Incorporated and ING Barings LLC are the representatives (the "Representatives") pursuant to an Underwriting Agreement (the "Underwriting Agreement") to be entered into between the Company and the Representatives of the Underwriters.

As counsel for the Company, we have examined the form of the proposed Underwriting Agreement being filed as an exhibit to the Registration Statement, the Company's Amended and Restated Certificate of Incorporation and the Company's Amended and Restated By-laws, each as will be in effect at the time of the issuance of the Registered Shares, and the Company's Certificate of Ownership and Merger as will be filed prior to the issuance of the Registered Shares and such records, certificates and other documents of the Company as we have deemed necessary or appropriate for the purposes of this opinion.

Based on the foregoing, we are of the opinion that (i) when the Company's Amended and Restated Certificate of Incorporation and the Certificate of Ownership and Merger are filed the Stockholder Shares will be duly authorized, legally issued, fully paid and non-assessable by the Company under the Delaware General Corporation Law (the "DGCL") and (ii) when the Underwriting Agreement is completed (including the insertion therein of pricing terms) and executed by the Company and on behalf of the Underwriters, and the Company Shares are sold to the Underwriters and paid for pursuant to the terms of the Underwriting Agreement, the Company Shares will be duly authorized, legally issued, fully paid and non-assessable by the Company under the DGCL.

We hereby consent to being named as counsel to the Company in the Registration Statement, to the references therein to our firm under the caption "Legal Matters," and to the inclusion of this opinion as an exhibit to the Registration Statement.

Very truly yours,

/s/ GOODWIN, PROCTER & HOAR LLP

GOODWIN, PROCTER & HOAR LLP

Exhibit 10.2

HARVARD BIOSCIENCE, INC.

2000 STOCK OPTION AND INCENTIVE PLAN

SECTION 1. GENERAL PURPOSE OF THE PLAN; DEFINITIONS

The name of the plan is the Harvard Bioscience, Inc. 2000 Stock Option and Incentive Plan (the "Plan"). The purpose of the Plan is to encourage and enable the officers, employees, Independent Directors and other key persons (including consultants) of Harvard Bioscience, Inc. (the "Company") and its Subsidiaries upon whose judgment, initiative and efforts the Company largely depends for the successful conduct of its business to acquire a proprietary interest in the Company. It is anticipated that providing such persons with a direct stake in the Company's welfare will assure a closer identification of their interests with those of the Company, thereby stimulating their efforts on the Company's behalf and strengthening their desire to remain with the Company.

The following terms shall be defined as set forth below:

"ACT" means the Securities Act of 1933, as amended, and the rules and regulations thereunder.

"ADMINISTRATOR" is defined in Section 2(a).

"AWARD" or "AWARDS," except where referring to a particular category of grant under the Plan, shall include Incentive Stock Options, Non-Qualified Stock Options, Stock Appreciation Rights, Deferred Stock Awards, Restricted Stock Awards, Unrestricted Stock Awards, Performance Share Awards and Dividend Equivalent Rights.

"BOARD" means the Board of Directors of the Company.

"CHANGE OF CONTROL" is defined in Section 17.

"CODE" means the Internal Revenue Code of 1986, as amended, and any successor Code, and related rules, regulations and interpretations.

"COMMITTEE" means the Committee of the Board referred to in Section 2.

"COVERED EMPLOYEE" means an employee who is a "Covered Employee" within the meaning of Section 162(m) of the Code.

"DEFERRED STOCK AWARD" means Awards granted pursuant to Section 8.

"DIVIDEND EQUIVALENT RIGHT" means Awards granted pursuant to Section 12.

"EFFECTIVE DATE" means the date on which the Plan is approved by stockholders as set forth in Section 19.

"EXCHANGE ACT" means the Securities Exchange Act of 1934, as amended, and the rules and regulations thereunder.

"FAIR MARKET VALUE" of the Stock on any given date means the fair market value of the Stock determined in good faith by the Administrator; provided, however, that if the Stock is admitted to quotation on the National Association of Securities Dealers Automated Quotation System ("Nasdaq"), Nasdaq National System or a national securities exchange, the determination shall be made by reference to market quotations. If there are no market quotations for such date, the determination shall be made by reference to the last date preceding such date for which there are market quotations; provided further, however, that if the date for which Fair Market Value is determined is the first day when trading prices for the Stock are reported on Nasdaq or on a national securities exchange, the Fair Market Value shall be the "Price to the Public" (or equivalent) set forth on the cover page for the final prospectus relating to the Company's Initial Public Offering.

"INCENTIVE STOCK OPTION" means any Stock Option designated and qualified as an "incentive stock option" as defined in Section 422 of the Code.

"INDEPENDENT DIRECTOR" means a member of the Board who is not also an employee of the Company or any Subsidiary.

"INITIAL PUBLIC OFFERING" means the consummation of the first fully underwritten, firm commitment public offering pursuant to an effective registration statement under the Act, other than on Forms S-4 or S-8 or their then equivalents, covering the offer and sale by the Company of its equity securities, or such other event as a result of or following which the Stock shall be publicly held.

"NON-QUALIFIED STOCK OPTION" means any Stock Option that is not an Incentive Stock Option.

"OPTION" or "STOCK OPTION" means any option to purchase shares of Stock granted pursuant to Section 5.

"PERFORMANCE SHARE AWARD" means Awards granted pursuant to Section 10.

"PERFORMANCE CYCLE" means one or more periods of time, which may be of varying and overlapping durations, as the Administrator may select, over which the attainment of one or more performance criteria will be measured for the purpose of determining a grantee's right to and the payment of a Performance Share Award, Restricted Stock Award or Deferred Stock Award.

"RESTRICTED STOCK AWARD" means Awards granted pursuant to Section 7.

"STOCK" means the Common Stock, par value $.01 per share, of the Company, subject to adjustments pursuant to Section 3.

"STOCK APPRECIATION RIGHT" means any Award granted pursuant to Section 6.

"SUBSIDIARY" means any corporation or other entity (other than the Company) in any unbroken chain of corporations or other entities beginning with the Company if each of the corporations or entities (other than the last corporation or entity in the unbroken chain) owns stock or other interests possessing 50 percent or more of the economic interest or the total combined voting power of all classes of stock or other interests in one of the other corporations or entities in the chain.

"UNRESTRICTED STOCK AWARD" means any Award granted pursuant to Section 9.

SECTION 2. ADMINISTRATION OF PLAN; ADMINISTRATOR AUTHORITY TO SELECT GRANTEES AND DETERMINE AWARDS

(a) COMMITTEE. The Plan shall be administered by either the Board or a committee of not less than two Independent Directors (in either case, the "Administrator").

(b) POWERS OF ADMINISTRATOR. The Administrator shall have the power and authority to grant Awards consistent with the terms of the Plan, including the power and authority:

(i) to select the individuals to whom Awards may from time to time be granted;

(ii) to determine the time or times of grant, and the extent, if any, of Incentive Stock Options, Non-Qualified Stock Options, Stock Appreciation Rights, Restricted Stock Awards, Deferred Stock Awards, Unrestricted Stock Awards, Performance Share Awards and Dividend Equivalent Rights, or any combination of the foregoing, granted to any one or more grantees;

(iii) to determine the number of shares of Stock to be covered by any Award;

(iv) to determine and modify from time to time the terms and conditions, including restrictions, not inconsistent with the terms of the Plan, of any Award, which terms and conditions may differ among individual Awards and grantees, and to approve the form of written instruments evidencing the Awards;

(v) to accelerate at any time the exercisability or vesting of all or any portion of any Award;

(vi) subject to the provisions of Section 5(a)(ii), to extend at any time the period in which Stock Options may be exercised;

(vii) to determine at any time whether, to what extent, and under what circumstances distribution or the receipt of Stock and other amounts payable with respect to an Award shall be deferred either automatically or at the election of the grantee and whether and to what extent the Company shall pay or credit amounts constituting interest (at rates determined by the Administrator) or dividends or deemed dividends on such deferrals; and

(viii) at any time to adopt, alter and repeal such rules, guidelines and practices for administration of the Plan and for its own acts and proceedings as it shall deem advisable; to interpret the terms and provisions of the Plan and any Award (including related written instruments); to make all determinations it deems advisable for the administration of the Plan; to decide all disputes arising in connection with the Plan; and to otherwise supervise the administration of the Plan.

All decisions and interpretations of the Administrator shall be binding on all persons, including the Company and Plan grantees.

(c) DELEGATION OF AUTHORITY TO GRANT AWARDS. The Administrator, in its discretion, may delegate to the Chief Executive Officer of the Company all or part of the Administrator's authority and duties with respect to the granting of Awards at Fair Market Value, to individuals who are not subject to the reporting and other provisions of Section 16 of the Exchange Act or "covered employees" within the meaning of Section 162(m) of the Code. Any such delegation by the Administrator shall include a limitation as to the amount of Awards that may be granted during the period of the delegation and shall contain guidelines as to the determination of the exercise price of any Stock Option or Stock Appreciation Right, the conversion ratio or price of other Awards and the vesting criteria. The Administrator may revoke or amend the terms of a delegation at any time but such action shall not invalidate any prior actions of the Administrator's delegate or delegates that were consistent with the terms of the Plan.

(d) INDEMNIFICATION. Neither the Board nor the Committee, nor any member of either or any delegatee thereof, shall be liable for any act, omission, interpretation, construction or determination made in good faith in connection with the Plan, and the members of the Board and the Committee (and any delegatee thereof) shall be entitled in all cases to indemnification and reimbursement by the Company in respect of any claim, loss, damage or expense (including, without limitation, reasonable attorneys' fees) arising or resulting therefrom to the fullest extent permitted by law and/or under any directors' and officers' liability insurance coverage which may be in effect from time to time.

SECTION 3. STOCK ISSUABLE UNDER THE PLAN; MERGERS; SUBSTITUTION

(a) STOCK ISSUABLE. Subject to adjustment as provided in Section 3(b), the maximum number of shares of Stock reserved and available for issuance under the Plan shall be such aggregate number of shares of Stock as does not exceed the sum of (i) three million seven hundred fifty thousand (3,750,000) shares; plus (ii) as of each June 30 and December 31 following the closing of the Company's initial public offering, an additional positive number equal to fifteen percent (15%) of the shares of Stock issued by the Company during the six-month period then ended (excluding shares issued in the Company's initial public offering); provided that not more than three million seven hundred fifty thousand (3,750,000) shares shall be issued in the form of Unrestricted Stock Awards, Restricted Stock Awards, or Performance Share Awards except to the extent such Awards are granted in lieu of cash compensation or fees. For purposes of this limitation, the shares of Stock underlying any Awards which are forfeited, canceled, reacquired by the Company, satisfied without the issuance of Stock or otherwise terminated (other than by exercise) shall be added back to the shares of Stock available for issuance under the Plan. Subject to such overall limitation, shares of Stock may be issued up to such maximum number pursuant to any type or types of Award; provided, however, that Stock Options or Stock Appreciation Rights with respect to no more than 1,000,000 shares of Stock may be granted to any one individual grantee during any one calendar year period. The shares available for issuance under the Plan may be authorized but unissued shares of Stock or shares of Stock reacquired by the Company and held in its treasury.

(b) CHANGES IN STOCK. Subject to Section 3(c) hereof, if, as a result of any reorganization, recapitalization, reclassification, stock dividend, stock split, reverse stock split or other similar change in the Company's capital stock, the outstanding shares of Stock are increased or decreased or are exchanged for a different number or kind of shares or other securities of the Company, or additional shares or new or different shares or other securities of the Company or other non-cash assets are distributed with respect to such shares of Stock or other securities, or, if, as a result of any merger or consolidation, sale of all or substantially all of the assets of the Company, the outstanding shares of Stock are converted into or exchanged for a different number or kind of securities of the Company or any successor entity (or a parent or subsidiary thereof), the Administrator shall make an appropriate or proportionate adjustment in (i) the maximum number of shares reserved for issuance under the Plan, including the maximum number of shares that may be issued in the form of Unrestricted Stock Awards, Restricted Stock Awards or Performance Share Awards, (ii) the number of Stock Options or Stock Appreciation Rights that can be granted to any one individual grantee and the maximum number of shares that may be granted under a Performance-based Award, (iii) the number and kind of shares or other securities subject to any then outstanding Awards under the Plan, (iv) the repurchase price per share subject to each outstanding Restricted Stock Award, and (v) the price for each share subject to any then outstanding Stock Options and Stock Appreciation Rights under the Plan, without changing the aggregate exercise price (i.e., the exercise price multiplied by the number of Stock Options and Stock Appreciation Rights) as to which such Stock Options and Stock Appreciation Rights remain exercisable. The adjustment by the

Administrator shall be final, binding and conclusive. No fractional shares of Stock shall be issued under the Plan resulting from any such adjustment, but the Administrator in its discretion may make a cash payment in lieu of fractional shares.

The Administrator may also adjust the number of shares subject to outstanding Awards and the exercise price and the terms of outstanding Awards to take into consideration material changes in accounting practices or principles, extraordinary dividends, acquisitions or dispositions of stock or property or any other event if it is determined by the Administrator that such adjustment is appropriate to avoid distortion in the operation of the Plan, provided that no such adjustment shall be made in the case of an Incentive Stock Option, without the consent of the grantee, if it would constitute a modification, extension or renewal of the Option within the meaning of Section 424(h) of the Code.

(c) MERGERS AND OTHER TRANSACTIONS. In the case of and subject to the consummation of (i) the dissolution or liquidation of the Company, (ii) the sale of all or substantially all of the assets of the Company on a consolidated basis to an unrelated person or entity, (iii) a merger, reorganization or consolidation in which the outstanding shares of Stock are converted into or exchanged for a different kind of securities of the successor entity and the holders of the Company's outstanding voting power immediately prior to such transaction do not own a majority of the outstanding voting power of the successor entity immediately upon completion of such transaction, or (iv) the sale of all of the Stock of the Company to an unrelated person or entity (in each case, a "Sale Event"), all Options and Stock Appreciation Rights that are not exercisable immediately prior to the effective time of the Sale Event shall become fully exercisable as of the effective time of the Sale Event and all other Awards with conditions and restrictions relating solely to the passage of time and continued employment shall become fully vested and nonforfeitable as of the effective time of the Sale Event, except as the Administrator may otherwise specify with respect to particular Awards. Upon the effective time of the Sale Event, the Plan and all outstanding Awards granted hereunder shall terminate, unless provision is made in connection with the Sale Event in the sole discretion of the parties thereto for the assumption or continuation of Awards theretofore granted by the successor entity, or the substitution of such Awards with new Awards of the successor entity or parent thereof, with appropriate adjustment as to the number and kind of shares and, if appropriate, the per share exercise prices, as such parties shall agree (after taking into account any acceleration hereunder). In the event of such termination, each grantee shall be permitted, within a specified period of time prior to the consummation of the Sale Event as determined by the Administrator, to exercise all outstanding Options and Stock Appreciation Rights held by such grantee, including those that will become exercisable upon the consummation of the Sale Event; provided, however, that the exercise of Options and Stock Appreciation Rights not exercisable prior to the Sale Event shall be subject to the consummation of the Sale Event.

Notwithstanding anything to the contrary in this Section 3.2(c), in the event of a Sale Event pursuant to which holders of the Stock of the Company will receive upon consummation thereof a cash payment for each share surrendered in the Sale Event, the Company shall have the right, but not the obligation, to make or provide for a cash payment to the grantees holding

Options and Stock Appreciation Rights, in exchange for the cancellation thereof, in an amount equal to the difference between (A) the value as determined by the Administrator of the consideration payable per share of Stock pursuant to the Sale Event (the "Sale Price") times the number of shares of Stock subject to outstanding Options and Stock Appreciation Rights (to the extent then exercisable at prices not in excess of the Sale Price) and (B) the aggregate exercise price of all such outstanding Options and Stock Appreciation Rights.

(d) SUBSTITUTE AWARDS. The Administrator may grant Awards under the Plan in substitution for stock and stock based awards held by employees, directors or other key persons of another corporation in connection with the merger or consolidation of the employing corporation with the Company or a Subsidiary or the acquisition by the Company or a Subsidiary of property or stock of the employing corporation. The Administrator may direct that the substitute awards be granted on such terms and conditions as the Administrator considers appropriate in the circumstances. Any substitute Awards granted under the Plan shall not count against the share limitation set forth in Section 3(a).

SECTION 4. ELIGIBILITY

Grantees under the Plan will be such full or part-time officers and other employees, Independent Directors and key persons (including consultants and prospective employees) of the Company and its Subsidiaries as are selected from time to time by the Administrator in its sole discretion.

SECTION 5. STOCK OPTIONS

Any Stock Option granted under the Plan shall be in such form as the Administrator may from time to time approve.

Stock Options granted under the Plan may be either Incentive Stock Options or Non-Qualified Stock Options. Incentive Stock Options may be granted only to employees of the Company or any Subsidiary that is a "subsidiary corporation" within the meaning of Section 424(f) of the Code. To the extent that any Option does not qualify as an Incentive Stock Option, it shall be deemed a Non-Qualified Stock Option.

No Incentive Stock Option shall be granted under the Plan after October 26, 2010.

(a) STOCK OPTIONS GRANTED TO EMPLOYEES AND KEY PERSONS. The Administrator in its discretion may grant Stock Options to eligible employees and key persons of the Company or any Subsidiary. Stock Options granted pursuant to this Section 5(a) shall be subject to the following terms and conditions and shall contain such additional terms and conditions, not inconsistent with the terms of the Plan, as the Administrator shall deem desirable. If the Administrator so determines, Stock Options may be granted in lieu of cash compensation at the optionee's election, subject to such terms and conditions as the Administrator may establish.

(i) EXERCISE PRICE. The exercise price per share for the Stock covered by a Stock Option granted pursuant to this Section 5(a) shall be determined by the Administrator at the time of grant but shall not be less than 100 percent of the Fair Market Value on the date of grant in the case of Incentive Stock Options, or 85 percent of the Fair Market Value on the date of grant, in the case of Non-Qualified Stock Options (other than options granted in lieu of cash compensation). If an employee owns or is deemed to own (by reason of the attribution rules of Section 424(d) of the Code) more than 10 percent of the combined voting power of all classes of stock of the Company or any parent or subsidiary corporation and an Incentive Stock Option is granted to such employee, the option price of such Incentive Stock Option shall be not less than 110 percent of the Fair Market Value on the grant date.

(ii) OPTION TERM. The term of each Stock Option shall be fixed by the Administrator, but no Stock Option shall be exercisable more than 10 years after the date the Stock Option is granted. If an employee owns or is deemed to own (by reason of the attribution rules of Section 424(d) of the Code) more than 10 percent of the combined voting power of all classes of stock of the Company or any parent or subsidiary corporation and an Incentive Stock Option is granted to such employee, the term of such Stock Option shall be no more than five years from the date of grant.

(iii) EXERCISABILITY; RIGHTS OF A STOCKHOLDER. Stock Options shall become exercisable at such time or times, whether or not in installments, as shall be determined by the Administrator at or after the grant date. The Administrator may at any time accelerate the exercisability of all or any portion of any Stock Option. An optionee shall have the rights of a stockholder only as to shares acquired upon the exercise of a Stock Option and not as to unexercised Stock Options.

(iv) METHOD OF EXERCISE. Stock Options may be exercised in whole or in part, by giving written notice of exercise to the Company, specifying the number of shares to be purchased. Payment of the purchase price may be made by one or more of the following methods to the extent provided in the Option Award agreement:

(A) In cash, by certified or bank check or other instrument acceptable to the Administrator;

(B) Through the delivery (or attestation to the ownership) of shares of Stock that have been purchased by the optionee on the open market or that have been beneficially owned by the optionee for at least six months and are not then subject to restrictions under any Company plan. Such surrendered shares shall be valued at Fair Market Value on the exercise date;

(C) By the optionee delivering to the Company a properly executed exercise notice together with irrevocable instructions to a broker to promptly deliver to the Company cash or a check payable and acceptable to the Company

for the purchase price; provided that in the event the optionee chooses to pay the purchase price as so provided, the optionee and the broker shall comply with such procedures and enter into such agreements of indemnity and other agreements as the Administrator shall prescribe as a condition of such payment procedure; or

(D) By the optionee delivering to the Company a promissory note if the Board has expressly authorized the loan of funds to the optionee for the purpose of enabling or assisting the optionee to effect the exercise of his Stock Option; provided that at least so much of the exercise price as represents the par value of the Stock shall be paid other than with a promissory note if otherwise required by state law.

Payment instruments will be received subject to collection. The delivery of certificates representing the shares of Stock to be purchased pursuant to the exercise of a Stock Option will be contingent upon receipt from the optionee (or a purchaser acting in his stead in accordance with the provisions of the Stock Option) by the Company of the full purchase price for such shares and the fulfillment of any other requirements contained in the Option Award agreement or applicable provisions of laws. In the event an optionee chooses to pay the purchase price by previously-owned shares of Stock through the attestation method, the number of shares of Stock transferred to the optionee upon the exercise of the Stock Option shall be net of the number of shares attested to.

(v) ANNUAL LIMIT ON INCENTIVE STOCK OPTIONS. To the extent required for "incentive stock option" treatment under Section 422 of the Code, the aggregate Fair Market Value (determined as of the time of grant) of the shares of Stock with respect to which Incentive Stock Options granted under this Plan and any other plan of the Company or its parent and subsidiary corporations become exercisable for the first time by an optionee during any calendar year shall not exceed $100,000. To the extent that any Stock Option exceeds this limit, it shall constitute a Non-Qualified Stock Option.

(b) RELOAD OPTIONS. At the discretion of the Administrator, Options granted under the Plan may include a "reload" feature pursuant to which an optionee exercising an option by the delivery of a number of shares of Stock in accordance with Section 5(a)(iv)(B) hereof would automatically be granted an additional Option (with an exercise price equal to the Fair Market Value of the Stock on the date the additional Option is granted and with such other terms as the Administrator may provide) to purchase that number of shares of Stock equal to the sum of (i) the number delivered to exercise the original Option and (ii) the number withheld to satisfy tax liabilities, with an Option term equal to the remainder of the original Option term unless the Administrator otherwise determines in the Award agreement for the original Option grant.

(c) STOCK OPTIONS GRANTED TO INDEPENDENT DIRECTORS.

(i) AUTOMATIC GRANT OF OPTIONS.

(A) Each person who is an Independent Director on the effective date of the Initial Public Offering, other than Christopher W. Dick and Richard C. Klaffky, Jr., shall be granted a Non-Qualified Stock Option to acquire 10,000 shares of Stock.

(B) Each Independent Director who is first elected to serve as a Director after the Initial Public Offering shall be granted, on the fifth business day after his election, a Non-Qualified Stock Option to acquire 10,000 shares of Stock.

(C) Each Independent Director, other than Christopher W. Dick and Richard C. Klaffky, Jr., who is serving as Director of the Company on the fifth business day after each annual meeting of shareholders, beginning with the 2001 annual meeting, shall automatically be granted on such day a Non-Qualified Stock Option to acquire 2,500 shares of Stock.

(D) The exercise price per share for the Stock covered by a Stock Option granted under this Section 5(c) shall be equal to the Fair Market Value of the Stock on the date the Stock Option is granted.

(E) The Administrator, in its discretion, may grant additional Non-Qualified Stock Options to Independent Directors. Any such grant may vary among individual Independent Directors.

(ii) EXERCISE; TERMINATION.

(A) Unless otherwise determined by the Administrator, an Option granted under Section 5(c) shall be exercisable as to one-third of the shares of Stock covered thereby as of the first anniversary of the grant date, as to a second one-third of the shares of Stock covered thereby as of the second anniversary of the grant date, and as to the remaining one-third of the shares of Stock covered thereby as of the third anniversary of the grant date. An Option issued under this Section 5(c) shall not be exercisable after the expiration of ten years from the date of grant.

(B) Options granted under this Section 5(c) may be exercised only by written notice to the Company specifying the number of shares to be purchased. Payment of the full purchase price of the shares to be purchased may be made by one or more of the methods specified in Section 5(a)(iv). An optionee shall

have the rights of a stockholder only as to shares acquired upon the exercise of a Stock Option and not as to unexercised Stock Options.

(d) NON-TRANSFERABILITY OF OPTIONS. No Stock Option shall be transferable by the optionee otherwise than by will or by the laws of descent and distribution and all Stock Options shall be exercisable, during the optionee's lifetime, only by the optionee, or by the optionee's legal representative or guardian in the event of the optionee's incapacity. Notwithstanding the foregoing, the Administrator, in its sole discretion, may provide in the Award agreement regarding a given Option that the optionee may transfer his Non-Qualified Stock Options to members of his immediate family, to trusts for the benefit of such family members, or to partnerships in which such family members are the only partners, provided that the transferee agrees in writing with the Company to be bound by all of the terms and conditions of this Plan and the applicable Option.

SECTION 6. STOCK APPRECIATION RIGHTS.

(a) NATURE OF STOCK APPRECIATION RIGHTS. A Stock Appreciation Right is an Award entitling the recipient to receive an amount in cash or shares of Stock or a combination thereof having a value equal to the excess of the Fair Market Value of the Stock on the date of exercise over the exercise price Stock Appreciation Right, which price shall not be less than 85 percent of the Fair Market Value of the Stock on the date of grant (or more than the option exercise price per share, if the Stock Appreciation Right was granted in tandem with a Stock Option) multiplied by the number of shares of Stock with respect to which the Stock Appreciation Right shall have been exercised, with the Administrator having the right to determine the form of payment.

(b) GRANT AND EXERCISE OF STOCK APPRECIATION RIGHTS. Stock Appreciation Rights may be granted by the Administrator in tandem with, or independently of, any Stock Option granted pursuant to Section 5 of the Plan. In the case of a Stock Appreciation Right granted in tandem with a Non-Qualified Stock Option, such Stock Appreciation Right may be granted either at or after the time of the grant of such Option. In the case of a Stock Appreciation Right granted in tandem with an Incentive Stock Option, such Stock Appreciation Right may be granted only at the time of the grant of the Option.

A Stock Appreciation Right or applicable portion thereof granted in tandem with a Stock Option shall terminate and no longer be exercisable upon the termination or exercise of the related Option.

(c) TERMS AND CONDITIONS OF STOCK APPRECIATION RIGHTS. Stock Appreciation Rights shall be subject to such terms and conditions as shall be determined from time to time by the Administrator, subject to the following:

(i) Stock Appreciation Rights granted in tandem with Options shall be exercisable at such time or times and to the extent that the related Stock Options shall be exercisable.

(ii) Upon exercise of a Stock Appreciation Right, the applicable portion of any related Option shall be surrendered.

(iii) All Stock Appreciation Rights shall be exercisable during the grantee's lifetime only by the grantee or the grantee's legal representative.

SECTION 7. RESTRICTED STOCK AWARDS

(a) NATURE OF RESTRICTED STOCK AWARDS. A Restricted Stock Award is an Award entitling the recipient to acquire, at such purchase price as determined by the Administrator, shares of Stock subject to such restrictions and conditions as the Administrator may determine at the time of grant ("Restricted Stock"). Conditions may be based on continuing employment (or other service relationship) and/or achievement of pre-established performance goals and objectives. The grant of a Restricted Stock Award is contingent on the grantee executing the Restricted Stock Award agreement. The terms and conditions of each such agreement shall be determined by the Administrator, and such terms and conditions may differ among individual Awards and grantees.

(b) RIGHTS AS A STOCKHOLDER. Upon execution of a written instrument setting forth the Restricted Stock Award and payment of any applicable purchase price, a grantee shall have the rights of a stockholder with respect to the voting of the Restricted Stock, subject to such conditions contained in the written instrument evidencing the Restricted Stock Award. Unless the Administrator shall otherwise determine, certificates evidencing the Restricted Stock shall remain in the possession of the Company until such Restricted Stock is vested as provided in Section 7(d) below, and the grantee shall be required, as a condition of the grant, to deliver to the Company a stock power endorsed in blank.

(c) RESTRICTIONS. Restricted Stock may not be sold, assigned, transferred, pledged or otherwise encumbered or disposed of except as specifically provided herein or in the Restricted Stock Award agreement. If a grantee's employment (or other service relationship) with the Company and its Subsidiaries terminates for any reason, the Company shall have the right to repurchase Restricted Stock that has not vested at the time of termination at its original purchase price, from the grantee or the grantee's legal representative.

(d) VESTING OF RESTRICTED STOCK. The Administrator at the time of grant shall specify the date or dates and/or the attainment of pre-established performance goals, objectives and other conditions on which the non-transferability of the Restricted Stock and the Company's right of repurchase or forfeiture shall lapse. Subsequent to such date or dates and/or the attainment of such pre-established performance goals, objectives and other conditions, the shares on which all restrictions have lapsed shall no longer be Restricted Stock

and shall be deemed "vested." Except as may otherwise be provided by the Administrator either in the Award agreement or, subject to Section 15 below, in writing after the Award agreement is issued, a grantee's rights in any shares of Restricted Stock that have not vested shall automatically terminate upon the grantee's termination of employment (or other service relationship) with the Company and its Subsidiaries and such shares shall be subject to the Company's right of repurchase as provided in Section 7(c) above.

(e) WAIVER, DEFERRAL AND REINVESTMENT OF DIVIDENDS. The Restricted Stock Award agreement may require or permit the immediate payment, waiver, deferral or investment of dividends paid on the Restricted Stock.

SECTION 8. DEFERRED STOCK AWARDS

(a) NATURE OF DEFERRED STOCK AWARDS. A Deferred Stock Award is an Award of phantom stock units to a grantee, subject to restrictions and conditions as the Administrator may determine at the time of grant. Conditions may be based on continuing employment (or other service relationship) and/or achievement of pre-established performance goals and objectives. The grant of a Deferred Stock Award is contingent on the grantee executing the Deferred Stock Award agreement. The terms and conditions of each such agreement shall be determined by the Administrator, and such terms and conditions may differ among individual Awards and grantees. At the end of the deferral period, the Deferred Stock Award, to the extent vested, shall be paid to the grantee in the form of shares of Stock.

(b) ELECTION TO RECEIVE DEFERRED STOCK AWARDS IN LIEU OF COMPENSATION. The Administrator may, in its sole discretion, permit a grantee to elect to receive a portion of the cash compensation or Restricted Stock Award otherwise due to such grantee in the form of a Deferred Stock Award. Any such election shall be made in writing and shall be delivered to the Company no later than the date specified by the Administrator and in accordance with rules and procedures established by the Administrator. The Administrator shall have the sole right to determine whether and under what circumstances to permit such elections and to impose such limitations and other terms and conditions thereon as the Administrator deems appropriate.

(c) RIGHTS AS A STOCKHOLDER. During the deferral period, a grantee shall have no rights as a stockholder; provided, however, that the grantee may be credited with Dividend Equivalent Rights with respect to the phantom stock units underlying his Deferred Stock Award, subject to such terms and conditions as the Administrator may determine.

(d) RESTRICTIONS. A Deferred Stock Award may not be sold, assigned, transferred, pledged or otherwise encumbered or disposed of during the deferral period.

(e) TERMINATION. Except as may otherwise be provided by the Administrator either in the Award agreement or, subject to Section 15 below, in writing after the Award agreement is issued, a grantee's right in all Deferred Stock Awards that have not vested shall

automatically terminate upon the grantee's termination of employment (or cessation of service relationship) with the Company and its Subsidiaries for any reason.

SECTION 9. UNRESTRICTED STOCK AWARDS

GRANT OR SALE OF UNRESTRICTED STOCK. The Administrator may, in its sole discretion, grant (or sell at par value or such higher purchase price determined by the Administrator) an Unrestricted Stock Award to any grantee pursuant to which such grantee may receive shares of Stock free of any restrictions ("Unrestricted Stock") under the Plan. Unrestricted Stock Awards may be granted in respect of past services or other valid consideration, or in lieu of cash compensation due to such grantee.

SECTION 10. PERFORMANCE SHARE AWARDS

(a) NATURE OF PERFORMANCE SHARE AWARDS. A Performance Share Award is an Award entitling the recipient to acquire shares of Stock upon the attainment of specified performance goals. The Administrator may make Performance Share Awards independent of or in connection with the granting of any other Award under the Plan. The Administrator in its sole discretion shall determine whether and to whom Performance Share Awards shall be made, the performance goals, the periods during which performance is to be measured, and all other limitations and conditions.

(b) RIGHTS AS A STOCKHOLDER. A grantee receiving a Performance Share Award shall have the rights of a stockholder only as to shares actually received by the grantee under the Plan and not with respect to shares subject to the Award but not actually received by the grantee. A grantee shall be entitled to receive a stock certificate evidencing the acquisition of shares of Stock under a Performance Share Award only upon satisfaction of all conditions specified in the Performance Share Award agreement (or in a performance plan adopted by the Administrator).

(c) TERMINATION. Except as may otherwise be provided by the Administrator either in the Award agreement or, subject to Section 15 below, in writing after the Award agreement is issued, a grantee's rights in all Performance Share Awards shall automatically terminate upon the grantee's termination of employment (or cessation of service relationship) with the Company and its Subsidiaries for any reason.

(d) ACCELERATION, WAIVER, ETC. At any time prior to the grantee's termination of employment (or other service relationship) by the Company and its Subsidiaries, the Administrator may in its sole discretion accelerate, waive or, subject to Section 15, amend any or all of the goals, restrictions or conditions applicable to a Performance Share Award.

SECTION 11. PERFORMANCE-BASED AWARDS TO COVERED EMPLOYEES

Notwithstanding anything to the contrary contained herein, if any Restricted Stock Award, Deferred Stock Award or Performance Share Award granted to a Covered Employee is intended to qualify as "Performance-based Compensation" under Section 162(m) of the Code and the regulations promulgated thereunder (a "Performance-based Award"), such Award shall comply with the provisions set forth below:

(a) PERFORMANCE CRITERIA. The performance criteria used in performance goals governing Performance-based Awards granted to Covered Employees may include any or all of the following: (i) the Company's return on equity, assets, capital or investment, (ii) pre-tax or after-tax profit levels of the Company or any Subsidiary, a division, an operating unit or a business segment of the Company, or any combination of the foregoing; (iii) cash flow, funds from operations or similar measure; (iv) total shareholder return; (v) changes in the market price of the Stock; (vi) sales or market share; or (vii) earnings per share.

(b) GRANT OF PERFORMANCE-BASED AWARDS. With respect to each Performance-based Award granted to a Covered Employee, the Committee shall select, within the first 90 days of a Performance Cycle (or, if shorter, within the maximum period allowed under Section 162(m) of the Code) the performance criteria for such grant, and the achievement targets with respect to each performance criterion (including a threshold level of performance below which no amount will become payable with respect to such Award). Each Performance-based Award will specify the amount payable, or the formula for determining the amount payable, upon achievement of the various applicable performance targets. The performance criteria established by the Committee may be (but need not be) different for each Performance Cycle and different goals may be applicable to Performance-based Awards to different Covered Employees.

(c) PAYMENT OF PERFORMANCE-BASED AWARDS. Following the completion of a Performance Cycle, the Committee shall meet to review and certify in writing whether, and to what extent, the performance criteria for the Performance Cycle have been achieved and, if so, to also calculate and certify in writing the amount of the Performance-based Awards earned for the Performance Cycle. The Committee shall then determine the actual size of each Covered Employee's Performance-based Award, and, in doing so, may reduce or eliminate the amount of the Performance-based Award for a Covered Employee if, in its sole judgment, such reduction or elimination is appropriate.

(d) MAXIMUM AWARD PAYABLE. The maximum Performance-based Award payable to any one Covered Employee under the Plan for a Performance Cycle is 500,000 Shares (subject to adjustment as provided in Section 3(b) hereof).

SECTION 12. DIVIDEND EQUIVALENT RIGHTS

(a) DIVIDEND EQUIVALENT RIGHTS. A Dividend Equivalent Right is an Award entitling the grantee to receive credits based on cash dividends that would have been paid on the shares of Stock specified in the Dividend Equivalent Right (or other award to which it relates) if such shares had been issued to and held by the grantee. A Dividend Equivalent Right may be granted hereunder to any grantee as a component of another Award or as a freestanding award. The terms and conditions of Dividend Equivalent Rights shall be specified in the Award agreement. Dividend equivalents credited to the holder of a Dividend Equivalent Right may be paid currently or may be deemed to be reinvested in additional shares of Stock, which may thereafter accrue additional equivalents. Any such reinvestment shall be at Fair Market Value on the date of reinvestment or such other price as may then apply under a dividend reinvestment plan sponsored by the Company, if any. Dividend Equivalent Rights may be settled in cash or shares of Stock or a combination thereof, in a single installment or installments. A Dividend Equivalent Right granted as a component of another Award may provide that such Dividend Equivalent Right shall be settled upon exercise, settlement, or payment of, or lapse of restrictions on, such other award, and that such Dividend Equivalent Right shall expire or be forfeited or annulled under the same conditions as such other award. A Dividend Equivalent Right granted as a component of another Award may also contain terms and conditions different from such other award.

(b) INTEREST EQUIVALENTS. Any Award under this Plan that is settled in whole or in part in cash on a deferred basis may provide in the grant for interest equivalents to be credited with respect to such cash payment. Interest equivalents may be compounded and shall be paid upon such terms and conditions as may be specified by the grant.

(c) TERMINATION. Except as may otherwise be provided by the Administrator either in the Award agreement or, subject to Section 15 below, in writing after the Award agreement is issued, a grantee's rights in all Dividend Equivalent Rights or interest equivalents shall automatically terminate upon the grantee's termination of employment (or cessation of service relationship) with the Company and its Subsidiaries for any reason.

SECTION 13. TAX WITHHOLDING

(a) PAYMENT BY GRANTEE. Each grantee shall, no later than the date as of which the value of an Award or of any Stock or other amounts received thereunder first becomes includable in the gross income of the grantee for Federal income tax purposes, pay to the Company, or make arrangements satisfactory to the Administrator regarding payment of, any Federal, state, or local taxes of any kind required by law to be withheld with respect to such income. The Company and its Subsidiaries shall, to the extent permitted by law, have the right to deduct any such taxes from any payment of any kind otherwise due to the grantee. The Company's obligation to deliver stock certificates to any grantee is subject to and conditioned on tax obligations being satisfied by the grantee.

(b) PAYMENT IN STOCK. Subject to approval by the Administrator, a grantee may elect to have the minimum required tax withholding obligation satisfied, in whole or in part, by (i) authorizing the Company to withhold from shares of Stock to be issued pursuant to any Award a number of shares with an aggregate Fair Market Value (as of the date the withholding is effected) that would satisfy the withholding amount due, or (ii) transferring to the Company shares of Stock owned by the grantee with an aggregate Fair Market Value (as of the date the withholding is effected) that would satisfy the withholding amount due.

SECTION 14. TRANSFER, LEAVE OF ABSENCE, ETC.

For purposes of the Plan, the following events shall not be deemed a termination of employment:

(a) a transfer to the employment of the Company from a Subsidiary or from the Company to a Subsidiary, or from one Subsidiary to another; or

(b) an approved leave of absence for military service or sickness, or for any other purpose approved by the Company, if the employee's right to re-employment is guaranteed either by a statute or by contract or under the policy pursuant to which the leave of absence was granted or if the Administrator otherwise so provides in writing.

SECTION 15. AMENDMENTS AND TERMINATION

The Board may, at any time, amend or discontinue the Plan and the Administrator may, at any time, amend or cancel any outstanding Award for the purpose of satisfying changes in law or for any other lawful purpose, but no such action shall adversely affect rights under any outstanding Award without the holder's consent. If and to the extent determined by the Administrator to be required by the Code to ensure that Incentive Stock Options granted under the Plan are qualified under Section 422 of the Code or to ensure that compensation earned under Awards qualifies as performance-based compensation under Section 162(m) of the Code, if and to the extent intended to so qualify, Plan amendments shall be subject to approval by the Company stockholders entitled to vote at a meeting of stockholders. Nothing in this Section 15 shall limit the Administrator's authority to take any action permitted pursuant to Section 3(c).

SECTION 16. STATUS OF PLAN

With respect to the portion of any Award that has not been exercised and any payments in cash, Stock or other consideration not received by a grantee, a grantee shall have no rights greater than those of a general creditor of the Company unless the Administrator shall otherwise expressly determine in connection with any Award or Awards. In its sole discretion, the Administrator may authorize the creation of trusts or other arrangements to meet the Company's obligations to deliver Stock or make payments with respect to Awards hereunder, provided that the existence of such trusts or other arrangements is consistent with the foregoing sentence.

SECTION 17. CHANGE OF CONTROL PROVISIONS

Upon the occurrence of a Change of Control as defined in this Section 17:

(a) Except as otherwise provided in the applicable Award agreement, each outstanding Stock Option and Stock Appreciation Right shall automatically become fully exercisable.

(b) Except as otherwise provided in the applicable Award Agreement, conditions and restrictions on each outstanding Restricted Stock Award, Deferred Stock Award and Performance Share Award which relate solely to the passage of time and continued employment will be removed. Performance or other conditions (other than conditions and restrictions relating solely to the passage of time and continued employment) will continue to apply unless otherwise provided in the applicable Award agreement.

(c) "Change of Control" shall mean the occurrence of any one of the following events:

(i) any "Person," as such term is used in Sections 13(d) and 14(d) of the Act (other than the Company, any of its Subsidiaries, or any trustee, fiduciary or other person or entity holding securities under any employee benefit plan or trust of the Company or any of its Subsidiaries), together with all "affiliates" and "associates" (as such terms are defined in Rule 12b-2 under the Exchange Act) of such person, shall become the "beneficial owner" (as such term is defined in Rule 13d-3 under the Exchange Act), directly or indirectly, of securities of the Company representing 25 percent or more of the combined voting power of the Company's then outstanding securities having the right to vote in an election of the Company's Board of Directors ("Voting Securities") (in such case other than as a result of an acquisition of securities directly from the Company); or

(ii) persons who, as of the Effective Date, constitute the Company's Board of Directors (the "Incumbent Directors") cease for any reason, including, without limitation, as a result of a tender offer, proxy contest, merger or similar transaction, to constitute at least a majority of the Board, provided that any person becoming a director of the Company subsequent to the Effective Date shall be considered an Incumbent Director if such person's election was approved by or such person was nominated for election by either (A) a vote of at least a majority of the Incumbent Directors or (B) a vote of at least a majority of the Incumbent Directors who are members of a nominating committee comprised, in the majority, of Incumbent Directors; but provided further, that any such person whose initial assumption of office is in connection with an actual or threatened election contest relating to the election of members of the Board of Directors or other actual or threatened solicitation of proxies or consents by or on behalf of a Person other than the Board, including by reason of agreement intended to

avoid or settle any such actual or threatened contest or solicitation, shall not be considered an Incumbent Director; or

(iii) the consummation of a consolidation, merger or consolidation or sale or other disposition of all or substantially all of the assets of the Company (a "Corporate Transaction"); excluding, however, a Corporate Transaction in which the stockholders of the Company immediately prior to the Corporate Transaction, would, immediately after the Corporate Transaction, beneficially own (as such term is defined in Rule 13d-3 under the Act), directly or indirectly, shares representing in the aggregate more than 50 percent of the voting shares of the corporation issuing cash or securities in the Corporate Transaction (or of its ultimate parent corporation, if any); or

(iv) the approval by the stockholders of any plan or proposal for the liquidation or dissolution of the Company.

Notwithstanding the foregoing, a "Change of Control" shall not be deemed to have occurred for purposes of the foregoing clause (i) solely as the result of an acquisition of securities by the Company which, by reducing the number of shares of Voting Securities outstanding, increases the proportionate number of shares of Voting Securities beneficially owned by any person to 25 percent or more of the combined voting power of all then outstanding Voting Securities; PROVIDED, HOWEVER, that if any person referred to in this sentence shall thereafter become the beneficial owner of any additional shares of Voting Securities (other than pursuant to a stock split, stock dividend, or similar transaction or as a result of an acquisition of securities directly from the Company) and immediately thereafter beneficially owns 25 percent or more of the combined voting power of all then outstanding Voting Securities, then a "Change of Control" shall be deemed to have occurred for purposes of the foregoing clause (i).

SECTION 18. GENERAL PROVISIONS

(a) NO DISTRIBUTION; COMPLIANCE WITH LEGAL REQUIREMENTS. The Administrator may require each person acquiring Stock pursuant to an Award to represent to and agree with the Company in writing that such person is acquiring the shares without a view to distribution thereof.

No shares of Stock shall be issued pursuant to an Award until all applicable securities law and other legal and stock exchange or similar requirements have been satisfied. The Administrator may require the placing of such stop-orders and restrictive legends on certificates for Stock and Awards as it deems appropriate.

(b) DELIVERY OF STOCK CERTIFICATES. Stock certificates to grantees under this Plan shall be deemed delivered for all purposes when the Company or a stock transfer agent of the Company shall have mailed such certificates in the United States mail, addressed to the grantee, at the grantee's last known address on file with the Company.

(c) OTHER COMPENSATION ARRANGEMENTS; NO EMPLOYMENT RIGHTS. Nothing contained in this Plan shall prevent the Board from adopting other or additional compensation arrangements, including trusts, and such arrangements may be either generally applicable or applicable only in specific cases. The adoption of this Plan and the grant of Awards do not confer upon any employee any right to continued employment with the Company or any Subsidiary.

(d) TRADING POLICY RESTRICTIONS. Option exercises and other Awards under the Plan shall be subject to such Company's insider trading policy, as in effect from time to time.

(e) LOANS TO GRANTEES. The Company shall have the authority to make loans to grantees of Awards hereunder (including to facilitate the purchase of shares) and shall further have the authority to issue shares for promissory notes hereunder.

(f) DESIGNATION OF BENEFICIARY. Each grantee to whom an Award has been made under the Plan may designate a beneficiary or beneficiaries to exercise any Award or receive any payment under any Award payable on or after the grantee's death. Any such designation shall be on a form provided for that purpose by the Administrator and shall not be effective until received by the Administrator. If no beneficiary has been designated by a deceased grantee, or if the designated beneficiaries have predeceased the grantee, the beneficiary shall be the grantee's estate.

SECTION 19. EFFECTIVE DATE OF PLAN

This Plan shall become effective upon approval by the holders of a majority of the votes cast at a meeting of stockholders at which a quorum is present. Subject to such approval by the stockholders and to the requirement that no Stock may be issued hereunder prior to such approval, Stock Options and other Awards may be granted hereunder on and after adoption of this Plan by the Board.

SECTION 20. GOVERNING LAW

This Plan and all Awards and actions taken thereunder shall be governed by, and construed in accordance with, the laws of the State of Delaware, applied without regard to conflict of law principles.

DATE APPROVED BY BOARD OF DIRECTORS: October 26, 2000

DATE APPROVED BY STOCKHOLDERS: _____, 2000

Exhibit 10.3

HARVARD BIOSCIENCE, INC.
EMPLOYEE STOCK PURCHASE PLAN

The purpose of the Harvard Bioscience, Inc. Employee Stock Purchase Plan ("the Plan") is to provide eligible employees of Harvard Bioscience, Inc. (the "Company") and certain of its subsidiaries with opportunities to purchase shares of the Company's common stock, par value $.01 per share (the "Common Stock"). Five hundred thousand (500,000) shares of Common Stock in the aggregate have been approved and reserved for this purpose. The Plan is intended to constitute an "employee stock purchase plan" within the meaning of Section 423(b) of the Internal Revenue Code of 1986, as amended (the "Code"), and shall be interpreted in accordance with that intent.

1. ADMINISTRATION. The Plan will be administered by the person or persons (the "Administrator") appointed by the Company's Board of Directors (the "Board") for such purpose. The Administrator has authority to make rules and regulations for the administration of the Plan, and its interpretations and decisions with regard thereto shall be final and conclusive. No member of the Board or individual exercising administrative authority with respect to the Plan shall be liable for any action or determination made in good faith with respect to the Plan or any option granted hereunder.

2. OFFERINGS. The Company will make one or more offerings to eligible employees to purchase Common Stock under the Plan ("Offerings"). Unless otherwise determined by the Administrator, the initial Offering will begin on January 1, 2001 and will end on June 30, 2001 (the "Initial Offering"). Thereafter, unless otherwise determined by the Administrator, an Offering will begin on the first business day occurring on or after each January 1 and July 1

and will end on the last business day occurring on or before the following June 30 and December 31, respectively. The Administrator may, in its discretion, designate a different period for any Offering, provided that no Offering shall exceed six months in duration or overlap any other Offering.

3. ELIGIBILITY. All employees of the Company (including employees who are also directors of the Company) and all employees of each Designated Subsidiary (as defined in Section 11) are eligible to participate in any one or more of the Offerings under the Plan, provided that as of the first day of the applicable Offering (the "Offering Date") they are customarily employed by the Company or a Designated Subsidiary for more than 20 hours a week.

4. PARTICIPATION. An employee eligible on any Offering Date may participate in such Offering by submitting an enrollment form to his appropriate payroll location at least 15 business days before the Offering Date (or by such other deadline as shall be established for the Offering). The form will (a) state a whole percentage to be deducted from his Compensation (as defined in Section 11) per pay period, (b) authorize the purchase of Common Stock for him in each Offering in accordance with the terms of the Plan and (c) specify the exact name or names in which shares of Common Stock purchased for him are to be issued pursuant to Section 10. An employee who does not enroll in accordance with these procedures will be deemed to have waived his right to participate. Unless an employee files a new enrollment form or withdraws from the Plan, his deductions and purchases will continue at the same percentage of Compensation for future Offerings, provided he remains eligible.

Notwithstanding the foregoing, participation in the Plan will neither be permitted nor be denied contrary to the requirements of the Code.

5. EMPLOYEE CONTRIBUTIONS. Each eligible employee may authorize payroll deductions at a minimum of one percent (1%) up to a maximum of ten percent (10%) of his Compensation for each pay period. The Company will maintain book accounts showing the amount of payroll deductions made by each participating employee for each Offering. No interest will accrue or be paid on payroll deductions.

6. DEDUCTION CHANGES. Except as may be determined by the Administrator in advance of an Offering, an employee may not increase or decrease his payroll deduction during any Offering, but may increase or decrease his payroll deduction with respect to the next Offering (subject to the limitations of Section 5) by filing a new enrollment form at least 15 business days before the next Offering Date (or by such other deadline as shall be established for the Offering). The Administrator may, in advance of any Offering, establish rules permitting an employee to increase, decrease or terminate his payroll deduction during an Offering.

7. WITHDRAWAL. An employee may withdraw from participation in the Plan by delivering a written notice of withdrawal to his appropriate payroll location. The employee's withdrawal will be effective as of the next business day. Following an employee's withdrawal, the Company will promptly refund to him his entire account balance under the Plan (after payment for any Common Stock purchased before the effective date of withdrawal). Partial withdrawals are not permitted. The employee may not begin participation again during the

remainder of the Offering, but may enroll in a subsequent Offering in accordance with Section 4.

8. GRANT OF OPTIONS. On each Offering Date, the Company will grant to each eligible employee who is then a participant in the Plan an option ("Option") to purchase on the last day of such Offering (the "Exercise Date"), at the Option Price hereinafter provided for, (a) a number of shares of Common Stock, which number shall not exceed the number of whole shares which is less than or equal to $12,500 divided by the closing price per share of Common Stock on the Offering Date, or (b) such other lesser maximum number of shares as shall have been established by the Administrator in advance of the Offering. The purchase price for each share purchased under each Option (the "Option Price") will be 85% of the Fair Market Value of the Common Stock on the Offering Date or the Exercise Date, whichever is less.

Notwithstanding the foregoing, no employee may be granted an option hereunder if such employee, immediately after the option was granted, would be treated as owning stock, possessing five percent (5%) or more of the total combined voting power or value of all classes of stock of the Company or any Parent or Subsidiary (as defined in Section 11). For purposes of the preceding sentence, the attribution rules of Section 424(d) of the Code shall apply in determining the stock ownership of an employee, and all stock which the employee has a contractual right to purchase shall be treated as stock owned by the employee. In addition, no employee may be granted an Option which permits his rights to purchase stock under the Plan, and any other employee stock purchase plan of the Company and its Parents and Subsidiaries, to accrue at a rate which exceeds $25,000 of the fair market value of such stock (determined on

the option grant date or dates) for each calendar year in which the Option is outstanding at any time. The purpose of the limitation in the preceding sentence is to comply with Section 423(b)(8) of the Code.

9. EXERCISE OF OPTION AND PURCHASE OF SHARES. Each employee who continues to be a participant in the Plan on the Exercise Date shall be deemed to have exercised his Option on such date and shall acquire from the Company such number of whole shares of Common Stock reserved for the purpose of the Plan as his accumulated payroll deductions on such date will purchase at the Option Price, subject to any other limitations contained in the Plan. Any amount remaining in an employee's account at the end of an Offering solely by reason of the inability to purchase a fractional share will be carried forward to the next Offering; any other balance remaining in an employee's account at the end of an Offering will be refunded to the employee promptly.

10. ISSUANCE OF CERTIFICATES. Certificates representing shares of Common Stock purchased under the Plan may be issued only in the name of the employee, in the name of the employee and another person of legal age as joint tenants with rights of survivorship, or in the name of a broker authorized by the employee to be his, or their, nominee for such purpose.

11. DEFINITIONS.

The term "Compensation" means the amount of base pay, prior to salary reduction pursuant to either Section 125 or 401(k) of the Code, but excluding overtime, commissions, incentive or bonus awards, allowances and reimbursements for expenses such as relocation allowances or travel expenses, income or gains on the exercise of Company stock options, and similar items.

The term "Designated Subsidiary" means any present or future Subsidiary (as defined below) that has been designated by the Board to participate in the Plan. The Board may so designate any Subsidiary, or revoke any such designation, at any time and from time to time, either before or after the Plan is approved by the stockholders.

The term "Fair Market Value of the Common Stock" on any given date means the fair market value of the Common Stock determined in good faith by the Administrator; PROVIDED, HOWEVER, that if the Common Stock is admitted to quotation on the National Association of Securities Dealers Automated Quotation System ("Nasdaq"), Nasdaq National System or national securities exchange, the determination shall be made by reference to market quotations. If there are no market quotations for such date, the determination shall be made by reference to the last date preceding such date for which there are market quotations.

The term "Initial Public Offering" means the consummation of the first fully underwritten, firm commitment public offering pursuant to an effective registration statement under the Securities Act of 1933, as amended, other than on Forms S-4 or S-8 or their then equivalents, covering the offer and sale by the Company of its Common Stock.

The term "Parent" means a "parent corporation" with respect to the Company, as defined in Section 424(e) of the Code.

The term "Subsidiary" means a "subsidiary corporation" with respect to the Company, as defined in Section 424(f) of the Code.

12. RIGHTS ON TERMINATION OF EMPLOYMENT. If a participating employee's employment terminates for any reason before the Exercise Date for any Offering, no payroll deduction will be taken from any pay due and owing to the employee and the balance in his

account will be paid to him or, in the case of his death, to his designated beneficiary as if he had withdrawn from the Plan under Section 7. An employee will be deemed to have terminated employment, for this purpose, if the corporation that employs him, having been a Designated Subsidiary, ceases to be a Subsidiary, or if the employee is transferred to any corporation other than the Company or a Designated Subsidiary.

13. SPECIAL RULES. Notwithstanding anything herein to the contrary, the Administrator may adopt special rules applicable to the employees of a particular Designated Subsidiary, whenever the Administrator determines that such rules are necessary or appropriate for the implementation of the Plan in a jurisdiction where such Designated Subsidiary has employees; provided that such rules are consistent with the requirements of Section 423(b) of the Code. Such special rules may include (by way of example, but not by way of limitation) the establishment of a method for employees of a given Designated Subsidiary to fund the purchase of shares other than by payroll deduction, if the payroll deduction method is prohibited by local law or is otherwise impracticable. Any special rules established pursuant to this Section 13 shall, to the extent possible, result in the employees subject to such rules having substantially the same rights as other participants in the Plan.

14. OPTIONEES NOT STOCKHOLDERS. Neither the granting of an Option to an employee nor the deductions from his pay shall constitute such employee a holder of the shares of Common Stock covered by an Option under the Plan until such shares have been purchased by and issued to him.

15. RIGHTS NOT TRANSFERABLE. Rights under the Plan are not transferable by a participating employee other than by will or the laws of descent and distribution, and are exercisable during the employee's lifetime only by the employee.

16. APPLICATION OF FUNDS. All funds received or held by the Company under the Plan may be combined with other corporate funds and may be used for any corporate purpose.

17. ADJUSTMENT IN CASE OF CHANGES AFFECTING COMMON STOCK. In the event of a subdivision of outstanding shares of Common Stock, or the payment of a dividend in Common Stock, the number of shares approved for the Plan, and the share limitation set forth in Section 8, shall be increased proportionately, and such other adjustments shall be made as may be deemed equitable by the Administrator. In the event of any other change affecting the Common Stock, such adjustment shall be made as may be deemed equitable by the Administrator to give proper effect to such event.

18. AMENDMENT OF THE PLAN. The Board may at any time, and from time to time, amend the Plan in any respect, except that without the approval, within 12 months of such Board action, by the stockholders, no amendment shall be made increasing the number of shares approved for the Plan or making any other change that would require stockholder approval in order for the Plan, as amended, to qualify as an "employee stock purchase plan" under Section 423(b) of the Code.

19. INSUFFICIENT SHARES. If the total number of shares of Common Stock that would otherwise be purchased on any Exercise Date plus the number of shares purchased under previous Offerings under the Plan exceeds the maximum number of shares issuable under the Plan, the shares then available shall be apportioned among participants in proportion to the

amount of payroll deductions accumulated on behalf of each participant that would otherwise be used to purchase Common Stock on such Exercise Date.

20. TERMINATION OF THE PLAN. The Plan may be terminated at any time by the Board. Upon termination of the Plan, all amounts in the accounts of participating employees shall be promptly refunded.

21. GOVERNMENTAL REGULATIONS. The Company's obligation to sell and deliver Common Stock under the Plan is subject to obtaining all governmental approvals required in connection with the authorization, issuance, or sale of such stock.

The Plan shall be governed by Delaware law except to the extent that such law is preempted by federal law.

22. ISSUANCE OF SHARES. Shares may be issued upon exercise of an Option from authorized by unissued Common Stock, from shares held in the treasury of the Company, or from any other proper source.

23. TAX WITHHOLDING. Participation in the Plan is subject to any minimum required tax withholding on income of the participant in connection with the Plan. Each employee agrees, by entering the Plan, that the Company and its Subsidiaries shall have the right to deduct any such taxes from any payment of any kind otherwise due to the employee, including shares issuable under the Plan.

24. NOTIFICATION UPON SALE OF SHARES. Each employee agrees, by entering the Plan, to give the Company prompt notice of any disposition of shares purchased under the Plan where such disposition occurs within two years after the date of grant of the Option pursuant to which such shares were purchased.

25. EFFECTIVE DATE AND APPROVAL OF SHAREHOLDERS. The Plan shall take effect on the first day of the Company's Initial Public Offering, subject to approval by the holders of a majority of the votes cast at a meeting of stockholders at which a quorum is present or by written consent of the stockholders.

DATE APPROVED BY BOARD OF DIRECTORS: October 26, 2000
DATE APPROVED BY STOCKHOLDERS: _____, 2000

CONFIDENTIAL INFORMATION HAS BEEN OMITTED PURSUANT TO RULE 406 UNDER THE SECURITIES ACT AND HAS BEEN FILED SEPARATELY, WITH THE COMMISSION. THE LOCATIONS OF THE OMITTED INFORMATION HAVE BEEN INDICATED WITH ASTERISKS.

DISTRIBUTION AGREEMENT

THIS DISTRIBUTION AGREEMENT (this "Agreement"), made on the 2nd day of March, 1999, by and between Biochrom Limited, a company incorporated in England, having its registered office at Unit 22 Phase I Cambridge Science Park, Milton Road, Cambridge, CB4 4FJ, England ("Newco") and Amersham Pharmacia Biotech AB, a company incorporated in Sweden, having its registered office at Bjorkgatan 30, SE-751 84 Uppsala, Sweden.

W I T N E S S E T H:

WHEREAS, pursuant to that certain Asset Purchase Agreement by and between Newco and Pharmacia Biotech (Biochrom) Limited ("Biochrom"), Pharmacia & Upjohn, Inc. and Harvard Apparatus, Inc., dated March 2, 1999 (the "Purchase Agreement"), Newco is purchasing from Biochrom the business and substantially all of the assets of Biochrom (the "Acquisition");

WHEREAS, it is a condition to the closing of the Acquisition that AP Biotech enter into this Agreement with Newco and that this Agreement become effective upon the closing of the Acquisition;

WHEREAS, subsequent to the consummation of the Acquisition, Newco will be the manufacturer and seller of certain Products (as hereinafter defined) previously manufactured and/or sold by Biochrom and distributed by AP Biotech; and

WHEREAS, Newco and AP Biotech desire that AP Biotech distribute certain of the Products on the terms and subject to the conditions set forth in this Agreement.

NOW, THEREFORE, in consideration of the above premises and of the mutual agreements and understandings set forth herein, the parties hereto hereby agree as follows:

SECTION 1. DEFINITIONS. (a) As used in this Agreement, the following terms shall have the following meanings:

"AAA Products" shall mean those products set forth in SCHEDULE 1(a) attached hereto.

"AP Biotech" shall mean Amersham Pharmacia Biotech AB and its affiliates. An affiliate shall consist of any entity that, directly or indirectly, is wholly-owned, or has not less than a majority of its voting power or economic interests owned, by Amersham Pharmacia Biotech Ltd.

"Closing Date" shall mean the date of the closing of the Acquisition.

"Current Products" shall mean all products sold or offered for sale by Biochrom to AP Biotech prior to the Closing Date (including without limitation, those products listed in

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SCHEDULES 1(a) AND 1(b) attached hereto). The term "Current Products" shall not include any Modified Products, New Products or Excluded Market Products.

"Customer Information" shall mean, to the extent that such information is in the possession of AP Biotech, (A) information, including names, addresses, telephone and facsimile numbers and e-mail addresses, and purchase histories owned by or in the possession of AP Biotech for all customers (which customers shall include, but shall not be limited to, all subdistributors of AP Biotech which engage in the distribution of products manufactured and sold by Biochrom) of AP Biotech that have purchased Products (including any prior version of Products or discontinued Products) from AP Biotech or have been sent quotes for the prospective purchase of Products and (B) similar information for each end-user of the Products other than customers. Notwithstanding the foregoing, the Customer Information shall exclude all information regarding the prices at which Products were sold by AP Biotech to its customers.

"Daily Rate" shall mean, with respect to any Quarter or Year, the relevant Quarterly Minimum or Yearly Minimum, as the case may be, divided by the number of days contained within such Quarter or Year, respectively.

"Excluded Markets" shall mean markets other than the Market, including without limitation, companies, institutions, individuals or other entities involved in food and beverage applications, environmental applications, clinical applications outside the Life-Sciences area, industrial applications and quality control applications (other than quality control applications in the pharmaceutical, biotechnology or other Life-Sciences areas).

"Excluded Market Products" shall mean any products that are sold by Newco and are designed primarily for sale to the Excluded Markets.

"GBP" shall mean British Pounds.

"Insolvency Event" shall mean, in relation to either party, any one of the following:

(1) a notice shall have been issued to convene a meeting for the purpose of passing a resolution to wind up that party or such a resolution shall have been passed other than a resolution for the solvent reconstruction or reorganization of that party or for the purpose of inclusion of any party of the share capital of that party in the Official List of the London Stock Exchange or an application by that party for registration as a public company in accordance with the requirements of the Companies Act 1985;

(2) a resolution shall have been passed by the party's directors to seek a winding up or administration order or a petition for a winding up or administration order shall have been presented against that party or such an order shall have been made;

(3) a receiver, administrative receiver, receiver and manager, interim receiver, custodian, sequestrator or similar officer is appointed in respect of that party or over a substantial part of its assets or any third party takes steps to appoint such an officer in respect of that party or an encumbrancer takes steps to enforce or enforces its security;

(4) a proposal for a voluntary arrangement shall have been made in relation to that party under Part I Insolvency Act 1986;

(5) a step or event shall have been taken or arisen outside the United Kingdom which is similar or analogous to any of the steps or events listed at (1) to (4) above;

(6) that party takes any step (including starting negotiations) with a view to readjustment, rescheduling or deferral of any part of that party's indebtedness, or proposes or makes any general assignment, composition or arrangement with or for the benefit of all or some of the party's creditors or makes or suspends or threatens to suspend making payments to all or some of that party's creditors or the party submits to any type of voluntary arrangement; or

(7) where that party is resident in the United Kingdom it is deemed to be unable to pay its debts within the meaning of Section 123 Insolvency Act 1986.

"Intellectual Property" shall have the meaning set forth in Section 13(a) hereof.

"International Region" shall mean the Territory except Japan and the United States of America.

"Letter of Instruction" shall mean the letter of instruction that Newco shall send to the Escrow Agent (as defined herein) in accordance with the provisions of Section 16(f) hereof, which letter shall direct the Escrow Agent to distribute the Escrowed Customer Information (as defined herein) to Newco or its designee (in the manner specified by Newco in such letter).

"License Agreements" shall mean the Trade Mark License Agreements which are attached hereto as SCHEDULE 13(b)(i) and 13(b)(ii).

"Life Science" or "Life Sciences" shall mean and include biology, biochemistry, genetics, molecular biology, biotechnology and all other branches of science and technology related to the biological sciences.

"Market" shall mean only the following types of companies, institutions, facilities and other potential purchasers of products that fall within the categories listed below:

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(1) companies or other entities identified primarily as pharmaceutical or biotechnology companies, including companies or other entities engaged in research, development, scale-up, production or quality control of biopharmaceutical and other pharmaceutical or Life Science-related products and services, and divisions or departments of other companies or other entities engaged in any such activities;

(2) research, teaching, advisory, administrative and hospital, clinical and other health care institutions and facilities, and departments of other institutions or entities engaged in research, teaching, advisory, administration, health care (including development of routine diagnostic methods), quality control and other activities related to Life Sciences, including without limitation governmental, academic, and medical institutions and facilities (all only as related to Life Sciences); and

(3) with respect to Japan only, any companies, institutions, individuals or other entities: (i) within the categories listed in (1) and (2) above with respect to Current Products and New Products; and (ii) within the categories listed in the definition of Excluded Markets with respect only to Current Products; PROVIDED, HOWEVER, that in no event shall this clause (ii) be construed to mean that, outside of Japan, the term Market shall include the categories listed in the definition of Excluded Markets.

"Minimum" shall mean the Year One Minimum, the Year Two Minimum or the Year Three Minimum.

"Modified Excluded Market Products" shall mean products sold by Newco that may perform similar functions as Current Products or New Products but are differentiated from such Current Products or New Products: (i) by product and company trade names, and (ii) in the event such products have cases, by the color of their cases.

"Modified Market Products" shall mean products sold by Newco that may perform similar functions as Current Products or New Products but are differentiated from such Current Products or New Products: (i) by product and company trade names, and (ii) in the event such products have cases, by the shape and the color of their cases.

"Modified Products" shall mean all Modified Market Products and Modified Excluded Market Products.

"New Products" shall mean all products sold or offered for sale by Newco that: (i) were not sold or offered for sale by Biochrom to AP Biotech prior to the Closing Date and (ii) are designed primarily for sale to the Market.

"Products" shall mean all products sold by Newco, including Current Products, New Products, Modified Products and Excluded Market Products.

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"Quarter" shall mean one of the four (4) successive three (3) calendar month periods of each calendar year. Accordingly, with respect to each calendar year: "First Quarter" shall mean the period from January 1 to March 31; "Second Quarter" shall mean the period from April 1 to June 30; "Third Quarter" shall mean the period from July 1 to September 30; and "Fourth Quarter" shall mean the period from October 1 to December 31. For purposes of this Agreement, the term "Quarter" shall also apply to the period from the Closing Date to March 31, 1999 and to the Year Three Tail Period.

"Region" shall mean any of the International Region, Japan or the United States of America.

"Relevant Material" shall mean all documents or other material in the possession or control of the furnishing party (as defined in Section 19(d) hereof) which are relevant to matters in dispute in the arbitration with the exception of communications to and from lawyers admitted to practice law or practicing law (whether or not employed by a party) for the purpose of obtaining and giving legal advice or communications which reflect attorney work product.

"Territory" shall mean: (i) with respect to all Products other than AAA Products, the entire world excluding: (A) Canada, (B) New Zealand and the neighboring territories of Fiji, South Pacific Islands, Samoa and Tonga, (C) South Africa and the neighboring territories of Namibia, Botswana, Swaziland, Lesotho, Zimbabwe, Malawi, Mauritius, Seychelles, Madagascar, Mozambique and Angola, and (D) Turkey, and: (ii) with respect to AAA Products, the entire world, excluding: (A) Canada, (B) New Zealand and the neighboring territories of Fiji, South Pacific Islands, Samoa and Tonga, (C) South Africa and the neighboring territories of Namibia, Botswana, Swaziland, Lesotho, Zimbabwe, Malawi, Mauritius, Seychelles, Madagascar, Mozambique and Angola, (D) Turkey, (E) the United States, and (F) Japan.

"USD" shall mean United States Dollars.

"Year" shall mean any of Year One, Year Two or Year Three.

"Year One" shall mean the period commencing on the Closing Date and ending on December 31, 1999.

"Year Two" shall mean the period commencing on January 1, 2000 and ending on December 31, 2000.

"Year Three" shall mean the period commencing on January 1, 2001 and ending on December 31, 2001.

"Year Three Tail Period" shall mean the period commencing on January 1, 2002 and ending on February 26, 2002.

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"Yen" shall mean Japanese Yen.

(b) Notwithstanding anything contained in this Agreement to the contrary, the effective date of this Agreement shall be the Closing Date.

SECTION 1A. ESCROW DEPOSITS.

(a) Within sixty (60) days following the Closing Date, (i) AP Biotech and Newco shall enter into the Escrow Agreement with Boston Safe Deposit & Trust Company (the "Escrow Agent") in the form attached hereto as EXHIBIT 1A(a) (the "Escrow Agreement") and (ii) on the date such Escrow Agreement is entered into, AP Biotech shall deposit the Customer Information with respect to the three (3) years prior to the Closing Date (such Customer Information to be both in paper form and contained on a floppy diskette) (the "Initial Customer Information"), with the Escrow Agent to be held in escrow pursuant to and in accordance with the terms of the Escrow Agreement;

(b) Within thirty (30) days following June 30 and December 31 of each Year, AP Biotech shall deposit with the Escrow Agent the Customer Information with respect to the six month period immediately preceding each such date (or in the case of June 30 of Year One, with respect to the period between the Closing Date and June 30, 1999), such Customer Information to be both in paper form and contained on a floppy diskette (the "Semi-Annual Customer Information" and, together with the Initial Customer Information, the "Escrowed Customer Information").

(c) Within ten (10) business days following the execution of the Escrow Agreement and the deposit by AP Biotech of the Initial Customer Information with the Escrow Agent in accordance with Section 1A(a) above, the Escrow Agent shall deliver to Newco copies of that number of pages of the Initial Customer Information which contains the names and information with respect to approximately, but not less than, twenty (20) customers, which pages shall be selected at random by the Escrow Agent (the "Initial Sample"). Newco shall have the right to contact those customers of AP Biotech contained in the Initial Sample to verify the accuracy of the Initial Customer Information. The parties acknowledge that the Initial Customer Information may include information regarding customers of AP Biotech that do not purchase Products from AP Biotech.

SECTION 2. APPOINTMENT.

(a) (i) Newco hereby appoints AP Biotech, and AP Biotech hereby accepts the appointment, as the exclusive distributor, marketer and seller of Current Products and New Products for sales to the Market within the Territory on the terms and subject to the conditions set forth herein. Newco shall not appoint, enter into an agreement with or otherwise intentionally assist any other distributor, marketer, seller or sales representative with respect to any of the Current Products or New Products for sales to the Market within the Territory. Newco shall not make or promote any sales of Current Products or New Products to the

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Market within the Territory directly to persons or entities other than AP Biotech or its authorized subdistributors. For the avoidance of doubt, the parties hereto acknowledge the principle of freedom of movement of goods within the European Union (and any other countries where such principle may apply). Newco shall not be liable where any Current Product or New Product is imported and/or resold by a third party distributor, marketer, seller or sales representative (other than in connection with an appointment by, an agreement with, or with the intentional assistance of Newco) into the Territory in accordance with such principle.

(ii) AP Biotech shall be entitled to appoint one or more subdistributors in accordance with the terms of this Section 2(a)(ii). AP Biotech shall have agreements with all such subdistributors (the "Subdistribution Agreements"); PROVIDED, HOWEVER, that in no event shall any such Subdistribution Agreement impose any obligations upon Newco or otherwise contain terms and conditions that are inconsistent with the terms and conditions under this Agreement. Notwithstanding AP Biotech's entering into any such Subdistribution Agreement, AP Biotech shall remain solely responsible to Newco for any and all actions or inactions of its subdistributors in connection with any such Subdistribution Agreement, and AP Biotech shall not be relieved from responsibility for its obligations under this Agreement. Newco shall not be required to seek fulfillment of, or otherwise enforce, such obligations from or against any subdistributor or any party other than AP Biotech.

(b) Notwithstanding the provisions set forth in Section 2(a) above, Newco shall be entitled to:

(i) After Year One, sell AAA Products to the Market within the Territory on a non-exclusive basis with AP Biotech;

(ii) Sell in Belgium and Luxembourg those products contemplated in the Exclusive Distribution Agreement, dated December 11, 1995, between Biochrom and Van der Heyden NV, for resale under the product names "UniSpec," "Ultrospec," "UviMaster," "UviMaster Plus" or "UviMaster PC" or such other product names which are not confusingly similar to the product names of the Current Products and New Products sold or offered for sale by Newco to AP Biotech for resale by AP Biotech to customers in Belgium and Luxembourg;

(iii) In the event that prior to the termination of this Agreement, Newco delivers a written offer to AP Biotech offering for sale to AP Biotech a New Product (which offer shall specify that failure by AP Biotech to accept such offer will result in the loss by AP Biotech of its rights to distribute such New Product under the terms of this Agreement), together with a reasonable number of samples of, and information with respect to, such New Product to allow AP Biotech to assess such New Product, and AP Biotech does not, within sixty (60) days following the receipt of such written offer from Newco, accept Newco's offer in writing, which such writing shall express AP Biotech's desire to begin placing orders with Newco for such New Product and the estimated date upon which such orders will be placed, then, notwithstanding anything contained in this Agreement to the contrary, Newco may sell

such New Product to the Market within the Territory (or otherwise) to a third party distributor or directly to a customer, at its discretion.

(c) The parties acknowledge that Newco may:

(i) Sell outside the Territory those products contemplated in the agreements between Biochrom and each of: (A) Fisher Scientific Ltd., dated October 21, 1994; (B) SMM Instruments (Pty) Ltd., dated November 6, 1991; and (C) Science and Technology (NZ) Ltd., dated November 15, 1995;

(ii) Sell Modified Excluded Market Products to any third party in the Excluded Markets; and

(iii) Sell Modified Market Products to any third party in either the Market or the Excluded Markets within or outside the Territory.

(iv) Sell chemicals, spare parts, consumables or accessories for use in connection with any Modified Market Products or Excluded Market Products.

(d) Notwithstanding anything contained herein to the contrary, AP Biotech shall have no rights to sell Excluded Market Products or Modified Products.

(e) AP Biotech shall at all times act as and be an independent contractor and not an employee or agent of Newco.

SECTION 3. FORECASTS; ORDERS.

(a) A forecast of anticipated purchases by major Product for the month of March 1999 is attached hereto as SCHEDULE 3(a)(i). No later than twenty (20) days prior to the beginning of each Quarter (beginning with the Second Quarter of Year One), AP Biotech will provide Newco with a forecast of anticipated purchases by major Product for such Quarter. The first such forecast (for the Second Quarter of Year One) is attached hereto as SCHEDULE 3(a)(i). In addition, no later than thirty (30) days prior to the commencement of Year Two and Year Three, AP Biotech will provide a Quarterly forecast for the upcoming Year by major Product. AP Biotech shall deliver to Newco such a forecast for Year One within seven (7) business days following the Closing Date.

(b) Purchase orders for Current and New Products shall be placed through the AP Biotech electronic data interchange system, as the same exists from time to time (the "EDIS"). Newco shall have access to the EDIS consistent with past practice; PROVIDED, HOWEVER, that Newco's access to AP Biotech's communications network shall be limited to communications through the EDIS relating to AP Biotech's purchasing and selling the Products contemplated under this Agreement in accordance with the plan attached hereto as SCHEDULE 3(b). Each party shall pay one-half of any documented third party out-of-pocket costs reasonably incurred to

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modify AP Biotech's communications network to limit Newco's access in accordance with this SCHEDULE 3(b) (the "AP Biotech EDIS Modification Charges"); provided, however, that in no event shall Newco's one-half portion of the AP Biotech EDIS Modification Charges exceed $21,000 in the aggregate without the prior mutual agreement of the parties. If at any time while this Agreement is in effect, AP Biotech ceases providing Newco with access to the EDIS, AP Biotech shall refund to Newco the full amount of the AP Biotech EDIS Modification Charges paid by Newco in accordance with the previous sentence. AP Biotech shall keep Newco informed in writing of any anticipated changes in the EDIS in sufficient time to allow Newco to make any changes necessary to continue using the EDIS in an effective manner. In addition, each party shall pay one-half of any documented third party out-of-pocket costs reasonably incurred to modify Newco's communications network to limit AP Biotech's access (the "Newco EDIS Modification Charges"); PROVIDED, HOWEVER, that in no event shall AP Biotech's one-half portion of the Newco EDIS Modification Charges exceed 5,000 GBP in the aggregate without the prior written agreement of the parties. Furthermore, AP Biotech shall be responsible for training Newco's employees in the use of such modified EDIS. Each party shall pay one-half of any documented costs relating to such training; provided, however, that in no event shall Newco's one-half portion of such costs exceed $2,500 in the aggregate without the prior written agreement of the parties. To the extent of any inconsistency in terms between the EDIS and this Agreement, the terms of this Agreement shall prevail.

(c) Each purchase order shall specify: (i) the Current Products or New Products, including quantity of each, to be purchased by AP Biotech, (ii) instructions for delivery, and (iii) the delivery date therefor, subject to Section 6(b) hereof. In the event the parties agree for a purchase order to be placed through the EDIS in accordance with paragraph (b) above, no charge to Newco for the use of the EDIS shall be made.

(d) The parties expressly agree that nothing contained in this Section 3 shall increase or decrease in any way the requirements for the minimum purchases of Products by AP Biotech as provided for in Section 7 of this Agreement.

SECTION 4. PRICES.

(a) The prices for Current Products sold by Newco to AP Biotech during Year One shall be the prices set forth in SCHEDULES 1(a) and 1(b) attached hereto. The prices for such Products shall be stated in SCHEDULES 1(a) and 1(b) in GBP. Products delivered by Newco to AP Biotech shall be billed at the purchase price in effect for such Products at the time that the order therefor is placed if the delivery date is within thirty (30) days of the order date. If the delivery date is more than thirty (30) days from the order date then the price shall be that prevailing at the specified time of delivery.

(b) Subsequent price lists for the Current Products and the New Products shall be prepared in accordance with the provisions of this Section 4 and issued by Newco at least three (3) months prior to the commencement of each Year.

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(c) For each of Year Two and Year Three, Newco may, in its sole discretion, increase the prices of Products sold to AP Biotech which are then in Newco's product line by up to four percent (4%). Price increases in excess of four percent (4%) may be made only by agreement with AP Biotech. Any price increase in excess of four percent (4%) will be negotiated in good faith by the parties.

(d) Intentionally Omitted.

(e) Prior to Newco's establishing the prices for New Products to be sold by Newco to AP Biotech, Newco shall consult with AP Biotech and shall undertake the Price Comparison Process (as defined below) if made necessary by AP Biotech's presenting Price Evidence (as defined below); PROVIDED, HOWEVER, that after such consultation and after undertaking the Price Comparison Process (if necessary), Newco shall ultimately set such prices in its sole discretion. Newco will provide a recommended end-user selling price for each New Product such that New Products are priced competitively with the list price for products with similar features sold by other companies (the "Comparable Products"); PROVIDED, HOWEVER, that if AP Biotech presents meaningful written (as opposed to anecdotal) evidence (the "Price Evidence") to Newco that the average selling price to end-users of a particular Comparable Product is less than ninety percent (90%) of the list price of such Comparable Product, then the list price of such Comparable Product shall not be taken into account by Newco in determining whether the end-user selling prices of the New Products are priced competitively with the list prices of the Comparable Products (the foregoing proviso being herein referred to as the "Price Comparison Process"). The price at which Newco sells New Products to AP Biotech will be such recommended end user selling price less thirty-five percent (35%). The prices at which Products are sold by AP Biotech to its customers will be set by AP Biotech in its sole discretion.

SECTION 5. PAYMENT.

(a) Payment of invoices shall be made in full by AP Biotech to Newco for all Products sold by Newco to AP Biotech no later than the date forty-five (45) days from the date of invoice.

(b) No invoice shall be issued by Newco prior to the date of shipment of the relevant Products from Newco's production facility.

(c) For each invoice with respect to which payment is not made by AP Biotech within the number of days specified in Section 5(a), interest shall be payable (as well after as before judgment) by AP Biotech to Newco on the invoice amount at a rate of one percent (1%) per month for the number of days elapsed.

(d) All payments to be made by AP Biotech to Newco hereunder shall be made by wire transfer in immediately available funds to Newco's GBP bank account, which account is

set forth in SCHEDULE 5(d) attached hereto, or to such other account as Newco shall specify in writing to AP Biotech.

(e) No deduction is to be taken for returns or damage claims without a written credit memo from Newco for such amount, which credit memo shall not be unreasonably withheld.

(f) All prices quoted for Products in accordance with the provisions of this Section 5 shall be exclusive of any value added taxes.

SECTION 6. SHIPPING AND DELIVERY.

(a) The Products sold by Newco to AP Biotech shall be shipped ex works Newco's production facility located in Cambridge, England. The term "ex works" as used in this Section 6(a) refers to Incoterms 1990.

(b) Newco shall ship the Products for which it has received an order in accordance with Section 3(b), Section 7(b) or Section 16(b)(ii)(B) hereof no later than the date three (3) business days prior to the specified date for delivery in the related purchase order, provided that such delivery date is not less than thirty (30) days from the date Newco receives such order, if the order is for spectrophotometers, and not less than ninety (90) days from the date Newco receives such order, if the order is for AAA Products. If the delivery date specified in the purchase order for spectrophotometers or AAA Products does not comply with the respective timing requirements for the delivery of such products detailed in the foregoing sentence, Newco may deem the delivery date for such purchase order to be thirty (30) days, in the case of spectrophotometers, and ninety (90) days, in the case of AAA Products, from the date Newco received such purchase order and deliver such Products in accordance with such schedule. AP Biotech shall be promptly notified in writing by Newco of any anticipated delays in delivery of any of the Products.

(c) In the event a customer of AP Biotech cancels an order for a Product prior to shipment from Newco due to late delivery of that Product by Newco and Newco has been notified of such cancellation in writing, AP Biotech shall not be required to accept delivery of or pay for such Product. However, in the event that the Product has been shipped prior to receiving such written notice, AP Biotech shall be required to accept delivery of and pay for such Product.

(d) Newco shall print its own catalog and lot numbers (if applicable) and expiration dates (if applicable) conspicuously on outer shipping cartons of all Products, as well as inner shelf packs and inner units of all multiple unit packed Products.

(e) Newco shall ship dated Products in such time that no less than seventy-five percent (75%) of the manufactured shelf life will be remaining at the time of shipment from

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Newco. Newco shall accept return, for full invoice credit plus shipping charges, of any dated Product shipped in breach of the provisions of this Section.

(f) Claims for shortage or damage during shipment may only be made to the carrier.

SECTION 7. MINIMUMS.

For purposes of this Section 7, the term "purchase" and the term "sale," or any similar terms, and any derivations of such terms, shall refer to the actual date of shipment of Products by Newco to AP Biotech or the actual date of shipment of products by Newco to customers other than AP Biotech, as applicable. Notwithstanding anything contained in this Section 7 to the contrary, AP Biotech shall have no rights to distribute, market or sell any Products other than the Current Products and New Products pursuant to the terms of this Agreement.

(a) During each Year, AP Biotech undertakes to purchase from Newco a sufficient number of Products such that the aggregate purchase prices for such Products shall be at least equal to the following:

(i) For Year One, $12,535,000 (the "Year One Minimum"), reduced by (A) $1,957,521 and (B) the USD value of all sales of Products made by Newco to customers other than AP Biotech during Year One.

(ii) For Year Two, the Year One Minimum increased by the amount of the price increase for Year Two specified in Section 4(c), but not to exceed four percent (4%) (the "Year Two Minimum") less the USD value of all sales of Products made by Newco to customers other than AP Biotech during Year Two. If the USD value of AP Biotech's purchases of Products from Newco in Year One exceeds the Year One Minimum, then the Year Two Minimum shall be reduced by the amount by which such purchases exceed the Year One Minimum.

(iii) For Year Three, the Year Two Minimum increased by the amount of the price increase for Year Three specified in Section 4(c), but not to exceed four percent (4%) (the "Year Three Minimum") less the USD value of all sales of Products made by Newco to customers other than AP Biotech during Year Three. If the USD value of AP Biotech's purchases of Products from Newco in Year Two exceeds the Year Two Minimum, then the Year Three Minimum shall be reduced by the amount by which such purchases exceed the Year Two Minimum.

(b) The purchases of Products by AP Biotech from Newco for each of the Year One Minimum, the Year Two Minimum and the Year Three Minimum shall be distributed throughout the respective Years in the following manner: First Quarter: 23.5%, Second Quarter 24.0%, Third Quarter 25.0% and Fourth Quarter 27.5% (each of which shall hereinafter be referred to as a "Quarterly Minimum"); PROVIDED, HOWEVER, that, (i) with respect to the First Quarter of Year One, the Quarterly Minimum shall be equal to the product

of (A) the Daily Rate that would otherwise be in effect for the First Quarter of Year One multiplied by (B) the number of days between the Closing Date and the end of the First Quarter and (ii) with respect to the Year Three Tail Period, the Quarterly Minimum shall be equal to the product of (X) the Daily Rate for the First Quarter of Year Three multiplied by (Y) the number of days contained in the Year Three Tail Period. If the USD value of purchases of AP Biotech in any Quarter plus the USD value of purchases by all customers of Newco other than AP Biotech in the same Quarter are less than the Quarterly Minimum for that Quarter then AP Biotech will, within thirty (30) days of the end of said Quarter, either: (i) place orders with Newco for Products in the amount of the shortfall, with shipment of such Products to take place in accordance with the time schedules set forth in Section 6(b) hereof; PROVIDED, HOWEVER, that the Products so ordered by AP Biotech shall be counted solely toward fulfillment of the Quarterly Minimum for the Quarter in which such shortfall occurred and in no event shall the shipment of such ordered Products in any following Quarter be counted toward the fulfillment of the Quarterly Minimum in said following Quarter, or (ii) pay to Newco, by wire transfer in immediately available USD funds to Newco's account set forth in SCHEDULE 5(d) or such other account as Newco shall specify to AP Biotech in writing, an amount equal to thirty-five percent (35%) of the shortfall. If the USD value of AP Biotech's purchases of Products in any Quarter exceeds the Minimum for that Quarter, then the Quarterly Minimum for the following Quarter shall be reduced by the amount by which such purchases exceed the Quarterly Minimum for that Quarter.

(c) Newco will provide a report to AP Biotech within ten (10) business days of the end of each month showing the actual sales of all Products made by Newco in that month, the cumulative amount of sales of all Products by Newco for the relevant Quarter through the end of such month, the amount of sales of all Products anticipated to be made by Newco to third parties during that Quarter, and the amount of the estimated additional purchases by AP Biotech needed to reach the Quarterly Minimum for that Quarter.

(d) If the purchases by AP Biotech of Products from Newco exceed the Year One Minimum in Year One or the Year Two Minimum in Year Two or the Year Three Minimum in Year Three then AP Biotech will receive a credit against future payments to Newco equal to four percent (4%) of the invoice amount for the relevant Year in excess of the relevant Year Minimum.

(e) Minimums payable by AP Biotech pursuant to Section 7(a) shall be subject to the following:

(i) The Minimum for any Quarter and for the Year shall be reduced by the purchase price of (A) any order if such order is canceled by a customer prior to shipment from Newco due to late delivery of that Product by Newco and Newco has been notified of such cancellation in writing and (B) any Product that is returned by AP Biotech to Newco as contemplated by Section 6(e) and no replacement order is placed by AP Biotech for such Product.

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(ii) The Minimum for any Quarter and for the Year in which such Quarter occurs shall be reduced by the purchase price of any Products sold by Newco to AP Biotech in that Quarter or Year with respect to which Newco fails to fulfill its obligations under Section 11(b) hereto (A) in the case of AAA Products, within forty-five (45) days of receiving written notice from AP Biotech as provided for in Section 11(b) or (B) in the case of all Products other than AAA Products, within thirty (30) days of receiving written notice from AP Biotech as provided for in Section 11(b) (either of clause (A) or (B) being referred to herein as a "Section 11(b) Failure"). AP Biotech shall, within thirty (30) days following the end of the Quarter in which such Section 11(b) Failure occurs, notify Newco in writing that the Minimum for that Quarter and for the Year in which such Quarter occurs has been reduced in accordance with this Section 7(e)(ii); PROVIDED, that if AP Biotech does not so notify Newco in such thirty (30) day period, AP Biotech shall be deemed to have waived its rights to have such Minimums reduced under this Section 7(e)(ii) with respect to that specific Section 11(b) Failure.

(iii) In the event that: (A) twenty-five percent (25%) or more of the units shipped of a Product breaches the warranty provided by Newco in Section 11(a) during any three (3) month period, (B) AP Biotech provides written notice to Newco of such breach, which such written notice shall reference this Section 7(e)(ii), and (C) AP Biotech ceases purchasing such Product upon the expiration of said three (3) month period, then the Quarterly Minimums shall be reduced by the purchase price of the amounts of such Products set forth in AP Biotech's forecasts for each Year required by Section 3(a) hereto for up to a maximum of two (2) full Quarters following the end of the Quarter in which such three (3) month period expires, unless prior to the expiration of such two (2) Quarter period, AP Biotech commences placing orders with Newco for such Product which it had previously ceased purchasing, in which case the Quarterly Minimum for the Quarter following the Quarter in which AP Biotech places such orders and for each Quarter thereafter shall be set at the level at which such Quarterly Minimum would have been set under this Section 7 had such a reduction pursuant to this Section 7(e)(iii) not occurred.

(iv) In the event that the product currently known as "UltroSpec 3000+" (or such other substantially similar name to be determined by Newco) shall not be introduced and available for delivery to AP Biotech under this Agreement within the two hundred seventy (270) day period following the Closing Date, then the Year One Minimum shall be reduced by the amount of $41,500 for each whole thirty (30) day period for which such availability is delayed beyond such two hundred seventy (270) day period.

(v) In the event that the "GeneQuant Pro" shall not be introduced and available for delivery to AP Biotech under this Agreement within the ninety (90) day period following the Closing Date, then the Year One Minimum shall be reduced by the amount of $83,000 for each whole thirty (30) day period for which such availability is delayed beyond such ninety (90) day period.

(vi) In the event that two (2) additional New Products (other than the "UltroSpec 3000+", which shall be made available in accordance with Section 8(e) hereof)

shall not be introduced and available for delivery to AP Biotech under this Agreement by the end of Year Two, then the Year Three Minimum shall be reduced by the amount of $83,000 for each whole thirty (30) day period for which such availability is delayed beyond the end of Year Two.

(v) In the event that: (A) an order by AP Biotech for a Product is placed for delivery in any Quarter, and (B) the time of delivery in the order is in accordance with Section 6(b) hereof, and (C) Newco delivers the Product during the subsequent Quarter, AP Biotech shall receive credit against the Minimum for the Quarter in which delivery was to be made pursuant to AP Biotech's order. AP Biotech shall not also receive credit against the Minimum for the Quarter in which delivery was in fact made.

(f) For purposes of determining whether the Minimum has been met for any particular Quarter or Year, as the case may be, under this Section 7, all foreign exchange conversions to USD shall be performed at the average exchange rate for such Quarter or Year, as the case may be, determined by (i) in the case of any Quarter, calculating the quotient of (A) the sum of the exchange rates for the relevant currency on the last day of each month contained in such Quarter (as published in the Financial Times) divided by (B) three (3), and (ii) in the case of any Year, calculating the quotient of (A) the sum of the exchange rates for the relevant currency on the last day of each month contained in such Year (as published in the Financial Times) divided by (B) twelve (12).

SECTION 8. DUTIES OF NEWCO.

(a) With respect to Current Products and New Products sold by Newco to AP Biotech in accordance with the terms of this Agreement, Newco shall, except as otherwise provided below, at its sole expense and consistent with past practices:

(i) co-operate with AP Biotech in order to aid and assist AP Biotech in its sales and marketing program concerning the Current Products and New Products; PROVIDED, HOWEVER, that AP Biotech is solely responsible for all costs of marketing and sales efforts except those functions currently provided by Biochrom;

(ii) provide to AP Biotech such number of demonstration models of the Current Products and New Products and parts therefor as they shall mutually agree, at prices equal to Newco's cost;

(iii) provide sales, demonstration and support training which AP Biotech and Newco shall jointly deem necessary for AP Biotech's sales and service representatives in individual or other sessions at such location as AP Biotech shall reasonably request and Newco will provide instructors with training materials, schematic drawings for circuit boards, service manuals and products for demonstrations in connection with such training activities;

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(iv) update AP Biotech with all available information reasonably necessary or desirable for the effective marketing of the Current Products and New Products;

(v) provide reasonable back-up technical support by e-mail, telephone and facsimile to AP Biotech's and its distributors' technical service and sales personnel in connection with the Current Products and New Products;

(vi) participate as mutually agreed and in accordance with current practice in AP Biotech's promotional efforts by providing relevant copy and photography for advertising, direct mail and/or any other promotional effort in connection with the Current Products and New Products, the manner in which the materials are to be used to be mutually agreed upon by the parties; all costs and expenses for advertising, direct mail and/or any other promotional effort are solely to be borne by AP Biotech; and

(vii) refer to AP Biotech all leads, inquiries and prospects actually received by Newco concerning potential customers and purchasers of the Current Products and New Products in the Market in the Territory.

(b) Newco shall make available for purchase all necessary consumables, accessories and spare parts for the operation, repair and proper servicing of each of the Current Products and New Products to AP Biotech and each customer of AP Biotech for a period of seven (7) years following the date of delivery of the relevant Current Products and New Product.

(c) Newco shall provide with each shipment of Current Products and New Products instruction/operating manuals concerning the Current Products and New Products consistent with current practices.

(d) Newco shall comply with the terms of Section 11 hereof and shall manufacture and sell Current Products and New Products which conform to quality standards consistent with past practice.

(e) Newco hereby agrees to make available for sale to AP Biotech before the date two hundred seventy (270) days from the Closing Date a New Product to be known as the "UltroSpec 3000+" (or such other substantially similar name to be determined by Newco). Notwithstanding anything contained herein to the contrary, the parties agree that the sole and exclusive remedy of AP Biotech for a breach by Newco of this Section 8(e) shall be the reduction in the Year One Minimum as provided for in Section 7(e)(iv) hereto.

(f) Newco hereby agrees to make available for sale to AP Biotech before the date ninety (90) days from the Closing Date the New Product currently under development by Biochrom known as the "GeneQuant Pro." Notwithstanding anything contained herein to the contrary, the parties agree that the sole and exclusive remedy of AP Biotech for a breach by Newco of this Section 8(f) shall be the reduction in the Year One Minimum as provided for in Section 7(e)(v) hereto.

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(g) Newco will use commercially reasonable efforts to make available for sale to AP Biotech at least two additional New Products by the end of Year Two. Newco will consult with AP Biotech on the desired specifications of these New Products. Notwithstanding anything contained herein to the contrary, the parties agree that the sole and exclusive remedy of AP Biotech for a breach by Newco of this Section 8(e) shall be the reduction in the Year Three Minimum as provided for in Section 7(e)(vi) hereto.

(h) Newco shall comply with all applicable export control laws and regulations relating to Newco's export of Products to AP Biotech pursuant to this Agreement and shall, consistent with past practices, provide information and documentation reasonably necessary or useful to assist AP Biotech in complying with its obligations under applicable export control laws.

SECTION 9. DUTIES OF AP BIOTECH.

With respect to Current Products and New Products sold by Newco to AP Biotech in accordance with the terms of this Agreement, AP Biotech shall, at its sole expense and in all cases consistent with past practices:

(a) maintain an adequate number of trained personnel for the performance of its duties hereunder;

(b) include the Current Products and New Products in the Pharmacia Bio Directory Catalog or any substitute or successor catalog that exists from time to time and include selected Current Products and New Products in a reasonable number, but not less than two per Year of Pharmacia Bio Direct mailings and such other promotional support including, without limitation, showing such Products on AP Biotech's web site and telemarketing in connection with performance of its duties hereunder; PROVIDED, HOWEVER, that AP Biotech may, in its sole discretion, substitute alternative marketing programs of equivalent scope and effect. Any New Product or Product upgrade will be promoted with the level of support customarily given by AP Biotech to the launch of comparable new products and product upgrades respectively but in any event not less than one Pharmacia Bio Direct mailing per New Product or Product upgrade;

(c) establish and maintain an inventory of the Current Products and New Products and spare parts appropriate to meet the needs of purchasers and end-users of such Products (including prior versions thereof) in the Territory; and

(d) perform such maintenance, service and repair activities for Current Products and New Products as AP Biotech has customarily performed on-site at its customers' premises (as determined in accordance with past practice).

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SECTION 10. INSURANCE.

From and after the Closing Date, for so long as this Agreement shall remain in effect and for two (2) years thereafter, Newco shall maintain product liability insurance coverage on an occurrence basis for all occurrences relating to the Products sold by Newco to AP Biotech with limits of liability not less than Two Million GBP ((pound)2,000,000) combined single limit for bodily injury and property damage. AP Biotech shall be named on the products liability policy of Newco as an additional insured. The certificate policy endorsement shall clearly state that "This is primary insurance without recourse to similar insurance maintained by Amersham Pharmacia Biotech AB, if any." Newco shall provide to AP Biotech a certificate evidencing coverage of such policy immediately upon receipt from insurer. The insurer providing such insurance policy may not be changed by Newco and such insurance shall not be materially changed by Newco without at least ninety (90) days' prior written notice to AP Biotech.

SECTION 11. WARRANTY.

(a) With respect to Current Products and New Products sold by Newco to AP Biotech under this Agreement, Newco warrants for a period of twelve (12) months from the date of sale of a Current Product or New Product by AP Biotech to a customer, or a period of fifteen (15) months from the date of sale of a Current Product or New Product by Newco to AP Biotech, whichever period expires first (the "Warranty Period"), that the Current Products and New Products will be free of defects in material and/or workmanship, and will conform to the published specifications set forth in literature, packaging, inserts, materials and/or other documentation prepared by Newco. Except as expressly stated in this Section 11(a), Newco makes no representation and gives no warranties, oral or written, express or implied, including without limitation implied warranties as to quality or fitness for a particular purpose regarding or in relation to the Products.

(b) Newco shall, consistent with past practice, repair or replace all Current Products and New Products sold by Newco to AP Biotech, to the extent such Current Products and New Products breach the provisions of Section 11(a) hereof during the Warranty Period, as follows:

(i) Newco shall, at its sole expense, and at Newco's option, either (A) repair on-site at the customer's premises all AAA Products for which AP Biotech has notified Newco in writing that the repair required is not of the type that has customarily been performed by AP Biotech (as determined in accordance with past practice) and therefore, AP Biotech is not required to perform such repair under Section 9(d) hereof; PROVIDED that each party shall pay one-half of any reasonable out-of-pocket travel and accommodation expenses associated with such on-site repair by Newco or (B) repair or replace such AAA Products at Newco's premises; and

(ii) Newco shall, at its sole expense, repair or replace at Newco's premises, all Current Products and New Products (other than AAA Products) sold by Newco to AP

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Biotech for which AP Biotech has notified Newco in writing that the repair required is not of the type that has customarily been performed by AP Biotech (as determined in accordance with past practice) and therefore, AP Biotech is not required to perform such repair under Section 9(d) hereof.

(c) If non-customary warranty service (as determined in accordance with past practice) is performed (with respect to Current Products and New Products sold by Newco to AP Biotech) by AP Biotech at Newco's request, Newco shall credit to AP Biotech the cost of parts and labor at Newco's then current rates reasonably incurred in servicing such Current Products and New Products (or prior versions of such Products) owned by end users which fail during the Warranty Period.

(d) In the event of the failure of a Current Product or New Product sold by Newco to AP Biotech after the Closing Date, or a recall of any of such Current Products or New Products whether by Newco or AP Biotech, in each case with the consent of Newco, or any government agency, Newco shall pay all the costs of a retrieval and/or recall of such Current Products and New Products owned by customers of AP Biotech.

(e) Newco shall pay all costs for Newco-ordered changes and updates to the Current Products and New Products sold by Newco to AP Biotech in the hands of AP Biotech or any of its customers.

(f) Newco represents and warrants that the marketing and sales of any New Products will not infringe any patent, copyright, trademark or other similar intellectual property rights enforceable within the Territory.

SECTION 12. INDEMNIFICATION; LIMITED LIABILITY.

(a) Newco shall defend, indemnify and hold harmless AP Biotech and any officers, directors, agents, shareholders, legal representatives, employees, successors and assigns of AP Biotech (exclusive of any subdistributors not included within the defined term "AP Biotech") from and against any and all third party claims, actions, suits and judgments, and from and against any and all liabilities, losses, damages, costs, charges, attorneys' fees and other expenses of whatever nature and character (collectively "Third Party Damages") arising from or in connection with: (i) the manufacture by Newco of any Current Product or New Product, (ii) any breach by Newco of any of its obligations under this Agreement, or (iii) an allegation by a third party that the Current Products or New Products sold by Newco to AP Biotech in accordance with this Agreement infringe any other party's intellectual property rights (other than rights with respect to the Intellectual Property). Notwithstanding anything contained herein to the contrary, Newco shall not be required to provide indemnification with respect to any Third Party Damages to the extent that they result from the negligence, gross negligence or wilful misconduct of AP Biotech.

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(b) AP Biotech shall defend, indemnify and hold harmless Newco and any officers, directors, agents, shareholders, legal representatives, employees, successors and assigns of Newco from and against any and all Third Party Damages arising from or in connection with: (i) the distribution by AP Biotech of the Current Products or the New Products pursuant to the terms of this Agreement, (ii) any actions or inactions of any subdistributor appointed by AP Biotech under the terms of this Agreement in connection with any Subdistribution Agreement, or (iii) any breach by AP Biotech (or by any subdistributor appointed by AP Biotech under the terms of this Agreement) of any of its obligations under this Agreement. Notwithstanding anything contained herein to the contrary, AP Biotech shall not be required to provide indemnification with respect to any Third Party Damages to the extent that they result from the negligence, gross negligence or wilful misconduct of Newco.

(c) Except as otherwise provided in Section 12(a) or 12(b) above, neither party shall be liable to the other party (or its affiliates) under this Section 12 with respect to any indirect, incidental, special, punitive or consequential damages, including but not limited to lost revenue or other commercial or economic loss, arising out of or relating to this Agreement.

SECTION 13. TRADEMARKS, ETC.

(a) The trade name "Amersham" and all related and associated logos and trademarks with respect thereto are and shall remain the sole property of Amersham International plc (the "Amersham Name"). The trade name "Pharmacia Biotech" and all related and associated logos and trademarks with respect thereto are and shall remain the sole property of Pharmacia & Upjohn, Inc. (the "Pharmacia Biotech Name" and together with the Amersham Name, the "Intellectual Property").

(b) Newco has entered into the License Agreements attached hereto as SCHEDULES 13(b)(i) and 13(b)(ii) with respect to the Intellectual Property.

SECTION 14. CONFIDENTIALITY.

Each of Newco and AP Biotech agrees that it shall treat any and all information of a confidential nature relating to the Products or the manufacture, use, marketing or sale thereof, or the business plans or activities of the other party, which is designated as confidential ("Confidential Information") as confidential and shall not disclose any Confidential Information to any third party, other than legal, business and financial advisors who have a need to know, for any purpose whatsoever and not to make use of any such Confidential Information for any purpose other than the performance of its obligations under this Agreement without the prior written consent of the other party; PROVIDED, HOWEVER, that the limitation on disclosure set forth in this Section 14 shall not apply in the case of:

(a) information which, as of the date hereof, is published or otherwise generally available to the public;

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(b) information which after the date hereof becomes available to the public other than through an act or omission of Newco or AP Biotech, as the case may be, which is in violation of the provisions hereof;

(c) information rightfully acquired from a third party which did not obtain such information under a pledge of confidentiality;

(d) information which is developed by the disclosing party independently of the relationship established by this Agreement; or

(e) any information which the disclosing party is required to disclose by law (including the regulations of a stock exchange) or court order.

SECTION 15. CUSTOMER INFORMATION.

(a) In consideration of entering into this Agreement, AP Biotech hereby grants to Newco the right to freely use a copy of the Escrowed Customer Information after the effective date of termination of this Agreement pursuant to Section 16 hereof; provided, however, that in the event that, pursuant to Sections 16(a) and 16(f) hereof and the terms of the Escrow Agreement, the Escrowed Customer Information is distributed by the Escrow Agent to Newco while this Agreement is still in effect, Newco shall have the right, prior to the effective date of termination of this Agreement, to contact a sampling of not more than twenty (20) customers of AP Biotech's customers to verify the accuracy of the Customer Information.

(b) While this Agreement is in effect, Newco shall not directly, and shall not appoint, enter into an agreement with or otherwise assist a third party distributor, marketer, seller or sales representative to, use the Escrowed Customer Information to make sales of Modified Market Products to those customers of AP Biotech listed in the Escrowed Customer Information. Newco shall not be prohibited from making sales of Modified Market Products to a customer listed in the Escrowed Customer Information prior to the effective date of termination of this Agreement if Newco can demonstrate with documentary evidence that it made sales to, promoted the sale of, or quoted prices for, Products to such customer prior to Newco's receiving the Escrowed Customer Information from the Escrow Agent under the terms of this Agreement and the Escrow Agreement.

SECTION 16. TERM; TERMINATION.

(a) After eighteen (18) months from the Closing Date, either party may terminate this Agreement without cause by providing eighteen (18) months' prior written notice of termination to the other party, which such termination shall be effective upon the expiration of such eighteen (18) month period. Notwithstanding anything contained herein to the contrary, in the event that AP Biotech provides Newco with such a notice of termination, within thirty (30) days following the effective date of such termination, AP Biotech shall deliver to Newco the Customer Information with respect to the period between the last date on which any Semi-

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Annual Customer Information was deposited by AP Biotech with the Escrow Agent in accordance with the terms of Section 1A(b) hereof and the effective date of such termination.

(b) (i) In the event of a material breach: (A) in the case of Newco, of its obligations pursuant to Section 2(a)(i), 4(a)-(d), 6(b), 8(a), 10, 12(a), or 15(b), and (B) in the case of AP Biotech, of its obligations pursuant to Section 3(a), 9, 12(b) or 17, which shall not be remedied within thirty (30) days of written notice of such breach from the non-breaching party (which notice shall specify the obligations under this Agreement that have been breached, including if the breach constitutes a Newco Sale Breach (as defined below)), the Agreement shall terminate effective upon the expiration of such thirty (30) day period.

(ii) In the event of a breach by AP Biotech of its obligations pursuant to Section 1A(a), Section 1A(b), Section 5 with respect to any invoice or Section 7 with respect to any Quarter or Year, Newco may terminate this Agreement by providing written notice of termination to AP Biotech within thirty (30) days following such breach (which notice shall specify the obligations under this Agreement that have been breached by AP Biotech). The notice of termination shall become effective thirty (30) days after delivery of such notice to AP Biotech (the "Cure Period") unless, within the Cure Period:

(A) with respect to a breach by AP Biotech of its obligations under Section 5 hereof, AP Biotech pays to Newco, by wire transfer in immediately available funds to Newco's accounts set forth in SCHEDULE 5(d) or such other accounts as Newco shall specify to AP Biotech in writing, (X) the invoice amounts for each invoice with respect to which payment was not made by AP Biotech within the number of days specified in Section 5(a) hereof, plus (Y) the amount of interest accrued on such invoice amounts in accordance with Section 5(c) hereof;

(B) with respect to a breach by AP Biotech of its obligations under Section 7 hereof, AP Biotech either (X) places orders with Newco for Products in the amount of any shortfall not previously satisfied during the course of the Quarter or Year, with shipment of such Products to take place in accordance with the time schedules set forth in Section 6(b) hereof; PROVIDED, HOWEVER, that the Products so ordered by AP Biotech shall be counted solely toward fulfillment of the Quarterly or Yearly Minimum for the Quarter or Year in which such shortfall occurred and in no event shall the shipment of such ordered Products in any following Quarter or Year be counted toward the fulfillment of the Quarterly or Yearly Minimum in said following Quarter or Year, or (Y) pays to Newco, by wire transfer in immediately available funds to Newco's accounts set forth in SCHEDULE 5(d) or such other accounts as Newco shall specify to AP Biotech in writing, an amount equal to thirty-five percent (35%) of the shortfall; or

(C) with respect to a breach by AP Biotech of its obligations under Section 1A(a) or Section 1A(b) hereof, AP Biotech (i) executes the Escrow Agreement and/or delivers the Initial Customer Information, as the case may be, in cure of a breach by AP Biotech of its obligations under Section 1A(a) hereof or (ii) delivers the Semi-Annual Customer

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Information to the Escrow Agent in cure of a breach by AP Biotech of its obligations under Section 1A(b) hereof.

In the event that AP Biotech fails to cure the breach of its obligations under Section 5, Section 7, Section 1A(a) or Section 1A(b), as provided for in this Section 16(b)(ii) during the Cure Period, then this Agreement shall automatically terminate upon the expiration of the Cure Period. Notwithstanding anything contained herein to the contrary, upon such a termination pursuant to this Section 16(b)(ii), AP Biotech shall, within ten (10) business days following the termination, pay to Newco by wire transfer in immediately available funds to Newco's accounts set forth in SCHEDULE 5(d) or such other accounts as Newco shall specify to AP Biotech in writing, an aggregate amount equal to thirty-five percent (35%) of the Minimums for Year One, Year Two, Year Three and the Year Three Tail Period that would have been in effect under the terms of this Agreement that AP Biotech would otherwise have been required to satisfy pursuant to Section 7 hereof had Newco not so terminated this Agreement (the "Full Termination Minimum Amount"). If the delivery of such notice of termination occurs prior to the establishment of either the Year Two Minimum or the Year Three Minimum in accordance with Section 7 hereto, for purposes of calculating the Full Termination Minimum Amount, the Minimum for each such Year shall be calculated by increasing the previous Year's Minimum by four percent (4%).

(c) A party shall have the right to terminate this Agreement by written notice to the other party upon the occurrence of an Insolvency Event with respect to the other party.

(d) INTENTIONALLY OMITTED.

(e) (i) In the event that Newco shall have delivered a notice of termination of this Agreement to AP Biotech pursuant to Section 16(a) hereto and, at any time during the period of eighteen (18) months following the effective date of the notice of termination, Newco desires to locate and appoint a new distributor, effective upon the termination of this Agreement, for the Current Products and New Products to the Market in the Territory, AP Biotech shall have a right of first offer with respect to such appointment on the terms set forth in subsection (ii) below.

(ii) Newco shall notify AP Biotech in writing of its desire to so locate and appoint a new distributor (the "New Distributor Notice") and shall offer AP Biotech a term sheet containing terms substantially similar to the terms Newco is considering offering to such new distributor (the "Term Sheet"). AP Biotech will have thirty (30) days from the date it receives the New Distributor Notice to accept such Term Sheet in writing (the "Acceptance Notice"). If AP Biotech accepts such Term Sheet within such thirty-day period, then the parties shall have thirty (30) days from the date Newco receives the Acceptance Notice to enter into a definitive distribution agreement which incorporates the principal terms of the Term Sheet. In the event that either (i) AP Biotech does not deliver the Acceptance Notice to Newco within thirty (30) days of receiving the New Distributor Notice or (ii) after delivery by AP Biotech of the Acceptance Notice to Newco, the parties do not execute a definitive distribution

agreement within thirty (30) days thereafter, Newco may appoint another distributor on terms that are, in the aggregate, not materially less favorable to Newco than those contained in the Term Sheet.

(f) (A) Newco shall be permitted to deliver the Letter of Instruction to the Escrow Agent under the following circumstances: (i) in the case of a termination pursuant to either Section 16(a) or Section 16(c) hereof, as of the date upon which the notice of termination is physically delivered by the terminating party to the non-terminating party; and (ii) in the case of a termination pursuant to Section 16(b)(i) or Section 16(b)(ii) hereof, as of the date upon which this Agreement automatically terminates in accordance with the provisions of such Section.

(B) Newco shall not be permitted to deliver the Letter of Instruction to the Escrow Agent in the event that AP Biotech delivers a notice of termination to Newco under Section 16(b)(i) hereof as a result of (x) a breach by Newco of its obligations under Section 15(b) hereof or (y) prior to the effective date of termination of this Agreement, Newco's making, or appointing a distributor to make, sales of Current Products or New Products to the Market within the Territory in violation of Section 2 hereof (a "Newco Sale Breach").

(g) The provisions of Sections 10, 12, 14, 16(f), 16(g), 16(h), 17, 19(c) and 19(d) hereof shall survive termination of this Agreement. The provisions of Sections 5, 7(c), 7(d), 8(b), 11, 16(a), 16(b)(i), 16(b)(ii) and 16(e) hereof shall survive termination of this Agreement to the extent that any obligations thereunder remain outstanding.

(h) Following a termination of this Agreement, Newco agrees to pay to AP Biotech a commission in the amount of five percent (5%) of the actual sale price for each sale of a Product by Newco, or any distributor of Newco, to a customer in the Territory made within six (6) months of termination which was identified to Newco in writing, and evidenced by a copy of a written quotation for sale of a Product by AP Biotech prior to such termination.

SECTION 17. NON-COMPETITION.

In consideration of transactions to be consummated by Newco in connection with the Acquisition and in consideration of Newco's entering into this Agreement, AP Biotech hereby agrees that it shall not, either solely or jointly with any person or entity, directly or indirectly:

(a) at any time until the later of (x) four (4) years after the Closing Date or (y) the termination or expiration of this Agreement engage in the Territory in the manufacture, distribution or sale of any Current Products or New Products or of any products directly competitive with the Current Products or New Products. Notwithstanding the foregoing, nothing in this Agreement shall prevent AP Biotech from: (i) engaging in the manufacture, distribution or sale of (A) mass spectrometers and related products or instruments in which mass spectrometer technology is utilized, (B) chromatography instruments and related products or instruments in which spectrophotometer technology is utilized or (C) electrophoresis

instruments and related products or instruments in which electrophoresis technology is utilized, including without limitation DNA sequencing instruments; or (ii) subject to the last sentence of this Section 17(a) and receipt by Newco of a written agreement executed by the Subject Company (as hereinafter defined) to be bound by the terms contained in the last sentence of this Section 17(a) (provided that such written agreement shall not be required in the case of a merger between AP Biotech and the Subject Company), acquiring, being acquired or merging (in each case whether by sale of stock, assets or otherwise) with a company that sells spectrophotometers (a "Subject Company"); PROVIDED, HOWEVER, that AP Biotech shall notify Newco that it has entered into such a transaction within thirty (30) days following the consummation of such transaction. In the event that AP Biotech shall enter into an acquisition or merger with a Subject Company as permitted under clause (ii) above, AP Biotech agrees that (A) AP Biotech will continue to distribute the Current Products and New Products as provided for herein, (B) the Escrowed Customer Information shall not be used in connection with the marketing or sale of any products of the Subject Company, (C) the Intellectual Property shall not be used in connection with spectrophotometers manufactured by the Subject Company and (D) the spectrophotometers manufactured by the Subject Company (x) shall not be sold by those persons and entities that constituted the AP Biotech sales force prior to the acquisition or merger and (y) shall not be included in AP Biotech's world wide web site, the Pharmacia BioDirectory (or any successor publication) or the Pharmacia BioDirect mailings (or any successor publication).

(b) While each of the undertakings contained in Section 17(a) above is considered by the parties to be reasonable, if any such undertaking should be held invalid as an unreasonable restraint of trade or for any other reason but would have been held valid if part of the wording thereof had been deleted or the period thereof reduced or the range of activities or area dealt with thereby reduced in scope, said undertaking shall apply with such modifications as may be necessary to make them valid and effective.

(c) Each undertaking contained in Section 17(a) above shall be read and construed independently of the other undertakings therein contained so that if one or more should be held to be invalid as an unreasonable restraint of trade or for any other reason whatsoever then the remaining undertakings shall be valid to the extent that they are not held to be so invalid.

(d) The benefit of the undertakings contained in Section 17(a) above may be assigned in whole or in part by Newco in accordance with the terms of Section 19(e) hereof.

SECTION 18. FORCE MAJEURE.

Neither party shall be subject to any liability to the other party for failure to meet any of its obligations under this Agreement if such failure results from causes or circumstances beyond the reasonable control of the defaulting party, including any act of God, fire, explosion, perils of the sea, flood, drought, war, riot, sabotage, accident, embargo, interruption of or delay in transportation, strike, compliance with any order, direction, request

from any governmental agency or office, other than the obligations of either party under Section 12 hereof. The party which shall be subject to any such event of force majeure shall, promptly upon the occurrence thereof, notify the other party of the occurrence of such event and shall, promptly upon the cessation thereof, notify the other party of such cessation.

SECTION 19. MISCELLANEOUS.

(a) EFFECTIVENESS OF AGREEMENT. This Agreement is conditioned, and will only become effective, upon the closing of the Acquisition.

(b) NOTICES. All notices required or authorized by this Agreement to be given by either party to the other shall be in writing and shall be delivered by hand or shall be sent by courier, registered mail (return receipt requested), or facsimile (receipt confirmed) to the following addresses:

IF TO NEWCO, TO:

Biochrom Limited
Cambridge Science Park
Milton Rd.
Cambridge CB4 4FJ
England
Attention: Barry Brown
Facsimile No.: +44 122 342 0238

with a copy to:

Harvard Apparatus, Inc.
80 October Hill Road
Holliston, MA 01746
Attention: David Green
Facsimile No.: (508) 429-5732

Goodwin, Procter & Hoar LLP
Exchange Place
Boston, MA 02109
Attention: H. David Henken, P.C.
Facsimile No.: (617) 523-1231

Cameron McKenna
Mitre House
160 Aldersgate Street
London, EC1A 4DD
Attention: Guilherme Brafman

CONFIDENTIAL INFORMATION HAS BEEN OMITTED PURSUANT TO RULE 406 UNDER THE SECURITIES ACT AND HAS BEEN FILED SEPARATELY, WITH THE COMMISSION. THE LOCATIONS OF THE OMITTED INFORMATION HAVE BEEN INDICATED WITH ASTERISKS.

Facsimile No.: + 44 171 367 2000

IF TO AP BIOTECH, TO:

Amersham Pharmacia Biotech AB
Bjorkgatan 30
SE-751 84 Uppsala
Sweden
Attention: Ulf Lundberg, Esq.
Facsimile No.: + 46 181 65 322

with a copy to:

Cardiff Labs
Forrest Farm Estate
Whitchurch
Cardiff, Wales CF4 7YT
Attention: Andrew Carr
Facsimile No.: + 44 122 252 6440

Curtis, Mallet-Prevost, Colt & Mosle
101 Park Avenue
New York, New York 10178
Attention: Eric Gilioli, Esq.
Facsimile No.: (212) 697-1559

Any notice sent by registered mail which is not returned to the sender as undelivered shall be deemed to have been given on the tenth business day after being deposited in the mail. Any notice sent by courier shall be deemed to have been given on the date on which such notice was delivered by the courier service. Any notice delivered by hand, or sent by facsimile, shall be deemed to have been given on the date on which such notice was delivered or sent.

(c) GOVERNING LAW.

This Agreement shall be governed by and construed in accordance with the laws of England and Wales.

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(d) DISPUTE RESOLUTION. All disputes between the parties arising out of the circumstances and relationships contemplated by this Agreement including disputes relating to the validity, construction or interpretation of this Agreement and including disputes relating to pre-contractual representations shall be settled by arbitration as follows:

(i) Newco and AP Biotech hereby agree to cooperate in good faith to resolve any disputes, claims or controversies that may arise hereunder or with respect to the performance by either party of its obligations as contemplated hereby.

(ii) In the event that any dispute, claim or controversy shall not be so resolved by the parties between themselves, Newco and AP Biotech agree that any and all disputes, claims or controversies arising out of or relating to this Agreement or a breach thereof, whether grounded in common law or statutory law, shall be finally settled in accordance with the Arbitration Rules of the International Chamber of Commerce in effect on the Closing Date. Save as otherwise expressly provided herein the procedural rules shall be the rules of the High Court in England and Wales and the lex curiae shall be the law of England and Wales.

(iii) The number of arbitrators shall be three, chosen in accordance with the procedures set out in this Section 19(d). The award of the arbitrators shall be final and binding on the parties.

(iv) Each party shall appoint one arbitrator. If within (30) days after receipt of the claimant's notification of the appointment of an arbitrator the respondent has not notified the claimant of the arbitrator it appoints, the second arbitrator shall be appointed by the appointing authority.

(v) The arbitrators thus appointed shall choose a further arbitrator who will act as the presiding arbitrator of the tribunal. If within (30) days after the appointment of arbitrators under (d)(iv) above, they have not agreed upon the choice of the presiding arbitrator, then at the request of any party to the arbitration proceeding the presiding arbitrator shall be appointed by the appointing authority.

(vi) The Chartered Institute of Arbitrators, London, England shall be the appointing authority.

(vii) At the request of any party to the arbitration ("requesting party") the arbitrators shall order the other party ("furnishing party") to supply and furnish to the requesting party (the cost of which shall be reimbursed upon demand by the requesting party to the furnishing party) true and complete copies of the Relevant Material and to produce to the arbitral tribunal any or all of the Relevant Material and/or copies thereof as any part or the arbitral tribunal shall require.

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(viii) The procedures leading to the production of Relevant Material under this paragraph shall be determined by the arbitrators, and may include the preparation of lists of Relevant Material for initial evaluation by the requesting party prior to disclosure and/or inspection of Relevant Material by the requesting party prior to supply and furnishing the copies. In making such determination, the arbitrators shall take into account the urgency with which the Relevant Material should be brought before the arbitral tribunal.

(ix) No party shall use or disclose any Relevant Material obtained under this paragraph for any purpose except in the course of the conduct of the arbitration and (as far as applicable) proceedings before any court, and then only to the extent necessary for the implementation and enforcement of any aware of the arbitrators.

(x) The arbitration, including the making of the award, shall take place in London, U.K.

(xi) All submissions and awards in relation to arbitration hereunder shall be made in English and all arbitration proceedings shall be conducted in English.

(xii) The failure or refusal of either party to submit to arbitration in accordance with this Section 19(d) shall be deemed a breach of this Agreement. If either party seeks and secures judicial intervention requiring enforcement of this arbitration provision, such party shall be entitled to recover from the other party in such judicial proceeding all costs and expenses, including reasonable attorneys' fees, that it was thereby required to incur.

(xiii) The procedures specified in this Section 19(d) shall be the sole and exclusive procedures for the resolution of disputes between the parties arising out of or relating to this Agreement; PROVIDED, HOWEVER, that a party, without prejudice to the above procedures, may seek equitable remedies, including without limitation, specific performance, a preliminary injunction or other provisional judicial relief if in its sole judgment such action is necessary to avoid irreparable damage or to preserve the status quo. The parties to this Agreement hereby acknowledge and agree that the failure of AP Biotech to deposit the Initial Customer Information or any Semi-Annual Customer Information with the Escrow Agent in accordance with the delivery requirements of Section 1A(a) and Section 1A(b) hereof, respectively, will cause irreparable damage to Newco and its businesses and that, accordingly, Newco shall be entitled, if the circumstances so require, to seek the equitable remedy of specific performance to force AP Biotech to deliver such Initial Customer Information or Semi-Annual Customer Information.

(e) ASSIGNABILITY; BINDING EFFECT.

This Agreement shall be binding upon and inure to the benefit of the parties hereto, their successors and permitted assigns. Neither party may assign any of its rights or obligations hereunder except as may be contemplated hereby or except with the prior written consent of the other party; PROVIDED, HOWEVER that (i) AP Biotech shall be entitled to assign its

rights and obligations hereunder without obtaining the prior written consent of Newco to (A) any of its affiliates, or (B) any successor in interest in the event of a merger, a sale of substantially all of its assets, a sale of a majority of its capital stock or a sale of a material portion of its assets (provided that such material portion includes the business and assets of AP Biotech necessary for the performance of this Agreement consistent with past practice) and (ii) Newco shall be entitled to assign its rights and obligations hereunder without obtaining the prior written consent of AP Biotech to (A) any of its affiliates, or (B) any successor in interest in the event of a merger, a sale of substantially all of its assets or a sale of a majority of its capital stock; PROVIDED, HOWEVER, that no assignment by AP Biotech under clause (i)(A) above or by Newco under clause (ii)(A) above shall relieve the assigning party of any of its obligations hereunder. Notwithstanding clause (ii)(B) above, the consent of AP Biotech shall be required for the assignment by Newco of any of its rights or obligations hereunder in the event of a merger with, or a sale of substantially all of its assets or a majority of its capital stock to, any of the companies listed on SCHEDULE 19(e) or any successor in interest thereto.

(f) ENTIRE AGREEMENT.

This Agreement, including the Schedules referred to herein, is complete, reflects the entire agreement of the parties with respect to its subject matter, and supersedes all previous written or oral negotiations, commitments and writings in connection therewith.

(g) EXECUTION IN COUNTERPARTS.

This Agreement may be executed in two (2) or more counterparts, each of which shall be deemed an original, but all of which shall constitute one (1) and the same document.

(h) AMENDMENT.

This Agreement may not be amended except by a writing duly and validly executed by each party hereto.

(i) SEVERABILITY.

If any provisions of this Agreement shall be held by any arbitral panel or court of competent authority to be void and unenforceable in whole or in part, this Agreement shall continue to be valid and in full force and effect with respect to the other provisions hereof.

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IN WITNESS WHEREOF, the parties hereto have duly executed this Agreement as of the date first above written.

AMERSHAM PHARMACIA BIOTECH AB

By: Signature not legible

Name:
Title: CEO (acting)

BIOCHROM LIMITED

By: /s/ David Green

Name: David Green
Title: President

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Schedule 1(a)

NEW CO PRICING

AMINO ACID ANALYSIS PRICING

Main Instruments:

Item Number	Description	Price at 20/11/98	New co Price
80-2107-03	BIOCHROM 20 SODIUM ECHP 20cm x 4.6mm COLUMN	***	***
80-2107-04	BIOCHROM 20 SODIUM ECHR 20cm x 4.6mm COLUMN	***	***
80-2107-05	BIOCHROM 20 LITHIUM HP 20cm x 4.6mm COLUMN	***	***
80-2107-06	BIOCHROM 20 LITHIUM HR 25cm x 4.6mm COLUMN	***	***
80-2107-07	BIOCHROM 20 SODIUM HP 20cm x 4.6mm COLUMN	***	***
80-2107-08	BIOCHROM 20 SODIUM HR 20cm x 4.6mm COLUMN	***	***
80-2107-09	BIOCHROM 20 POLYAMINE 10cm x 4.6mm COLUMN	***	***
80-2108-18	BIOCHROM 20 SODIUM OXHP 20cm x 4.6mm COLUMN S/H	***	***
80-2108-19	BIOCHROM 20 SODIUM OXHR 20cm x 4.6mm COLUMN S/H	***	***
80-2108-20	BIOCHROM 20 LITHIUM HP 20cm x 4.6mm COLUMN S/H	***	***
80-2108-21	BIOCHROM 20 LITHIUM HR 25cm x 4.6mm COLUMN S/H	***	***
80-2108-22	BIOCHROM 20 SODIUM HP 20cm x 4.6mm COLUMN S/H	***	***
80-2108-23	BIOCHROM 20 SODIUM HR 20cm x 4.6mm COLUMN S/H	***	***
80-2108-24	BIOCHROM 20 POLYAMINE 10cm x 4.6mm COLUMN S/H	***	***
80-2108-83	BIO 20 LITHIUM HP 20cm FLUORESCENCE SPARK/H	***	***
80-2108-93	BIO 20 SODIUM HP 20 cm FLUORESCENCE SPARK/H	***	***

Chemicals, Chemical Kits, Packed Columns:

Item Number	Description	Price at 20/11/98	New co Price
80-2037-56	SODIUM BORATE BUFFER PH10.0 2L	***	***
80-2037-57	SODIUM HYDROXIDE SOLUTION, 1L	***	***
80-2037-62	CALIBRATION STANDARD PHYSIOLOGICAL FLUID	***	***
80-2037-67	SODIUM CITRATE BUFFER PH2.2, 2L	***	***
80-2037-68	SODIUM CITRATE BUFFER PH3.2, 2L	***	***
80-2037-69	LITHIUM CITRATE BUFFER PH3.55 2L	***	***
80-2037-71	BORATE BUFFER (FLUORIMETRY) 1L	***	***
80-2037-72	ORTHOPHTHALALDEHYDE (OPA), 2G	***	***
80-2037-74	POLYAMINE BUFFER, 2L	***	***
80-2037-79	SODIUM CITRATE BUFFER PH2.65, 2L	***	***
80-2037-80	SODIUM CITRATE BUFFER PH3.35, 2L	***	***
80-2037-88	BORATE/CITRATE BUFFER PH8.6, 2L	***	***
80-2037-90	PROTEIN HYDROLYSATE KIT 4150	***	***
80-2037-94	PROTEIN HYDROLYSATE KIT BIO20/4151-II/4151	***	***

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80-2037-99	FLUORIMETER REAGENT KIT	***	***
60-2038-00	NINHYDRIN REAGENT KIT 4150	***	***
80-2038-04	PHYSIOLOGICAL FLUID KIT 4151	***	***
80-2038-07	NINHYDRIN REAGENT KIT 2L BIO20/4151-II/4151	***	***
80-2038-08	SODIUM CITRATE BUFFER PH4.25, 2L	***	***
80-2038-09	SODIUM CITRATE BUFFER PH6.45, 2L	***	***
80-2038-10	LITHIUM CITRATE BUFFER PH2.2, 2L	***	***
80-2038-15	LITHIUM CITRATE BUFFER A 2L	***	***
80-2038-16	LITHIUM CITRATE BUFFER B 2L	***	***
80-2038-17	LITHIUM CITRATE BUFFER C 2L	***	***
80-2038-18	LITHIUM CITRATE BUFFER D 2L	***	***
80-2038-19	LITHIUM CITRATE BUFFER E 2L	***	***
80-2038-20	LITHIUM HYDROXIDE SOLUTION 1L	***	***
80-2038-33	ULTROPAC 8 RESIN, LITHIUM, 7.5G	***	***
80-2038-40	ULTROPAC 1 RESIN, SODIUM, 10G	***	***
80-2038-41	ULTROPAC 1 RESIN, LITHIUM, 10G	***	***
80-2038-42	ULTROPAC 8 RESIN, SODIUM, 1G	***	***
80-2038-43	ULTROPAC 8 RESIN, LITHIUM, 1G	***	***
80-2038-45	ULTROPAC 8 RESIN, SODIUM, 6G	***	***
80-2038-46	ULTROPAC 8 RESIN, LITHIUM, 6G	***	***
80-2087-14	PREWASH COLUMN RESIN 2G BIO20/41561-II	***	***
80-2097-18	LITHIUM BUFFER D II FILTERED, 2L	***	***
80-2098-05	PHYSIOLOGICAL FLUID KIT BIO20/4151-II	***	***
80-2089-83	LITHIUM CITRATE BUFFER CII 4151-II	***	***
80-2101-42	OXIDISED FEEDSTUFF KIT BIO20/4151-II/4151	***	***
80-2104-11	HR LI COLUMN 25X4.6 PEEK	***	***
80-2104-12	HR LI COLUMN 20X4.6 PEEK	***	***
80-2104-13	LI PREWASH COLUMN 10X4.0 PEEK	***	***
80-2104-14	HR NA COLUMN 20X4.6 PEEK	***	***
80-2104-15	HP NA COLUMN 20X4.6 PEEK	***	***
80-2104-16	NA PREWASH COLUMN 10X4.0 PEEK	***	***
80-2104-17	HR NA EEC COLUMN 20X4.6 PEEK	***	***
80-2104-18	HP NA EEC COLUMN 20X4.6 PEEK	***	***
80-2104-19	POLYAMINE COLUMN 10X4.0 PEEK	***	***
80-2104-74	BIOCHROM 20 RESIN LI 1G	***	***
80-2104-75	BIOCHROM 20 RESIN NA 1G	***	***
80-2105-71	HR LI COLUMN 26X4.6 PEEK ALPHA PLUS SERIES I	***	***
80-2105-72	HP LI COLUMN 26X4.6 PEEK ALPHA PLUS SERIES I	***	***
80-2105-73	HR NA COLUMN 26X4.6 PEEK ALPHA PLUS SERIES I	***	***
80-2105-74	HP NA COLUMN 26X4.6 PEEK ALPHA PLUS SERIES I	***	***
80-2105-75	HR NA EEC COLUMN 26X4.6 PEEK ALPHA PLUS SERIES I	***	***
80-2105-76	HP NA EEC COLUMN 26X4.6 PEEK ALPHA PLUS SERIES I	***	***
80-2105-77	POLYAMINE COLUMN 10XS4.0 ALPHA PLUS SERIES I	***	***
80-2105-81	HR LI COLUMN 25X4.6 PEEK ALPHA PLUS SERIES II	***	***
80-2105-82	HP LI COLUMN 20X4.6 PEEK ALPHA PLUS SERIES II	***	***
80-2105-83	HR NA COLUMN 20X4.6 PEEK ALPHA PLUS SERIES II	***	***
80-2105-84	HP NA COLUMN 20X4.6 PEEK ALPHA PLUS SERIES II	***	***
80-2105-85	HR NA EEC COLUMN 20X4.6 ALPHA PLUS SERIES II	***	***

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80-2105-86	HP NA EEC COLUMN 20X4.6 ALPHA PLUS SERIES II	***	***
80-2105-87	POLYAMINE COLUMN 10X4.0 ALPHA PLUS SERIES II	***	***
80-2108-22	ULTROSOLVE 2L	***	***
80-2109-23	NINHYDRIN POWDER 20G	***	***
80-2109-24	HYDRINDANTIN 1.6G	***	***
80-2109-25	NINHYDRIN REAGENT KIT 1L	***	***

Accessories:

Item Number	Description	Price at 20/11/98	New co Price
80-2104-10	2 CHANNEL RECORDER WHITE (KIPP & ZONEN)	***	***
80-2105-25	1 CHROMATOGRAPH 2 DETECT DATA HANDLING SYSTEM	***	***
80-2105-26	2 CHROMATOGRAPH 2 DETECT DATA HANDLING SYSTEM	***	***
80-2105-27	4 CHROMATOGRAPH 2 DETECT DATA HANDLING SYSTEM	***	***
80-2105-33	UPGRADE 1-2/2-2 EZCHROM	***	***
80-2105-34	UPGRADE 1-2/4-2 EZCHROM	***	***
80-2105-35	UPGRADE 1-2/4-4 EZCHROM	***	***
80-2105-36	UPGRADE 2-2/4-2 EZCHROM	***	***
80-2105-37	UPGRADE 2-2/4-4 EZCHROM	***	***
80-2105-38	UPGRADE 4-2/4-4 EZCHROM	***	***
80-2108-40	EMPTY PEEK COLUMN 25X4.6 U/C	***	***
80-2108-41	EMPTY PEEK COLUMN 20X4.6 U/C	***	***
80-2108-42	EMPTY PEEK COLUMN 15X4.6 U/C	***	***
80-2108-43	EMPTY PEEK COLUMN 10X4.0 U/C	***	***
80-2108-44	COLUMN HEAT TRANSFER BLOCK 25cm U/C	***	***
80-2108-45	COLUMN HEAT TRANSFER BLOCK 20cm U/C	***	***
80-2108-46	COLUMN HEAT TRANSFER BLOCK 15cm U/C	***	***
80-2108-47	COLUMN HEAT TRANSFER BLOCK 10cm U/C	***	***
80-2108-52	1 CHROMATOGRAPH 2 DETECT DHS - BCD LICENCE EZCH	***	***
80-2108-53	2 CHROMATOGRAPH 2 DETECT DHS - BCD LICENCE EZCH	***	***
80-2108-54	4 CHROMATOGRAPH 2 DETECT DHS - BCD LICENCE EZCH	***	***
80-2108-57	AUTOSAMPLER UPDATE KIT INC MARATHON WIN 3.1	***	***
80-2108-77	EZCHROM SOFTWARE UPDATE TO LATEST VERSION	***	***
80-2108-81	AUTOSAMPLER UPDATE KIT MARATHON WIN 3.1	***	***
80-2108-88	AUTOSAMPLER UPDATE KIT INC MIDAS WIN 3.1	***	***
80-2108-89	AUTOSAMPLER UPDATE KIT EX MIDAS WIN 3.1	***	***
80-2109-47	EZCHROM BOARD C/W CABLES	***	***
80-2109-48	EU EZCHROM PCB	***	***
80-2109-73	AUTOSAMPLER UPDATE KIT INC MIDAS WIN 95	***	***
80-2109-74	AUTOSAMPLER UPDATE KIT EX MIDAS WIN 95	***	***
80-2110-40	EZCHROM 1xX TO ELITE 1 UPGRADE	***	***
80-2110-41	EZCHROM 2xX TO ELITE 2 UPGRADE	***	***

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Consumanies and Spare Parts

Item Number	Description	Price at 20/11/98	New co Price
80-2016-26	SYRINGE ADAPTOR	***	***
80-2016-44	COMPRESSION SPRING	***	***
80-2016-45	TAPERED FLOW CELL END CAP	***	***
80-2016-46	FLOW CELL END CAP	***	***
80-2016-47	FLOWCELL SEAL (PKT OF 2)	***	***
80-2016-49	METAL SCREEN (PKT OF 10)	***	***
80-2016-53	FLOWCELL LOCATING STUD	***	***
80-2016-58	BEAM SPLITTER MOUNTING BRACKET	***	***
80-2016-62	SAMPLE LOADING VALVE ASSEMBLY	***	***
80-2016-68	CAPSULE WHEEL MK II	***	***
80-2016-77	3 WAY MANIFOLD	***	***
80-2016-85	REACTION COIL TUBING	***	***
80-2016-96	COVER	***	***
80-2017-16	FLOWCELL BODY	***	***
80-2017-26	MAGNETIC CATCH SPACER	***	***
80-2017-37	NITROGEN RESTRICTOR	***	***
80-2017-50	PIPE	***	***
80-2017-56	COLUMN CLAMP SCREW	***	***
80-2017-59	COLUMN PELTIER CLAMP BLOCK	***	***
80-2017-71	4 WAY MANIFOLD	***	***
80-2017-72	COLUMN PELTIER RETAINER	***	***
80-2017-75	CAPSULE SHUTE CLIP	***	***
80-2017-78	CHUTE SLIDER BUSH	***	***
80-2018-00	PELTIER CONNECTION PILLAR 4151	***	***
80-2018-29	COIL FLUSHCAP	***	***
80-2018-30	COIL FLUSH BODY	***	***
80-2018-31	COIL FLUSH PISTON	***	***
80-2018-32	RETAINER PLATE	***	***
80-2018-33	VALVE ADAPTOR FOR N-R VALE	***	***
80-2018-35	BELLOFRAM MODIFIED	***	***
80-2018-40	NITROGEN MANIFOLD - 4151 MKII	***	***
80-2018-43	COLUMN ADAPTOR	***	***
80-2018-88	THERMISTOR CLAMP	***	***
80-2018-89	RAM GUIDE - 4151	***	***
80-2018-92	CAPSULE BUFFER	***	***
80-2019-23	CAPOFLEX LOOSE WOOL 500G	***	***
80-2018-25	ROLL PIPE TAPE	***	***
80-2019-41	PIN SPRING - PKT 10	***	***
80-2019-80	MAGNETIC CATCH	***	***
20-2019-92	O RING (PKT OF 5)	***	***
80-2019-94	O RING VITON (PKT OF 10)	***	***
80-2019-95	MOTOR DRIVE COUPLING	***	***

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80-2019-99	CARD EJECTOR	***	***
80-2020-20	NITROGEN NON-RETURN VALVE	***	***
80-2020-23	BUFFER SOLENOID VALVE	***	***
80-2020-24	FAN	***	***
80-2020-25	PRESSURE REGULATOR	***	***
80-2020-26	SOLENOID VALVE	***	***
80-2020-27	PRESSURE SWITCH 5150/100	***	***
80-2020-28	SOLENOID VALVE	***	***
80-2020-30	FAN	***	***
80-2020-31	ADAPTOR TAP	***	***
80-2020-33	PISTON SEAL REPLACEMENT KIT	***	***
80-2020-34	LENS F25	***	***
80-2020-38	FLOWCELL WINDOW (PKT OF 2)	***	***
80-2020-39	BAND PASS FILTER 440	***	***
80-2020-40	FILTER 570NM	***	***
80-2020-64	FLANGING TOOL 220V	***	***
80-2020-65	FLANGING TOOL 110V	***	***
80-2020-70	INSERTION TOOL	***	***
80-2020-74	3 WAY WHITEY VALVE	***	***
80-2020-75	CHROMATRONIX COUPLING	***	***
80-2020-76	PTFE TUBE 3.1X1.5MM (PACK 3M)	***	***
80-2020-77	PTFE TUBING 0.7 X 2 MM (PACK 3M)	***	***
80-2020-78	CHROMATRONIX END FITTING	***	***
80-2020-79	SWAGELOK NUT 1/16"	***	***
80-2020-82	MALE CONNECTOR 1/16"	***	***
80-2020-84	SWAGELOK FRONT FERRULE 1/4"	***	***
80-2020-85	SWAGELOK BACK FERRULE 1/4"	***	***
80-2020-87	REDUCING UNION 1/16" TO 1/8"	***	***
80-2020-88	TEFLON TUBING 1.8X0.5MM (PACK 3M)	***	***
80-2020-89	PTFE TUBING 1.6X0.3MM (PACK 3M)	***	***
80-2020-91	ELBOW TAPER CONNECTOR	***	***
80-2020-92	TAPER CONNECTOR	***	***
80-2020-95	TUBING BLUE 5 X 3 MM (PACK 3M)	***	***
80-2020-96	TUBING RED 5 X 3 MM (PACK 3M)	***	***
80-2020-98	CONNECTOR	***	***
80-2021-00	BEV-A-LINE TUBING (3m)	***	***
80-2021-03	CROSS TUBE FITTING	***	***
80-2021-04	TEE 1410-5/3-1/8"	***	***
80-2021-08	LUER ADAPTOR (PACK 2)	***	***
80-2021-12	PIPETTE TIPS (PKT 1000)	***	***
80-2021-19	GILSON PIPETTE 10-100UL	***	***
80-2021-21	100MM GLASS BOTTLE	***	***
80-2022-23	PQT CET 75W2K20-TURN	***	***
80-2022-50	TRANSDUCER	***	***
80-2022-51	CARTRIDGE HEATER 24V	***	***
80-2022-56	70 DEGREE THERMAL SAFETY SWITCH	***	***
80-2022-57	RELAY 3 POLE	***	***
80-2022-59	CAPSULE WHEEL MOTOR 24V	***	***

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80-2022-64	DIODE	***	***
80-2022-97	MICROSWITCH - CAPSULE AND RAM	***	***
80-2023-01	SWITCH TO DISPLAY PRESSURE	***	***
80-2023-49	CAPSULE SET NOS. 1-25, 80UL	***	***
80-2023-51	CAPSULE SET NOS. 25-50, 80UL	***	***
80-2023-53	CAPSULE SET NOS. 1-25, 160UL	***	***
80-8023-55	FLOWCELL WASHER (PACK 2)	***	***
80-8023-56	DETECTOR PCB	***	***
80-2023-57	CAPSULE WHEEL ALIGNMENT PCB	***	***
80-2023-58	CAPSULE SET NOS 25-50, 160UL	***	***
80-2023-63	UNIVERSAL CONTROL PCB	***	***
80-2023-64	SIGNAL LEAD	***	***
80-2023-65	TRANSFORMER	***	***
80-2023-67	PHOTOMETER SYSTEM PCB	***	***
80-2023-80	SILICONE OIL 100ML	***	***
80-2023-82	INTEGRATOR CABLE	***	***
80-2023-91	COLUMN THERMISTOR ASSY	***	***
80-2023-93	REACTION COIL TERMISTOR	***	***
80-2023-95	PELTIER DRIVE PCB	***	***
80-2024-05	AUTOLOADER ASSY - 4151	***	***
80-2024-08	FLOWMETER ASSEMBLY	***	***
80-2024-14	COIL FLUSH ASSEMBLY	***	***
80-2024-27	RS 232 CONNECTION CABLE FOR PRINTER TO 4151	***	***
80-2024-37	INTEGRATOR INTERFACE KIT	***	***
80-2024-47	MOTHERBOARD PCB - 4151	***	***
80-2024-56	PRESSURE REGULATOR 4150/4151	***	***
80-2024-68	REGULATOR LAS 3905	***	***
80-2026-11	METERING VALVE	***	***
80-2026-29	TEE NO 2070-1/8"-1/8"	***	***
80-2026-40	100 ML GLASS BOTTLE	***	***
80-2026-73	IC LM311N	***	***
80-2026-76	IC OPTO ISOLATOR	***	***
80-2028-47	PRESSURE GAUGE 0.1 BAR	***	***
80-2030-22	BEAM SPLITTER MIRROR	***	***
80-2030-45	CAPSULE FOLLOWER	***	***
80-2030-58	LOOM PCB ASSY	***	***
80-2032-77	PRESSURE RELIEF VALVE 10 BAR	***	***
80-2041-35	BOTTLE TOP	***	***
80-2041-96	BUFFER BOTTLE SCREW CAP	***	***
80-2050-20	"O" RNG 008 E.P.	***	***
80-2051-93	ARMATURE	***	***
80-2052-09	PRESSURE SWITCH	***	***
80-2052-10	SEAL KIT FOR CHECK VALVE	***	***
80-2052-12	CHECK VALVE	***	***
80-2052-13	OUTLET CHECK VALVE HOUSING	***	***
80-2052-14	INLET CHECK VALVE HOUSING	***	***
80-2052-15	PUMP HEAD AND CHECK VALVE	***	***
80-2052-20	24VDC COIL	***	***

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80-2052-22	PLUNGER SEAL KIT	***	***
80-2052-23	PUMP SEAL	***	***
80-2052-24	SEAL SUPPORT	***	***
80-2052-28	VERNIER KNOB	***	***
80-2052-29	COMPRESSION SPRING	***	***
80-2052-32	PRESSURE RING	***	***
80-2053-80	M3 ALLEN KEY	***	***
80-2053-81	FLANGING TOOL TIP MEDIUM	***	***
80-2053-85	SWAGELOK CONNECTOR 1/8"	***	***
80-2053-97	SWAGELOK NUT 1/8:	***	***
80-2054-21	PTFE TUBING 1.5X0.6MM (PACK 3M)	***	***
80-2054-23	PTFE TUBING 1.8X0.8MM	***	***
80-2054-65	NIN COLUMN COUPLING	***	***
80-2054-68	PTFE INSERT FOR REACTION COL	***	***
80-2054-88	FILTER DISC 9 MM (PKT OF 10)	***	***
80-2054-97	TUBING NATURAL 5 X 3 MM	***	***
80-2054-98	TUBING 1/16 X 3/16 (PKT OF 3M)	***	***
80-2062-19	MOTOR BRUSH - PAIR	***	***
80-2063-37	IC CA3140E	***	***
80-2063-88	SWITCH - TWO POSITION	***	***
80-2064-82	SHORTING PLUG 12.7 MM	***	***
80-2065-74	PTFE FILTER 6 MM (PKT OF 10)	***	***
80-2066-88	RAM PROBE PIPE ASSY	***	***
80-2066-94	FILER 440 NM	***	***
80-2066-95	FILTER ASSY 570 NM	***	***
80-2067-20	PIPE MIXING TEE 4480	***	***
80-2067-21	PIPE BACK PRESSURE VALVE 4480	***	***
80-2067-40	DOUBLE EURO-EXTENDER CARD	***	***
80-2067-42	PRESSURE IND/ABSORB SWITCH	***	***
80-2067-78	NITROGEN INLET LINE	***	***
80-2067-81	REACTION COIL ASSY	***	***
80-2067-84	REACTION COIL INDICATOR LED	***	***
80-2068-06	PRESSURE RELIEF VALVE	***	***
80-2069-49	CONTROL EPROM IC 102-4151	***	***
80-2069-55	COIL FLUSH VALVE SPARES	***	***
80-2069-58	PIPE KIT	***	***
80-2069-60	COILED TUBE ASSY	***	***
80-2069-89	MOD KIT - FLOWMETER 4151	***	***
80-2070-09	TRANSDUCER ASSY 1000 OSI 320MM	***	***
80-2070-11	TRANSDUCER ASSY 1000 PSI	***	***
80-2070-13	PRESSURE TRANSDUCER 1000 PSI	***	***
80-2070-14	PRESSURE TRANSDUCER 2000 PSI	***	***
80-2070-15	PRESSURE TRANSDUCER 1000 PSI	***	***
80-2070-16	PRESSURE TRANSDUCER 1000 PSI	***	***
80-2070-17	TRANSDUCER ASSEMBLY 2000 PSI	***	***
80-2070-18	TRANSDUCER ASSEMBLY 1000 PSI	***	***
80-2070-19	PRESSURE TRANSDUCER	***	***
80-2071-20	SERVICE KIT FOR 4151	***	***

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80-2072-47	NIN BOTTLE ADAPTOR	***	***
80-2072-77	PISTON ASSEMBLY	***	***
80-2073-94	SWAGELOK FRONT FERRULE 1/16"	***	***
80-2073-95	SWAGELOK BACK FERRULE 1/16"	***	***
80-2074-95	PELTIER ELEMENT	***	***
80-2074-96	RELAY 24V DPCO	***	***
80-2075-04	9 WAY PLUG	***	***
80-2075-12	SMALL COUPLING SCREW	***	***
80-2075-53	440NM BEAM SPLITTER ASSEMBLY	***	***
80-2084-29	TUBE NUT & FERRULE KIT 1/8"	***	***
80-2084-30	TUBE NUT & FERRULE KIT 1/16"	***	***
80-2086-65	2ND INTERFACE PCB - 4151 MK II	***	***
80-2086-89	PROGRAMMER ASSEMBLY - 4151 MK II	***	***
80-2086-90	MODIFIED FRIDGE ASSY - 4151 MK II	***	***
80-2086-93	PUMP ASSEMBLY 4151 MK II	***	***
80-2086-96	COLUMN DOOR ASSEMBLY - 4151 MK II	***	***
80-2086-97	AC OUTPUT PCB - 4151 REPLACES 80-2023-89	***	***
80-2087-00	METER PANEL ASSEMBLY - 4151 MK II	***	***
80-2087-01	BUFFER METER ASSY - 4151 MK II	***	***
80-2087-03	PROBE ASSY - 4151 MK II	***	***
80-2087-04	AUTOLOADER ASSY - 4151 MK II	***	***
80-2087-27	FERRULE 1/16" 4151 MK II	***	***
80-2087-28	COMPRESSION SCREW - 4151 MK II	***	***
80-2087-29	BUFFER BOTTLE TOP	***	***
80-2087-30	ROTOR SEAL -4151 MK II	***	***
80-2079-31	TEFZEL TUBING (PACK 2M) 4151 MK II	***	***
80-2087-39	DRIP TRAY CLIP 4151 MK II	***	***
80-2087-55	NOZZLE - 4151 MK II	***	***
80-2087-62	A LOADER VALVE + ACTUATOR MK II	***	***
80-2087-65	FLOWMETER 1ML 4151 MK II	***	***
80-2087-71	PUMP PRIMING VALVE-4151 MK II	***	***
80-2088-00	THERMAL FUSE - 4151 & 4151 MK II	***	***
80-2088-12	REACTION COIL MOD KIT	***	***
80-2088-63	BUBBLE TRAP TOP	***	***
80-2089-00	E.U. SECOND INTERFACE PCP (40 00 4978/80202433)	***	***
80-2089-01	E.U. AC OUTPUT PCB (40 00 2853/80202369)	***	***
80-2089-02	E.U. UNIVERSAL CONTROL PCB (40 00 2832/80202363)	***	***
80-2089-03	E.U. PHOTOMETER PCB (40 00 2847/80202367)	***	***
80-2089-75	AUTOLOADER ASSEMBLY - 4151	***	***
80-2097-32	NIN BOTTLE TOP	***	***
80-2099-28	4151 MK II EPROMIC 102 VERSION 5.3	***	***
80-2099-30	4151 MK II EPROMIC 103 VERSION 5.3	***	***
80-2099-31	4151 MK II EPROMIC 104 VERSION 5.3	***	***
80-2099-32	4151 MK II EPROMIC 106 VERSION 5.3	***	***
80-2100-52	TOOL KIE BIOCHROM 1	***	***
80-2100-53	COLUMN CLAMP ASSEMBLY	***	***
80-2101-43	SAMPLE LOADING VALVE REPLACEMENT	***	***
80-2101-44	PREWASH COLUMN REPLACEMENT LITHIUM	***	***

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80-2101-45	PREWASH COLUMN REPLACEMENT SODIUM	***	***
80-2101-59	MODIFIED MOTOR AUTOLOADER	***	***
80-2101-61	E.U. 2ND I/F PCB 4151 II	***	***
80-2101-62	E.U. A/C O/P PCB 4161 II	***	***
80-2102-05	4151 FRIDGE THERMOSTAT	***	***
80-2102-17	FRIDGE DRIP TRAY KIT	***	***
80-2102-18	LOOM PCB DRIP GUARD	***	***
80-2103-11	NAVIGATOR SOFTWARE KIT	***	***
80-2103-12	NAVIGATOR UNIVERSAL CONTROL PCB	***	***
80-2103-80	SIGNAL & SOR CABLE FOR AAA DATA HANDLING SYSTEM	***	***
80-2103-81	SIGNAL & SOR CABLE HFLC DATA HANDLING SYSTEM	***	***
80-2104-23	PROBE ASSEMBLY	***	***
80-2104-24	FLOWCELL ASSEMBLY	***	***
80-2104-25	PRESSURE RELIEF VALVE ASSEMBLY PHOTOMETER	***	***
80-2104-26	PEEK UNION	***	***
80-2104-27	DURAN BOTTLE (NIN) 2000ml	***	***
80-2104-28	MANUAL INSTRUCTION BIO20 IDENT INC S/W WIN 3.1	***	***
80-2104-29	CAPSULE SET OF 5	***	***
80-2104-30	COLUMN PACKING RESERVIOR	***	***
80-2104-31	MODIFIED FINGERTIGHT FITTING	***	***
80-2104-32	AC OUTPUT PCB ASSEMBLY	***	***
80-2104-33	MOTHERBOARD PCB ASSEMBLY	***	***
80-2104-35	COLUMN HEAT TRANSFER BLOCK 25cm	***	***
80-2104-36	COLUMN HEAT TRANSFER BLOCK 16cm	***	***
80-2104-38	COLUMN HEAT TRANSFER BLOCK 20cm	***	***
80-2104-39	MODIFIED FRIDGE 240V	***	***
80-2104-42	MODIFIED BOTTLE CAP	***	***
80-2104-43	PROBE AND FERRULE KIT	***	***
80-2104-44	FLOWCELL WINDOW KIT	***	***
80-2104-45	FINGERTIGHT PEEK FITTING PACK OF 5	***	***
80-2104-46	DOUBLE FERRULE PEEK PACK OF 2	***	***
80-2104-47	TEE PEEK HIGH PRESSURE	***	***
80-2104-48	PEEK COLUMN FRIT (PKT 6)	***	***
80-2104-49	PEEK TUBING 1/16"X 5mm 6 METRE LENGTH	***	***
80-2104-50	PEEK TUBING 1/16"X 0.5mm 6 METRE LENGTH	***	***
80-2104-51	TEFLON PACKING SEAL PACK OF 10	***	***
80-2104-52	1/16 FLANGELESS FITTING KIT (PACK OF 5)	***	***
80-2104-53	1/8" FLANGELESS FITTING KIT (PACK OF 5)	***	***
80-2104-62	AUTOLOADER VALVE	***	***
80-2104-64	SYRINGELESS FILTER UNIT 0.45UM PKT 10	***	***
80-2104-69	CAPSULE CHUTE WINDOW	***	***
80-2104-70	BIQ 20 EPROM 1C127 V1.1	***	***
80-2104-80	NINHYDRIN FILER CARTRIDGE	***	***
80-2104-82	BUFFER PUMP FILTER	***	***
80-2104-84	1 YEAR SPARES KIT BIO 20	***	***
80-2104-85	2 YEAR SPARES KIT BIO 20	***	***
80-2104-86	BUFFER FILTER CARTRIDGE	***	***
80-2104-87	TACHOMETER INTERFACE PCB ASSEMBLY	***	***

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80-2104-88	TRANSDUCER PCB ASSEMBLY	***	***
80-2104-89	SERVICE MANUAL BIO 20	***	***
80-2104-93	EPROM IC127V1.2 4152 PL	***	***
80-2105-00	PEEK CONE UPDATE KIT FOR ALPHA PLUS	***	***
80-2105-01	PEEK COLUMN UPDATE KIT FOR ALPHA PLUS	***	***
80-2105-28	AUTOSAMPLER VIAL READER EZCHROM	***	***
80-2105-29	BINARY PUMP CNTRL SINGLE EZCHROM	***	***
80-2105-30	BINARY PUMP CNTRL MULT EZCHROM	***	***
80-2105-32	OPERATOR MANUAL EZCHROM	***	***
80-2105-46	SIGNAL CABLE ASSY AAA-EZCHROM	***	***
80-2105-53	TEFZEL TUBING (PACK 5M)	***	***
80-2105-58	PRESSURE REGULATORY KIT 0-10 BAR	***	***
80-2105-66	FERRULE 1/4" PTFE	***	***
80-2105-67	EZCHROM REPROCESSING S/W DONGLE SOFTWARE & M	***	***
80-2105-70	BURETTE ASSY	***	***
80-2106-41	REFURBISHED AUTOLOADER VALVE WET END	***	***
80-2106-59	E.U. ALPHA DETECTOR PCB ONLY SENT FROM SWEDEN	***	***
80-2106-72	E..U. 4151-2 NAVIGATOR PCB ONLY SENT FROM SWEDEN	***	***
80-2106-73	E.U. BIO20 A/C O/P PCB ONLY SENT FROM SWEDEN	***	***
80-2107-15	CAPSULE SHUTE UPDATE KIT	***	***
80-2107-20	BIOCHROM 20 SHORTFORM INSTRUCTIONS A/LOADER	***	***
80-2107-56	PEEK COLUMN END FITTING	***	***
80-2107-57	TUNGSTEN LAMP FOR AAA	***	***
80-2107-96	CAPSULE SHUTE (PLASTIC)	***	***
80-2107-97	COIL FLUSH NON-RETURN VALVES - REPLACEMENT KIT	***	***
80-2107-99	EPROM V2 O (4152 S/H) IC127	***	***
80-2108-30	COLUMN PACKING RESERVIOR UPCHURCH	***	***
80-2108-32	COIL FLUSH ASSY	***	***
80-2108-33	COIL FLUSH DIAPHRAGM X2	***	***
80-2108-34	SOLENOID VALVE SINGLE AUTOLOADER	***	***
80-2108-35	SOLENOID VALVE DOUBLE AUTOLOADER	***	***
80-2108-36	ANTI SURGE THERMISTOR KIT	***	***
80-2108-37	EPROM V1.0 (4152) IC2 CAPSULE IDENT	***	***
80-2108-39	EPROM V3.0 (4152) IC127	***	***
80-2108-48	PHARMACIA COLUMN COUPLER	***	***
80-2108-49	COLUMN END FITTING C/W 2 MICRON FRIT (6 PACK)	***	***
80-2108-50	PACKING SEAL U/C PACK OF 10	***	***
80-2108-51	CAPSULE IDENT PCB	***	***
80-2108-55	CAPSULE HOLDER	***	***
80-2108-56	CAPSULE IDENT UPDATE KIT	***	***
80-2108-65	COIL FLUSH NON RETURN VALVE	***	***
80-2108-66	E.U. OPTO HOLDER ASSY	***	***
80-2108-73	BUFFER PUMP ASSEMBLY	***	***
80-2108-74	NINHYDRIN PUMP ASSEMBLY	***	***
80-2108-75	UNIVERSAL CONTROL PCB BIOCHROM 20	***	***
80-2108-84	BIO 20 PELTIER DRIVE PCB	***	***
80-2108-85	TEE ASSY LOW PRESSURE	***	***
80-2108-86	CROSS ASSY LOW PRESSURE	***	***

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80-2108-87	FLANGELESS NUT TOOL	***	***
80-2108-90	NIN PRESS RELIEF VALVE	***	***
80-2108-98	LOW PRESSURE MANIFOLD UPDATE KIT	***	***
80-2108-99	SET OF SEALED PELTIER ELEMENTS	***	***
80-2109-16	TACHOMETER INTERFACE PCB ASSY BIOCHROM 20	***	***
80-2109-17	PUMP MOTOR INC PCB ALPHA PLUS & BIOCHROM 20	***	***
80-2109-18	PUMP MOTOR BIOCHROM 20	***	***
80-2109-21	BUFFER PUMP FILTER ALPHA PLUS	***	***
80-2109-27	COIL FLUSH NITROGEN SOLENOID VALVE	***	***
80-2109-28	CALIBRATION CAPSULE SET	***	***
80-2109-30	BIOCHROM 20 SHORTFORM INSTRUCTIONS A/S WIN 3.1	***	***
80-2109-31	MANUAL INSTRUCTION BIO20 S/H INC S/W WIN 3.1	***	***
80-2109-32	AUTOLOADER RAM NITROGEN SOLENOID VALVE	***	***
80-2109-52	BUFFER PUMP HEAD AND CHECK VALVES ASSY	***	***
80-2109-53	AUTOSAMPLER S/W UPDATE KIT	***	***
80-2109-75	MANUAL INSTRUCTION BIO20 A/L INC S/W FOR WIN 95	***	***
80-2109-76	MANUAL INSTRUCTION BIO20 A/S INC S/W FOR WIN 95	***	***
80-2109-89	LINK ARM ASSY - PUMP	***	***
80-2109-90	PISTON FOLLOWER ASSY - PUMP	***	***
80-2109-91	1YR SPARES KIT BIO20 A/S	***	***
80-2109-92	2YR SPARES KIT BIO20 A/S	***	***
80-2109-93	SAMPLE NEEDLE MIDAS	***	***
80-2110-10	REFURBISHED PUMP MECHANICAL ASSY	***	***
80-2110-22	BUFFER PUMP HEAD WITHOUT FITTINGS	***	***
80-2110-23	NIN PUMP HEAD WITHOUT FITTINGS	***	***
80-2110-24	CAPSULE SET D01-D50 FOR CAPSULE IDENT. SYSTEM	***	***

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RDP transfer prices - Blochrom Spectrophotometers, 1998 and 1999 Schedule 1(b)

Part Number	Description (Main instruments)	RDP EUR/INT. 1998 Transfer Price GBP	RDP EUR./INT 1999 (Newco) Transfer Price GBP
80-2088-64	Novaspec II	***	***
80-2103-98	GeneQuant	***	***
80-2105-98	GeneQuant II	***	***
8021-0-98	GeneQuant pro	***	***
80-2109-10	Ultrospec 1000	***	***
80-2198-00	Ultrospec 1000E	***	***
80-2106-00	Ultrospec 2000	***	***
80-2106-20	Ultrospec 3000	***	***
80-2108-00	Ultrospec 4000	***	***

Part Number	Description (Accessories, Spares and Consumables)	RDP EUR/INT. 1998 Transfer Price GBP	RDP EUR./INT 1999 (Newco) Transfer Price GBP
Product Line 4001.cells			
80-2106-85	SET OF CELL SPACERS	***	***
80-2004-53	DISPCUVETTE, UV AND VIS METHACRYLATE (PKT 100)	***	***
80-2080-60	10MM FLOWCELL AUTOFILL II/III/PLUS/4060	***	***
80-2001-97	CASE FOR 6" 10MM CELLS	***	***
80-2002-50	10MM TDS FLOWCELL AND MOUNT	***	***
80-2002-51	1MM PATHLENGTH TDS FLOWCELL	***	***
80-2002-54	1MM CELL TYPE O UV SILICA	***	***
80-2002-57	5MM CELL TYPE O UV SILICA	***	***
80-2002-58	10MM CELL TYPE O UV SILICA	***	***
80-2002-63	50MM CELL TYPE O UV SILICA	***	***
80-2002-70	10MM CELL TYPE I UV SILICA	***	***
80-2002-77	10MM CELL TYPE 4 UV SILICA	***	***
80-2002-81	10MM CELL TYPE 5 UV SILICA	***	***
80-2002-95	10MM CELL TYPE 8 UV SILICA	***	***
80-2002-99	10MM CELL TYPE 9 UV SILICA	***	***

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80-2003-05	10MM CELL TYPE 10 UV SILICA	***	***
80-2003-09	10MM CELL TYPE 11 UV SILICA	***	***
80-2003-12	100MM CELL TYPE 12 UV SILICA	***	***
80-2003-13	40MM FUNNEL FLOWCELL	***	***
80-2003-14	50MM FUNNEL FLOWCELL	***	***
80-2003-15	1MM STANDARD CELL - TDS	***	***
80-2003-83	1MM CELL TYPE O GLASS	***	***
80-2003-85	5MM CELL TYPE O GLASS	***	***
80-2003-87	10MM CELL TYPE O GLASS	***	***
80-2003-93	50MM CELL TYPE O GLASS	***	***
80-2003-98	10MM CELL TYPE I GLASS	***	***
80-2004-15	10MM CELL TYPE 4 GLASS	***	***
80-2004-41	10MM CELL TYPE 10 GLASS	***	***
80-2004-45	10MM CELL TYPE 11 GLASS	***	***
80-2004-49	TALL SERIES RECTANGULAR CELL	***	***
80-2004-50	TEST TUBE GLASS 12MM PACK OF 10	***	***
80-2004-51	TEST TUBE GLASS 24MM PACK OF 10	***	***
80-2076-38	10MM SQ MICRO I UV SILICA CELL	***	***
80-2079-60	FUNNEL FLOWCELL NOVA SPEC II	***	***
80-2099-89	2 MTCHD CELL STD REC. LID UVS 10MMP	***	***
80-2099-91	6 MTCHD CELL STD REC LID UVS 10MMP	***	***
80-2099-97	6 MTCHD CELL STD REC LID GLS 10MMP	***	***
80-2100-13	2 MTCHD CELL S/MICRO LID UVS 10MMP	***	***
80-2100-15	6 MTCHD CELL S/MICRO LID UVS 10MMP	***	***
80-2100-22	2 MTCHD CELL S/MICRO STP UVS 10MMP	***	***
80-2100-25	2 MTCHD CELL MICRO LID UVS 10MM PL	***	***
80-2100-27	6 MTCHD CELL MICRO LID UVS 10MM PL	***	***
80-2103-68	ULTRA MICRO VOLUME CEL (5-7 UL WORKING VOLUME)	***	***
80-2103-69	MICRO VOLUME CELL (70 UL WORKING VOLUME)	***	***
80-2104-66	HELIX CAPILLARY CELL - 100 QUARTZ CAPILLARIES	***	***
80-2104-67	SPARE QUARTZ CAPILLARIES (100)	***	***
80-3004-65	10MM STANDARD CELL TDS	***	***
80-2004-67	1MM TDS FLOWCELL AND MOUNT	***	***
80-2108-12	TDS FLOWCELL 10MM P/L	***	***
80-2108-13	TDS FLOWCELL 1MM P/L	***	***

Product line, 4010, accessories

80-2109-01	TEMPERATURE CONTROLLER	***	***
80-2109-02	SERIAL INTERFACE ADAPOR LEAD	***	***
80-2109-03	CHART RECORDER LEAD	***	***
80-2109-04	2 POSITION MANUAL CELL CHANGER	***	***
80-2109-05	50MM PATHLENGTH CELL HOLDER	***	***
80-2109-06	WATER HEATED CELL HOLDER U100	***	***
80-2109-08	FITTING KIT FOR EXTERNAL SAMPLE DELIVERY	***	***
80-2109-09	SPARE SINGLE CELL HOLDER	***	***

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80-2109-13	DUST COVER	***	***
80-2109-33	TEST TUBE HOLDER U1000	***	***
80-2109-07	ELECTRICALLY HEATED CELL HOLDER U1000	***	***
80-2109-12	USER MANUAL FOR ULTROSPEC 1000	***	***
80-2109-34	COMBINED SERIAL/CHART INTERFACE (U1000)	***	***
80-2109-45	DEMONSTRATION KIT USER MANUAL	***	***
80-2108-63	BASIC UV/VIS SPECTRO BOOKLET	***	***
80-2108-72	UV/VISIBLEWALL POSTER	***	***
80-2109-11	DEUTERIUM LAMP ASSY 4010	***	***

Product line, 4010, spares

80-2109-36	POWER SUPPLY ASSY U1000	***	***
80-2109-37	MAIN PCB ASSY U1000	***	***
80-2109-38	PHOTOMETER PCB ASSY 4010	***	***
80-2109-39	LAMP-SELECT MOTOR 4010	***	***
80-2109-40	FILTER MOTOR ASSY 4010	***	***
80-2109-41	FILTER QUADRANT 4010	***	***
80-2109-44	FAN 4010 SERIES	***	***
80-2109-42	KEY BD/DISPLAY ASSY U1000	***	***
80-2108-67	ULTROSPEC 1000 SERVICE MANUAL	***	***
80-2109-51	EPROM VI-4 (4010) IC102	***	***
80-2109-46	CONTROLLER IC3 V1.0 (4020)	***	***

Product line 4040. Novaspec 11. Accessories

80-2001-10	TEST TUBE COVER (100MM) NOVASPECT II	***	***
80-2103-70	NOVASPEC II USER MANUAL (PHARMACIA)	***	***
80-2104-65	NOVASPEC FUNNEL F/CELL COVER ASSEMBLY	***	***
80-2105-19	5MM CELL HOLDER FOR NOVASPEC II	***	***
80-2107-28	NOVASCAN SOFTWARE FOR WINDOWS	***	***
80-2001-11	SPECTRAL LIGHT PIPE NOVASPEC I	***	***
80-2077-57	MULTI-SIZE SAMPLE HOLDER NOVASPEC II	***	***
80-2078-89	SPECTRAL LIGHT PIPE NOVASPEC II	***	***
80-2079-61	10MM FUNNEL FLOWCELL VENTURI-NOVASPEC II	***	***
80-3089-80	16MM TEST TUBE HOLDER NOVASPEC II	***	***
80-2094-88	FUNNEL FLOWCELL HOLDER S/A	***	***
80-2095-03	WATER HEATED CELL HOLDER NOVASPEC II	***	***
80-2005-94	TEST TUBE/CUVETTE HOLDER NOVASPEC I	***	***
80-2103-16	RS 232C LEAD, SPECTRO TO EPSON P40 PRINTER	***	***

Product line 4040. Novaspec II. Spares

80-2107-26	FUSE KIT NOVASPEC II	***	***
80-2075-02	CONNECTOR 25 WAY D TYPE FEMALE SOCKET	***	***
80-2077-48	GRATING ASSY.	***	***
80-2077-51	4040 FILTER WHEEL & MOTOR ASSEMBLY	***	***
80-2077-52	FILTER WHEEL S/A-4040	***	***

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80-2077-56	MOUNTING BLOCK SUB ASSY 4040	***	***
80-2077-68	PHOTOMETER PCB	***	***
80-2077-71	FILTER WHEEL MOTOR S/A 4040	***	***
80-2077-73	4040 GRATING MOTOR ASSEMBLY	***	***
80-2077-82	LAMPHOLDER MOUNTING BLOCK-4040	***	***
80-2078-03	FILTER 10 DIA 1 THK	***	***
80-2078-04	FILTER 10 DIA 1 THK	***	***
80-2078-23	FUSE CARRIER (DOUBLE)	***	***
80-2078-70	4040 LAMP HOLDER	***	***
80-2086-52	SPINDLE	***	***
80-2086-53	SPRING - 4040	***	***
80-2099-96	4040 + DIA MEMBRANE KEYBOARD	***	***
80-2099-27	SAMPLE COVER S/A	***	***
80-2101-32	DISPLAY WINDOW 4040	***	***
80-2101-57	CONTROL EPROM V1.2 DIA PL	***	***
80-2104-54	COLLIMATING MIRROR	***	***
80-2107-34	MAIN PCB 4040 (CE)	***	***
80-2107-35	TRANSFORMER 4040 (CE)	***	***
80-2107-36	MAINS INLET (CE)	***	***
80-2108-79	SEIKO DPU-414 SERIAL PRINTER	***	***
80-2063-23	IC SN74LSOON	***	***
80-2080-53	CELL SPRING CLIP NOVASPEC II	***	***
80-2086-68	SERVICE MANUAL - 4040	***	***
80-2088-93	E.U. (40004563/80200597)	***	***
80-2088-94	E.U. (40007042/80207768)	***	***
80-2106-40	NOVASPEC CLINICAL EPROM V1.0 (4040)	***	***
80-3107-98	EPROM V2.0 (4040) IC 100	***	***

Product line 4050, Ultrospec II/III, accessories

80-2084-58	RS232C SERIAL INTERFACE LEAD - SPECTROPHOTOMETER	***	***
80-2100-98	SERIAL TO DIN PRINTER LEAD	***	***
80-2015-09	CORROSIVE FUME TRAP FOR FUNNEL FLOWCELL	***	***
80-2071-87	EPSON-IBM PARALLEL INTERFACE LEAD	***	***
80-2099-67	SIX POSN CELL CHANGER ULTROSPEC III	***	***
80-2099-71	TURRET THUMB SCREW (ULTROSPEC III)	***	***
80-2001-84	HPLC CELL HOLDER AND FLOWCELL	***	***
80-3001-85	CYLINDRICAL CELL HOLDER	***	***
80-2001-86	10MM SINGLE CELL HOLDER	***	***
80-2001-87	50MM SINGLE CELL HOLDER	***	***
80-2001-89	ACCESSORY BASE PLATE	***	***
80-2001-90	WATER HEATED SINGLE CELL HOLDER	***	***
80-2002-03	FOUR CELL HOLDER LONG PATHLENGTH	***	***
80-2102-13	TUBE RESTRAINER ASSEMBLY WATER HTD CELL CHANGER	***	***

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80-2103-46	ULTROSPEC III MANUAL A5	***	***
80-2103-18	ELECTRICAL VACUUM PUMP ACCESSORY KIT	***	***
80-2105-47	RS232CI/F CABLE M/F 25 INST TO 9 COMP	***	***
80-2007-13	TDS 8 POSITION, 1MM 6 FLOWCELL, 2 STOPPERED	***	***
80-2007-16	TDS 8 POSITION 10MM 6 FLOWCELL, 2 STOPPERED	***	***
80-2010-14	6 POSITION WATER HEATED TURRET	***	***
80-2070-57	TDS 8 POSITION 1MM 8 FLOWCELLS	***	***
80-2070-60	TDS 8 POSITION 10MM 8 FLOWCELLS	***	***
80-2076-34	MICROVOLUME CELL HOLDER	***	***
80-2091-86	25MM TEST TUBE HOLDER	***	***
80-2091-88	9-16MM TEST TUBE HOLDER	***	***
80-2091-61	VENTURI FUNNEL FLOWCELL, 10MM	***	***
80-2093-74	TDS SOFTWARE 3.5 DISC	***	***
80-2100-88	APPLICATIONS SOFTWARE MS WINDOWS ULTROSPEC III	***	***
80-2103-88	ULTRA MICROVOLUME (SUL) CELL HOLDER	***	***
80-2100-58	DEUTERIUM LAMP AND MOUNT ASSEMBLY, VERSION 2	***	***
80-2102-70	FLOWCELL AND TUBING KIT AUTOFILL III/SIPPER	***	***
80-2102-71	PUMP TUBING KIT AUTOFILL III/SIPPER	***	***
80-2007-06	TUBING KIT (TDS)	***	***

Product line 4050, Ultrospec II/III, spares

80-2000-64	INTERCONNECTION LEAD	***	***
80-2005-85	LAMP HOLDER - 4040/4040	***	***
80-2022-94	TUNGSTEN LAMP 20W 12V	***	***
80-2062-93	REFLECTIVE OPTOSWITCH	***	***
80-2073-65	NUT M2 (PKT 10)	***	***
80-2000-65	INTERCONNECTION LEAD AUX	***	***
80-2062-50	LIGHT EMITTING DIODE	***	***
80-2063-99	VOLTAGE SELECTOR	***	***
80-2075-54	EPROM - 4050 V3.2 SUPPORT TIL END OF 2001	***	***
80-2075-55	EPROM - 4051 V3.2 SUPPORT TIL END OF 2001	***	***
80-2075-56	PROGRAM EPROM 4052 V3.2 SUPPORT TIL END OF 2001	***	***
80-2075-57	CONTROL EPROM IC23 4037 SUPPORT TIL END OF 2001	***	***
80-2075-59	EPROM IC23 V.6.2 4057 SUPPORT TIL END OF 2001	***	***
80-2099-65	EPROM IC3 4070 II/III V3 SUPPORT TIL END OF 2001	***	***
80-2007-39	TDS PUMP CONTROL CABLE ASSEMBLY	***	***
80-2068-56	SET OF N/D CALIBRATION FILTERS	***	***
80-2069-63	CELL TURRET UPDATE KIT SUPPORT TIL EN OF 2001	***	***
80-2098-54	TOP COVER ASSY - SPARES AUTOFILL III	***	***
80-2098-99	SERVICE MANUAL - 4050 ULTROSPEC III	***	***
80-2108-94	EPROM V2.0 (4058)	***	***

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Product line 4054. Ultrospec Plus, accessories

80-2087-82	9-16MM TEST TUBE HOLDER ULTROSPEC PLUS	***	***
80-2104-95	AUTOSAMPLER INTERFACE KIT (4054)	***	***
80-2010-76	AUTOFIL PLUS	***	***

Product line 4054, Ultrospec Plus, spares

80-3105-11	EPROM V2.5 (4054) CIII SUPPORT TIL END OF 2001	***	***
80-2086-67	SERVICE MANUAL - 4054	***	***
80-2107-49	SEIKO PRINTER (4054) REPLACED BY 80-2108-79	***	***
80-2108-95	EPROM (ICI 110) V2.6 4054 SUPPORT TO END OF 2001	***	***

Product line 4060, Biochrom 4060, accessories

80-2103-46	MULTIPURPOSE CELL HOLDER	***	***
80-2103-47	SIPPER ACCESSORY	***	***
80-2103-48	FELTIER HTD CELL HOLDER SINGLE	***	***
80-2103-49	SINGLE CELL HOLDER WATER HEATED	***	***
80-2103-50	MICROVOLUME CELL HOLDER	***	***
80-2103-51	SEVEN CELL CHANGER	***	***
80-2103-52	SEVEN CELL CHANGER (WM) WATER HEATED	***	***
80-2103-66	SEVEN CELL CHANGER BASE PLATE	***	***
80-2103-67	HPLC FLOWCELL/HOLDER	***	***
80-2103-82	ACCESSORY BASEPLATE	***	***
80-2105-41	CELL COMPARTMENT COVER FOR BIOCHROM 4060	***	***
80-2105-52	7 POSITION FELTIER CELL CHANGER	***	***
80-2105-94	TM PROGRAMMABLE FELTIER CELL HOLDER AND SOFTWARE	***	***
80-2106-58	BIOCHROM 4060 USER MANUAL	***	***
80-2103-29	DEUTERIUM LAMP & COLLAR	***	***

Product line 4060, Boichrom 4060, spares

80-2103-20	GRATING MOTOR S/A	***	***
80-2103-22	LAMP SELECT MIRROR ASSY	***	***
80-2103-23	CONTROL MOTOR ASSY LAMP SELECT & DARK FLAG	***	***
80-2103-24	TUNGSTEN LAMP SOCKET	***	***
80-2103-25	F/W AND MOTOR ASSY	***	***
80-2103-26	FILTER WHEEL MOTOR	***	***
80-2103-28	PHOTOMULTIPLIER TUBE	***	***
80-2103-30	PMT CONTROL PCB ASSY	***	***
80-2103-32	POWER SUPPLY PCB ASSY	***	***
80-2103-33	TRANSFORMER ASSY	***	***
80-2103-36	RING SNAP	***	***
80-2103-40	FAN ASSY	***	***
80-2103-42	TENSATOR SPRING	***	***

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80-2103-43	POWER-ON INDICATOR ASSY	***	***
80-2104-83	TUBING RESTRAINER 4060 WATER HTD CELL CHANGER	***	***
80-2107-23	MAIN PCB (4060) VER 2	***	***
80-2103-63	BIOCHROM 4060 SERVICE MANUAL	***	***
80-2103-83	FILTER FLAG & MOTOR ASSY	***	***
80-2103-84	FILTER FLAG ASSY	***	***
80-2105-57	BIOCHROM 4060 DUST COVER	***	***
80-2106-67	EPROM V1.4 (4060) IC404	***	***
80-2106-68	EPROM V1.4 (4060) IC405	***	***
80-2107-24	EPROM V2.00 4060 IC404	***	***
80-2107-25	EPROM V2.00 4060 IC405	***	***

Product line 4080 / 4081. GeneQuant and GeneQuant ii, spares and accessories

80-2105-20	GENEQUANT USER MANUAL	***	***
80-2105-56	DEUTERIUM LAMP GENEQUANT	***	***
80-2105-09	4080 PRINTER CABLE	***	***
80-2104-57	MAIN PCB 4080	***	***
80-2104-59	OPTICAL UNIT 4080	***	***
80-2104-60	TOP COVER ASSEMBLY 4080	***	***
80-2104-61	EPROM 4080 V1.5	***	***
80-2105-18	GENEQUANT DUST COVER	***	***
80-2105-44	EPROM V2.2 (4080p) IC106	***	***
80-2105-64	SIDE ARM SPRING CLIP FOR GENEQUANT	***	***
80-2106-21	KEYBOARD - GENEQUANT	***	***
80-2106-23	DISPLAY - GENEQUANT	***	***
80-2107-37	TRANSFORMER/REAR PANEL 4080 (CE)	***	***
80-2107-33	MOQ FILTER SET (MEDELCO) FOR GENEQUANT	***	***
80-2105-58	CENEQUANT II USER MANUAL	***	***
80-2106-27	KEYBOARD - GENEQUANT II	***	***
80-2106-32	EPROM 4081 v 1.0	***	***

Product line 4090, Ultrospec 2000, accessories

80-2105-49	TEMPERATURE CONTROL UNIT	***	***
80-2105-88	SWIFT-SCAN SOFTWARE	***	***
80-2105-89	SWIFT-KIN SOFTWARE	***	***
80-2105-90	SWIFT-TIME SOFTWARE	***	***
80-2105-91	SWIFT-QUANT SOFTWARE	***	***
80-2105-92	SWIFT-MULTI SOFTWARE	***	***
80-2105-93	SWIFT-FRAC SOFTWARE	***	***
80-2105-97	RS232C1/F CABLE M/F 9 INST TO 9 COMP	***	***

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80-2106-01	4 POSITION CELL HOLDER	***	***
80-2106-02	6 POSITION CELL CHANGER	***	***
80-2106-03	6 POSITION WATER HEATED CELL CHANGER	***	***
80-2106-04	6 POSITION FELTIER HEATED CELL CHANGER	***	***
80-2106-05	10MM SINGLE CELL HOLDER	***	***
80-2106-06	ULTRAMICROVOLUME CELL HOLDER, 2 AXIS ADJUST	***	***
80-2106-07	50MM SINGLE CELL HOLDER	***	***
80-2106-08	WATER HEATED SINGLE CELL HOLDER	***	***
80-2106-09	MICROVOLUME CELL HOLDER (50 UL)	***	***
80-2106-10	CYLINDRICAL CELL HOLDER	***	***
80-2106-11	HPLC CELL HOLDER AND FLOWCELL	***	***
80-2106-12	10MM ELECTRICALLY HEATED CELL HOLDER	***	***
80-2106-13	10MM FELTIER HEATED CELL HOLDER	***	***
80-2106-14	TM PROGRAMMABLE HEATED CELL HOLDER AND SOFTWARE	***	***
80-2106-15	SIPPER	***	***
80-2106-19	DUST COVER 4090	***	***
80-2106-24	ULTROSPEC 2000 USER MANUAL	***	***
80-2106-26	SWIFT-LAB SOFTWARE	***	***
80-2106-31	SWIFT-METHOD SOFTWARE	***	***
80-2106-51	RS232C UF CABLE M/F 9 INST TO 25 COMP	***	***
80-2106-59	SWIFT SOFTWARE USER MANUAL	***	***
80-2106-60	PRINTER STAND	***	***
80-2104-96	AUTOSAMPLER INTERFACE KIT (2000/3000/4000)	***	***
80-2105-95	CHART RECORDER CABLE	***	***
80-2106-78	ACCESSORIES USER MANUAL	***	***
80-2107-14	100MM SINGLE CELL HOLDER	***	***
80-2108-10	SINGLE CELL HOLDER - USE WITH MAGNETIC STIRRER	***	***
80-2108-64	SPRECROPHOTOMETRY DEMO KIT	***	***
80-2055-13	TUBING KIT FOR FLOWCELL	***	***
80-2106-16	TUNGSTEN HALOGEN LAMP 4090	***	***
80-2106-17	DEUTERIUM LAMP ASSY, 4090	***	***
80-2080-74	PUMP TUBING (PKT OF 6)	***	***
80-2106-99	VITON PUMP TUBING	***	***
80-2107-68	CELL HOLDER ASSEMBLY	***	***
80-2107-69	CELL CORNER SPRING	***	***
80-2107-70	CELL PACKERS (8) FOR 1MM PATHLENGTH CELLS	***	***
80-2107-71	CELL PACKERS (8) FOR 5MM PATHLENGTH CELLS	***	***

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Product line 4090, Ultrospec 2000. spares

80-2106-18	BASEPLATE PLUG FOR 4090 SAMPLE COMPARTMENT	***	***
80-2106-44	PHOTOMETER PCT ASSY 4090	***	***
80-2106-45	LAMP-SELECT MOTOR ASSY	***	***
80-2106-46	FILTER MOTOR ASSY	***	***
80-2106-48	CELL MOTOR ASSY 4090	***	***
80-2106-49	DISPLAY MODULE 4090	***	***
80-2106-50	KEYBOARD & WINDOW 4090	***	***
80-2106-61	CELL CHANGER THUMB SCREW	***	***
80-2106-80	CONCAVE DIFFRACTION GRATING	***	***
80-2107-38	MAIN PCB ASSY 4090 (CE)	***	***
80-2107-39	POWER SUPPLY ASSY 4090 (CE)	***	***
80-2107-47	FAN 4090 SERIES	***	***
80-2107-48	FILTER QUADRANT ASSY	***	***
80-2108-62	LAMP SELECT MIRROR 4090	***	***
80-2009-85	F/CELL-TUBING SPARE DIT ULTROSPEC 2000 SERIES	***	***
80-2106-52	UL TROSPEC 2000 SERVICE MANUAL	***	***
80-2106-83	HEIGHT GAUGE	***	***
80-2107-00	EPROM V3.0 (ICI1) TEMP CONTROL UNIT	***	***
80-2107-18	CALIBRATION SOFTWARE AND FILTER-ACCRED ENG ONLY	***	***
80-2107-21	SLAVE MICROCONTROLLER V1.70 4090/4094 IC127	***	***
80-2107-66	EPROM V1.90 400IC105 VAN DER HEYDEN	***	***
80-2108-60	LAMP ACCESS COVER 4090	***	***
80-2108-61	CELL COMPARTMENT ACCESS COVER (4090)	***	***
80-2108-96	ELSA CD-ROM V1.00 (ULTROSPEC 2000 ONLY)	***	***
80-2109-59	EPROM V2.2 4090 ICI05 PL	***	***

Product line 4090, Ultrospec 3000, spares

80-2106-25	ULTROSPEC 3000 USER MANUAL	***	***
80-2106-55	VGA DRIVER PCB 4094	***	***
80-2106-56	VGA DISPLAY 4094	***	***
80-2106-57	KEYBOARD & WINDOW 4094	***	***
80-2106-53	ULTROSPEC 3000 SERVICE MANUAL	***	***
80-2108-97	EPROM V2.1 (4094)	***	***

Product line 4096, Ultrospec 4000, accessories

80-2108-31	SWIFT II - MTHOD S/W	***	***
80-2100-50	QUAL/PERE VERIF LOGBOOK FOR PHB UV/VIS SPECTROS	***	***
80-2107-68	SWIFT II - SCAN S/W	***	***
80-2107-89	SWIFT II - KIN S/W	***	***

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80-2107-90	SWIFT II - TIME S/W	***	***
80-2107-91	SWIFT II - QUANT S/W	***	***
80-2107-92	SWIFT II - MULTI S/W	***	***
80-2107-93	SWIFT II - FRAC S/W	***	***
80-2108-01	8 POSITION CELL CHANGER	***	***
80-2108-04	ULTROSPEC 4000 USER MANUAL	***	***
80-2108-25	SWIFT II USER MANUAL	***	***
80-2108-26	SWIFT II - LAB S/W	***	***
80-2108-08	CELL HOLDER ASSY 4096	***	***

Product line 4096, Ultrospec 4000, spares

80-2108-05	ULTROSPEC 4000 SERVICE MANUAL	***	***
80-2108-09	PHOTOMETER PCG ASSY 4096	***	***
80-2108-28	SLAVE MICROCONTROLLER V1.1 4096 ICI27	***	***
80-2109-49	EPROM V2.0 4096 ICI05	***	***

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Schedule 3(a)(i)

FORECAST

BIOCHROM

	March	April	May	June	Q2	July	August	September	Q3	October	November	December	Q4
Nevaspec	21				72								
Ultrospec 1000E	7.5				15.5								
Ultrospec 1080	23				43								
Ultrospec 2080	63				280								
Ultrospec 3900	44				148								
Ultrospec 4900	22				21.5								
Genequant	11				35								
Genequant II	33				123								
Genequantpro													
B20 (autoloader)	21				22								
B20 (autosampler)	22				22								

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Schedule 3(b)

All costs in SEK

APBiotech site costs

Hardware

179730-021	ProLiant 3000R P450-512K	Price 38894
295643-B21	Smart 3200 Array Controller	Price 17150
336356-B2	4.3GB Wide-Ultra SCSI-3 10K	Price 5024 x 3
306592-B2	RPS-aggregate ProLiant 3000/5500	Price 5613
313616-B21	256MB 5DRAM DIMM	Price 10954
PILA 8460	EtherExpress PRO/100 for PCI	Price 664 x 2
Sony 17"	Museum GDM-200PST TCO-95	Price 5910
	Subtotal	89.000

Software

	Microsoft NT server 4.0	Price 3000
	FW Encrypton center 4.0	Price 141.500
	Areserve Back-up software	Price 3640
	Subtotal	153.140

Installation

	Upnet personal 36cm a 1000 kr	Price 36000
	Subtotal	36.000

Biochrom site costs

	Cisco 2500 Routers	Price 25000 x 2
	Subtotal	50.000
	Grand Total	328.140

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Schedule 5(d)

Barclays Bank PLC
Barclays Business Centre
Cambridge, Chesterton Branch
28 Chesterton Road, Cambridge
Sort Code 201735
Account #50067970
Account Name: Biochrom Limited

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Schedule 19E

Perkin-Elmer Corporation and any entity that, directly or indirectly, is wholly-owned, or has not less than a majority of its voting power or economic interests owned, by Perkin-Elmer Corporation

Bio-Rad Laboratories, Inc. and any entity that, directly or indirectly, is wholly-owned, or has not less than a majority of its voting power or economic interests owned, by Bio-Rad Laboratories, Inc.

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ESCROW AGREEMENT

Exhibit 1A(a)

This ESCROW AGREEMENT is entered into as of _____, 1999 by and among Biochrom Limited, a limited liability company incorporated under the laws of England ("Newco"), Amersham Pharmacia Biotech AB, a company incorporated in Sweden ("AP Biotech") and Boston Safe Deposit & Trust Company (the "Escrow Agent").

WHEREAS, pursuant to a certain Asset Purchase Agreement, dated as of March 2, 1999 (the "Purchase Agreement"), by and among Newco, Pharmacia Biotech (Biochrom) Limited ("Seller"), Harvard Apparatus, Inc. and Pharmacia & Upjohn, Inc., Newco has agreed to purchase the business and substantially all of the assets of Seller (the "Asset Purchase");

WHEREAS, as a condition to the consummation of the Asset Purchase, Newco and AP Biotech have entered into a certain Distribution Agreement, dated as of March 2, 1999 (the "Distribution Agreement"), pursuant to which Newco has agreed to sell to AP Biotech, and AP Biotech has agreed to distribute, certain of Newco's products;

WHEREAS, pursuant to Section 1A(a) of the Distribution Agreement, on the date hereof, AP Biotech will deposit with the Escrow Agent certain information regarding its customers for the three (3) years prior to the date of the closing of the Asset Purchase (the "Closing Date"), such information to be both in paper form and contained on a floppy diskette (the "Initial Customer Information"), to be held as hereinafter provided;

WHEREAS, pursuant to Section 1A(b) of the Distribution Agreement, within thirty (30) days following June 30 and December 31 of each calendar year during the term of the Distribution Agreement, AP Biotech shall deposit with the Escrow Agent certain information regarding its customers with respect to the six month period immediately preceding each of such dates (or in the case of June 30, 1999, with respect to the period between the Closing Date and June 30, 1999), such information to be both in paper form and contained on a floppy diskette (the "Semi- Annual Customer Information" and, together with the Initial Customer Information, the "Customer Information"), with the Escrow Agent, to be held as hereinafter provided;

WHEREAS, the Escrow Agent is willing to establish an escrow account on the terms and subject to the conditions hereinafter set forth.

NOW, THEREFORE, in consideration of the premises and mutual covenants herein contained, the parties hereto agree as follows:

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1. APPOINTMENT OF ESCROW AGENT. Newco and AP Biotech hereby appoint Boston Safe Deposit & Trust Company as Escrow Agent, and Boston Safe Deposit & Trust Company hereby accepts such appointment.

2. ESTABLISHMENT OF ESCROW.

(a) On the date hereof, AP Biotech will deposit with the Escrow Agent the Initial Customer Information in accordance with Section 1A(a) of the Distribution Agreement and the Escrow Agent hereby acknowledges receipt of such Initial Customer Information.

(b) In accordance with Section 1A(b) of the Distribution Agreement, within thirty (30) days following June 30 and December 31 of each calendar year during the term of this Escrow Agreement, AP Biotech shall deposit with the Escrow Agent the Semi-Annual Customer Information for the six month period immediately preceding each such date (or in the case of June 30, 1999, with respect to the period between the Closing Date and June 30, 1999). The Escrow Agent shall acknowledge receipt of each such deposit by AP Biotech of Semi-Annual Customer Information in writing to each of Newco and AP Biotech (in accordance with the notice provisions set forth in Section 8 hereof) within five (5) business days after such deposit is made. Such Initial Customer Information, together with all Semi-Annual Customer Information, as held by the Escrow Agent in accordance with the terms of this Agreement, shall be referred to herein as the "Escrow." The Escrow shall be segregated from the other assets of the Escrow Agent, held in a fire-proof location subject to appropriate controls necessary to maintain the confidentiality of the materials constituting the Escrow in accordance with the provisions of Section 13 hereof, and held in trust for the benefit of Newco pursuant hereto.

(c) In accordance with Section 1A(c) of the Distribution Agreement, within ten (10) business days following the execution of this Agreement and the deposit by AP Biotech of the Initial Customer Information with the Escrow Agent as provided for in Section 2(a) above, the Escrow Agent shall deliver to Newco and AP Biotech (in accordance with the notice provisions set forth in Section 8 hereof) copies of that number of pages of the Initial Customer Information which contains the names and information with respect to approximately, but not less than, twenty (20) customers, which pages shall be selected by the Escrow Agent at random.

3. DISTRIBUTION. The Escrow Agent shall distribute all of the Customer Information from the Escrow to Newco or its designee as set forth in written instructions executed by Newco in the form attached hereto as Exhibit B, which statement shall be true and correct as of the date delivered.

4. TERMINATION. This Escrow Agreement shall terminate upon the distribution of the Customer Information in accordance with Section 3 hereof.

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5. DUTIES AND RESPONSIBILITIES OF ESCROW AGENT.

(a) DUTIES LIMITED. The Escrow Agent undertakes to perform only such duties as are expressly set forth herein. The Escrow Agent shall not be bound by any waiver, modification, amendment, termination, cancellation or revision of this Escrow Agreement, unless any of the foregoing is in writing and signed by each of the parties hereto. The Escrow Agent shall not be bound by any assignment by any party hereto of its rights hereunder unless (i) the assignment complies with Section 10 hereof, and (ii) the Escrow Agent shall have received written notice thereof from the assignor. The Escrow Agent is not deemed to have any knowledge of the terms of the Distribution Agreement.

(b) NO REPRESENTATIONS. The Escrow Agent makes no representation as to the validity, value, genuineness or the collectibility of any security or other document or instrument held by or delivered to the Escrow Agent.

(c) INDEMNIFICATION OF ESCROW AGENT. Newco and AP Biotech hereby jointly and severally agree to indemnify the Escrow Agent for, and to hold it harmless against, any and all claims, suits, actions, proceedings, investigations, judgments, deficiencies, damages, settlements, liabilities and expenses (including reasonable legal fees and expenses of attorneys chosen by the Escrow Agent) as and when incurred, arising out of or based upon any act, omission, alleged act or alleged omission by the Escrow Agent or any other cause, in any case in connection with the acceptance of, or performance or non-performance by the Escrow Agent of, any of the Escrow Agent's duties under this Escrow Agreement, except as a result of the Escrow Agent's bad faith, willful misconduct or gross negligence. Except in cases of the Escrow Agent's bad faith, willful misconduct or gross negligence, the Escrow Agent shall be fully protected in acting in reliance upon any certificate, statement, request, notice, advice, direction, other agreement or instrument or signature reasonably and in good faith believed by the Escrow Agent to be genuine, in assuming that any person purporting to give the Escrow Agent any of the foregoing in accordance with the provisions hereof, or in connection with either this Escrow Agreement or the Escrow Agent's duties hereunder, has been duly authorized to do so, or in acting or failing to act in good faith on the advice of any counsel retained by the Escrow Agent. The Escrow Agent shall not be liable for any mistake of fact or law or any error of judgment, or for any act or omission, except as a result of its bad faith, willful misconduct or gross negligence.

(d) LIABILITY OF ESCROW AGENT. The Escrow Agent shall incur no liability whatever in connection with its duties hereunder except for bad faith, willful misconduct or gross negligence. In the event that the Escrow Agent shall be uncertain as to its duties or rights hereunder, or shall receive any certificate, statement, request, notice, advice, direction or other agreement or instrument from any other party with respect to the Escrow which, in the Escrow Agent's reasonable and good faith opinion, is in conflict with any of the provisions of this Escrow Agreement, or shall be advised that a dispute has arisen with respect to the distribution, ownership or right of possession of the Escrow or any part thereof (or as to the delivery,

non-delivery or content of any certificate, statement, request, notice, advice, direction or other agreement or instrument), the Escrow Agent shall be entitled, without liability to any person, to refrain from taking any action other than to use its best efforts to keep safely the Escrow until the Escrow Agent shall be directed otherwise in accordance with Section 3 hereof, but the Escrow Agent shall be under no duty to institute or defend any proceeding, although the Escrow Agent may, in its discretion and at the expense of Newco, on the one hand, and AP Biotech, on the other hand, as provided in Section 5(c) hereof, institute or defend such proceedings. In the event of any dispute hereunder, the Escrow Agent shall be entitled to petition a court of competent jurisdiction and shall perform any acts ordered by such court.

(e) AUTHORITY TO INTERPLEAD. The parties hereto authorize the Escrow Agent, if the Escrow Agent is threatened with litigation or is sued, to interplead all interested parties in any court of competent jurisdiction and to deposit the Escrow with the clerk of that court.

6. RESIGNATION; SUCCESSOR ESCROW AGENT.

(a) RESIGNATION. The Escrow Agent may resign and be discharged from its duties and obligations hereunder at any time by giving no less than thirty (30) days notice of such resignation to Newco and AP Biotech, specifying the date when such resignation shall take effect. Thereafter, the Escrow Agent shall have no further obligation hereunder except to hold the Escrow as depositary. In the event of such resignation, Newco and AP Biotech agree that they will jointly appoint a banking corporation, trust company, attorney or other person as successor Escrow Agent within thirty (30) days of notice of such resignation. The Escrow Agent shall refrain from taking any action until it shall receive joint written instructions from Newco and AP Biotech designating the successor Escrow Agent. Upon receipt of such instructions, the Escrow Agent shall promptly deliver all of the Escrow to such successor Escrow Agent in accordance with such instructions and upon receipt of the Escrow, the successor Escrow Agent shall thereupon be bound by all of the provisions hereof.

(b) TERMINATION OF ESCROW AGENT. Newco and AP Biotech acting together shall have the right to terminate the appointment of the Escrow Agent hereunder by giving notice in writing of such termination to the Escrow Agent, specifying the date upon which such termination shall take effect. Prior to the date of such termination, Newco and AP Biotech agree that they will jointly appoint a banking corporation, trust company, attorney or other person as successor Escrow Agent. Upon receipt of joint written instructions from Newco and AP Biotech designating the successor Escrow Agent, the Escrow Agent shall promptly deliver to such successor Escrow Agent all of the Escrow in accordance with such instructions and upon receipt of the Escrow, the successor Escrow Agent shall thereupon be bound by all of the provisions hereof. In the event that the Escrow Agent does not receive such instructions prior to the date of termination of the Escrow Agent's duties hereunder, the Escrow Agent shall have no further obligation hereunder except to hold the Escrow as depositary.

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7. SUCCESSOR ESCROW AGENT. Upon receipt by the successor Escrow Agent of the Escrow, the Escrow Agent shall be released from its obligations hereunder, and the successor Escrow Agent shall thereupon be bound by all of the provisions hereof and the term "Escrow Agent" as used herein shall mean such successor Escrow Agent. The provisions of Sections 5(c), 5(d) and 5(e) shall inure to the benefit of the Escrow Agent notwithstanding its release or removal.

8. NOTICES. Any notice permitted or required hereunder shall be deemed to have been duly given if delivered personally, sent by facsimile transmission or if mailed certified or registered mail, postage prepaid, to the parties at their respective addresses set forth below or to such other address as any party may hereafter designate.

If to Newco:

Biochrom Limited
22 Cambridge Science Park
Milton Rd.
Cambridge CB4 4FJ
England
Attention: Barry Brown
Facsimile No.: 011-44-122-342-0238

with a copy to:

Harvard Apparatus, Inc.
84 October Hill Road
Holliston, MA 01746
Attn: David Green
Fax: (508) 429-5732

Goodwin, Procter & Hoar LLP
Exchange Place
Boston, MA 02109
Attn: H. David Henken, P.C
Fax: (617) 523-1231

Cameron McKenna
Mitre House
160 Aldersgate Street
London, EC1A 4DD
Attention: Guilherme Brafman
Facsimile No.: 011-44-171-367-2000

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If to AP Biotech:

Amersham Pharmacia Biotech AB
Bjorkgatan 30
SE-751 84 Uppsala
Sweden
Attention: Ulf Lundberg, Esq.
Facsimile No.: 011-46-18-321-126

with a copy to:

Cardiff Labs
Forrest Farm Estate
Whitchurch
Cardiff, Wales CF4 7YT
Attention: Andrew Carr
Facsimile No.: 011-44-122-252-6440

Curtis, Mallet-Prevost, Colt & Mosle
101 Park Avenue
New York, New York 10178
Attention: Eric Gilioli, Esq.
Facsimile No.: (212) 697-1559

If to the Escrow Agent:

Boston Safe Deposit and Trust Company
One Boston Place
Third Floor/024-003C
Boston, MA 02108
Attention: Brian F. Gregory
Fax: (617) 722-7982

9. MODIFICATIONS. This Agreement may not be altered or modified without the express written consent of the parties hereto. No course of conduct shall constitute a waiver of any of the terms and conditions of this Agreement, unless such waiver is specified in writing, and then only to the extent so specified. A waiver of any of the terms and conditions of this Agreement on one occasion shall not constitute a waiver of the other terms of this Agreement, or of such terms and conditions on any other occasion.

10. ASSIGNMENT. No assignment of any rights or delegation of any obligations provided for herein may be made by any party hereto without the express written consent of

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the other parties hereto, except for the provisions hereof respecting successor Escrow Agents. This Escrow Agreement shall inure to the benefit of any binding upon the successors, heirs, personal representatives and permitted assigns of the parties hereto.

11. FEES AND EXPENSES OF ESCROW AGENT. Except as provided in Section 5 above, the fees and expenses of the Escrow Agent for serving as Escrow Agent hereunder are as set forth on Exhibit A hereto. Such fees and expenses shall be borne by Newco.

12. MISCELLANEOUS. This Agreement shall be construed under and governed by the laws of The Commonwealth of Massachusetts. This Agreement may be executed in any number of counterparts, each of which shall be deemed an original but all of which shall constitute one agreement.

13. CONFIDENTIALITY. The Escrow Agent agrees that it shall treat any and all information in the Escrow (all such Escrow information being "Confidential Information") as confidential and shall not disclose any Confidential Information to any third party, other than its legal advisors who have a need to know, for any purpose other than the performance of its obligations under the Escrow Agreement without the prior written consent of Newco and AP Biotech; provided, however, that the limitation on disclosure set forth in this Section 13 shall not apply in the case of any information which the disclosing party is required to disclose by law (including the regulations of a stock exchange) or a court order.

[REMAINDER OF PAGE INTENTIONALLY LEFT BLANK]

IN WITNESS WHEREOF, the parties have executed this as of the date first forth above.

BIOCHROM LIMITED

By:

Name:
Title:

AMERSHAM PHARMACIA BIOTECH AB

By:

Name:
Title:

BOSTON SAFE DEPOSIT AND TRUST COMPANY

By:

Name:
Title:

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EXHIBIT A

ESCROW AGENT FEES

$425 per calendar quarter during the term of this Agreement

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EXHIBIT B

Boston Safe Deposit & Trust Company
One Boston Place
Boston, MA 02110
Attn: Brian Gregory

Re: ESCROW ACCOUNT FOR BIOCHROM LIMITED/AMERSHAM PHARMACIA BIOTECH AB

Ladies and Gentlemen:

Reference is hereby made to that certain Escrow Agreement, dated _____, 1999 by and among Biochrom Limited ("Biochrom"), Amersham Pharmacia Biotech AB ("AP Biotech") and Boston Safe Deposit & Trust Company (the "Escrow Agreement").

The undersigned duly authorized officer of Biochrom, in his/her capacity as such, does hereby certify as follows:

1. Either (a) the Distribution Agreement has been terminated pursuant to Section 16(a) or Section 16(c) thereof and notice of termination has been physically delivered by the terminating party to the non-terminating party or (b) the Distribution Agreement has automatically terminated pursuant to Section 16(b)(i) or Section 16(b)(ii) thereof; and

2. AP Biotech has not delivered a notice of termination to Biochrom pursuant to Section 16(b)(i) of the Distribution Agreement as a result of (a) a breach by Biochrom of its obligations under Section 15(b) thereof or (b) a Newco Sales Breach (as defined in the Distribution Agreement) prior to the effective date of the termination of the Distribution Agreement.

Therefore, in accordance with Section 3 of the Escrow Agreement, you are hereby instructed to distribute all of the Customer Information (as defined in the Escrow Agreement) from the Escrow (as defined in the Escrow Agreement) to:

Biochrom Limited
22 Cambridge Science Park
Milton Rd.
Cambridge CB4 4FJ
England
Attention: Barry Brown

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In witness whereof, the undersigned has executed this letter as of the date first written above on behalf of Biochrom Limited

BIOCHROM LIMITED

By:

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Schedule 13(b)(i)

TRADE MARK LICENSE AGREEMENT (this Agreement) made March 2,1999

BETWEEN

(1) PHARMACIA & UPJOHN, INC., a Delaware corporation with offices at 7000 Portage Road, Kalamazoo, MI 49001 U.S.A. (Licensor).

(2) BIOCHROM LIMITED, a limited liability company incorporated in England whose registered office is at Cambridge Science Park, Milton Road, Cambridge CB4 4FJ, England (Licensee).

WHEREAS

(A) The Licensor is the beneficial owner and the registered proprietor or has made application for the registration of, and licenses or through its associated companies has used in connection with its business for a number of years, the Licensed Marks, the particulars of which are set out in Schedule 1.

(B) The Licensor has agreed to grant or to cause to procure the grant to the Licensee of certain rights in respect of the Licensed Marks subject to the terms and conditions of this Agreement.

(C) This Agreement has been entered into in pursuance of the Asset Purchase Agreement dated March 2, 1999 (the Asset Purchase Agreement) which contemplates the sale to Licensee by Pharmacia Biotech (Biochrom) Limited (Biochrom) of substantially all of the assets of Biochrom, and the Distribution Agreement dated March 2, 1999 (the Distribution Agreement) between Licensee and Amersham Pharmacia Biotech AB (AP Biotech) being entered into in connection with the Asset Purchase Agreement.

IT IS AGREED AS FOLLOWS

DEFINITIONS

1.1 In this Agreement unless the context otherwise requires the following expressions shall have the following meanings (capitalized terms used herein without definition have the meanings assigned to them in the Distribution Agreement):

Business means the manufacture and sale by Biochrom of the Products and the distribution of the Products as contemplated in the Distribution Agreement.

Licensed Marks means those trade marks which are registered or the subject of a pending application particulars of which are set out in Schedule 1.

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Products means the Current Products and New Products as defined in the Distribution Agreement.

INTERPRETATION

1.2 In this Agreement unless the context otherwise requires:

(a) reference to persons shall include individuals, bodies corporate (wherever incorporated), unincorporated associations and partnerships;

(b) the headings are inserted for convenience only and shall not affect the construction of the Agreement;

(c) references to one gender shall include each gender and all genders; and

(d) any reference to an enactment is a reference to it as from time amended, consolidated or re-enacted (with or without modification) and includes all instruments or orders made under such enactment.

1.3 The schedules comprise Schedules to this Agreement and form part of this Agreement.

GRANT OF LICENSE

2.1 In consideration of the good and valuable consideration given by the Licensee in pursuance of the Asset Purchase Agreement and the Distribution Agreement, the Licensor hereby grants to and/or agrees to cause to procure the grant to the Licensee of a royalty-free, non-exclusive, non-sublicensable license to use, solely in connection with the Business, the Licensed Marks on or in relation to the Products, subject to the provisions set out in this Agreement. The Licensee acknowledges and agrees that, after four (4) months from the Closing Date (as defined in the Asset Purchase Agreement) or, in the case of Fisher Scientific Limited, after December 3 1, 1999, the Licensee shall be entitled to use the Licensed Marks solely in connection with the Products to be sold by the Licensee to AP Biotech pursuant to the Distribution Agreement unless AP Biotech shall otherwise consent in writing.

2.2 The license granted hereunder shall be for the term of this Agreement.

2.3 The Licensor or Licensee shall at the request of the other party execute and at Licensee's expense take all steps reasonable requisite for the registration or recordal of the license granted hereunder in such form as may be reasonably required by the requesting party. The Licensee agrees that any such recordal may be canceled by the Licensor on the termination of this Agreement in accordance with its terms and that it will assist the Licensor so far as is necessary to achieve such cancellation by executing any necessary documents or doing any necessary acts

in connection therewith.

CONDITIONS OF USE

3.1 The Licensee hereby undertakes that:

(a) it will use the Licensed Marks only in relation to Products which conform to the current quality standards used by Licensee or AP Biotech;

(b) it will use the Licensed Marks (including, without limitation, both with respect to presentation of the Licensed Marks on the Products, packing, wrappers, notepaper, price lists, advertisements and other promotional material and the like and with respect to shaping, printing style, colour, quality of materials used and otherwise) only in the form set out in Schedule 2 or as may from time to time be approved by the Licensor or AP Biotech;

(c) it will not use the Licensed Marks together or in combination with any other marks, names, words, logos, symbols or devices other than: (i) those specified in Schedule 1 or the trademarks licensed to Licensee by Pharmacia & Upjohn, Inc. under a Trade Mark License Agreement of even date hereof-, and (ii) the names "Biochrom" and "Harvard", whether jointly or separately, and all related and associated logos and trademarks;

(d) it will not use the Licensed Marks in relation to any goods other than the Products nor use or seek to register any other trade or service marks which are similar to or substantially similar to or so nearly resemble the Licensed Marks as to be likely to cause deception or confusion;

(e) it shall, when requested to do so by the Licensor or AP Biotech, supply the Licensor and AP Biotech with details of any written complaints made by customers relating to the Products together with reports, if any exist, on the manner in which such complaints are being or have been dealt with and shall comply with any reasonable directions or recommendations given by the Licensor or AP Biotech in respect thereof,

(f) it shall submit to the Licensor and AP Biotech for their approval a specimen of every new advertising or promotional material issued or created by Licensee in which the Licensed Marks appear and the Licensee undertakes not to use or distribute such material unless and until the Licensor and AP Biotech shall have approved the same in writing. If Licensor and AP Biotech fail to respond within twenty-eight (28) days the foregoing material will be deemed approved;

(g) to the extent consistent with past practice, it will include on the Products and in all documentation and material referred to in paragraphs (b) and (f) a statement that the relevant Licensed Mark is the registered trade mark or the trade mark as the case may be of the Licensor; and

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(h) it will not use the Licensed Marks in a manner which is likely to cause material harm to the goodwill attached to the Licensed Marks.

The parties acknowledge that AP Biotech is a distributor of the Products and that Licensee shall not be responsible for, or deemed to control, the actions or omissions of AP Biotech.

APPROVAL, INSPECTION AND TESTING

4.1 On reasonable request by the Licensor or AP Biotech, the Licensee agrees to supply at Licensor's sole expense t6 the Licensor or AP Biotech samples of the Products offered for sale under the Licensed Marks.

4.2 The Licensee shall, on reasonable prior notice from the Licensor or AP Biotech, permit the Licensor, AP Biotech and/or their representatives or agents at all reasonable times access to the premises of the Licensee to inspect the Products as manufactured and/or offered for sale by the Licensee under the Licensed Marks and the method by which the Products are manufactured, packed and labelled. The Licensee undertakes that it will do such things as may reasonably be necessary to ensure that such Products are processed, packed and labelled by the methods and in conformity with such specifications and standards of quality consistent with Biochrom's past practices. Licensor and its representatives, however, shall sign a confidentiality agreement on a form acceptable to Licensee before any such inspection may take place.

4.3 If (consequent on any such inspection by any representatives or agent of the Licensor or AP Biotech as is referred to in Clause 4.2) it is found that any licensed Products bearing or intended to bear the Licensed Marks are not in conformity with any of the Licensee's obligations under Clause 4 hereof and the Licensor or AP Biotech shall give the Licensee written notice of that fact, the Licensee undertakes that it will not sell any of such non-conforming Products under the Licensed Marks without the prior written consent of the Licensor or AP Biotech.

MAINTENANCE OF TRADEMARKS

5.1 Licensor shall at its own expense take any and all action that may be required to maintain the registration of any of the Trademarks.

INFRINGEMENTS

6.1 The Licensee and Licensor shall forthwith give written notice (in

accordance with the provisions of Clause 12) to the other party of any of the following matters which may at any time during the continuance of this Agreement come to their knowledge, giving full particulars thereof:

(a) any infringement or suspected or threatened infringement of the Licensed Marks, whether by reason of imitation of get-up or otherwise;

(b) any allegation or complaint made by any third party that the use by the Licensee of the Licensed Marks in accordance with this Agreement may be liable to cause deception or confusion to the public; or

(c) any other form of attack, charge or claim to which the Licensed Marks may be subject;

Provided always that the notifying party shall not make any admissions in respect of such matters other than to the notified party and provided further that the notifying party shall in every case furnish the notified party with all information in its possession relating thereto which may be reasonably required by the notified party.

6.2 Licensor shall consult with Licensee on any matter within the scope of Clause 6.1 on the appropriate course of action. The Licensor shall have the sole right to assume the conduct of any actions and proceedings (whether in its own name or that of the Licensee) relating to the Licensed Marks and shall bear the costs and expenses of any such actions and proceedings. Any costs or damages recovered in connection with any such actions or proceedings shall be for the account of the Licensor.

6.3 The Licensee undertakes and agrees that it will indemnify and hold the Licensor harmless from and against all costs and expenses (including, without limitation, legal costs, fees and expenses), actions, proceedings, claims, demands, and damages arising from:

(a) a breach of this Agreement by the Licensee; and

(b) the Licensee's use of the Licensed Marks on defective products.

6.4 The Licensor shall not be obliged to bring or extend any proceedings relating to the Licensed Marks if it decides in its sole discretion not to do so.

TERM AND TERMINATION

7.1 This Agreement shall continue, unless terminated in accordance with Clause 7.2 or 7.3, until terminated at any time by either party in writing as specified in Clause 11 giving at least eighteen (18) months advance notice, provided that Licensor shall not have any right to give such notice before the date which is eighteen (18) months following the date first above written.

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7.2 This Agreement shall terminate immediately upon the occurrence of either of the following events:

(a) termination of the Distribution Agreement; or

(b) termination of the Trade Mark License Agreement dated August 4, 1997, between Licensor and AP Biotech;

such termination to take effect immediately upon the effective date of termination of either such agreement identified above.

7.3 Notwithstanding the provisions of Clause 7.1 forthwith upon the occurrence of any of the following events, the Licensor or Licensee, as the case may be, may (without prejudice to any other right of remedy) by written notice to the other party terminate this Agreement with immediate effect:

(a) if the Licensee or Licensor commits a breach of any obligation under this Agreement, including a breach of any representation or warranty, and fails to remedy it within sixty (60) days of receipt of notice from the Licensor or Licensee, as the case may be, of such breach; or

(b) if the Licensee enters into liquidation whether compulsory or voluntary, other than for the purposes of amalgamation or reconstruction approved in writing by the Licensor on the basis that the resulting company undertakes that other party's obligations under this Agreement and is commercially acceptable to the former party, or has a receiver or administrative receiver or administrator or similar official appointed over all or any of its assets and is not discharged within a period of thirty (30) days;

(c) if the Licensee is declared insolvent or makes any general composition with its creditors;

(d) if the Licensee ceases or threatens to cease to carry all or any material part of its business;

(e) Intentionally omitted.

(f) if any distress, execution or exception is levied on any of the assets of the Licensee or if any judgment of a monetary sum is given against the Licensee and is not paid out within forty-five (45) days; or

(g) if the Licensee shall challenge the validity of or the entitlement of the Licensor to use or license the use of the Licensed Marks.

7.4 Termination of this Agreement shall not release either of the parties from any other liability which at the time of termination has already accrued to the other party, nor affect in any way the survival of any other right, duty or obligation of the parties which is expressly stated elsewhere in this Agreement to survive such termination.

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EFFECTS OF TERMINATION

8.1 Upon termination of this Agreement for any reason, the rights and license granted hereunder to the Licensee shall cease and determine and the Licensee shall forthwith discontinue any and all use of the Licensed Marks save that, except in the case of a termination pursuant to Clause 7.3(a) attributable to a breach by the Licensee of an obligation under this Agreement or pursuant to Clause 7.3(g), the Licensee may continue to sell solely in connection with the Business the Products bearing the Licensed Marks in stock at the date of termination for ninety (90) days provided that the Licensee shall comply with the terms and conditions hereof in respect of the sales of such Products during such period.

8.2 Upon termination, or expiration of the period referred to in Clause 8.1, whichever is the later, the Licensor or AP Biotech may request that the Licensee delete or remove the Licensed Marks from or (where such deletion or removal is not reasonably practicable) destroy or, if the Licensor or AP Biotech shall so elect, deliver to the Licensor, AP Biotech or any other company, firm or person designated by the Licensor or by AP Biotech, all Products and all wrappers and packing and all price-lists, sheets of note paper and the like and all other materials or documents in the possession or under the control of the Licensee to which the Licensed Marks are then affixed or approved. In the event that Licensor or AP Biotech elect to have any such Products delivered to them, Licensor or AP Biotech (as the case may be) shall, after receipt of such Products, pay their market value to Licensee.

ACKNOWLEDGEMENT

9.1 The Licensee recognizes the Licensor's title to the Licensed Marks and shall not at any time do or suffer to be done any act or thing which is likely in any way to prejudice such title. It is understood that the Licensee shall not acquire and shall not claim any title to the Licensed Marks or the goodwill attaching thereto by virtue of the rights hereby granted to the Licensee or through the Licensee's use of the Licensed Marks, either before, on or after the date of this Agreement, it being the intention of the parties that all use of the Licensed Marks by the Licensee shall at all times inure to the benefit of the Licensor.

9.2 Licensee hereby represents and warrants that it has the full power and authority to enter into this Agreement and that its execution, delivery and performance of this Agreement has been duly authorized by all required corporate action by Licensee.

9.3 Licensor hereby represents and warrants that (i) it has the full power and authority to grant to Licensee all of the rights granted to Licensee herein and that its execution, delivery and performance of this Agreement has been duly authorized by all required corporate action by Licensor, (ii) Licensor and its affiliates are the sole legal and beneficial owners of the Licensed

Marks, and (iii) it is unaware of any rights in the Licensed Marks superior to its rights or those of its affiliates.

LAW AND CONSTRUCTION

10.1 This Agreement is governed by and shall be construed in accordance with the laws of England and Wales.

ARBITRATION

11.1 All disputes between the parties arising out of the circumstances and relationships contemplated by this Agreement including disputes relating to the validity, construction or interpretation of this Agreement and including disputes relating to pre-contractual representations shall be settled by arbitration as follows:

11.2 The parties hereby agree to cooperate in good faith to resolve any disputes, claims or controversies that may arise hereunder or with respect to the performance by either party of its obligations as contemplated hereby.

11.3 In the event that any dispute, claim or controversy shall not be so resolved by the parties between themselves, the parties agree that any and all disputes, claims or controversies arising out of or relating to this Agreement or a breach thereof, whether grounded in common law or statutory law, shall be finally settled in accordance with the Arbitration Rules of the International Chamber of Commerce in effect on the date hereof. Save as otherwise expressly provided herein the procedural rules shall be the rules of the High Court in England and Wales and the lex curiae shall be the law of England and Wales.

11.4 The number of arbitrators shall be three, chosen in accordance with the procedures set out in this Clause 11. The award of the arbitrators shall be final and binding on the parties.

11.5 Each party shall appoint one arbitrator. If within (30) days after receipt of the claimant's notification of the appointment of an arbitrator the respondent has not notified the claimant of the arbitrator it appoints, the second arbitrator shall be appointed by the appointing authority.

11.6 The arbitrators thus appointed shall choose a further arbitrator who will act as the presiding arbitrator of the tribunal. If within (30) days after the appointment of arbitrators under Clause 11.5 above, they have not agreed upon the choice of the presiding arbitrator, then at the request of any party to the arbitration proceeding the presiding arbitrator shall be appointed by the appointing authority.

11.7 The Chartered Institute of Arbitrators, London, England shall be the appointing authority.

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11.8 At the request of any party to the arbitration ("requesting party") the arbitrators shall order the other party ("furnishing party") to supply and furnish to the requesting party (the cost of which shall be reimbursed upon demand by the requesting party to the furnishing party) true and complete copies of the relevant documents and materials (the "Relevant Materials") and to produce to the arbitral tribunal any or all of the Relevant Material and/or copies thereof as any part of the arbitral tribunal shall require.

11.9 The procedures leading to the production of Relevant Material under this paragraph shall be determined by the arbitrators, and may include the preparation of lists of Relevant Material for initial evaluation by the requesting party prior to disclosure and/or inspection of Relevant Material by the requesting party prior to supply and furnishing the copies. In making such determination, the arbitrators shall take into account the urgency with which the Relevant Material should be brought before the arbitral tribunal.

11.10 No party shall use or disclose any Relevant Material obtained under this paragraph for any purpose except in the course of the conduct of the arbitration and (as far as applicable) proceedings before any court, and then only to the extent necessary for the implementation and enforcement of any aware of the arbitrators.

11.11 The arbitration, including the making of the award, shall take place in London, U.K.

11.12 All submissions and awards in relation to arbitration hereunder shall be made in English and all arbitration proceedings shall be conducted in English.

11.13 The failure or refusal of either party to submit to arbitration in accordance with this Clause 11 shall be deemed a breach of this Agreement. If either party seeks and secures judicial intervention requiring enforcement of this arbitration provision, such party shall be entitled to recover from the other party in such judicial proceeding all costs and expenses, including reasonable attorneys' fees, that it was thereby required to incur.

11.14 The procedures specified in this Clause 11 shall be the sole and exclusive procedures for the resolution of disputes between the parties arising out of or relating this Agreement; provided, however, that a party, without prejudice to the above procedures, may seek equitable remedies, including without limitation, specific performance, a preliminary injunction or other provisional judicial relief if in its sole judgment such action is necessary . to avoid irreparable damage or to preserve the status quo.

NOTICES

12.1 Any notice or other communication to be given by one party to any other party under, or in connection with the matters contemplated by, this Agreement shall be in writing and signed by or on behalf of the party giving it and may be served by delivering it or sending it by fax, pre-paid recorded delivery or registered or certified post to the address and for the attention of the relevant party set out in Clause 12.2 (or as otherwise notified from time to time hereunder). Any

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notice so served by hand, fax or post shall be deemed to have been received

(a) in the case of delivery by hand, when delivered;

(b) in the case of fax, twelve (12) hours after the time of dispatch;

(c) in the case of pre-paid recorded delivery or registered post, forty-eight (48) hours from the date of posting.

12.2 The addresses of the parties for the purpose of Clause 12.1 are as follows:

Address: Pharmacia & Upjohn, Inc.
7000 Portage Road
Kalamazoo, MI 49001-0199
USA
Att: Robert J. Meisenhelder, Esq.

Fax: (616) 833-7564

Address: Amersham Pharmacia Biotech AB
Bjorkgatan 30
SE-751 84 Uppsala
Sweden
Att: Ulf Lundberg, Esq.

Fax: 46 18 165 322

Address: Curtis, Mallet-Prevost, Colt & Mosle
101 Park Avenue
New York, NY 10178
Att: Eric Gilioli, Esq.

Fax: (212) 697-1559

Address: Biochrom Limited
Cambridge Science Park
Milton Road
Cambridge CB4 4FJ
England
Att: Barry Brown

Fax: 44 1223 420238

Address: Goodwin, Procter & Hoar LLP
Exchange Place

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Boston, MA 02109
Att: H. David Henken, P.C.

Fax: (617) 523-1231

Address: Cameron McKenna
Mitre House
160 Aldersgate Street
London, EC1A 4DD
Attention: Guilherme Brafman

Fax: 44-171-367-2000

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NON-ASSIGNABILITY

13.1 The Licensee may not nor may not purport to assign, transfer, change or part with all or any of its rights and/or obligations under this Agreement or sub-contract the performance of any of its obligations under this Agreement without the prior written consent of the Licensor. A change of control of the Licensee shall be deemed an assignment hereunder. For purposes of this Clause 13.1, "control" shall mean the ownership of the majority of ordinary share capital or the ability to cast the majority of the votes at a general meeting of Licensee, to appoint the majority of the board of directors or to direct the general management of Licensee. The sale of substantially all of the assets of Licensee shall also be deemed a change of control for purposes of this Clause 13.1.

13.2 Any right, power, privilege or remedy of a party under or pursuant to this Agreement shall not be capable of being waived or varied otherwise than by an express waiver or variation in writing.

13.3 No failure or delay by any party in exercising any right, power, privilege or remedy shall impair such right, power, privilege or remedy or operate or be construed as a waiver or variation thereof or preclude its exercise at any subsequent time or on any subsequent occasion and no single or partial exercise of any such right, power, privilege or remedy shall preclude any other or further exercise thereof or the exercise of any other right, power, privilege or remedy.

SEVERANCE

14.1 If any provision of this Agreement is held to be invalid or unenforceable, then such provision shall (so far as invalid or unenforceable) be given no effect and shall be deemed not to be included in this Agreement but without invalidating any of the remaining provisions of this Agreement. The parties shall then use all reasonable endeavors to replace the invalid or unenforceable provisions by a valid and enforceable substitute provision the effect of which is as close as possible to the intended effect of the invalid or unenforceable provision.

ENTIRE AGREEMENT

15.1 This Agreement, including the Schedules referred to herein, is complete, reflects the entire agreement of the parties with respect to its subject matter, and supersedes all previous written or oral negotiations, commitments and writings in connection therewith.

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In witness whereof, the parties have executed this Agreement as of the date first above written.

PHARMACIA & UPJOHN, INC.

By: /s/ Mats Pettersson

Name: Mats Pettersson
Title: Senior Vice President
Business Development

BIOCHROM LIMITED

By: /s/ David Green

Name: David Green
Title: Director

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Schedule 1

Licensed Marks

Trademark	CWT	P	Appl. No.	Appl. Date	Reg. No.	Reg. Date	Rpn. Date	Class	Holder	Org. Omit
DROP design	AR	N	1,656,953	1988-07-21				1	PH (OLD)	P
DROP design	AR	N	1,656,956	1988-07-21				10	PH (OLD)	P
DROP design	AR	N	2033294	1996-05-14				42	PH	P
DROP design	AU	N	2660581	1995-05-09				42	PH	P
DROP design	AU	N	2660580	1995-05-09	660580	1995-05-09	2005-05-09	9, 42	PH	P
DROP design	BD	N	44697	1995-08-30				1	PH	P
DROP design	BD	N	44699	1995-08-30				5	PH	P
DROP design	BD	N	44698	1995-08-30				9	PH	P
DROP design	BD	N	44700	1995-08-30				10	PH	P
DROP design	BD	N	43639	1995-05-09				16	PH	P
DROP design	BD	N	43637	1995-05-09				3	PH	P
DROP design	BD	N	43641	1995-05-09				30	PH	P
DROP design	BD	N	43640	1995-05-09				29	PH	P
DROP design	BG	N	35646	1996-07-11	30845	1997-06-16	2006-07-11	1, 9	PH	P
DROP design	BR	N			780190858	1982-12-28	2002-12-28	05.00	PH	P
DROP design	BY	N	950797	1995-05-26	7811	1998-01-19	2005-05-26	1, 9, 10, 42	PH	P
DROP design	CA	N			162,525	1969-05-02	1999-05-02		PH	P

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Trademark	CWT	P	Appl. No.	Appl. Date	Reg. No.	Reg. Date	Rpn. Date	Class	Holder	Org. Omit
DROP design	CA	N			314,300	1986-09-12	2001-09-12		PH	P
DROP design	CA	N			325,547	1987-04-03	2002-04-03		PH	P
DROP design	CN	N			352632	1989-06-30	1999-06-29	14	PH (OLD)	P
DROP design	CN	N			152773	1989-06-30	1999-06-29	31	PH (OLD)	P
DROP design	CN	N			156063	1989-07-30	1999-07-29	26	PH (OLD)	P
DROP design	CN	N			160102	1989-05-10	1999-09-09	17	PH (OLD)	P
DROP design	DE	N			1109203	1987-07-28	2006-10-31	9	PU	P
DROP design	DE	N			156,882	1969-04-24	2008-02-29	1, 3, 5, 10	PU DV	P
DROP design	DK	N	3350/67	1967-09-32	6362/60	1968-02-09	2008-02-09	1, 3, 5, 10, 35, 36, 41	PU	P
DROP design	DK	N	9501092	1995-02-22	22082					P
DROP design	EG	N			72273	1989-11-14	1998-08-14	1	PH (OLD)	P
DROP design	EG	N			72276	1989-11-14	1998-0-14	10	PH (OLD)	P
DROP design	EG	N			72274	1989-11-14	1998-06-14	5	PH (OLD)	P
DROP design	EG	N			72275	1989-11-14	1998-06-14	9	PH (OLD)	P
DROP design	FR	N			1443280	1969-01-05	2008-01-04	1, 5, 10	PU FR	P
DROP design	GB	N	3255794	1998-01-17				9	PU	P
DROP design	GB	N			929,347	1970-01-09	2003-01-05	1	PU	P
DROP design	GB	N			919,349	1969-01-05	2003-01-05	5	PU	P
DROP design	GB	N			919,348	1969-08-27	2003-01-05	3	PU	P

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Trademark	CWT	P	Appl. No.	Appl. Date	Reg. No.	Reg. Date	Rpn. Date	Class	Holder	Org.	Omit
DROP design	GR	N			89824	1990-11-19	2008-05-09	1, 5, 9, 10	PU		P
DROP design		N	BA8961149A	1996-12-24				1, 9	PU		P
DROP design	HK	N	5536/95	1995-05-11	0493/96	1995-06-11	2002-05-11	1	PH		P
DROP design	HK	N	5597/95	1995-05-11	8656/95	1995-05-11	2002-15-11	9	PH		P
DROP design	HK	N	5598/95	1995-05-11	8194/95	1995-05-11	2002-05-11	10	PK		P
DROP design	HK	N	5599/95	1995-05-11	8822/1998	1995-05-11	2002-05-11	42	PK		P
DROP design	BR	N	950913	1995-05-22	8950913	1995-05-22	2005-05-22	1, 9, 18, 42	PH		P
DROP design	ID	N	20273	1995-06-13	357982	1996-09-17	2004-12-15	1	PH		P
DROP design	ID	N	10274	1995-06-15	373898	1996-11-18	2004-12-15	9	PH		P
DROP design	ID	N	10275	1995-06-15	371415	1996-10-17	2004-12-15	10	PH		P
DROP design	ID	N	10276	1995-06-15	371414	1996-10-17	2004-12-15	42	PH		P
DROP design	IH	N			76,036	1970-01-09	2005-01-09	1	PH (OLD)		P
DROP design	IH	N			76,481	1970-01-09	2005-01-09	5	PH (OLD)		P
DROP design	IH	N			76,482	1970-01-13	2005-01-13	3	PH (OLD)		P
DROP design	IN	N	522505	1990-01-09				1	PH (OLD)		P
DROP design	IN	N	522502	1990-01-09				10	PH (OLD)		P
DROP design	IN	N	522506	1990-01-09				5	PH (OLD)		P
DROP design	IN	N	522507	1990-01-09	522507	1990-01-09	1997-01-09	9	PHDS		P
DROP design	JP	N	10-101653	1998-11-30				1, 5, 9, 10, 42	PU		P

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Trademark	CWT	P	Appl. No.	Appl. Date	Reg. No.	Reg. Date	Rpn. Date	Class	Holder	Org. Omit
DROP design	KR	N	19446/95	1995-05-16	341352	1996-06-18	2005-06-19	10	PH	P
DROP design	KR	N	20694/95	1995-05-25	356514	1997-02-18	2007-02-18	34	PH	P
DROP design	KR	N	4848/95	1995-05-10	36419	1997-05-29	2007-05-29	112	PH	P
DROP design	KE	N	7467	1995-05-25				1, 9, 10, 42	PH	P
DROP design	L/T	N	95-1295	1995-05-02				1, 9, 10,42	PH	P
DROP design	LV	N	95-750	1995-04-27	N37 165	1997-04-20	2004-04-27	1, 9, 10,42	PH	P
DROP design	MAC	N	E-522/96	1996-10-08				1, 9	PU	P
DROP design	MOR	N	2936/96	1996-07-10				1,9	PU	P
DROP design	KY	N	95/09756	1995-05-20				9	PH	P
DROP design	KY	N	97/19998	1997-12-01				44	PU	P
DROP design	KY	N	95/04751	1995-05-10				1	PH	P
DROP design	KY	N	95/04758	1995-03-20	95/04758	1995-05-20	2002-05-21	10	PH	P
DROP design	PH	N	109403	1996-06-28				1	PH	P
DROP design	PH	N	113843	1996-09-13				9	PH	P
DROP design	PH	N	109404	1996-06-28				10	PH	P
DROP design	RG	N	41032	1996-09-27				1, 9	PU	P
DROP design	RG	N						1,9	PU	P
DROP design	KU	N	95705301	1995-05-15	151470	1997-04-10	2905-05-15	10, 42	PK	P
DROP design	GK	N	1249/68	1968-03-21	124676	1968-08-23	1998-08-23	1, 3, 5, 10, 35, 36, 41	PU	P

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DROP design	GK	N			166,747	1979-03-09	1999-03-09	1, 3, 5	PU	P
DROP design	GK	N	96-4627	1996-05-06	323807	1997-06-19	2007-06-19	9	PU	P
DROP design	SWR	N	8936/96	1996-07-10				1, 9	PU	P
DROP design	BG	N	4241/95	1995-05-13				9	PK	P
DROP design	BG	N	4242/95	1995-05-13				42	PK	P
DROP design	BG	N	4240/95	1995-05-13				10	PH	P
DROP design	BG	N	4239/95	1995-05-13	4239/95	1995-05-13	2005-05-13	1	PH	P
DROP design	SI	N	9570579	1995-05-29	9570675	1997-01-14	2005-05-29	1, 9, 10, 42	PH	P
DROP design	TH	N	211083	1995-08-11	SW4835	1995-08-11	2005-08-10	42	PH	P
DROP design	TH	N	292086	1995-08-11	TN53871	1995-08-11	2005-08-10	1	PH	P
DROP design	TH	N	291087	1995-08-11	TB0651	1995-08-11	2005-08-10	9	PH	P
DROP design	TH	N	291088	1995-08-11	46077	1995-05-25	2006-08-10	10	PH	P
DROP design	TH	N	11-055357	1995-11-07	735802	1996-11-16	2006-11-15	10	PH	P
DROP design	TH	N	11-055358	1995-11-07	87321	1996-12-16	2006-12-25	12	PH	P
DROP design	TH	N	11-055355	1995-11-07	742479	1997-01-01	2007-12-31	1	PH	P
DROP design	TH	N	11-055356	1995-11-07	748808	1997-02-16	2007-02-05	9	PH	P
DROP design	UA	N	95061844IT	1995-06-01				1, 9, 10, 42	PH	P
DROP design	UB	N			890,315	1970-05-05	2000-04-10	1	PH (OLD)	P
DROP design	UB	N	323,662	1969-06-11	890,473	1970-05-05	2000-04-10	1	PH (OLD)	P

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DROP design	UB	N			890,328	1970-05-05	2000-05-05	1	PH (OLD)	P
DROP design	US	N	74/390,444	1993-05-17	1820903	1994-02-15	2004-02-15	1	PHBT	P
DROP design	US	N	384,469	1982-09-09	1,290,768	1984-08-21	2004-08-21	9	PH (OLD)	P
DROP design	US	N			1,446,200	1987-07-07	200707-07	10	PH DEL	P
DROP design	US	N			872,880	1969-07-15	2009-07-15	5	PH (OLD)	P
DROP design	XX	N			365,485	1970-02-17	2010-01-17	1, 3, 5, 10	PR D	P
DROP design PHARMACIA	AU	N			2258.597	1972-05-24	2007-05-24	1	PU	P
DROP design PHARMACIA	AU	N			2258.700	1972-05-24	2007-05-24	10	PU	P
DROP design PHARMACIA	BK	N			114210261	1989-08-15	1999-08-15	01.90	PU	P
DROP design PHARMACIA	BR	N	814410251	1988-08-18	014418251	1990-03-20	2000-03-20	09.25/09.45	PH&S	P
DROP design PHARMACIA	CL	N	0-89527	1994-05-17	207337	1998-02-25	2004-05-17	1, 9	PH	P
DROP design PHARMACIA	DK	N			909296	1973-08-30	2003-06-30	1, 3, 5, 10	PU DR	P
DROP design PHARMACIA	DR	N			1109202	1987-07-28	2006-10-31	9	PU	P
DROP design PHARMACIA	DK	N	4050/69	1969-10-08	1375/70	1970-04-17	2000-04-17	1, 3, 5, 9, 10, 30	PK	P
DROP design PHARMACIA	EG	N			72277	1990-03-07	1990-06-14	1	PH (OLD)	P
DROP design PHARMACIA	EG	N			72278	1990-03-07	1990-06-14	5	PH (OLD)	P
DROP design PHARMACIA	EG	N			72273	1990-03-87	1998-06-14	9	PH (OLD)	P
DROP design PHARMACIA	EG	N			72280	1990-03-87	1998-06-14	10	PH (OLD)	P
DROP design PHARMACIA	GR	N			89423	1990-11-19	2008-06-09	1, 5, 9, 11	PU	P

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Trademark	CWT	P	Appl. No.	Appl. Date	Reg. No.	Reg. Date	Rpn. Date	Class	Holder	Org.	Omit
DROP design PHARMACIA	HP	N	M9206404	1992-12-16	137257	1992-12-16	2002-12-16	1, 9	PHET		P
DROP design PHARMACIA	IL	N	92578	1994-05-23	92670	1996-02-11	2001-05-22	1	PH		P
DROP design PHARMACIA	IL	N	92673	1994-05-23	92671	1996-02-04	2001-05-22	3	PH		P
DROP design PHARMACIA	IN	N	522504	1990-01-05				10	PH (OLD)		P
DROP design PHARMACIA	IN	N	522503	1990-01-09				9	PH (OLD)		P
DROP design PHARMACIA	JP	N	74063/72	1972-06-01	1362963	1970-12-22	2008-12-22	1	PU		P
DROP design PHARMACIA	KW	N			20376	1980-09-13	1998-09-12	1	PH		P
DROP design PHARMACIA	KW	N			20377	1980-09-13	1998-09-12	5			P
DROP design PHARMACIA	MX	N			356077	1980-08-25	2003-08-25	26			P
DROP design PHARMACIA	MX	N			357568	1980-08-25	2003-08-25	6	PHBT		P
DROP design PHARMACIA	MO	N			70,857	1970-08-28	2000-08-28	1, 3, 5, 10, 35, 36, 41	PH		P
DROP design PHARMACIA	NZ	N			177887	1980-03-01	2009-03-01	1	PH		P
DROP design PHARMACIA	NZ	N			177099	1980-03-01	2009-03-01	3	PH		P
DROP design PHARMACIA	NZ	N			177889	1980-03-01	2009-03-01	5	PH		P
DROP design PHARMACIA	NZ	N			177891	1988-03-01	2009-03-01	10	PH		P
DROP design PHARMACIA	NZ	N			177890	1988-03-01	2009-03-01	9	PH		P
DROP design PHARMACIA	PA	N			047576	1989-03-06	2005-08-01	1	PH		P
DROP design PHARMACIA	PL	N	G-133384	1994-05-16	90747	1994-05-16	2004-05-16	1, 9	PH		P
DROP design PHARMACIA	BU	N	94020756	1994-06-16	130869	1995-08-15	2004-06-16	1, 9	PH		P

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Trademark	CWT	P	Appl. No.	Appl. Date	Reg. No.	Reg. Date	Rpn. Date	Class	Holder	Org.	Omit
DROP design PHARMACIA	SA	N			197/13	1989-04-23	1998-06-02	1	PH (OLD)		P
DROP design PHARMACIA	BA	N			197/14	1989-04-23	1998-06-02	5	PH (OLD)		P
DROP design PHARMACIA	BA	N			152.178	1975-08-01	2005-08-01	1, 9	PU		P
DROP design PHARMACIA	SK	N	P021250-94	1994-05-17	180238	1998-04-20	2004-04-27	1, 5, 9	PH		P
DROP design PHARMACIA	TN	N			EX.88.250	1988-07-07	2003-07-07	1, 5, 9, 10	PH		P
DROP design PHARMACIA	TR	N			106092	1988-07-20	1998-07-20	5	PU		P
DROP design PHARMACIA	VE	N	448/96	1996-01-17				1	PHAT		P
DROP design PHARMACIA	VE	N	447/96	1996-01-17				9	PH		P
DROP design PHARMACIA	XX	N			402.486	1973-10-05	2013-10-05	1, 3, 5, 10	PH D		P
DROP design PHARMACIA	JP	N			1362970	1970-12-22	1998-06-22	1	PU		P
DROP design (POS)	DX	N	3349/67	1967-09-12	0361/88	1968-02-09	2008-02-09	1, 3, 5, 10, 35, 36, 41	PU		P
DROP design (POS)	PJ	N			54.129	1969-02-20	1999-02-20	1, 3, 5, 10, 35, 36, 41	PU		P
DROP design (POS)	NO	N			74.427	1968-05-30	2008-05-30	1, 3, 5, 10, 35, 36, 41	PU		P
DROP design (POS)	BN	N			122.446	1968-02-12	2008-02-02	1, 3, 5, 10, 35, 36, 41	PU		P

TOTAL NUMBER OF RECORDS: 145

CONFIDENTIAL INFORMATION HAS BEEN OMITTED PURSUANT TO RULE 406 UNDER THE SECURITIES ACT AND HAS BEEN FILED SEPARATELY, WITH THE COMMISSION. THE LOCATIONS OF THE OMITTED INFORMATION HAVE BEEN INDICATED WITH ASTERISKS.

Trademark	CWT	P	Appl. No.	Appl. Date	Reg. No.	Reg. Date	Rpn. Date	Class	Holder	Org.	Omit
Pharmacia	AR	N	1889706	1993-08-25				5	KP		P
Pharmacia	AR	N	1889707	1993-08-25	1585743	1995-12-20	2005-12-20	1	KP		P
Pharmacia	AR	N	1889705	1993-08-25	1585742	1995-12-20	2005-12-20	9	KP		P
Pharmacia	AR	N	1889704	1993-08-25	1585741	1995-12-20	2005-12-20	10	KP		P
Pharmacia	AR	N	1889703	1993-08-25	1585740	1995-12-20	2005-12-20	41	KP		P
Pharmacia	AU	N	A638355	1994-08-19	A638355	1994-08-19	2004-08-19	1	PU		P
Pharmacia	AU	N	A638356	1994-08-19	A638356	1994-08-19	2004-08-19	5	PU		P
Pharmacia	AU	N	A638357	1994-08-19	A638357	1994-08-19	2004-08-19	9	PU		P
Pharmacia	AU	N	A638358	1994-08-19	A638358	1994-08-19	2004-08-19	10	PU		P
Pharmacia	BD	N	43594	1994-04-21				36	PK		P
Pharmacia	BD	N			21369	1984-11-11	2006-11-11	3	PK		P
Pharmacia	BD	N			21371	1984-11-11	2006-11-11	10	PK		P
Pharmacia	BD	N			21370	1984-11-11	2006-11-11	5	PK		P
Pharmacia	BD	N			21368	1984-11-11	2006-11-11	9	PK		P
Pharmacia	BK	N			379665	1982-01-14	2002-01-14	1, 5	PU		P
Pharmacia	BY	N	950799	1995-05-26	7813	1998-01-15	2005-05-26	1, 3, 5, 9, 10, 16, 29, 30	PB		P
Pharmacia	CA	N			315,021	1986-06-06	2001-06-01		PR		P
Pharmacia	CA	N			326,058	1987-04-10	2002-04-10		PR		P
Pharmacia	CN	N			350805	1989-06-10	1999-06-09	26	PU		P

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Trademark	CWT	P	Appl. No.	Appl. Date	Reg. No.	Reg. Date	Rpn. Date	Class	Holder	Org.	Omit
Pharmacia	CN	N			352631	1989-06-30	1999-06-29	14	PU		P
Pharmacia	CN	N			352774	1989-06-30	1999-06-29	31	PU		P
Pharmacia	CN	N	8830223	1988-09-08	882463	1996-10-14	2006-10-13	10	PH (OLD)		P
Pharmacia	DK	N	2289/65	1965-04-03	3010/66	1966-11-18	2006-12-28	1, 3, 5, 10	PHBT		P
Pharmacia	DK	N	3859/56	1956-12-21	0248/57	1957-02-09	2007-02-09	5	PU		P
Pharmacia	KC	N	42769	1993-11-08				1	KP		P
Pharmacia	KC	N	43770	1993-11-08				3	KP		P
Pharmacia	KC	N	43771	1993-11-08				5	KP		P
Pharmacia	KC	N	43772	1993-11-08				41	KP		P
Pharmacia	KC	N	42773	1993-11-08				10	KP		P
Pharmacia	KC	N	42774	1993-11-08				9	KP		P
Pharmacia	XN	N	9401232	1984-06-09	12906	1997-03-26	2007-03-26	1, 3, 5, 9, 10, 16, 41	PS		P
Pharmacia	GB	N	1560863	1994-02-28				3	PU		P
Pharmacia	GB	N	1568414	1994-02-28	1550464	1994-01-28	2001-01-28	10	PU		P
Pharmacia	GB	N			1,162,185	1981-10-01	2002-10-01	1	PU		P
Pharmacia	GB	N			81,162,186	1982-11-01	2002-10-01	5	PU		P
Pharmacia	GB	N			1,184,730	1982-11-04	2003-11-04	9	PU		P
Pharmacia	HK	N			81985	1984-10-26	2005-10-26	1	PHBS		P
Pharmacia	HK	N			318	1984-10-26	2005-10-26	5	PHBS		P

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Trademark	CWT	P	Appl. No.	Appl. Date	Reg. No.	Reg. Date	Rpn. Date	Class	Holder	Org. Omit
Pharmacia	HK	N			81946	1984-10-26	2005-10-26	9	PHBS	P
Pharmacia	HM	N	7548/94	1994-10-13	63567	1995-11-07	2005-11-07	1	PH	P
Pharmacia	HM	N	7541/94	1994-10-13	63406	1995-11-07	2005-11-07	10	PH	P
Pharmacia	HM	N	7542/94	1994-10-13	63407	1995-11-07	2005-11-07	9	PH	P
Pharmacia	HM	N	7543/94	1994-10-23	63761	1995-12-07	2003-12-07	5	PH	P
Pharmacia	HM	N	958914	1995-05-22				1, 3, 5, 9, 10, 16, 29, 30	PH	P
Pharmacia	ID	N			398960	1988-06-29	2007-06-29	5	PU	P
Pharmacia	ID	N			398961	1988-06-29	2007-06-29	9	PU	P
Pharmacia	ID	N			398962	1988-06-29	2007-06-29	10	PU	P
Pharmacia	ID	N	235902	1988-06-29	398959	1997-10-13	2007-06-29	1	PU	P
Pharmacia	IN	N	94/1722					41	PH	P
Pharmacia	IN	N	94/1716		176357	1994-03-16	2003-03-16	1	PH	P
Pharmacia	IN	N	94/1718		176158	1994-03-16	2002-03-16	5	PH	P
Pharmacia	IN	N	94/1719		176160	1994-03-16	2002-03-16	10	PH	P
Pharmacia	IN	N	94/1728		174160	1994-03-16	2002-03-16	10	PH	P
Pharmacia	IN	N	429134	1984-10-30				10	PH (OLD)	P
Pharmacia	IN	N	429132	1984-10-30				5	PH (OLD)	P
Pharmacia	IN	N	429135	1984-10-30	4291348	1990-10-30	1998-10-30	1	PH (OLD)	P
Pharmacia	IN	N	429133	1984-10-30			2003-12-03	1-42	PU	P

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Trademark	CWT	P	Appl. No.	Appl. Date	Reg. No.	Reg. Date	Rpn. Date	Class	Holder	Org.	Omit
Pharmacia	KR	N			120540	1984-12-04	2005-09-04	11	PH		P
Pharmacia	KR	N			121548	1985-12-23	2005-09-23	10	PH		P
Pharmacia	KR	N			117895	1985-10-04	2005-10-04	34	PH		P
Pharmacia	KR	N	7466	1995-05-25	5781	1995-05-25	2005-05-25	1, 3, 5, 9, 10, 16, 29, 30	PH		P
Pharmacia	LT	N	16070	1994-06-25				1, 3, 5, 9, 10, 16, 41	PH		P
Pharmacia	LV	N	94-1245	1995-06-07				1, 3, 5, 9, 10, 36, 42	PH		P
Pharmacia	NY	N			83/81234	1983-11-23	2004-11-23	1	PH		P
Pharmacia	NY	N			83/81235	1983-11-23	2004-11-23	52	PH		P
Pharmacia	NY	N	84/05098	1984-11-01	84/05090		2005-11-01	10	PH		P
Pharmacia	NY	N	84/05089	1984-11-02	84/05089	1991-10-19	2005-11-01	9	PH		P
Pharmacia	PH	N	107587	1996-04-22				1	PH		P
Pharmacia	PH	N	107588	1996-04-22				5	PH		P
Pharmacia	PH	N			41075	1988-09-12	2008-09-12	1, 5	PHBS		P
Pharmacia	PK	N	04545	1984-11-18	84565	1984-11-18	2006-11-18	10	PHBS		P
Pharmacia	PK	N			84543	1984-11-18	2006-11-18	1	PHBS		P
Pharmacia	PK	N	04546	1984-11-18	84546	1984-11-18	2006-11-18	5	PHBS		P
Pharmacia	PK	N			84544	1984-11-18	2006-11-18	9	PHBS		P

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Trademark	CWT	P	Appl. No.	Appl. Date	Reg. No.	Reg. Date	Rpn. Date	Class	Holder	Org.	Omit
Pharmacia	RU	N	95705300	1995-05-15	251469	1997-04-20	2005-05-25	3, 5, 10, 16, 29, 30, 42	PH		P
Pharmacia	UK	N			184,436	1982-12-17	2002-12-17	1, 5	PU		P
Pharmacia	UK	N			106,427	1964-01-03	2004-01-03	35, 36, 41	PU		P
Pharmacia	UK	N	94-01477	1994-02-11	303216	1995-06-30	2005-06-30	3, 9, 10	PU		P
Pharmacia	SG	N	5738/84	1984-11-03	5738/84	1992-07-25	2001-11-03	9	PHBS		P
Pharmacia	SG	N			5988/83	1983-11-18	2004-11-18	1	PH (OLD)		P
Pharmacia	SG	N			B5989/83	1983-11-18	2004-11-18	5	PH (OLD)		P
Pharmacia	SH	N	1285-95	1995-05-10	101768	1998-08-17	2005-05-10	3, 5, 10, 16, 29, 30, 42	PH		P
Pharmacia	SH	N			118582	1987-10-12	1997-10-21	3	PH (OLD)		P
Pharmacia	TH	N			118474	1987-10-22	2007-10-21	2	PU		P
Pharmacia	TW	N	82-053533	1993-10-29	69927	1994-04-01	2001-04-01	1 (services)	PU		P
Pharmacia	TW	N	82-053529	1993-10-29	638404	1994-04-01	2003-04-01	72	PU		P
Pharmacia	TW	N	82-053520	1993-10-29	647614	1994-07-14	2003-07-16	1	PU		P
Pharmacia	TW	N	82-053531	1993-10-29	657514	1994-10-01	2003-10-01	76	PU		P
Pharmacia	TW	N	82-053534	1993-10-29	73994	1995-01-01	2001-01-01	12	PU		P
Pharmacia	TW	N	82-053530	1993-10-29	640158	1994-04-16	2005-04-15	74	PU		P
Pharmacia	TW	N	82-053532	1993-10-29	642537	1994-04-16	2004-04-15	86	PU		P
Pharmacia	UA	N	95061840IT	1995-06-01				1, 3, 5, 9, 10, 16, 29, 30	PM		P

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Trademark	CWT	P	Appl. No.	Appl. Date	Reg. No.	Reg. Date	Rpn. Date	Class	Holder	Org. Omit
Pharmacia	US	N			1,277,927	1984-05-13	2004-05-15	9	PU	P
Pharmacia	US	N	73/021625	1974-05-14	1025527	1975-11-25	2005-11-25	1	PU	P
Pharmacia	US	N	73/021627	1974-05-16	1,025,528	1975-11-25	2005-11-25	1, 5	PU	P
Pharmacia Anti. Farea	HN	N	7539/94	1994-10-13				5	PH	PH
Pharmacia Anti. Farea	HN	N	7540/94	1994-10-11	63405	1995-11-07	2005-11-07	1	PH	PH
Pharmacia Anti. Farea	HN	N	7537/94	1994-10-13	63402	1995-11-07	2005-11-07	19	PH	PS
Pharmacia Anti. Farea	HN	N	7538/94	1994-10-13	63403	1995-11-07	2006-11-07	9	PH	PH
Pharmacia Electronics	CB	N			304,434	1980-07-22	2010-02-19	9, 10	PH EL	PH
Pharmacia Electronics	DK	N			0927/80	1980-02-15	2010-02-15	9, 10	PH EL	PH
Pharmacia FEAT	FR	N			1360813	1985-05-23	2005-05-22	1, 5	PH	ADI
Pharmacia (JP)	JF	N			1480517	1979-11-30	1999-05-30	1	PH	P
Pharmacia Laserscan	US	N	74/544,913	1996-11-21	2171501	1998-07-07	2000-07-07	9	UP	SOPCA

J

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Schedule 2

Form of Licensed Marks

Form of Licensed Marks

[the logotype (lettering and symbol) and 'drop' symbol]

logotype specifications

o how to use our logotype and the 'drop' symbol
o the Amersham Pharmacia Biotech name
o artwork reference

amersham/pharmacia biotech

The company symbol and logotype are principal items of the identity and, as such, they must be employed with great care in accordance with the rules and guidelines set our in this document, together with any other instructions issued by Corporate Communications in Uppsala.

The logotype D consists of the symbol (or 'drop' as it is often called) and specifically centered lettering. In normal circumstances they should appear together, although on certain occasions, where indicated, the 'drop' symbol O may appear without the lettering. The lettering in this form must not be used on its own.

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amersham pharmacia biotech

The 'drop' symbol and the logotype may only be reproduced using the highest quality originals. No attempt must be made to reproduce either mark from anything other than the reproduction artwork or computer files supplied by Corporate Communications in Uppsala.

To afford these marks their appropriate status and to ensure that they are clearly recognized, an area around each device must be kept free of other visual elements. No additions or amendments to the 'drop' symbol or logotype are permitted.

amersham pharmacia biotech

Creative use of the symbol and logotype is only allowed with the express permission of the head of Corporate Communications in Uppsala.

The 'drop' symbol should always be reproduced in high gloss silver/chrome or, where this is not possible, in black. The lettering should appear in black only. Both the 'drop' symbol and the full logotype should normally appear on a white background; a colored background may be used (although this should be avoided as far as possible) as long as the color does not deduct from their visibility. They may also appear white out of black O using the artworks created for this purpose.

[the 'drop' symbol with technical specifications]

[the 'drop' symbol with technical specifications]

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The keytype should appear on all external communications, including stationery, labels, envelopes, business cards, brochures, mailings, advertisements, other printer material and where possible, all types of electronic mail, as well as buildings, signs, exhibition material, products and packaging, as directed by these guidelines or as instructed by Corporate Communications. It should also appear on internal communications, e.g., loan's and policies, and may be employed on clothing.

[Inaccurate versions of the 'drop' symbol and logotype reproduced]

Generally the logotype should appear in a prominent position towards the top of all area in which it appears or, sometimes as a sign off, at the bottom. When used large, the logotype should normally be placed centrally and when smaller towards the right (approximately two-thirds of the way across the page or area in which it sits).

The 'drop' symbol may be used as a decorative element and also as a principal identifier when there is restricted space (as long as there are other elements to support or qualify it, such as a line of text). It may also appear with other elements for specific applications as directed by Corporate Communications in Uppsala.

the Amersham Pharmacia Biotech name

In legal context The full name of the relevant legal entity should be used including the appropriate suffix, e.g. AD or Inc.

logotype specification

colours
logotype lettering
black
white out of black
logotype 'drop' symbol:
high gloss silver/chrome or black

	high gloss silver/chrome or white out of black
Signing off letters and documents The full name should also be used when signing off letters and documents. It should be set after the author's name and accompanied by the department name. Direct telephone number and e-mail address may be added below.	logotype artwork use only the specially prepared artwork to reproduce the symbol and logotype. log ba (&F).aps/log blk&F.tps master artwork for the logotype solid black (although this may also be used to produce separated fall artwork)
In daily speech In all external communications the company must always be referred to as "Amersham Pharmacia Biotech", unless a specific regional or sales company is being referred to. Should an abbreviated terms of the company name be needed, "AP Biotech must be used. Under no circumstances should any other forms of the company name be employed, e.g. APB	log ba &F.eps master artwork for the logotype solid black (produce separated artwork) log wh 85.eps master artwork for the logotype when reproduced whilte out of black when less than 65mm
In body copy In body copy the company is always called Amersham Pharmacia Biotech, unless a specific regional or sales company is being referred to.	Log wh +85. eps master artwork for the logotype when reproduced white out of black when more than 65mm
Responsibility for our Identity. It is the responsibility of the head of all companies and departments within Amersham Pharmacia Biotech, as it is of everyone who uses the information set out in these pages, to ensure the identity guidelines of the company are followed	Sym blk.eps master artwork for the 'drop' symbol reproducing as solid black (although this may be used to produce separated full artwork)

CONFIDENTIAL INFORMATION HAS BEEN OMITTED PURSUANT TO RULE 406 UNDER THE SECURITIES ACT AND HAS BEEN FILED SEPARATELY, WITH THE COMMISSION. THE LOCATIONS OF THE OMITTED INFORMATION HAVE BEEN INDICATED WITH ASTERISKS.

Exceptions to the rule may not be made without the prior approval of Corporate Communications in Uppsala. Any questions regarding the identity or its implementation should also be forwarded there.

Sym F. eps
master artwork for the 'drop' symbol
(separated full artwork)

Amersham Pharmacia Biotech, Corporate Communications, Uppsala, Sweden tel 46 18165000 fax 46 1816 64 22

Sym wh.eps
master artwork for the 'drop' symbol
when reproduced white out of black.

CONFIDENTIAL INFORMATION HAS BEEN OMITTED PURSUANT TO RULE 406 UNDER THE SECURITIES ACT AND HAS BEEN FILED SEPARATELY, WITH THE COMMISSION. THE LOCATIONS OF THE OMITTED INFORMATION HAVE BEEN INDICATED WITH ASTERISKS.

Schedule 13(b)(ii)

TRADE MARK LICENSE AGREEMENT (this Agreement) made March 2,1999

BETWEEN

(1) NYCOMED AMERSHAM PLC, (Company no. 1002610), a company incorporated in England whose registered office is at Amersham Place, Little Chalfont, Buckinghamshire, England HP7 9NA UK (Licensor)

(2) BIOCHROM LIMITED, a limited liability company incorporated in England whose registered office is at Cambridge Science Park, Milton Road, Cambridge CB4 4FJ, England (Licensee).

WHEREAS

(A) The Licensor is the beneficial owner and the registered proprietor or has made application for the registration of, and licenses or through its associated companies has used in connection with its business for a number of years, the Licensed Marks, the particulars of which are set out in Schedule 1.

(B) The Licensor has agreed to grant or to cause to procure the grant to the Licensee of certain rights in respect of the Licensed Marks subject to the terms and conditions of this Agreement.

(C) This Agreement has been entered into in pursuance of the Asset Purchase Agreement dated March 2, 1999 (the Asset Purchase Agreement) which contemplates the sale to Licensee by Pharmacia Biotech (Biochrom) Limited (Biochrom) of substantially all of the assets of Biochrom, and the Distribution Agreement dated March 2, 1999 (the Distribution Agreement) between Licensee and Amersham Pharmacia Biotech AB (AP Biotech) being entered into in connection with the Asset Purchase Agreement.

IT IS AGREED AS FOLLOWS

DEFINITIONS

1.1 In this Agreement unless the context otherwise requires the following expressions shall have the following meanings (capitalized terms used herein without definition have the meanings assigned to them in the Distribution Agreement):

Business means the manufacture and sale by Biochrom of the Products and the distribution of the Products as contemplated in the Distribution Agreement.

Licensed Marks means those trade marks which are registered or the subject of a pending application particulars of which are set out in Schedule 1.

CONFIDENTIAL INFORMATION HAS BEEN OMITTED PURSUANT TO RULE 406 UNDER THE SECURITIES ACT AND HAS BEEN FILED SEPARATELY, WITH THE COMMISSION. THE LOCATIONS OF THE OMITTED INFORMATION HAVE BEEN INDICATED WITH ASTERISKS.

Products means the Current Products and New Products as defined in the Distribution Agreement.

INTERPRETATION

1.2 In this Agreement unless the context otherwise requires:

(a) reference to persons shall include individuals, bodies corporate (wherever incorporated), unincorporated associations and partnerships;

(b) the headings are inserted for convenience only and shall not affect the construction of the Agreement;

(c) references to one gender shall include each gender and all genders; and

(d) any reference to an enactment is a reference to it as from time amended, consolidated or re-enacted (with or without modification) and includes all instruments or orders made under such enactment.

1.3 The schedules comprise Schedules to this Agreement and form part of this Agreement.

GRANT OF LICENSE

2.1 In consideration of the good and valuable consideration given by the Licensee in pursuance of the Asset Purchase Agreement and the Distribution Agreement, the Licensor hereby grants to and/or agrees to cause to procure the grant to the Licensee of a royalty-free, non-exclusive, non-sublicensable license to use, solely in connection with the Business, the Licensed Marks on or in relation to the Products, subject to the provisions set out in this Agreement. The Licensee acknowledges and agrees that, after four (4) months from the Closing Date (as defined in the Asset Purchase Agreement) or, in the case of Fisher Scientific Limited, after December 3 1, 1999, the Licensee shall be entitled to use the Licensed Marks solely in connection with the Products to be sold by the Licensee to AP Biotech pursuant to the Distribution Agreement unless AP Biotech shall otherwise consent in writing.

2.2 The license granted hereunder shall be for the term of this Agreement.

2.3 The Licensor or Licensee shall at the request of the other party execute and at Licensee's expense take all steps reasonable requisite for the registration or recordal of the license granted hereunder in such form as may be reasonably required by the requesting party. The Licensee agrees that any such recordal may be canceled by the Licensor on the termination of this Agreement in accordance with its terms and that it will assist the Licensor so far as is necessary

to achieve such cancellation by executing any necessary documents or doing any necessary acts in connection therewith.

CONDITIONS OF USE

3.1 The Licensee hereby undertakes that:

(a) it will use the Licensed Marks only in relation to Products which conform to the current quality standards used by Licensee or AP Biotech;

(b) it will use the Licensed Marks (including, without limitation, both with respect to presentation of the Licensed Marks on the Products, packing, wrappers, notepaper, price lists, advertisements and other promotional material and the like and with respect to shaping, printing style, colour, quality of materials used and otherwise) only in the form set out in Schedule 2 or as may from time to time be approved by the Licensor or AP Biotech;

(c) it will not use the Licensed Marks together or in combination with any other marks, names, words, logos, symbols or devices other than: (i) those specified in Schedule 1 or the trademarks licensed to Licensee by Pharmacia & Upjohn, Inc. under a Trade Mark License Agreement of even date hereof-, and (ii) the names "Biochrom" and "Harvard", whether jointly or separately, and all related and associated logos and trademarks;

(d) it will not use the Licensed Marks in relation to any goods other than the Products nor use or seek to register any other trade or service marks which are similar to or substantially similar to or so nearly resemble the Licensed Marks as to be likely to cause deception or confusion;

(e) it shall, when requested to do so by the Licensor or AP Biotech, supply the Licensor and AP Biotech with details of any written complaints made by customers relating to the Products together with reports, if any exist, on the manner in which such complaints are being or have been dealt with and shall comply with any reasonable directions or recommendations given by the Licensor or AP Biotech in respect thereof,

(f) it shall submit to the Licensor and AP Biotech for their approval a specimen of every new advertising or promotional material issued or created by Licensee in which the Licensed Marks appear and the Licensee undertakes not to use or distribute such material unless and until the Licensor and AP Biotech shall have approved the same in writing. If Licensor and AP Biotech fail to respond within twenty-eight (28) days the foregoing material will be deemed approved;

(g) to the extent consistent with past practice, it will include on the Products and in all documentation and material referred to in paragraphs (b) and (f) a statement that the relevant Licensed Mark is the registered trade mark or the trade mark as the case may be

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of the Licensor; and

(h) it will not use the Licensed Marks in a manner which is likely to cause material harm to the goodwill attached to the Licensed Marks.

The parties acknowledge that AP Biotech is a distributor of the Products and that Licensee shall not be responsible for, or deemed to control, the actions or omissions of AP Biotech.

APPROVAL, INSPECTION AND TESTING

4.1 On reasonable request by the Licensor or AP Biotech, the Licensee agrees to supply at Licensor's sole expense t6 the Licensor or AP Biotech samples of the Products offered for sale under the Licensed Marks.

4.2 The Licensee shall, on reasonable prior notice from the Licensor or AP Biotech, permit the Licensor, AP Biotech and/or their representatives or agents at all reasonable times access to the premises of the Licensee to inspect the Products as manufactured and/or offered for sale by the Licensee under the Licensed Marks and the method by which the Products are manufactured, packed and labelled. The Licensee undertakes that it will do such things as may reasonably be necessary to ensure that such Products are processed, packed and labelled by the methods and in conformity with such specifications and standards of quality consistent with Biochrom's past practices. Licensor and its representatives, however, shall sign a confidentiality agreement on a form acceptable to Licensee before any such inspection may take place.

4.3 If (consequent on any such inspection by any representatives or agent of the Licensor or AP Biotech as is referred to in Clause 4.2) it is found that any licensed Products bearing or intended to bear the Licensed Marks are not in conformity with any of the Licensee's obligations under Clause 4 hereof and the Licensor or AP Biotech shall give the Licensee written notice of that fact, the Licensee undertakes that it will not sell any of such non-conforming Products under the Licensed Marks without the prior written consent of the Licensor or AP Biotech.

MAINTENANCE OF TRADEMARKS

5.1 Licensor shall at its own expense take any and all action that may be required to maintain the registration of any of the Trademarks.

INFRINGEMENTS

6.1 The Licensee and Licensor shall forthwith give written notice (in accordance with the

provisions of Clause 12) to the other party of any of the following matters which may at any time during the continuance of this Agreement come to their knowledge, giving full particulars thereof:

(a) any infringement or suspected or threatened infringement of the Licensed Marks, whether by reason of imitation of get-up or otherwise;

(b) any allegation or complaint made by any third party that the use by the Licensee of the Licensed Marks in accordance with this Agreement may be liable to cause deception or confusion to the public; or

(c) any other form of attack, charge or claim to which the Licensed Marks may be subject;

Provided always that the notifying party shall not make any admissions in respect of such matters other than to the notified party and provided further that the notifying party shall in every case furnish the notified party with all information in its possession relating thereto which may be reasonably required by the notified party.

6.2 Licensor shall consult with Licensee on any matter within the scope of Clause 6.1 on the appropriate course of action. The Licensor shall have the sole right to assume the conduct of any actions and proceedings (whether in its own name or that of the Licensee) relating to the Licensed Marks and shall bear the costs and expenses of any such actions and proceedings. Any costs or damages recovered in connection with any such actions or proceedings shall be for the account of the Licensor.

6.3 The Licensee undertakes and agrees that it will indemnify and hold the Licensor harmless from and against all costs and expenses (including, without limitation, legal costs, fees and expenses), actions, proceedings, claims, demands, and damages arising from:

(a) a breach of this Agreement by the Licensee; and

(b) the Licensee's use of the Licensed Marks on defective products.

6.4 The Licensor shall not be obliged to bring or extend any proceedings relating to the Licensed Marks if it decides in its sole discretion not to do so.

TERM AND TERMINATION

7.1 This Agreement shall continue, unless terminated in accordance with Clause 7.2 or 7.3, until terminated at any time by either party in writing as specified in Clause 11 giving at least eighteen (18) months advance notice, provided that Licensor shall not have any right to give such notice before the date which is eighteen (18) months following the date first above written.

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7.2 This Agreement shall terminate immediately upon the occurrence of either of the following events:

(a) termination of the Distribution Agreement; or

(b) termination of the Trade Mark License Agreement dated August 4, 1997, between Licensor and AP Biotech;

such termination to take effect immediately upon the effective date of termination of either such agreement identified above.

7.3 Notwithstanding the provisions of Clause 7.1 forthwith upon the occurrence of any of the following events, the Licensor or Licensee, as the case may be, may (without prejudice to any other right of remedy) by written notice to the other party terminate this Agreement with immediate effect:

(a) if the Licensee or Licensor commits a breach of any obligation under this Agreement, including a breach of any representation or warranty, and fails to remedy it within sixty (60) days of receipt of notice from the Licensor or Licensee, as the case may be, of such breach; or

(b) if the Licensee enters into liquidation whether compulsory or voluntary, other than for the purposes of amalgamation or reconstruction approved in writing by the Licensor on the basis that the resulting company undertakes that other party's obligations under this Agreement and is commercially acceptable to the former party, or has a receiver or administrative receiver or administrator or similar official appointed over all or any of its assets and is not discharged within a period of thirty (30) days;

(c) if the Licensee is declared insolvent or makes any general composition with its creditors;

(d) if the Licensee ceases or threatens to cease to carry all or any material part of its business;

(e) Intentionally omitted.

(f) if any distress, execution or exception is levied on any of the assets of the Licensee or if any judgment of a monetary sum is given against the Licensee and is not paid out within forty-five (45) days; or

(g) if the Licensee shall challenge the validity of or the entitlement of the Licensor to use or license the use of the Licensed Marks.

7.4 Termination of this Agreement shall not release either of the parties from any other liability which at the time of termination has already accrued to the other party, nor affect in any way the survival of any other right, duty or obligation of the parties which is expressly stated elsewhere in this Agreement to survive such termination.

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EFFECTS OF TERMINATION

8.1 Upon termination of this Agreement for any reason, the rights and license granted hereunder to the Licensee shall cease and determine and the Licensee shall forthwith discontinue any and all use of the Licensed Marks save that, except in the case of a termination pursuant to Clause 7.3(a) attributable to a breach by the Licensee of an obligation under this Agreement or pursuant to Clause 7.3(g), the Licensee may continue to sell solely in connection with the Business the Products bearing the Licensed Marks in stock at the date of termination for ninety (90) days provided that the Licensee shall comply with the terms and conditions hereof in respect of the sales of such Products during such period.

8.2 Upon termination, or expiration of the period referred to in Clause 8.1, whichever is the later, the Licensor or AP Biotech may request that the Licensee delete or remove the Licensed Marks from or (where such deletion or removal is not reasonably practicable) destroy or, if the Licensor or AP Biotech shall so elect, deliver to the Licensor, AP Biotech or any other company, firm or person designated by the Licensor or by AP Biotech, all Products and all wrappers and packing and all price-lists, sheets of note paper and the like and all other materials or documents in the possession or under the control of the Licensee to which the Licensed Marks are then affixed or approved. In the event that Licensor or AP Biotech elect to have any such Products delivered to them, Licensor or AP Biotech (as the case may be) shall, after receipt of such Products, pay their market value to Licensee.

ACKNOWLEDGEMENT

9.1 The Licensee recognizes the Licensor's title to the Licensed Marks and shall not at any time do or suffer to be done any act or thing which is likely in any way to prejudice such title. It is understood that the Licensee shall not acquire and shall not claim any title to the Licensed Marks or the goodwill attaching thereto by virtue of the rights hereby granted to the Licensee or through the Licensee's use of the Licensed Marks, either before, on or after the date of this Agreement, it being the intention of the parties that all use of the Licensed Marks by the Licensee shall at all times inure to the benefit of the Licensor.

9.2 Licensee hereby represents and warrants that it has the full power and authority to enter into this Agreement and that its execution, delivery and performance of this Agreement has been duly authorized by all required corporate action by Licensee.

9.3 Licensor hereby represents and warrants that (i) it has the full power and authority to grant to Licensee all of the rights granted to Licensee herein and that its execution, delivery and performance of this Agreement has been duly authorized by all required corporate action by Licensor, (ii) Licensor and its affiliates are the sole legal and beneficial owners of the Licensed Marks, and (iii) it is unaware of any rights in the Licensed

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Marks superior to its rights or those of its affiliates.

LAW AND CONSTRUCTION

10.1 This Agreement is governed by and shall be construed in accordance with the laws of England and Wales.

ARBITRATION

11.1 All disputes between the parties arising out of the circumstances and relationships contemplated by this Agreement including disputes relating to the validity, construction or interpretation of this Agreement and including disputes relating to pre-contractual representations shall be settled by arbitration as follows:

11.2 The parties hereby agree to cooperate in good faith to resolve any disputes, claims or controversies that may arise hereunder or with respect to the performance by either party of its obligations as contemplated hereby.

11.3 In the event that any dispute, claim or controversy shall not be so resolved by the parties between themselves, the parties agree that any and all disputes, claims or controversies arising out of or relating to this Agreement or a breach thereof, whether grounded in common law or statutory law, shall be finally settled in accordance with the Arbitration Rules of the International Chamber of Commerce in effect on the date hereof. Save as otherwise expressly provided herein the procedural rules shall be the rules of the High Court in England and Wales and the lex curiae shall be the law of England and Wales.

11.4 The number of arbitrators shall be three, chosen in accordance with the procedures set out in this Clause 11. The award of the arbitrators shall be final and binding on the parties.

11.5 Each party shall appoint one arbitrator. If within (30) days after receipt of the claimant's notification of the appointment of an arbitrator the respondent has not notified the claimant of the arbitrator it appoints, the second arbitrator shall be appointed by the appointing authority.

11.6 The arbitrators thus appointed shall choose a further arbitrator who will act as the presiding arbitrator of the tribunal. If within (30) days after the appointment of arbitrators under Clause 11.5 above, they have not agreed upon the choice of the presiding arbitrator, then at the request of any party to the arbitration proceeding the presiding arbitrator shall be appointed by the appointing authority.

11.7 The Chartered Institute of Arbitrators, London, England shall be the appointing authority.

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11.8 At the request of any party to the arbitration ("requesting party") the arbitrators shall order the other party ("furnishing party") to supply and furnish to the requesting party (the cost of which shall be reimbursed upon demand by the requesting party to the furnishing party) true and complete copies of the relevant documents and materials (the "Relevant Materials") and to produce to the arbitral tribunal any or all of the Relevant Material and/or copies thereof as any part of the arbitral tribunal shall require.

11.9 The procedures leading to the production of Relevant Material under this paragraph shall be determined by the arbitrators, and may include the preparation of lists of Relevant Material for initial evaluation by the requesting party prior to disclosure and/or inspection of Relevant Material by the requesting party prior to supply and furnishing the copies. In making such determination, the arbitrators shall take into account the urgency with which the Relevant Material should be brought before the arbitral tribunal.

11.10 No party shall use or disclose any Relevant Material obtained under this paragraph for any purpose except in the course of the conduct of the arbitration and (as far as applicable) proceedings before any court, and then only to the extent necessary for the implementation and enforcement of any aware of the arbitrators.

11.11 The arbitration, including the making of the award, shall take place in London, U.K.

11.12 All submissions and awards in relation to arbitration hereunder shall be made in English and all arbitration proceedings shall be conducted in English.

11.13 The failure or refusal of either party to submit to arbitration in accordance with this Clause 11 shall be deemed a breach of this Agreement. If either party seeks and secures judicial intervention requiring enforcement of this arbitration provision, such party shall be entitled to recover from the other party in such judicial proceeding all costs and expenses, including reasonable attorneys' fees, that it was thereby required to incur.

11.14 The procedures specified in this Clause 11 shall be the sole and exclusive procedures for the resolution of disputes between the parties arising out of or relating this Agreement; provided, however, that a party, without prejudice to the above procedures, may seek equitable remedies, including without limitation, specific performance, a preliminary injunction or other provisional judicial relief if in its sole judgment such action is necessary . to avoid irreparable damage or to preserve the status quo.

NOTICES

12.1 Any notice or other communication to be given by one party to any other party under, or in connection with the matters contemplated by, this Agreement shall be in writing and signed by or on behalf of the party giving it and may be served by delivering it or sending it by fax, pre-paid recorded delivery or registered or certified post to the address and for the attention of the relevant party set out in Clause 12.2 (or as otherwise notified from time to time hereunder). Any

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notice so served by hand, fax or post shall be deemed to have been received

(a) in the case of delivery by hand, when delivered;

(b) in the case of fax, twelve (12) hours after the time of dispatch;

(c) in the case of pre-paid recorded delivery or registered post, forty-eight (48) hours from the date of posting.

12.2 The addresses of the parties for the purpose of Clause 12.1 are as follows:

Address: Nycomed Amersham plc
Amersham Place
Little Chalfont
Buckinghamshire HP7 9NA, England
UK
Att: Robert Allnutt, Esq.

Fax: 44 1494 542242

Address: Amersham Pharmacia Biotech AB
Bjorkgatan 30
SE-751 84 Uppsala
Sweden
Att: Ulf Lundberg, Esq.

Fax: 46 18 165 322

Address: Curtis, Mallet-Prevost, Colt & Mosle
101 Park Avenue
New York, NY 10178
Att: Eric Gilioli, Esq.

Fax: (212) 697-1559

Address: Biochrom Limited
Cambridge Science Park
Milton Road
Cambridge CB4 4FJ
England
Att: Barry Brown

Fax: 44 1223 420238

Address: Goodwin, Procter & Hoar LLP

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Exchange Place
Boston, MA 02109

Att: H. David Henken, P.C.

Fax: (617) 523-1231

Address: Cameron McKenna
Mitre House
160 Aldersgate Street
London, EC1A 4DD
Attention: Guilherme Brafman

Fax: 44-171-367-2000

NON-ASSIGNABILITY

13.1 The Licensee may not nor may not purport to assign, transfer, change or part with all or any of its rights and/or obligations under this Agreement or sub-contract the performance of any of its obligations under this Agreement without the prior written consent of the Licensor. A change of control of the Licensee shall be deemed an assignment hereunder. For purposes of this Clause 13.1, "control" shall mean the ownership of the majority of ordinary share capital or the ability to cast the majority of the votes at a general meeting of Licensee, to appoint the majority of the board of directors or to direct the general management of Licensee. The sale of substantially all of the assets of Licensee shall also be deemed a change of control for purposes of this Clause 13.1.

13.2 Any right, power, privilege or remedy of a party under or pursuant to this Agreement shall not be capable of being waived or varied otherwise than by an express waiver or variation in writing.

13.3 No failure or delay by any party in exercising any right, power, privilege or remedy shall impair such right, power, privilege or remedy or operate or be construed as a waiver or variation thereof or preclude its exercise at any subsequent time or on any subsequent occasion and no single or partial exercise of any such right, power, privilege or remedy shall preclude any other or further exercise thereof or the exercise of any other right, power, privilege or remedy.

SEVERANCE

14.1 If any provision of this Agreement is held to be invalid or unenforceable, then such provision shall (so far as invalid or unenforceable) be given no effect and shall be deemed not to

be included in this Agreement but without invalidating any of the remaining provisions of this Agreement. The parties shall then use all reasonable endeavors to replace the invalid or unenforceable provisions by a valid and enforceable substitute provision the effect of which is as close as possible to the intended effect of the invalid or unenforceable provision.

ENTIRE AGREEMENT

15.1 This Agreement, including the Schedules referred to herein, is complete, reflects the entire agreement of the parties with respect to its subject matter, and supersedes all previous written or oral negotiations, commitments and writings in connection therewith.

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In witness whereof, the parties have executed this Agreement as of the date first above written.

NYCOMED AMERSHAM PLC

By:

Name:
Title:

BIOCHROM LIMITED

By:

Name:
Title:

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Schedule 1

Licensed Marks

Corporate Trademarks;
AMERSHAM
22 December 1998

AMERSHAM

Country	App. No.	Reg. No.
Argentina		1515753
		1515755
		1797465
		1515752
		1515751
		1515754
Australia		B359261
		B359260
		B400211
		B400213
		B400214
		B400212
Austria		97957
Benelux		366718
Brazil		817657223
	817657231	
	817657240	
	817657258	
		817657207
	817657215	
		817657266
Canada		353995
France		1714292
Germany		647795
Greece		128839

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Country	App. No.	Reg. No.
Hong Kong		5615A-B1996
India	703032	
Indonesia		323408
		323405
		323407
		323406
		323409
		323410
Italy		393994
		376290
Japan		1708820
		1773613
		1551216
		1708820
Mexico		473600
		473599
		473601
		473602
		473603
		473598
New Zealand		160043
		160042
		160041
		160040
		106039
		160038
		160037
South Africa		85/5523
		85/5520
		85/5521
		85/5522
		85/5524
		85/5525
		85/55265
Spain		971081
		971080

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Country	App. No.	Reg. No.
		971079
		971078
		991327
		1026239
Sweden		174766
		179341
Switzerland		344329
Taiwan		800207
		777864
	85-014275	
United Arab Emirates		3214
		3211
USA		1457058

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Schedule 2

Form of Licensed Marks

the logotype (lettering and symbol) and 'drop' symbol

logotype specifications

o how to use our logotype and the 'drop' symbol
o the Amersham Pharmacia Biotech name
o artwork reference

amersham/pharmacia biotech

The company symbol and logotype are principal items of the identity and, as such, they must be employed with great care in accordance with the rules and guidelines set our in this document, together with any other instructions issued by Corporate Communications in Uppsala.

The logotype D consists of the symbol (or 'drop' as it is often called) and specifically centered lettering. In normal circumstances they should appear together, although on certain occasions, where indicated, the 'drop' symbol O may appear without the lettering. The lettering in this form must not be used on its own.

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amersham pharmacia biotech

The 'drop' symbol and the logotype may only be reproduced using the highest quality originals. No attempt must be made to reproduce either mark from anything other than the reproduction artwork or computer files supplied by Corporate Communications in Uppsala.

To afford these marks their appropriate status and to ensure that they are clearly recognized, an area around each device must be kept free of other visual elements. No additions or amendments to the 'drop' symbol or logotype are permitted.

amersham pharmacia biotech

Creative use of the symbol and logotype is only allowed with the express permission of the head of Corporate Communications in Uppsala.

The 'drop' symbol should always be reproduced in high gloss silver/chrome or, where this is not possible, in black. The lettering should appear in black only. Both the 'drop' symbol and the full logotype should normally appear on a white background; a colored background may be used (although this should be avoided as far as possible) as long as the color does not deduct from their visibility. They may also appear white out of black O using the artworks created for this purpose.

[The 'drop' symbol with technical specifications]

[The 'drop' symbol with technical specifications]

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The keytype should appear on all external communications, including stationery, labels, envelopes, business cards, brochures, mailings, advertisements, other printer material and where possible, all types of electronic mail, as well as buildings, signs, exhibition material, products and packaging, as directed by these guidelines or as instructed by Corporate Communications. It should also appear on internal communications, e.g., loan's and policies, and may be employed on clothing.

Generally the logotype should appear in a prominent position towards the top of all area in which it appears or, sometimes as a sign off, at the bottom. When used large, the logotype should normally be placed centrally and when smaller towards the right (approximately two-thirds of the way across the page or area in which it sits).

The 'drop' symbol may be used as a decorative element and also as a principal identifier when there is restricted space (as long as there are other elements to support or qualify it, such as a line of text). It may also appear with other elements for specific applications as directed by Corporate Communications in Uppsala.

[Inaccurate versions of the 'drop' symbol and logotype reproduced]

the Amersham Pharmacia Biotech name

In legal context
The full name of the relevant legal entity should be used including the appropriate suffix, e.g. AD or Inc.

logotype specification

colours
logotype lettering
black
white out of black
logotype 'drop' symbol:
high gloss silver/chrome or black
high gloss silver/chrome or white out of black

CONFIDENTIAL INFORMATION HAS BEEN OMITTED PURSUANT TO RULE 406 UNDER THE SECURITIES ACT AND HAS BEEN FILED SEPARATELY, WITH THE COMMISSION. THE LOCATIONS OF THE OMITTED INFORMATION HAVE BEEN INDICATED WITH ASTERISKS.

Signing off letters and documents
The full name should also be used when signing off letters and documents. It should be set after the author's name and accompanied by the department name. Direct telephone number and e-mail address may be added below.

In daily speech
In all external communications the company must always be referred to as "Amersham Pharmacia Biotech", unless a specific regional or sales company is being referred to. Should an abbreviated terms of the company name be needed, "AP Biotech must be used. Under no circumstances should any other forms of the company name be employed, e.g. APB

In body copy
In body copy the company is always called Amersham Pharmacia Biotech, unless a specific regional or sales company is being referred to.

Responsibility for our Identity.
It is the responsibility of the head of all companies and departments within Amersham Pharmacia Biotech, as it is of everyone who uses the information set out in these pages, to ensure the identity guidelines of the company are followed

Exceptions to the rule may not be made without the prior approval of Corporate Communications in Uppsala. Any questions regarding the identity or its implementation should also be forwarded there.

logotype artwork
use only the specially prepared artwork to reproduce the symbol and logotype.

log ba (&F).aps/log blk&F.tps
master artwork for the logotype solid black (although this may also be used to produce separated fall artwork)

log ba &F.eps
master artwork for the logotype solid black (produce separated artwork)

log wh 85.eps
master artwork for the logotype when reproduced whilte out of black when less than 65mm

Log wh +85. eps
master artwork for the logotype when reproduced white out of black when more than 65mm

Sym blk.eps
master artwork for the 'drop' symbol reproducing as solid black (although this may be used to produce separated full artwork)

Sym F. eps
master artwork for the 'drop' symbol (separated full artwork)

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Amersham Pharmacia Biotech, Corporate Communications, Uppsala, Sweden tel 46 18165000 fax 46 1816 64 22

Sym wh.eps
master artwork for the 'drop' symbol when reproduced white out of black.

EXHIBIT 10.5

FORM OF
HARVARD BIOSCIENCE, INC.
EMPLOYMENT AGREEMENT

This EXECUTIVE EMPLOYMENT AGREEMENT ("Agreement") is made as of the ____ day of _____, 2000, between Harvard Bioscience, Inc., a Delaware corporation (the "Company"), and Chane Graziano ("Executive"). For purposes of this Agreement the "Company" shall refer to the Company and any of its predecessors.

WHEREAS, the Company desires to employ Executive and Executive desires to be employed by the Company on the terms contained herein.

NOW, THEREFORE, in consideration of the mutual covenants and agreements herein contained and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the parties agree as follows:

1. EMPLOYMENT. The term of this Agreement shall extend from [_____] (the "Commencement Date") until the second anniversary of the Commencement Date; provided, however, that the term of this Agreement shall automatically be extended for two additional years on each second anniversary of the Commencement Date unless, not less than 90 days prior to each such date, either party shall have given notice to the other that it does not wish to extend this Agreement; provided, further, that if a Change in Control occurs during the original or extended term of this Agreement, the term of this Agreement shall, notwithstanding anything in this sentence to the contrary, continue in effect for a period of not less than eighteen (18) months beyond the month in which the Change in Control occurred. The term of this Agreement shall be subject to termination as provided in Paragraph 6 and may be referred to herein as the "Period of Employment."

2. POSITION AND DUTIES. During the Period of Employment, Executive shall serve as the Chief Executive Officer and member of the Board of Directors of the Company, and shall have supervision and control over and responsibility for the day-to-day business and affairs of those functions and operations of the Company and shall have such other powers and duties as may from time to time be prescribed by the Board of Directors of the Company (the "Board"), provided that such duties are consistent with Executive's position or other positions that he may hold from time to time. Executive shall devote his full working time and efforts to the business and affairs of the Company. Notwithstanding the foregoing, Executive may serve on other boards of directors, with the approval of the Board, or engage in religious, charitable or other community activities as long as such services and activities are disclosed to the Board and do not materially interfere with Executive's performance of his duties to the Company as provided in this Agreement.

3. COMPENSATION AND RELATED MATTERS.

(a) BASE SALARY AND INCENTIVE COMPENSATION. Executive's initial annual base salary shall be Two Hundred Seventy-Five Thousand ($275,000) Dollars. Executive's base salary shall be redetermined annually by the Board or a Committee thereof. The base salary in effect at any given time is referred to herein as "Base Salary." The Base Salary shall be payable in substantially equal bi-weekly installments. In addition to Base Salary, Executive shall be eligible to receive cash incentive compensation as determined by the Board or a Committee thereof from time to time, and shall also be eligible to participate in such incentive compensation plans as the Board or a Committee thereof shall determine from time to time for employees of the same status within the hierarchy of the Company.

(b) EXPENSES. Executive shall be entitled to receive prompt reimbursement for all reasonable expenses incurred by him in performing services hereunder during the Period of Employment, in accordance with the policies and procedures then in effect and established by the Company for its senior executive officers.

(c) OTHER BENEFITS. During the Period of Employment, Executive shall be entitled to continue to participate in or receive benefits under all of the Company's Employee Benefit Plans in effect on the date hereof, or under plans or arrangements that provide no less favorable treatment to the Executive then the Employee Benefit Plans provided to other members of the Company's senior management. As used herein, the term "Employee Benefit Plans" includes, without limitation, each pension and retirement plan; supplemental pension, retirement and deferred compensation plan; savings and profit-sharing plan; stock ownership plan; stock purchase plan; stock option plan; life insurance plan; medical insurance plan; disability plan; and health and accident plan or arrangement established and maintained by the Company on the date hereof for employees of the same status within the hierarchy of the Company. During the Period of Employment, Executive shall be entitled to an automobile or to a lease for an automobile (the "Company Car") for up to $1,500.00 per month and the cost of automobile insurance for such Company Car. To the extent that the scope or nature of benefits described in this section is determined under the policies of the Company based in whole or in part on the seniority or tenure of an employee's service, Executive shall be deemed to have a tenure with the Company equal to the actual time of Executive's service with the Company. During the Period of Employment, Executive shall be entitled to participate in or receive benefits under any employee benefit plan or arrangement which may, in the future, be made available by the Company to its executives and key management employees, subject to and on a basis consistent with the terms, conditions and overall administration of such plan or arrangement. Any payments or benefits payable to Executive under a plan or arrangement referred to in this Subparagraph 3(c) in respect of any calendar year during which Executive is employed by the Company for less than the whole of such year shall, unless otherwise provided in the applicable plan or arrangement, be prorated in accordance with the number of days in such calendar year during which he is so employed. Should any such payments or benefits accrue on a fiscal (rather than calendar) year, then the proration in the preceding sentence shall be on the basis of a fiscal year rather than calendar year.

(d) VACATIONS. Executive shall be entitled to [_____(___)] paid vacation days in each calendar year, which shall be accrued ratably during the calendar year. Executive shall also be entitled to all paid holidays given by the Company to its executives. To the extent that the scope or nature of benefits described in this section are determined under the policies of the Company based in whole or in part on the seniority or tenure of an employee's service, Executive shall be deemed to have a tenure with the Company equal to the actual time of Executive's service with Company.

4. UNAUTHORIZED DISCLOSURE.

(a) CONFIDENTIAL INFORMATION. Executive acknowledges that in the course of his employment with the Company (and, if applicable, its predecessors), he has been allowed to become, and will continue to be allowed to become, acquainted with the Company's business affairs, information, trade secrets, and other matters which are of a proprietary or confidential nature, including but not limited to the Company's and its affiliates' and predecessors' operations, business opportunities, price and cost information, finance, customer information, business plans, various sales techniques, manuals, letters, notebooks, procedures, reports, products, processes, services, and other confidential information and knowledge (collectively the "Confidential Information") concerning the Company's and its affiliates' and predecessors' business. The Company agrees to provide on an ongoing basis such Confidential Information as the Company deems necessary or desirable to aid Executive in the performance of his duties. Executive understands and acknowledges that such Confidential Information is confidential, and he agrees not to disclose such Confidential Information to anyone outside the Company except to the extent that (i) Executive deems such disclosure or use reasonably necessary or appropriate in connection with performing his duties on behalf of the Company; (ii) Executive is required by order of a court of competent jurisdiction (by subpoena or similar process) to disclose or discuss any Confidential Information, provided that in such case, Executive shall promptly inform the Company of such event, shall cooperate with the Company in attempting to obtain a protective order or to otherwise restrict such disclosure, and shall only disclose Confidential Information to the minimum extent necessary to comply with any such court order; (iii) such Confidential Information becomes generally known to and available for use in the Company's industry (the "laboratory analytical instruments industry"), other than as a result of any action or inaction by Executive; or (iv) such information has been rightfully received by a member of the laboratory analytical instruments industry or has been published in a form generally available to the laboratory analytical instruments industry prior to the date Executive proposes to disclose or use such information. Executive further agrees that he will not during employment and/or at any time thereafter use such Confidential Information in competing, directly or indirectly, with the Company. At such time as Executive shall cease to be employed by the Company, he will immediately turn over to the Company all Confidential Information, including papers, documents, writings, electronically stored information, other property, and all copies of them provided to or created by him during the course of his employment with the Company.

(b) HEIRS, SUCCESSORS, AND LEGAL REPRESENTATIVES. The foregoing provisions of this Paragraph 4 shall be binding upon Executive's heirs, successors, and legal representatives. The provisions of this Paragraph 4 shall survive the termination of this Agreement for any reason.

5. COVENANT NOT TO COMPETE. In consideration for Executive's employment by the Company under the terms provided in this Agreement and as a means to aid in the performance and enforcement of the terms of the provisions of Paragraph 4, Executive agrees that

(a) during the term of Executive's employment with the Company and for a period of twelve (12) months thereafter, regardless of the reason for termination of employment, Executive will not, directly or indirectly, as an owner, director, principal, agent, officer, employee, partner, consultant, servant, or otherwise, carry on, operate, manage, control, or become involved in any manner with any business, operation, corporation, partnership, association, agency, or other person or entity which is engaged in a business that produces products that compete directly with any of the Company's products which are produced by the Company or any affiliate of the Company or which the Company or any affiliate of the Company has active plans to produce as of the date of Executive's termination of employment with the Company, in any area or territory in which the Company or any affiliate of the Company conducts or has active plans to conduct operations as of the date of the Executive's termination of employment with the Company; provided, however, that the foregoing shall not prohibit Executive from owning up to one percent (1%) of the outstanding stock of a publicly held company engaged in the laboratory analytical instruments industry; and

(b) during the term of Executive's employment with the Company and for a period of twelve (12) months thereafter, regardless of the reason for termination of employment, Executive will not directly or indirectly solicit or induce any present or future employee of the Company or any affiliate of the Company to accept employment with Executive or with any business, operation, corporation, partnership, association, agency, or other person or entity with which Executive may be associated, and Executive will not hire or employ or cause any business, operation, corporation, partnership, association, agency, or other person or entity with which Executive may be associated to hire or employ any present or future employee of the Company.

Should Executive violate any of the provisions of this Paragraph, then in addition to all other rights and remedies available to the Company at law or in equity, the duration of this covenant shall automatically be extended for the period of time from which Executive began such violation until he permanently ceases such violation.

6. TERMINATION. Executive's employment hereunder may be terminated without any breach of this Agreement under the following circumstances:

(a) DEATH. Executive's employment hereunder shall terminate upon his death.

(b) DISABILITY. If, as a result of Executive's incapacity due to physical or mental illness, Executive shall have been absent from his duties hereunder on a full-time basis for one

hundred eighty (180) calendar days in the aggregate in any twelve (12) month period, the Company may terminate Executive's employment hereunder.

(c) TERMINATION BY COMPANY FOR CAUSE. At any time during the Period of Employment, the Company may terminate Executive's employment hereunder for Cause if such termination is approved by not less than a majority of the Board at a meeting of the Board called and held for such purpose. For purposes of this Agreement, "Cause" shall mean: (A) conduct by Executive constituting a material act of willful misconduct in connection with the performance of his duties, including, without limitation, misappropriation of funds or property of the Company or any of its affiliates other than the occasional, customary and de minimis use of Company property for personal purposes; (B) criminal or civil conviction of Executive, a plea of nolo contendere by Executive or conduct by Executive that would reasonably be expected to result in material injury to the reputation of the Company if he were retained in his position with the Company, including, without limitation, conviction of a felony involving moral turpitude; (C) continued, willful and deliberate non-performance by Executive of his duties hereunder (other than by reason of Executive's physical or mental illness, incapacity or disability) which has continued for more than thirty (30) days following written notice of such non-performance from the Board; (D) a breach by Executive of any of the provisions contained in Paragraphs 4 and 5 of this Agreement; or (E) a violation by Executive of the Company's employment policies which has continued following written notice of such violation from the Board.

(d) TERMINATION WITHOUT CAUSE. At any time during the Period of Employment, the Company may terminate Executive's employment hereunder without Cause if such termination is approved by a majority of the Board at a meeting of the Board called and held for such purpose. Any termination by the Company of Executive's employment under this Agreement which does not constitute a termination for Cause under Subparagraph 6(c) or result from the death or disability of the Executive under Subparagraph 6(a) or (b) shall be deemed a termination without Cause. If the Company provides notice to Executive under Paragraph 1 that it does not wish to extend the Period of Employment, such action shall be deemed a termination without Cause.

(e) TERMINATION BY EXECUTIVE. At any time during the Period of Employment, Executive may terminate his employment hereunder for any reason, including but not limited to Good Reason. If Executive provides notice to the Company under Paragraph 1 that he does not wish to extend the Period of Employment, such action shall be deemed a voluntary termination by Executive and one without Good Reason. For purposes of this Agreement, "Good Reason" shall mean that Executive has complied with the "Good Reason Process" (hereinafter defined) following the occurrence of any of the following events: (A) a substantial diminution or other substantive adverse change, not consented to by Executive, in the nature or scope of Executive's responsibilities, authorities, powers, functions or duties; (B) any removal, during the Period of Employment, from Executive of his title of Chief Executive Officer; (C) an involuntary reduction in Executive's Base Salary except for across-the-board reductions similarly affecting all or substantially all management employees; (D) a breach by the Company of any of its other material obligations under this Agreement and the failure of the Company to cure such breach

within thirty (30) days after written notice thereof by Executive; (E) the involuntary relocation of the Company's offices at which Executive is principally employed or the involuntary relocation of the offices of Executive's primary workgroup to a location more than 30 miles from such offices, or the requirement by the Company that Executive be based anywhere other than the Company's offices at such location on an extended basis, except for required travel on the Company's business to an extent substantially consistent with Executive's business travel obligations; or (F) the failure of the Company to obtain the agreement from any successor to the Company to assume and agree to perform this Agreement as required by Paragraph 10. "Good Reason Process" shall mean that (i) Executive reasonably determines in good faith that a "Good Reason" event has occurred; (ii) Executive notifies the Company in writing of the occurrence of the Good Reason event; (iii) Executive cooperates in good faith with the Company's efforts, for a period not less than ninety (90) days following such notice, to modify Executive's employment situation in a manner acceptable to Executive and Company; and (iv) notwithstanding such efforts, one or more of the Good Reason events continues to exist and has not been modified in a manner acceptable to Executive. If the Company cures the Good Reason event in a manner acceptable to Executive during the ninety (90) day period, Good Reason shall be deemed not to have occurred.

(f) NOTICE OF TERMINATION. Except for termination as specified in Subparagraph 6(a), any termination of Executive's employment by the Company or any such termination by Executive shall be communicated by written Notice of Termination to the other party hereto. For purposes of this Agreement, a "Notice of Termination" shall mean a notice which shall indicate the specific termination provision in this Agreement relied upon.

(g) DATE OF TERMINATION. "Date of Termination" shall mean: (A) if Executive's employment is terminated by his death, the date of his death; (B) if Executive's employment is terminated on account of disability under Subparagraph 6(b) or by the Company for Cause under Subparagraph 6(c), the date on which Notice of Termination is given; (C) if Executive's employment is terminated by the Company under Subparagraph 6(d), sixty (60) days after the date on which a Notice of Termination is given; and (D) if Executive's employment is terminated by Executive under Subparagraph 6(e), thirty (30) days after the date on which a Notice of Termination is given.

7. COMPENSATION UPON TERMINATION OR DURING DISABILITY.

(a) DEATH. If Executive's employment terminates by reason of his death, the Company shall, within ninety (90) days of death, pay in a lump sum amount to such person as Executive shall designate in a notice filed with the Company or, if no such person is designated, to Executive's estate, Executive's accrued and unpaid Base Salary to the date of his death, plus his accrued and unpaid incentive compensation, if any, under Subparagraph 3(a). Upon the death of Executive, all unvested stock options shall immediately vest in Executive's estate or other legal representatives and become exercisable. All other stock-based grants and awards held by Executive shall vest or be canceled upon the death of Executive in accordance with their terms. For a period of one (1) year following the Date of Termination, the Company shall pay such

health insurance premiums as may be necessary to allow Executive's spouse and dependents to receive health insurance coverage substantially similar to coverage they received prior to the Date of Termination. In addition to the foregoing, any payments to which Executive's spouse, beneficiaries, or estate may be entitled under any employee benefit plan shall also be paid in accordance with the terms of such plan or arrangement. Such payments, in the aggregate, shall fully discharge the Company's obligations hereunder.

(b) DISABILITY. During any period that Executive fails to perform his duties hereunder as a result of incapacity due to physical or mental illness, Executive shall continue to receive his accrued and unpaid Base Salary and accrued and unpaid incentive compensation, if any, under Subparagraph 3(a), until Executive's employment is terminated due to disability in accordance with Subparagraph 6(b) or until Executive terminates his employment in accordance with Subparagraph 6(e), whichever first occurs. Upon the Date of Termination, all unvested stock options shall immediately vest and become exercisable. All other stock-based grants and awards held by Executive shall vest or be canceled upon the Date of Termination in accordance with their terms. For a period of one (1) year following the Date of Termination, the Company shall pay such health insurance premiums as may be necessary to allow Executive and Executive's spouse and dependents to receive health insurance coverage substantially similar to coverage they received prior to the Date of Termination. Upon termination due to death prior to the termination first to occur as specified in the preceding sentence, Subparagraph 7(a) shall apply.

(c) TERMINATION OTHER THAN FOR GOOD REASON. If Executive's employment is terminated by Executive other than for Good Reason as provided in Subparagraph 6(e), then the Company shall, through the Date of Termination, pay Executive his accrued and unpaid Base Salary at the rate in effect at the time Notice of Termination is given. Thereafter, the Company shall have no further obligations to Executive except as otherwise expressly provided under this Agreement, provided any such termination shall not adversely affect or alter Executive's rights under any employee benefit plan of the Company in which Executive, at the Date of Termination, has a vested interest, unless otherwise provided in such employee benefit plan or any agreement or other instrument attendant thereto. In addition, all vested but unexercised stock options held by Executive as of the Date of Termination must be exercised by Executive within three (3) months following the Date of Termination or by the end of the option term, if earlier. All other stock-based grants and awards held by Executive shall vest or be canceled upon the Date of Termination in accordance with their terms.

(d) TERMINATION FOR GOOD REASON. If Executive terminates his employment for Good Reason as provided in Subparagraph 6(e) or if Executive's employment is terminated by the Company without Cause as provided in Subparagraph 6(d), then the Company shall, through the Date of Termination, pay Executive his accrued and unpaid Base Salary at the rate in effect at the time Notice of Termination is given and his accrued and unpaid incentive compensation, if any, under Subparagraph 3(a). In addition, subject to signing by Executive of a general release of claims in a form and manner satisfactory to the Company,

(i) the Company shall pay Executive an amount equal to two (2) times the sum of Executive's Average Base Salary and his Average Incentive Compensation (the "Severance Amount"). The Severance Amount shall be paid out in substantially equal bi-weekly installments over twelve (12) months, in arrears or in a lump sum. For purposes of this Agreement, "Average Base Salary" shall mean the average of the annual Base Salary received by Executive for each of the three (3) immediately preceding fiscal years or such fewer number of complete fiscal years as Executive may have been employed by the Company or the amount of Base Salary for the prior fiscal year, whichever is higher. For purposes of this Agreement, "Average Incentive Compensation" shall mean the average of the annual incentive compensation under Subparagraph 3(a) received by Executive for the three (3) immediately preceding fiscal years or such fewer number of complete fiscal years as Executive may have been employed by the Company or the amount of incentive compensation for the prior fiscal year, whichever is higher. In no event shall "Average Incentive Compensation" include any sign-on bonus, retention bonus or any other special bonus. Notwithstanding the foregoing, if the Executive breaches any of the provisions contained in Paragraphs 4 and 5 of this Agreement, all payments of the Severance Amount shall immediately cease. Furthermore, in the event Executive terminates his employment for Good Reason as provided in Subparagraph 6(e), he shall be entitled to the Severance Amount only if he provides the Notice of Termination provided for in Subparagraph 6(f) within thirty (30) days after the occurrence of the event or events which constitute such Good Reason as specified in clauses (A), (B), (C), (D) and (E) of Subparagraph 6(e); and

(ii) upon the Date of Termination, each unvested stock option that would otherwise vest during the next twenty-four (24) months shall accelerate and immediately vest. All other stock-based grants and awards held by Executive that would otherwise vest during the next twenty-four (24) months shall accelerate and immediately vest upon the Date of Termination; and

(iii) in addition to any other benefits to which Executive may be entitled in accordance with the Company's then existing severance policies, the Company shall, for a period of one (1) year commencing on the Date of Termination, pay such health insurance premiums as may be necessary to allow Executive and Executive's spouse and dependents to continue to receive health insurance coverage.

(e) TERMINATION FOR CAUSE. If Executive's employment is terminated by the Company for Cause as provided in Subparagraph 6(c), then the Company shall, through the Date of Termination, pay Executive his accrued and unpaid Base Salary at the rate in effect at the time Notice of Termination is given. Thereafter, the Company shall have no further obligations to Executive except as otherwise expressly provided under this Agreement, provided any such termination shall not adversely affect or alter Executive's rights under any employee benefit plan of the Company in which Executive, at the Date of Termination, has a vested interest, unless otherwise provided in such employee benefit plan or any agreement or other instrument attendant thereto. In addition, all stock options held by Executive as of the Date of Termination shall

immediately terminate and be of no further force and effect, and all other stock-based grants and awards shall be canceled or terminated in accordance with their terms.

(f) Nothing contained in the foregoing Subparagraphs 7(a) through 7(e) shall be construed so as to affect Executive's rights or the Company's obligations relating to agreements or benefits which are unrelated to termination of employment.

8. CHANGE IN CONTROL PAYMENT. The provisions of this Paragraph 8 set forth certain terms of an agreement reached between Executive and the Company regarding Executive's rights and obligations upon the occurrence of a Change in Control of the Company. These provisions are intended to assure and encourage in advance Executive's continued attention and dedication to his assigned duties and his objectivity during the pendency and after the occurrence of any such event. These provisions shall apply in lieu of, and expressly supersede, the provisions of Subparagraph 7(d)(i) regarding severance pay upon a termination of employment, if such termination of employment occurs within eighteen (18) months after the occurrence of the first event constituting a Change of Control, provided that such first event occurs during the Period of Employment. These provisions shall terminate and be of no further force or effect beginning eighteen (18) months after the occurrence of a Change of Control.

(a) CHANGE IN CONTROL.

(i) If within eighteen (18) months after the occurrence of the first event constituting a Change in Control, Executive's employment is terminated by the Company without Cause as provided in Subparagraph 6(d) or Executive terminates his employment for Good Reason as provided in Subparagraph 6(e), then the Company shall pay Executive a lump sum in cash in an amount equal to three (3) times the sum of (A) Executive's current or most recent Base Salary plus (B) Executive's most recent annual incentive compensation under Subparagraph 3(a) for the most recent fiscal year, excluding any sign-on bonus, retention bonus or any other special bonus; and

(ii) Notwithstanding anything to the contrary in any applicable option agreement or stock-based award agreement, upon a Change in Control, all stock options and other stock-based awards granted to Executive by the Company shall immediately accelerate and become exercisable or non-forfeitable as of the effective date of such Change in Control. Executive shall also be entitled to any other rights and benefits with respect to stock-related awards, to the extent and upon the terms provided in the employee stock option or incentive plan or any agreement or other instrument attendant thereto pursuant to which such options or awards were granted; and

(iii) The Company shall, for a period of one (1) year commencing on the Date of Termination, pay such health insurance premiums as may be necessary to allow Executive, Executive's spouse and dependents to continue to receive health insurance coverage substantially similar to the coverage they received prior to the Date of Termination.

(b) GROSS UP PAYMENT.

(i) Anything in this Agreement to the contrary notwithstanding, in the event it shall be determined that any compensation, payment or distribution by the Company to or for the benefit of Executive, whether paid or payable or distributed or distributable pursuant to the terms of this Agreement or otherwise (the "Severance Payments"), would be subject to the excise tax imposed by Section 4999 of the Internal Revenue Code of 1986, as amended (the "Code"), or any interest or penalties are incurred by Executive with respect to such excise tax (such excise tax, together with any such interest and penalties, are hereinafter collectively referred to as the "Excise Tax"), then Executive shall be entitled to receive an additional payment (a "Gross-Up Payment") such that the net amount retained by Executive, after deduction of any Excise Tax on the Severance Payments, any Federal, state, and local income tax, employment tax and Excise Tax upon the payment provided by this subsection, and any interest and/or penalties assessed with respect to such Excise Tax, shall be equal to the Severance Payments.

(ii) Subject to the provisions of Subparagraph 8(b)(iii), all determinations required to be made under this Subparagraph 8(b)(ii), including whether a Gross-Up Payment is required and the amount of such Gross-Up Payment, shall be made by KPMG LLP or any other nationally recognized accounting firm selected by the Company (the "Accounting Firm"), which shall provide detailed supporting calculations both to the Company and Executive within fifteen (15) business days of the Date of Termination, if applicable, or at such earlier time as is reasonably requested by the Company or Executive. For purposes of determining the amount of the Gross-Up Payment, Executive shall be deemed to pay federal income taxes at the highest marginal rate of federal income taxation applicable to individuals for the calendar year in which the Gross-Up Payment is to be made, and state and local income taxes at the highest marginal rates of individual taxation in the state and locality of Executive's residence on the Date of Termination, net of the maximum reduction in federal income taxes which could be obtained from deduction of such state and local taxes. The initial Gross-Up Payment, if any, as determined pursuant to this Subparagraph 8(b)(iii), shall be paid to Executive within five (5) days of the receipt of the Accounting Firm's determination. Any determination by the Accounting Firm shall be binding upon the Company and Executive. As a result of the uncertainty in the application of Section 4999 of the Code at the time of the initial determination by the Accounting Firm hereunder, it is possible that Gross-Up Payments which will not have been made by the Company should have been made (an "Underpayment"). In the event that the Company exhausts its remedies pursuant to Subparagraph 8(b)(iii) and Executive thereafter is required to make a payment of any Excise Tax, the Accounting Firm shall determine the amount of the Underpayment that has occurred, consistent with the calculations required to be made hereunder, and any such Underpayment, and any interest and penalties imposed on the Underpayment and required to be paid by

Executive in connection with the proceedings described in Subparagraph 8(b)(iii), shall be promptly paid by the Company to or for the benefit of Executive.

(iii) Executive shall notify the Company in writing of any claim by the Internal Revenue Service that, if successful, would require the payment by the Company of the Gross-up Payment. Such notification shall be given as soon as practicable but no later than ten (10) business days after Executive knows of such claim and shall apprise the Company of the nature of such claim and the date on which such claim is requested to be paid. Executive shall not pay such claim prior to the expiration of the 30-day period following the date on which he gives such notice to the Company (or such shorter period ending on the date that any payment of taxes with respect to such claim is due). If the Company notifies Executive in writing prior to the expiration of such period that it desires to contest such claim, provided that the Company has set aside adequate reserves to cover the Underpayment and any interest and penalties thereon that may accrue, Executive shall:

(A) give the Company any information reasonably requested by the Company relating to such claim,

(B) take such action in connection with contesting such claim as the Company shall reasonably request in writing from time to time, including, without limitation, accepting legal representation with respect to such claim by an attorney selected by the Company,

(C) cooperate with the Company in good faith in order to effectively contest such claim, and

(D) permit the Company to participate in any proceedings relating to such claim; provided, however, that the Company shall bear and pay directly all costs and expenses (including additional interest and penalties) incurred in connection with such contest and shall indemnify and hold Executive harmless, on an after-tax basis, for any Excise Tax or income tax, including interest and penalties with respect thereto, imposed as a result of such representation and payment of costs and expenses. Without limitation on the foregoing provisions of this Subparagraph 8(b)(iii), the Company shall control all proceedings taken in connection with such contest and, at its sole option, may pursue or forego any and all administrative appeals, proceedings, hearings and conferences with the taxing authority in respect of such claim and may, at its sole option, either direct Executive to pay the tax claimed and sue for a refund or contest the claim in any permissible manner, and Executive agrees to prosecute such contest to a determination before any administrative tribunal, in a court of initial jurisdiction and in one or more appellate courts, as the Company shall determine; provided, however, that if the Company directs Executive to pay such claim and sue for a refund, the Company shall advance the amount of such payment to Executive on

an interest-free basis and shall indemnify and hold Executive harmless, on an after-tax basis, from any Excise Tax or income tax, including interest or penalties with respect thereto, imposed with respect to such advance or with respect to any imputed income with respect to such advance; and further provided that any extension of the statute of limitations relating to payment of taxes for the taxable year of Executive with respect to which such contested amount is claimed to be due is limited solely to such contested amount. Furthermore, the Company's control of the contest shall be limited to issues with respect to which a Gross-Up Payment would be payable hereunder and Executive shall be entitled to settle or contest, as the case may be, any other issues raised by the Internal Revenue Service or any other taxing authority.

(iv) If, after the receipt by Executive of an amount advanced by the Company pursuant to Subparagraph 8(b)(iii), Executive becomes entitled to receive any refund with respect to such claim, Executive shall (subject to the Company's complying with the requirements of Subparagraph 8(b)(iii)) promptly pay to the Company the amount of such refund (together with any interest paid or credited thereon after taxes applicable thereto). If, after the receipt by Executive of an amount advanced by the Company pursuant to Subparagraph 8(b)(iii), a determination is made that Executive shall not be entitled to any refund with respect to such claim and the Company does not notify Executive in writing of its intent to contest such denial of refund prior to the expiration of 30 days after such determination, then such advance shall be forgiven and shall not be required to be repaid and the amount of such advance shall offset, to the extent thereof, the amount of Gross-Up Payment required to be paid.

(c) DEFINITIONS. For purposes of this Paragraph 8, the following terms shall have the following meanings:

"CHANGE IN CONTROL" shall mean any of the following:

(a) any "person," as such term is used in Sections 13(d) and 14(d) of the Securities Exchange Act of 1934, as amended (the "Act") (other than the Company, any of its subsidiaries, or any trustee, fiduciary or other person or entity holding securities under any employee benefit plan or trust of the Company or any of its subsidiaries), together with all "affiliates" and "associates" (as such terms are defined in Rule 12b-2 under the Act) of such person, shall become the "beneficial owner" (as such term is defined in Rule 13d-3 under the Act), directly or indirectly, of securities of the Company representing twenty-five percent (25%) or more of either (A) the combined voting power of the Company's then outstanding securities having the right to vote in an election of the Company's Board ("Voting Securities") or (B) the then outstanding shares of Company's common stock, par value $0.01 per share ("Common Stock") (other than as a result of an acquisition of securities directly from the Company); or

(b) persons who, as of the Commencement Date, constitute the Company's Board (the "Incumbent Directors") cease for any reason, including, without limitation, as a result of a tender offer, proxy contest, merger or similar transaction, to constitute at least a majority of the Board, provided that any person becoming a director of the Company subsequent to the Commencement Date shall be considered an Incumbent Director if such person's election was approved by or such person was nominated for election by a vote of at least a majority of the Incumbent Directors; but provided further, that any such person whose initial assumption of office is in connection with an actual or threatened election contest relating to the election of members of the Board or other actual or threatened solicitation of proxies or consents by or on behalf of a person other than the Board, including by reason of agreement intended to avoid or settle any such actual or threatened contest or solicitation, shall not be considered an Incumbent Director; or

(c) the stockholders of the Company shall approve (A) any consolidation or merger of the Company where the stockholders of the Company, immediately prior to the consolidation or merger, would not, immediately after the consolidation or merger, beneficially own (as such term is defined in Rule 13d-3 under the Act), directly or indirectly, shares representing in the aggregate more than fifty percent (50%) of the voting shares of the Company issuing cash or securities in the consolidation or merger (or of its ultimate parent corporation, if any), (B) any sale, lease, exchange or other transfer (in one transaction or a series of transactions contemplated or arranged by any party as a single plan) of all or substantially all of the assets of the Company or (C) any plan or proposal for the liquidation or dissolution of the Company.

Notwithstanding the foregoing, a "Change of Control" shall not be deemed to have occurred for purposes of the foregoing clause (a) solely as the result of an acquisition of securities by the Company which, by reducing the number of shares of Common Stock or other Voting Securities outstanding, increases the proportionate number of shares beneficially owned by any person to twenty-five percent (25%) or more of either (A) the combined voting power of all of the then outstanding Voting Securities or (B) Common Stock; PROVIDED, HOWEVER, that if any person referred to in this sentence shall thereafter become the beneficial owner of any additional shares of Voting Securities or Common Stock (other than pursuant to a stock split, stock dividend, or similar transaction or as a result of an acquisition of securities directly from the Company) and immediately thereafter beneficially owns twenty-five percent (25%) or more of either (A) the combined voting power of all of the then outstanding Voting Securities or (B) Common Stock, then a "Change of Control" shall be deemed to have occurred for purposes of the foregoing clause (a).

9. NOTICE. For purposes of this Agreement, notices and all other communications provided for in the Agreement shall be in writing and shall be deemed to have been duly given when delivered or mailed by United States certified mail, return receipt requested, postage prepaid, addressed as follows:

if to the Executive:

At his home address as shown
in the Company's personnel records;

if to the Company:

Harvard Bioscience, Inc.
84 October Hill Road
Holliston, MA 01746-1371
Attention: Board of Directors of Harvard Bioscience, Inc.

with a copy to:

H. David Henken, P.C.
Goodwin, Procter & Hoar LLP
Exchange Place
Boston, MA 02109

or to such other address as either party may have furnished to the other in writing in accordance herewith, except that notices of change of address shall be effective only upon receipt.

10. SUCCESSOR TO COMPANY. The Company shall require any successor (whether direct or indirect, by purchase, merger, consolidation or otherwise) to all or substantially all of the business or assets of the Company expressly to assume and agree to perform this Agreement to the same extent that the Company would be required to perform it if no succession had taken place. Failure of the Company to obtain an assumption of this Agreement at or prior to the effectiveness of any succession shall be a breach of this Agreement and shall constitute Good Reason if the Executive elects to terminate employment.

11. MISCELLANEOUS. No provisions of this Agreement may be modified, waived, or discharged unless such waiver, modification, or discharge is agreed to in writing and signed by Executive and such officer of the Company as may be specifically designated by the Board. No waiver by either party hereto of, or compliance with, any condition or provision of this Agreement to be performed by such other party shall be deemed a waiver of similar or dissimilar provisions or conditions at the same or at any prior or subsequent time. No agreements or representations, oral or otherwise, express or implied, unless specifically referred to herein, with respect to the subject matter hereof have been made by either party which are not set forth expressly in this Agreement. The validity, interpretation, construction, and performance of this Agreement shall be governed by the laws of the Commonwealth of Massachusetts (without regard to principles of conflicts of laws).

12. VALIDITY. The invalidity or unenforceability of any provision or provisions of this Agreement shall not affect the validity or enforceability of any other provision of this

Agreement, which shall remain in full force and effect. The invalid portion of this Agreement, if any, shall be modified by any court having jurisdiction to the extent necessary to render such portion enforceable.

13. COUNTERPARTS. This Agreement may be executed in several counterparts, each of which shall be deemed to be an original but all of which together will constitute one and the same instrument.

14. ARBITRATION; OTHER DISPUTES. In the event of any dispute or controversy arising under or in connection with this Agreement, the parties shall first promptly try in good faith to settle such dispute or controversy by mediation under the applicable rules of the American Arbitration Association before resorting to arbitration. In the event such dispute or controversy remains unresolved in whole or in part for a period of thirty (30) days after it arises, the parties will settle any remaining dispute or controversy exclusively by arbitration in Boston, Massachusetts, in accordance with the rules of the American Arbitration Association then in effect. Judgment may be entered on the arbitrator's award in any court having jurisdiction. Notwithstanding the above, the Company shall be entitled to seek a restraining order or injunction in any court of competent jurisdiction to prevent any continuation of any violation of Paragraph 4 or 5 hereof. Furthermore, should a dispute occur concerning Executive's mental or physical capacity as described in Subparagraph 6(b), 6(c) or 7(b), a doctor selected by Executive and a doctor selected by the Company shall be entitled to examine Executive. If the opinion of the Company's doctor and Executive's doctor conflict, the Company's doctor and Executive's doctor shall together agree upon a third doctor, whose opinion shall be binding.

15. THIRD-PARTY AGREEMENTS AND RIGHTS. Executive represents to the Company that Executive's execution of this Agreement, Executive's employment with the Company and the performance of Executive's proposed duties for the Company will not violate any obligations Executive may have to any employer or other party, and Executive will not bring to the premises of the Company any copies or other tangible embodiments of non-public information belonging to or obtained from any such previous employment or other party.

16. LITIGATION AND REGULATORY COOPERATION. During and after Executive's employment, Executive shall reasonably cooperate with the Company in the defense or prosecution of any claims or actions now in existence or which may be brought in the future against or on behalf of the Company which relate to events or occurrences that transpired while Executive was employed by the Company; provided, however, that such cooperation shall not materially and adversely affect Executive or expose Executive to an increased probability of civil or criminal litigation. Executive's cooperation in connection with such claims or actions shall include, but not be limited to, being available to meet with counsel to prepare for discovery or trial and to act as a witness on behalf of the Company at mutually convenient times. During and after Executive's employment, Executive also shall cooperate fully with the Company in connection with any investigation or review of any federal, state or local regulatory authority as any such investigation or review relates to events or occurrences that transpired while Executive was employed by the Company. The Company shall also provide Executive with compensation on

an hourly basis at a rate of $147.53 for requested litigation and regulatory cooperation that occurs after his termination of employment, and reimburse Executive for all costs and expenses incurred in connection with his performance under this Paragraph 16, including, but not limited to, reasonable attorneys' fees and costs.

17. GENDER NEUTRAL. Wherever used herein, a pronoun in the masculine gender shall be considered as including the feminine gender unless the context clearly indicates otherwise.

IN WITNESS WHEREOF, the parties have executed this Agreement effective on the date and year first above written.

HARVARD BIOSCIENCE, INC.

By:

Name :
Title:

EXECUTIVE

Chane Graziano

EXHIBIT 10.6

FORM OF
HARVARD BIOSCIENCE, INC.
EMPLOYMENT AGREEMENT

This EXECUTIVE EMPLOYMENT AGREEMENT ("Agreement") is made as of the ____ day of _____, 2000, between Harvard Bioscience, Inc., a Delaware corporation (the "Company"), and David Green ("Executive"). For purposes of this Agreement the "Company" shall refer to the Company and any of its predecessors.

WHEREAS, the Company desires to employ Executive and Executive desires to be employed by the Company on the terms contained herein.

NOW, THEREFORE, in consideration of the mutual covenants and agreements herein contained and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the parties agree as follows:

1. EMPLOYMENT. The term of this Agreement shall extend from [_____] (the "Commencement Date") until the second anniversary of the Commencement Date; provided, however, that the term of this Agreement shall automatically be extended for two additional years on each second anniversary of the Commencement Date unless, not less than 90 days prior to each such date, either party shall have given notice to the other that it does not wish to extend this Agreement; provided, further, that if a Change in Control occurs during the original or extended term of this Agreement, the term of this Agreement shall, notwithstanding anything in this sentence to the contrary, continue in effect for a period of not less than eighteen (18) months beyond the month in which the Change in Control occurred. The term of this Agreement shall be subject to termination as provided in Paragraph 6 and may be referred to herein as the "Period of Employment."

2. POSITION AND DUTIES. During the Period of Employment, Executive shall serve as the President and member of the Board of Directors of the Company and shall have such powers and duties as may from time to time be prescribed by the Board of Directors (the "Board") or the Chief Executive Officer of the Company, provided that such duties are consistent with Executive's position or other positions that he may hold from time to time. Executive shall devote his full working time and efforts to the business and affairs of the Company. Notwithstanding the foregoing, Executive may serve on other boards of directors, with the approval of the Board, or engage in religious, charitable or other community activities as long as such services and activities are disclosed to the Board and do not materially interfere with Executive's performance of his duties to the Company as provided in this Agreement.

3. COMPENSATION AND RELATED MATTERS.

(a) BASE SALARY AND INCENTIVE COMPENSATION. Executive's initial annual base salary shall be Two Hundred Twenty-Five Thousand ($225,000) Dollars. Executive's base salary shall be redetermined annually by the Board or a Committee thereof. The base salary in effect at any

given time is referred to herein as "Base Salary." The Base Salary shall be payable in substantially equal bi-weekly installments. In addition to Base Salary, Executive shall be eligible to receive cash incentive compensation as determined by the Board or a Committee thereof from time to time, and shall also be eligible to participate in such incentive compensation plans as the Board or a Committee thereof shall determine from time to time for employees of the same status within the hierarchy of the Company.

(b) EXPENSES. Executive shall be entitled to receive prompt reimbursement for all reasonable expenses incurred by him in performing services hereunder during the Period of Employment, in accordance with the policies and procedures then in effect and established by the Company for its senior executive officers.

(c) OTHER BENEFITS. During the Period of Employment, Executive shall be entitled to continue to participate in or receive benefits under all of the Company's Employee Benefit Plans in effect on the date hereof, or under plans or arrangements that provide no less favorable treatment to the Executive then the Employee Benefit Plans provided to other members of the Company's senior management. As used herein, the term "Employee Benefit Plans" includes, without limitation, each pension and retirement plan; supplemental pension, retirement and deferred compensation plan; savings and profit-sharing plan; stock ownership plan; stock purchase plan; stock option plan; life insurance plan; medical insurance plan; disability plan; and health and accident plan or arrangement established and maintained by the Company on the date hereof for employees of the same status within the hierarchy of the Company. During the Period of Employment, Executive shall be entitled to an automobile or to a lease for an automobile (the "Company Car") for up to $1,500.00 per month and the cost of automobile insurance for such Company Car. To the extent that the scope or nature of benefits described in this section is determined under the policies of the Company based in whole or in part on the seniority or tenure of an employee's service, Executive shall be deemed to have a tenure with the Company equal to the actual time of Executive's service with the Company. During the Period of Employment, Executive shall be entitled to participate in or receive benefits under any employee benefit plan or arrangement which may, in the future, be made available by the Company to its executives and key management employees, subject to and on a basis consistent with the terms, conditions and overall administration of such plan or arrangement. Any payments or benefits payable to Executive under a plan or arrangement referred to in this Subparagraph 3(c) in respect of any calendar year during which Executive is employed by the Company for less than the whole of such year shall, unless otherwise provided in the applicable plan or arrangement, be prorated in accordance with the number of days in such calendar year during which he is so employed. Should any such payments or benefits accrue on a fiscal (rather than calendar) year, then the proration in the preceding sentence shall be on the basis of a fiscal year rather than calendar year.

(d) VACATIONS. Executive shall be entitled to [_____(___)] paid vacation days in each calendar year, which shall be accrued ratably during the calendar year. Executive shall also be entitled to all paid holidays given by the Company to its executives. To the extent that the scope or nature of benefits described in this section are determined under the policies of the Company based in whole or in part on the seniority or tenure of an employee's service, Executive

shall be deemed to have a tenure with the Company equal to the actual time of Executive's service with Company.

4. UNAUTHORIZED DISCLOSURE.

(a) CONFIDENTIAL INFORMATION. Executive acknowledges that in the course of his employment with the Company (and, if applicable, its predecessors), he has been allowed to become, and will continue to be allowed to become, acquainted with the Company's business affairs, information, trade secrets, and other matters which are of a proprietary or confidential nature, including but not limited to the Company's and its affiliates' and predecessors' operations, business opportunities, price and cost information, finance, customer information, business plans, various sales techniques, manuals, letters, notebooks, procedures, reports, products, processes, services, and other confidential information and knowledge (collectively the "Confidential Information") concerning the Company's and its affiliates' and predecessors' business. The Company agrees to provide on an ongoing basis such Confidential Information as the Company deems necessary or desirable to aid Executive in the performance of his duties. Executive understands and acknowledges that such Confidential Information is confidential, and he agrees not to disclose such Confidential Information to anyone outside the Company except to the extent that (i) Executive deems such disclosure or use reasonably necessary or appropriate in connection with performing his duties on behalf of the Company; (ii) Executive is required by order of a court of competent jurisdiction (by subpoena or similar process) to disclose or discuss any Confidential Information, provided that in such case, Executive shall promptly inform the Company of such event, shall cooperate with the Company in attempting to obtain a protective order or to otherwise restrict such disclosure, and shall only disclose Confidential Information to the minimum extent necessary to comply with any such court order; (iii) such Confidential Information becomes generally known to and available for use in the Company's industry (the "laboratory analytical instruments industry"), other than as a result of any action or inaction by Executive; or (iv) such information has been rightfully received by a member of the laboratory analytical instruments industry or has been published in a form generally available to the laboratory analytical instruments industry prior to the date Executive proposes to disclose or use such information. Executive further agrees that he will not during employment and/or at any time thereafter use such Confidential Information in competing, directly or indirectly, with the Company. At such time as Executive shall cease to be employed by the Company, he will immediately turn over to the Company all Confidential Information, including papers, documents, writings, electronically stored information, other property, and all copies of them provided to or created by him during the course of his employment with the Company.

(b) HEIRS, SUCCESSORS, AND LEGAL REPRESENTATIVES. The foregoing provisions of this Paragraph 4 shall be binding upon Executive's heirs, successors, and legal representatives. The provisions of this Paragraph 4 shall survive the termination of this Agreement for any reason.

5. COVENANT NOT TO COMPETE. In consideration for Executive's employment by the Company under the terms provided in this Agreement and as a means to aid in the performance and enforcement of the terms of the provisions of Paragraph 4, Executive agrees that

(a) during the term of Executive's employment with the Company and for a period of twelve (12) months thereafter, regardless of the reason for termination of employment, Executive will not, directly or indirectly, as an owner, director, principal, agent, officer, employee, partner, consultant, servant, or otherwise, carry on, operate, manage, control, or become involved in any manner with any business, operation, corporation, partnership, association, agency, or other person or entity which is engaged in a business that produces products that compete directly with any of the Company's products which are produced by the Company or any affiliate of the Company or which the Company or any affiliate of the Company has active plans to produce as of the date of Executive's termination of employment with the Company, in any area or territory in which the Company or any affiliate of the Company conducts or has active plans to conduct operations as of the date of the Executive's termination of employment with the Company; provided, however, that the foregoing shall not prohibit Executive from owning up to one percent (1%) of the outstanding stock of a publicly held company engaged in the laboratory analytical instruments industry; and

(b) during the term of Executive's employment with the Company and for a period of twelve (12) months thereafter, regardless of the reason for termination of employment, Executive will not directly or indirectly solicit or induce any present or future employee of the Company or any affiliate of the Company to accept employment with Executive or with any business, operation, corporation, partnership, association, agency, or other person or entity with which Executive may be associated, and Executive will not hire or employ or cause any business, operation, corporation, partnership, association, agency, or other person or entity with which Executive may be associated to hire or employ any present or future employee of the Company.

Should Executive violate any of the provisions of this Paragraph, then in addition to all other rights and remedies available to the Company at law or in equity, the duration of this covenant shall automatically be extended for the period of time from which Executive began such violation until he permanently ceases such violation.

6. TERMINATION. Executive's employment hereunder may be terminated without any breach of this Agreement under the following circumstances:

(a) DEATH. Executive's employment hereunder shall terminate upon his death.

(b) DISABILITY. If, as a result of Executive's incapacity due to physical or mental illness, Executive shall have been absent from his duties hereunder on a full-time basis for one hundred eighty (180) calendar days in the aggregate in any twelve (12) month period, the Company may terminate Executive's employment hereunder.

(c) TERMINATION BY COMPANY FOR CAUSE. At any time during the Period of Employment, the Company may terminate Executive's employment hereunder for Cause if such termination is approved by not less than a majority of the Board at a meeting of the Board called and held for such purpose. For purposes of this Agreement, "Cause" shall mean: (A) conduct by Executive constituting a material act of willful misconduct in connection with the performance of

his duties, including, without limitation, misappropriation of funds or property of the Company or any of its affiliates other than the occasional, customary and de minimis use of Company property for personal purposes; (B) criminal or civil conviction of Executive, a plea of nolo contendere by Executive or conduct by Executive that would reasonably be expected to result in material injury to the reputation of the Company if he were retained in his position with the Company, including, without limitation, conviction of a felony involving moral turpitude; (C) continued, willful and deliberate non-performance by Executive of his duties hereunder (other than by reason of Executive's physical or mental illness, incapacity or disability) which has continued for more than thirty (30) days following written notice of such non-performance from the Board; (D) a breach by Executive of any of the provisions contained in Paragraphs 4 and 5 of this Agreement; or (E) a violation by Executive of the Company's employment policies which has continued following written notice of such violation from the Board.

(d) TERMINATION WITHOUT CAUSE. At any time during the Period of Employment, the Company may terminate Executive's employment hereunder without Cause if such termination is approved by a majority of the Board at a meeting of the Board called and held for such purpose. Any termination by the Company of Executive's employment under this Agreement which does not constitute a termination for Cause under Subparagraph 6(c) or result from the death or disability of the Executive under Subparagraph 6(a) or (b) shall be deemed a termination without Cause. If the Company provides notice to Executive under Paragraph 1 that it does not wish to extend the Period of Employment, such action shall be deemed a termination without Cause.

(e) TERMINATION BY EXECUTIVE. At any time during the Period of Employment, Executive may terminate his employment hereunder for any reason, including but not limited to Good Reason. If Executive provides notice to the Company under Paragraph 1 that he does not wish to extend the Period of Employment, such action shall be deemed a voluntary termination by Executive and one without Good Reason. For purposes of this Agreement, "Good Reason" shall mean that Executive has complied with the "Good Reason Process" (hereinafter defined) following the occurrence of any of the following events: (A) a substantial diminution or other substantive adverse change, not consented to by Executive, in the nature or scope of Executive's responsibilities, authorities, powers, functions or duties; (B) any removal, during the Period of Employment, from Executive of his title of President; (C) an involuntary reduction in Executive's Base Salary except for across-the-board reductions similarly affecting all or substantially all management employees; (D) a breach by the Company of any of its other material obligations under this Agreement and the failure of the Company to cure such breach within thirty (30) days after written notice thereof by Executive; (E) the involuntary relocation of the Company's offices at which Executive is principally employed or the involuntary relocation of the offices of Executive's primary workgroup to a location more than 30 miles from such offices, or the requirement by the Company that Executive be based anywhere other than the Company's offices at such location on an extended basis, except for required travel on the Company's business to an extent substantially consistent with Executive's business travel obligations; or (F) the failure of the Company to obtain the agreement from any successor to the Company to assume and agree to perform this Agreement as required by Paragraph 10. "Good Reason Process" shall mean that (i) Executive reasonably determines in good faith that a "Good Reason" event has occurred; (ii)

Executive notifies the Company in writing of the occurrence of the Good Reason event; (iii) Executive cooperates in good faith with the Company's efforts, for a period not less than ninety (90) days following such notice, to modify Executive's employment situation in a manner acceptable to Executive and Company; and (iv) notwithstanding such efforts, one or more of the Good Reason events continues to exist and has not been modified in a manner acceptable to Executive. If the Company cures the Good Reason event in a manner acceptable to Executive during the ninety (90) day period, Good Reason shall be deemed not to have occurred.

(f) NOTICE OF TERMINATION. Except for termination as specified in Subparagraph 6(a), any termination of Executive's employment by the Company or any such termination by Executive shall be communicated by written Notice of Termination to the other party hereto. For purposes of this Agreement, a "Notice of Termination" shall mean a notice which shall indicate the specific termination provision in this Agreement relied upon.

(g) DATE OF TERMINATION. "Date of Termination" shall mean: (A) if Executive's employment is terminated by his death, the date of his death; (B) if Executive's employment is terminated on account of disability under Subparagraph 6(b) or by the Company for Cause under Subparagraph 6(c), the date on which Notice of Termination is given; (C) if Executive's employment is terminated by the Company under Subparagraph 6(d), sixty (60) days after the date on which a Notice of Termination is given; and (D) if Executive's employment is terminated by Executive under Subparagraph 6(e), thirty (30) days after the date on which a Notice of Termination is given.

7. COMPENSATION UPON TERMINATION OR DURING DISABILITY.

(a) DEATH. If Executive's employment terminates by reason of his death, the Company shall, within ninety (90) days of death, pay in a lump sum amount to such person as Executive shall designate in a notice filed with the Company or, if no such person is designated, to Executive's estate, Executive's accrued and unpaid Base Salary to the date of his death, plus his accrued and unpaid incentive compensation, if any, under Subparagraph 3(a). Upon the death of Executive, all unvested stock options shall immediately vest in Executive's estate or other legal representatives and become exercisable. All other stock-based grants and awards held by Executive shall vest or be canceled upon the death of Executive in accordance with their terms. For a period of one (1) year following the Date of Termination, the Company shall pay such health insurance premiums as may be necessary to allow Executive's spouse and dependents to receive health insurance coverage substantially similar to coverage they received prior to the Date of Termination. In addition to the foregoing, any payments to which Executive's spouse, beneficiaries, or estate may be entitled under any employee benefit plan shall also be paid in accordance with the terms of such plan or arrangement. Such payments, in the aggregate, shall fully discharge the Company's obligations hereunder.

(b) DISABILITY. During any period that Executive fails to perform his duties hereunder as a result of incapacity due to physical or mental illness, Executive shall continue to receive his accrued and unpaid Base Salary and accrued and unpaid incentive compensation, if

any, under Subparagraph 3(a), until Executive's employment is terminated due to disability in accordance with Subparagraph 6(b) or until Executive terminates his employment in accordance with Subparagraph 6(e), whichever first occurs. Upon the Date of Termination, all unvested stock options shall immediately vest and become exercisable. All other stock-based grants and awards held by Executive shall vest or be canceled upon the Date of Termination in accordance with their terms. For a period of one (1) year following the Date of Termination, the Company shall pay such health insurance premiums as may be necessary to allow Executive and Executive's spouse and dependents to receive health insurance coverage substantially similar to coverage they received prior to the Date of Termination. Upon termination due to death prior to the termination first to occur as specified in the preceding sentence, Subparagraph 7(a) shall apply.

(c) TERMINATION OTHER THAN FOR GOOD REASON. If Executive's employment is terminated by Executive other than for Good Reason as provided in Subparagraph 6(e), then the Company shall, through the Date of Termination, pay Executive his accrued and unpaid Base Salary at the rate in effect at the time Notice of Termination is given. Thereafter, the Company shall have no further obligations to Executive except as otherwise expressly provided under this Agreement, provided any such termination shall not adversely affect or alter Executive's rights under any employee benefit plan of the Company in which Executive, at the Date of Termination, has a vested interest, unless otherwise provided in such employee benefit plan or any agreement or other instrument attendant thereto. In addition, all vested but unexercised stock options held by Executive as of the Date of Termination must be exercised by Executive within three (3) months following the Date of Termination or by the end of the option term, if earlier. All other stock-based grants and awards held by Executive shall vest or be canceled upon the Date of Termination in accordance with their terms.

(d) TERMINATION FOR GOOD REASON. If Executive terminates his employment for Good Reason as provided in Subparagraph 6(e) or if Executive's employment is terminated by the Company without Cause as provided in Subparagraph 6(d), then the Company shall, through the Date of Termination, pay Executive his accrued and unpaid Base Salary at the rate in effect at the time Notice of Termination is given and his accrued and unpaid incentive compensation, if any, under Subparagraph 3(a). In addition, subject to signing by Executive of a general release of claims in a form and manner satisfactory to the Company,

(i) the Company shall pay Executive an amount equal to two (2) times the sum of Executive's Average Base Salary and his Average Incentive Compensation (the "Severance Amount"). The Severance Amount shall be paid out in substantially equal bi-weekly installments over twelve (12) months, in arrears or in a lump sum. For purposes of this Agreement, "Average Base Salary" shall mean the average of the annual Base Salary received by Executive for each of the three (3) immediately preceding fiscal years or such fewer number of complete fiscal years as Executive may have been employed by the Company or the amount of Base Salary for the prior fiscal year, whichever is higher. For purposes of this Agreement, "Average Incentive Compensation" shall mean the average of the annual incentive compensation under Subparagraph 3(a) received by

Executive for the three (3) immediately preceding fiscal years or such fewer number of complete fiscal years as Executive may have been employed by the Company or the amount of incentive compensation for the prior fiscal year, whichever is higher. In no event shall "Average Incentive Compensation" include any sign-on bonus, retention bonus or any other special bonus. Notwithstanding the foregoing, if the Executive breaches any of the provisions contained in Paragraphs 4 and 5 of this Agreement, all payments of the Severance Amount shall immediately cease. Furthermore, in the event Executive terminates his employment for Good Reason as provided in Subparagraph 6(e), he shall be entitled to the Severance Amount only if he provides the Notice of Termination provided for in Subparagraph 6(f) within thirty (30) days after the occurrence of the event or events which constitute such Good Reason as specified in clauses (A), (B), (C), (D) and (E) of Subparagraph 6(e); and

(ii) upon the Date of Termination, each unvested stock option that would otherwise vest during the next twenty-four (24) months shall accelerate and immediately vest. All other stock-based grants and awards held by Executive that would otherwise vest during the next twenty-four (24) months shall accelerate and immediately vest upon the Date of Termination; and

(iii) in addition to any other benefits to which Executive may be entitled in accordance with the Company's then existing severance policies, the Company shall, for a period of one (1) year commencing on the Date of Termination, pay such health insurance premiums as may be necessary to allow Executive and Executive's spouse and dependents to continue to receive health insurance coverage.

(e) TERMINATION FOR CAUSE. If Executive's employment is terminated by the Company for Cause as provided in Subparagraph 6(c), then the Company shall, through the Date of Termination, pay Executive his accrued and unpaid Base Salary at the rate in effect at the time Notice of Termination is given. Thereafter, the Company shall have no further obligations to Executive except as otherwise expressly provided under this Agreement, provided any such termination shall not adversely affect or alter Executive's rights under any employee benefit plan of the Company in which Executive, at the Date of Termination, has a vested interest, unless otherwise provided in such employee benefit plan or any agreement or other instrument attendant thereto. In addition, all stock options held by Executive as of the Date of Termination shall immediately terminate and be of no further force and effect, and all other stock-based grants and awards shall be canceled or terminated in accordance with their terms.

(f) Nothing contained in the foregoing Subparagraphs 7(a) through 7(e) shall be construed so as to affect Executive's rights or the Company's obligations relating to agreements or benefits which are unrelated to termination of employment.

8. CHANGE IN CONTROL PAYMENT. The provisions of this Paragraph 8 set forth certain terms of an agreement reached between Executive and the Company regarding Executive's rights and obligations upon the occurrence of a Change in Control of the Company. These provisions are

intended to assure and encourage in advance Executive's continued attention and dedication to his assigned duties and his objectivity during the pendency and after the occurrence of any such event. These provisions shall apply in lieu of, and expressly supersede, the provisions of Subparagraph 7(d)(i) regarding severance pay upon a termination of employment, if such termination of employment occurs within eighteen (18) months after the occurrence of the first event constituting a Change of Control, provided that such first event occurs during the Period of Employment. These provisions shall terminate and be of no further force or effect beginning eighteen (18) months after the occurrence of a Change of Control.

(a) CHANGE IN CONTROL.

(i) If within eighteen (18) months after the occurrence of the first event constituting a Change in Control, Executive's employment is terminated by the Company without Cause as provided in Subparagraph 6(d) or Executive terminates his employment for Good Reason as provided in Subparagraph 6(e), then the Company shall pay Executive a lump sum in cash in an amount equal to three (3) times the sum of (A) Executive's current or most recent Base Salary plus (B) Executive's most recent annual incentive compensation under Subparagraph 3(a) for the most recent fiscal year, excluding any sign-on bonus, retention bonus or any other special bonus; and

(ii) Notwithstanding anything to the contrary in any applicable option agreement or stock-based award agreement, upon a Change in Control, all stock options and other stock-based awards granted to Executive by the Company shall immediately accelerate and become exercisable or non-forfeitable as of the effective date of such Change in Control. Executive shall also be entitled to any other rights and benefits with respect to stock-related awards, to the extent and upon the terms provided in the employee stock option or incentive plan or any agreement or other instrument attendant thereto pursuant to which such options or awards were granted; and

(iii) The Company shall, for a period of one (1) year commencing on the Date of Termination, pay such health insurance premiums as may be necessary to allow Executive, Executive's spouse and dependents to continue to receive health insurance coverage substantially similar to the coverage they received prior to the Date of Termination.

(b) GROSS UP PAYMENT.

(i) Anything in this Agreement to the contrary notwithstanding, in the event it shall be determined that any compensation, payment or distribution by the Company to or for the benefit of Executive, whether paid or payable or distributed or distributable pursuant to the terms of this Agreement or otherwise (the "Severance Payments"), would be subject to the excise tax imposed by Section 4999 of the Internal Revenue Code of 1986, as amended (the "Code"), or any interest or penalties are incurred by Executive with respect to such excise tax (such excise tax, together with

any such interest and penalties, are hereinafter collectively referred to as the "Excise Tax"), then Executive shall be entitled to receive an additional payment (a "Gross-Up Payment") such that the net amount retained by Executive, after deduction of any Excise Tax on the Severance Payments, any Federal, state, and local income tax, employment tax and Excise Tax upon the payment provided by this subsection, and any interest and/or penalties assessed with respect to such Excise Tax, shall be equal to the Severance Payments.

(ii) Subject to the provisions of Subparagraph 8(b)(iii), all determinations required to be made under this Subparagraph 8(b)(ii), including whether a Gross-Up Payment is required and the amount of such Gross-Up Payment, shall be made by KPMG LLP or any other nationally recognized accounting firm selected by the Company (the "Accounting Firm"), which shall provide detailed supporting calculations both to the Company and Executive within fifteen (15) business days of the Date of Termination, if applicable, or at such earlier time as is reasonably requested by the Company or Executive. For purposes of determining the amount of the Gross-Up Payment, Executive shall be deemed to pay federal income taxes at the highest marginal rate of federal income taxation applicable to individuals for the calendar year in which the Gross-Up Payment is to be made, and state and local income taxes at the highest marginal rates of individual taxation in the state and locality of Executive's residence on the Date of Termination, net of the maximum reduction in federal income taxes which could be obtained from deduction of such state and local taxes. The initial Gross-Up Payment, if any, as determined pursuant to this Subparagraph 8(b)(iii), shall be paid to Executive within five (5) days of the receipt of the Accounting Firm's determination. Any determination by the Accounting Firm shall be binding upon the Company and Executive. As a result of the uncertainty in the application of Section 4999 of the Code at the time of the initial determination by the Accounting Firm hereunder, it is possible that Gross-Up Payments which will not have been made by the Company should have been made (an "Underpayment"). In the event that the Company exhausts its remedies pursuant to Subparagraph 8(b)(iii) and Executive thereafter is required to make a payment of any Excise Tax, the Accounting Firm shall determine the amount of the Underpayment that has occurred, consistent with the calculations required to be made hereunder, and any such Underpayment, and any interest and penalties imposed on the Underpayment and required to be paid by Executive in connection with the proceedings described in Subparagraph 8(b)(iii), shall be promptly paid by the Company to or for the benefit of Executive.

(iii) Executive shall notify the Company in writing of any claim by the Internal Revenue Service that, if successful, would require the payment by the Company of the Gross-up Payment. Such notification shall be given as soon as practicable but no later than ten (10) business days after Executive knows of such claim and shall apprise the Company of the nature of such claim and the date on which such claim is requested to be paid. Executive shall not pay such claim prior to the expiration of the 30-day period following the date on which he gives such notice to the Company

(or such shorter period ending on the date that any payment of taxes with respect to such claim is due). If the Company notifies Executive in writing prior to the expiration of such period that it desires to contest such claim, provided that the Company has set aside adequate reserves to cover the Underpayment and any interest and penalties thereon that may accrue, Executive shall:

(A) give the Company any information reasonably requested by the Company relating to such claim,

(B) take such action in connection with contesting such claim as the Company shall reasonably request in writing from time to time, including, without limitation, accepting legal representation with respect to such claim by an attorney selected by the Company,

(C) cooperate with the Company in good faith in order to effectively contest such claim, and

(D) permit the Company to participate in any proceedings relating to such claim; provided, however, that the Company shall bear and pay directly all costs and expenses (including additional interest and penalties) incurred in connection with such contest and shall indemnify and hold Executive harmless, on an after-tax basis, for any Excise Tax or income tax, including interest and penalties with respect thereto, imposed as a result of such representation and payment of costs and expenses. Without limitation on the foregoing provisions of this Subparagraph 8(b)(iii), the Company shall control all proceedings taken in connection with such contest and, at its sole option, may pursue or forego any and all administrative appeals, proceedings, hearings and conferences with the taxing authority in respect of such claim and may, at its sole option, either direct Executive to pay the tax claimed and sue for a refund or contest the claim in any permissible manner, and Executive agrees to prosecute such contest to a determination before any administrative tribunal, in a court of initial jurisdiction and in one or more appellate courts, as the Company shall determine; provided, however, that if the Company directs Executive to pay such claim and sue for a refund, the Company shall advance the amount of such payment to Executive on an interest-free basis and shall indemnify and hold Executive harmless, on an after-tax basis, from any Excise Tax or income tax, including interest or penalties with respect thereto, imposed with respect to such advance or with respect to any imputed income with respect to such advance; and further provided that any extension of the statute of limitations relating to payment of taxes for the taxable year of Executive with respect to which such contested amount is claimed to be due is limited solely to such contested amount. Furthermore, the Company's control of the contest shall be limited to issues with respect to which a Gross-Up Payment would be payable hereunder and

Executive shall be entitled to settle or contest, as the case may be, any other issues raised by the Internal Revenue Service or any other taxing authority.

(iv) If, after the receipt by Executive of an amount advanced by the Company pursuant to Subparagraph 8(b)(iii), Executive becomes entitled to receive any refund with respect to such claim, Executive shall (subject to the Company's complying with the requirements of Subparagraph 8(b)(iii)) promptly pay to the Company the amount of such refund (together with any interest paid or credited thereon after taxes applicable thereto). If, after the receipt by Executive of an amount advanced by the Company pursuant to Subparagraph 8(b)(iii), a determination is made that Executive shall not be entitled to any refund with respect to such claim and the Company does not notify Executive in writing of its intent to contest such denial of refund prior to the expiration of 30 days after such determination, then such advance shall be forgiven and shall not be required to be repaid and the amount of such advance shall offset, to the extent thereof, the amount of Gross-Up Payment required to be paid.

(c) DEFINITIONS. For purposes of this Paragraph 8, the following terms shall have the following meanings:

"CHANGE IN CONTROL" shall mean any of the following:

(a) any "person," as such term is used in Sections 13(d) and 14(d) of the Securities Exchange Act of 1934, as amended (the "Act") (other than the Company, any of its subsidiaries, or any trustee, fiduciary or other person or entity holding securities under any employee benefit plan or trust of the Company or any of its subsidiaries), together with all "affiliates" and "associates" (as such terms are defined in Rule 12b-2 under the Act) of such person, shall become the "beneficial owner" (as such term is defined in Rule 13d-3 under the Act), directly or indirectly, of securities of the Company representing twenty-five percent (25%) or more of either (A) the combined voting power of the Company's then outstanding securities having the right to vote in an election of the Company's Board ("Voting Securities") or (B) the then outstanding shares of Company's common stock, par value $0.01 per share ("Common Stock") (other than as a result of an acquisition of securities directly from the Company); or

(b) persons who, as of the Commencement Date, constitute the Company's Board (the "Incumbent Directors") cease for any reason, including, without limitation, as a result of a tender offer, proxy contest, merger or similar transaction, to constitute at least a majority of the Board, provided that any person becoming a director of the Company subsequent to the Commencement Date shall be considered an Incumbent Director if such person's election was approved by or such person was nominated for election by a vote of at least a majority of the Incumbent Directors; but provided further, that any such person whose initial assumption of office is in connection with an actual or threatened election contest relating to the election of members of the Board or other actual or threatened solicitation of proxies or consents by or on behalf of a person other

than the Board, including by reason of agreement intended to avoid or settle any such actual or threatened contest or solicitation, shall not be considered an Incumbent Director; or

(c) the stockholders of the Company shall approve (A) any consolidation or merger of the Company where the stockholders of the Company, immediately prior to the consolidation or merger, would not, immediately after the consolidation or merger, beneficially own (as such term is defined in Rule 13d-3 under the Act), directly or indirectly, shares representing in the aggregate more than fifty percent (50%) of the voting shares of the Company issuing cash or securities in the consolidation or merger (or of its ultimate parent corporation, if any), (B) any sale, lease, exchange or other transfer (in one transaction or a series of transactions contemplated or arranged by any party as a single plan) of all or substantially all of the assets of the Company or (C) any plan or proposal for the liquidation or dissolution of the Company.

Notwithstanding the foregoing, a "Change of Control" shall not be deemed to have occurred for purposes of the foregoing clause (a) solely as the result of an acquisition of securities by the Company which, by reducing the number of shares of Common Stock or other Voting Securities outstanding, increases the proportionate number of shares beneficially owned by any person to twenty-five percent (25%) or more of either (A) the combined voting power of all of the then outstanding Voting Securities or (B) Common Stock; PROVIDED, HOWEVER, that if any person referred to in this sentence shall thereafter become the beneficial owner of any additional shares of Voting Securities or Common Stock (other than pursuant to a stock split, stock dividend, or similar transaction or as a result of an acquisition of securities directly from the Company) and immediately thereafter beneficially owns twenty-five percent (25%) or more of either (A) the combined voting power of all of the then outstanding Voting Securities or (B) Common Stock, then a "Change of Control" shall be deemed to have occurred for purposes of the foregoing clause (a).

9. NOTICE. For purposes of this Agreement, notices and all other communications provided for in the Agreement shall be in writing and shall be deemed to have been duly given when delivered or mailed by United States certified mail, return receipt requested, postage prepaid, addressed as follows:

if to the Executive:

At his home address as shown
in the Company's personnel records;

if to the Company:

Harvard Bioscience, Inc.
84 October Hill Road
Holliston, MA 01746-1371
Attention: Board of Directors of Harvard Bioscience, Inc.

with a copy to:

H. David Henken, P.C.
Goodwin, Procter & Hoar LLP
Exchange Place
Boston, MA 02109

or to such other address as either party may have furnished to the other in writing in accordance herewith, except that notices of change of address shall be effective only upon receipt.

10. SUCCESSOR TO COMPANY. The Company shall require any successor (whether direct or indirect, by purchase, merger, consolidation or otherwise) to all or substantially all of the business or assets of the Company expressly to assume and agree to perform this Agreement to the same extent that the Company would be required to perform it if no succession had taken place. Failure of the Company to obtain an assumption of this Agreement at or prior to the effectiveness of any succession shall be a breach of this Agreement and shall constitute Good Reason if the Executive elects to terminate employment.

11. MISCELLANEOUS. No provisions of this Agreement may be modified, waived, or discharged unless such waiver, modification, or discharge is agreed to in writing and signed by Executive and such officer of the Company as may be specifically designated by the Board. No waiver by either party hereto of, or compliance with, any condition or provision of this Agreement to be performed by such other party shall be deemed a waiver of similar or dissimilar provisions or conditions at the same or at any prior or subsequent time. No agreements or representations, oral or otherwise, express or implied, unless specifically referred to herein, with respect to the subject matter hereof have been made by either party which are not set forth expressly in this Agreement. The validity, interpretation, construction, and performance of this Agreement shall be governed by the laws of the Commonwealth of Massachusetts (without regard to principles of conflicts of laws).

12. VALIDITY. The invalidity or unenforceability of any provision or provisions of this Agreement shall not affect the validity or enforceability of any other provision of this Agreement, which shall remain in full force and effect. The invalid portion of this Agreement, if any, shall be modified by any court having jurisdiction to the extent necessary to render such portion enforceable.

13. COUNTERPARTS. This Agreement may be executed in several counterparts, each of which shall be deemed to be an original but all of which together will constitute one and the same instrument.

14. ARBITRATION; OTHER DISPUTES. In the event of any dispute or controversy arising under or in connection with this Agreement, the parties shall first promptly try in good faith to settle such dispute or controversy by mediation under the applicable rules of the American Arbitration Association before resorting to arbitration. In the event such dispute or controversy remains unresolved in whole or in part for a period of thirty (30) days after it arises, the parties will settle any remaining dispute or controversy exclusively by arbitration in Boston, Massachusetts, in accordance with the rules of the American Arbitration Association then in effect. Judgment may be entered on the arbitrator's award in any court having jurisdiction. Notwithstanding the above, the Company shall be entitled to seek a restraining order or injunction in any court of competent jurisdiction to prevent any continuation of any violation of Paragraph 4 or 5 hereof. Furthermore, should a dispute occur concerning Executive's mental or physical capacity as described in Subparagraph 6(b), 6(c) or 7(b), a doctor selected by Executive and a doctor selected by the Company shall be entitled to examine Executive. If the opinion of the Company's doctor and Executive's doctor conflict, the Company's doctor and Executive's doctor shall together agree upon a third doctor, whose opinion shall be binding.

15. THIRD-PARTY AGREEMENTS AND RIGHTS. Executive represents to the Company that Executive's execution of this Agreement, Executive's employment with the Company and the performance of Executive's proposed duties for the Company will not violate any obligations Executive may have to any employer or other party, and Executive will not bring to the premises of the Company any copies or other tangible embodiments of non-public information belonging to or obtained from any such previous employment or other party.

16. LITIGATION AND REGULATORY COOPERATION. During and after Executive's employment, Executive shall reasonably cooperate with the Company in the defense or prosecution of any claims or actions now in existence or which may be brought in the future against or on behalf of the Company which relate to events or occurrences that transpired while Executive was employed by the Company; provided, however, that such cooperation shall not materially and adversely affect Executive or expose Executive to an increased probability of civil or criminal litigation. Executive's cooperation in connection with such claims or actions shall include, but not be limited to, being available to meet with counsel to prepare for discovery or trial and to act as a witness on behalf of the Company at mutually convenient times. During and after Executive's employment, Executive also shall cooperate fully with the Company in connection with any investigation or review of any federal, state or local regulatory authority as any such investigation or review relates to events or occurrences that transpired while Executive was employed by the Company. The Company shall also provide Executive with compensation on an hourly basis at a rate of $120.71 for requested litigation and regulatory cooperation that occurs after his termination of employment, and reimburse Executive for all costs and expenses incurred in connection with his performance under this Paragraph 16, including, but not limited to, reasonable attorneys' fees and costs.

17. GENDER NEUTRAL. Wherever used herein, a pronoun in the masculine gender shall be considered as including the feminine gender unless the context clearly indicates otherwise.

IN WITNESS WHEREOF, the parties have executed this Agreement effective on the date and year first above written.

HARVARD BIOSCIENCE, INC.

By:

Name: James L. Warren
Title: Chief Financial Officer

EXECUTIVE

David Green

EXHIBIT 10.7

FORM OF
HARVARD BIOSCIENCE, INC.
EMPLOYMENT AGREEMENT

This EXECUTIVE EMPLOYMENT AGREEMENT ("Agreement") is made as of the ____ day of _____, 2000, between Harvard Bioscience, Inc., a Delaware corporation (the "Company"), and James Warren ("Executive"). For purposes of this Agreement the "Company" shall refer to the Company and any of its predecessors.

WHEREAS, the Company desires to employ Executive and Executive desires to be employed by the Company on the terms contained herein.

NOW, THEREFORE, in consideration of the mutual covenants and agreements herein contained and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the parties agree as follows:

1. EMPLOYMENT. The term of this Agreement shall extend from [_____] (the "Commencement Date") until the first anniversary of the Commencement Date; provided, however, that the term of this Agreement shall automatically be extended for one additional year on each anniversary of the Commencement Date unless, not less than 90 days prior to each such date, either party shall have given notice to the other that it does not wish to extend this Agreement; provided, further, that if a Change in Control occurs during the original or extended term of this Agreement, the term of this Agreement shall, notwithstanding anything in this sentence to the contrary, continue in effect for a period of not less than eighteen (18) months beyond the month in which the Change in Control occurred. The term of this Agreement shall be subject to termination as provided in Paragraph 6 and may be referred to herein as the "Period of Employment."

2. POSITION AND DUTIES. During the Period of Employment, Executive shall serve as the Chief Financial Officer and shall have such powers and duties as may from time to time be prescribed by the Board of Directors (the "Board") or the Chief Executive Officer of the Company, provided that such duties are consistent with Executive's position or other positions that he may hold from time to time. Executive shall devote his full working time and efforts to the business and affairs of the Company. Notwithstanding the foregoing, Executive may serve on other boards of directors, with the approval of the Board, or engage in religious, charitable or other community activities as long as such services and activities are disclosed to the Board and do not materially interfere with Executive's performance of his duties to the Company as provided in this Agreement.

3. COMPENSATION AND RELATED MATTERS.

(a) BASE SALARY AND INCENTIVE COMPENSATION. Executive's initial annual base salary shall be One Hundred Eighty-Five Thousand ($185,000) Dollars. Executive's base salary shall be redetermined annually by the Board or a Committee thereof. The base salary in effect at any

given time is referred to herein as "Base Salary." The Base Salary shall be payable in substantially equal bi-weekly installments. In addition to Base Salary, Executive shall be eligible to receive cash incentive compensation as determined by the Board or a Committee thereof from time to time, and shall also be eligible to participate in such incentive compensation plans as the Board or a Committee thereof shall determine from time to time for employees of the same status within the hierarchy of the Company.

(b) EXPENSES. Executive shall be entitled to receive prompt reimbursement for all reasonable expenses incurred by him in performing services hereunder during the Period of Employment, in accordance with the policies and procedures then in effect and established by the Company for its senior executive officers.

(c) OTHER BENEFITS. During the Period of Employment, Executive shall be entitled to continue to participate in or receive benefits under all of the Company's Employee Benefit Plans in effect on the date hereof, or under plans or arrangements that provide no less favorable treatment to the Executive then the Employee Benefit Plans provided to other members of the Company's senior management. As used herein, the term "Employee Benefit Plans" includes, without limitation, each pension and retirement plan; supplemental pension, retirement and deferred compensation plan; savings and profit-sharing plan; stock ownership plan; stock purchase plan; stock option plan; life insurance plan; medical insurance plan; disability plan; and health and accident plan or arrangement established and maintained by the Company on the date hereof for employees of the same status within the hierarchy of the Company. To the extent that the scope or nature of benefits described in this section is determined under the policies of the Company based in whole or in part on the seniority or tenure of an employee's service, Executive shall be deemed to have a tenure with the Company equal to the actual time of Executive's service with the Company. During the Period of Employment, Executive shall be entitled to participate in or receive benefits under any employee benefit plan or arrangement which may, in the future, be made available by the Company to its executives and key management employees, subject to and on a basis consistent with the terms, conditions and overall administration of such plan or arrangement. Any payments or benefits payable to Executive under a plan or arrangement referred to in this Subparagraph 3(c) in respect of any calendar year during which Executive is employed by the Company for less than the whole of such year shall, unless otherwise provided in the applicable plan or arrangement, be prorated in accordance with the number of days in such calendar year during which he is so employed. Should any such payments or benefits accrue on a fiscal (rather than calendar) year, then the proration in the preceding sentence shall be on the basis of a fiscal year rather than calendar year.

(d) VACATIONS. Executive shall be entitled to [_____(___)] paid vacation days in each calendar year, which shall be accrued ratably during the calendar year. Executive shall also be entitled to all paid holidays given by the Company to its executives. To the extent that the scope or nature of benefits described in this section are determined under the policies of the Company based in whole or in part on the seniority or tenure of an employee's service, Executive shall be deemed to have a tenure with the Company equal to the actual time of Executive's service with Company.

4. UNAUTHORIZED DISCLOSURE.

(a) CONFIDENTIAL INFORMATION. Executive acknowledges that in the course of his employment with the Company (and, if applicable, its predecessors), he has been allowed to become, and will continue to be allowed to become, acquainted with the Company's business affairs, information, trade secrets, and other matters which are of a proprietary or confidential nature, including but not limited to the Company's and its affiliates' and predecessors' operations, business opportunities, price and cost information, finance, customer information, business plans, various sales techniques, manuals, letters, notebooks, procedures, reports, products, processes, services, and other confidential information and knowledge (collectively the "Confidential Information") concerning the Company's and its affiliates' and predecessors' business. The Company agrees to provide on an ongoing basis such Confidential Information as the Company deems necessary or desirable to aid Executive in the performance of his duties. Executive understands and acknowledges that such Confidential Information is confidential, and he agrees not to disclose such Confidential Information to anyone outside the Company except to the extent that (i) Executive deems such disclosure or use reasonably necessary or appropriate in connection with performing his duties on behalf of the Company; (ii) Executive is required by order of a court of competent jurisdiction (by subpoena or similar process) to disclose or discuss any Confidential Information, provided that in such case, Executive shall promptly inform the Company of such event, shall cooperate with the Company in attempting to obtain a protective order or to otherwise restrict such disclosure, and shall only disclose Confidential Information to the minimum extent necessary to comply with any such court order; (iii) such Confidential Information becomes generally known to and available for use in the Company's industry (the "laboratory analytical instruments industry"), other than as a result of any action or inaction by Executive; or (iv) such information has been rightfully received by a member of the laboratory analytical instruments industry or has been published in a form generally available to the laboratory analytical instruments industry prior to the date Executive proposes to disclose or use such information. Executive further agrees that he will not during employment and/or at any time thereafter use such Confidential Information in competing, directly or indirectly, with the Company. At such time as Executive shall cease to be employed by the Company, he will immediately turn over to the Company all Confidential Information, including papers, documents, writings, electronically stored information, other property, and all copies of them provided to or created by him during the course of his employment with the Company.

(b) HEIRS, SUCCESSORS, AND LEGAL REPRESENTATIVES. The foregoing provisions of this Paragraph 4 shall be binding upon Executive's heirs, successors, and legal representatives. The provisions of this Paragraph 4 shall survive the termination of this Agreement for any reason.

5. COVENANT NOT TO COMPETE. In consideration for Executive's employment by the Company under the terms provided in this Agreement and as a means to aid in the performance and enforcement of the terms of the provisions of Paragraph 4, Executive agrees that

(a) during the term of Executive's employment with the Company and for a period of twelve (12) months thereafter, regardless of the reason for termination of employment, Executive

will not, directly or indirectly, as an owner, director, principal, agent, officer, employee, partner, consultant, servant, or otherwise, carry on, operate, manage, control, or become involved in any manner with any business, operation, corporation, partnership, association, agency, or other person or entity which is engaged in a business that produces products that compete directly with any of the Company's products which are produced by the Company or any affiliate of the Company or which the Company or any affiliate of the Company has active plans to produce as of the date of Executive's termination of employment with the Company, in any area or territory in which the Company or any affiliate of the Company conducts or has active plans to conduct operations as of the date of the Executive's termination of employment with the Company; provided, however, that the foregoing shall not prohibit Executive from owning up to one percent (1%) of the outstanding stock of a publicly held company engaged in the laboratory analytical instruments industry; and

(b) during the term of Executive's employment with the Company and for a period of twelve (12) months thereafter, regardless of the reason for termination of employment, Executive will not directly or indirectly solicit or induce any present or future employee of the Company or any affiliate of the Company to accept employment with Executive or with any business, operation, corporation, partnership, association, agency, or other person or entity with which Executive may be associated, and Executive will not hire or employ or cause any business, operation, corporation, partnership, association, agency, or other person or entity with which Executive may be associated to hire or employ any present or future employee of the Company.

Should Executive violate any of the provisions of this Paragraph, then in addition to all other rights and remedies available to the Company at law or in equity, the duration of this covenant shall automatically be extended for the period of time from which Executive began such violation until he permanently ceases such violation.

6. TERMINATION. Executive's employment hereunder may be terminated without any breach of this Agreement under the following circumstances:

(a) DEATH. Executive's employment hereunder shall terminate upon his death.

(b) DISABILITY. If, as a result of Executive's incapacity due to physical or mental illness, Executive shall have been absent from his duties hereunder on a full-time basis for one hundred eighty (180) calendar days in the aggregate in any twelve (12) month period, the Company may terminate Executive's employment hereunder.

(c) TERMINATION BY COMPANY FOR CAUSE. At any time during the Period of Employment, the Company may terminate Executive's employment hereunder for Cause if such termination is approved by not less than a majority of the Board at a meeting of the Board called and held for such purpose. For purposes of this Agreement, "Cause" shall mean: (A) conduct by Executive constituting a material act of willful misconduct in connection with the performance of his duties, including, without limitation, misappropriation of funds or property of the Company or any of its affiliates other than the occasional, customary and de minimis use of Company

property for personal purposes; (B) criminal or civil conviction of Executive, a plea of nolo contendere by Executive or conduct by Executive that would reasonably be expected to result in material injury to the reputation of the Company if he were retained in his position with the Company, including, without limitation, conviction of a felony involving moral turpitude; (C) continued, willful and deliberate non-performance by Executive of his duties hereunder (other than by reason of Executive's physical or mental illness, incapacity or disability) which has continued for more than thirty (30) days following written notice of such non-performance from the Board; (D) a breach by Executive of any of the provisions contained in Paragraphs 4 and 5 of this Agreement; or (E) a violation by Executive of the Company's employment policies which has continued following written notice of such violation from the Board.

(d) TERMINATION WITHOUT CAUSE. At any time during the Period of Employment, the Company may terminate Executive's employment hereunder without Cause if such termination is approved by a majority of the Board at a meeting of the Board called and held for such purpose. Any termination by the Company of Executive's employment under this Agreement which does not constitute a termination for Cause under Subparagraph 6(c) or result from the death or disability of the Executive under Subparagraph 6(a) or (b) shall be deemed a termination without Cause. If the Company provides notice to Executive under Paragraph 1 that it does not wish to extend the Period of Employment, such action shall be deemed a termination without Cause.

(e) TERMINATION BY EXECUTIVE. At any time during the Period of Employment, Executive may terminate his employment hereunder for any reason, including but not limited to Good Reason. If Executive provides notice to the Company under Paragraph 1 that he does not wish to extend the Period of Employment, such action shall be deemed a voluntary termination by Executive and one without Good Reason. For purposes of this Agreement, "Good Reason" shall mean that Executive has complied with the "Good Reason Process" (hereinafter defined) following the occurrence of any of the following events: (A) a substantial diminution or other substantive adverse change, not consented to by Executive, in the nature or scope of Executive's responsibilities, authorities, powers, functions or duties; (B) any removal, during the Period of Employment, from Executive of his title of Chief Financial Officer; (C) an involuntary reduction in Executive's Base Salary except for across-the-board reductions similarly affecting all or substantially all management employees; (D) a breach by the Company of any of its other material obligations under this Agreement and the failure of the Company to cure such breach within thirty (30) days after written notice thereof by Executive; (E) the involuntary relocation of the Company's offices at which Executive is principally employed or the involuntary relocation of the offices of Executive's primary workgroup to a location more than 30 miles from such offices, or the requirement by the Company that Executive be based anywhere other than the Company's offices at such location on an extended basis, except for required travel on the Company's business to an extent substantially consistent with Executive's business travel obligations; or (F) the failure of the Company to obtain the agreement from any successor to the Company to assume and agree to perform this Agreement as required by Paragraph 10. "Good Reason Process" shall mean that (i) Executive reasonably determines in good faith that a "Good Reason" event has occurred; (ii) Executive notifies the Company in writing of the occurrence of

the Good Reason event; (iii) Executive cooperates in good faith with the Company's efforts, for a period not less than ninety (90) days following such notice, to modify Executive's employment situation in a manner acceptable to Executive and Company; and (iv) notwithstanding such efforts, one or more of the Good Reason events continues to exist and has not been modified in a manner acceptable to Executive. If the Company cures the Good Reason event in a manner acceptable to Executive during the ninety (90) day period, Good Reason shall be deemed not to have occurred.

(f) NOTICE OF TERMINATION. Except for termination as specified in Subparagraph 6(a), any termination of Executive's employment by the Company or any such termination by Executive shall be communicated by written Notice of Termination to the other party hereto. For purposes of this Agreement, a "Notice of Termination" shall mean a notice which shall indicate the specific termination provision in this Agreement relied upon.

(g) DATE OF TERMINATION. "Date of Termination" shall mean: (A) if Executive's employment is terminated by his death, the date of his death; (B) if Executive's employment is terminated on account of disability under Subparagraph 6(b) or by the Company for Cause under Subparagraph 6(c), the date on which Notice of Termination is given; (C) if Executive's employment is terminated by the Company under Subparagraph 6(d), sixty (60) days after the date on which a Notice of Termination is given; and (D) if Executive's employment is terminated by Executive under Subparagraph 6(e), thirty (30) days after the date on which a Notice of Termination is given.

7. COMPENSATION UPON TERMINATION OR DURING DISABILITY.

(a) DEATH. If Executive's employment terminates by reason of his death, the Company shall, within ninety (90) days of death, pay in a lump sum amount to such person as Executive shall designate in a notice filed with the Company or, if no such person is designated, to Executive's estate, Executive's accrued and unpaid Base Salary to the date of his death, plus his accrued and unpaid incentive compensation, if any, under Subparagraph 3(a). Upon the death of Executive, all unvested stock options shall immediately vest in Executive's estate or other legal representatives and become exercisable. All other stock-based grants and awards held by Executive shall vest or be canceled upon the death of Executive in accordance with their terms. For a period of one (1) year following the Date of Termination, the Company shall pay such health insurance premiums as may be necessary to allow Executive's spouse and dependents to receive health insurance coverage substantially similar to coverage they received prior to the Date of Termination. In addition to the foregoing, any payments to which Executive's spouse, beneficiaries, or estate may be entitled under any employee benefit plan shall also be paid in accordance with the terms of such plan or arrangement. Such payments, in the aggregate, shall fully discharge the Company's obligations hereunder.

(b) DISABILITY. During any period that Executive fails to perform his duties hereunder as a result of incapacity due to physical or mental illness, Executive shall continue to receive his accrued and unpaid Base Salary and accrued and unpaid incentive compensation, if

any, under Subparagraph 3(a), until Executive's employment is terminated due to disability in accordance with Subparagraph 6(b) or until Executive terminates his employment in accordance with Subparagraph 6(e), whichever first occurs. Upon the Date of Termination, all unvested stock options shall immediately vest and become exercisable. All other stock-based grants and awards held by Executive shall vest or be canceled upon the Date of Termination in accordance with their terms. For a period of one (1) year following the Date of Termination, the Company shall pay such health insurance premiums as may be necessary to allow Executive and Executive's spouse and dependents to receive health insurance coverage substantially similar to coverage they received prior to the Date of Termination. Upon termination due to death prior to the termination first to occur as specified in the preceding sentence, Subparagraph 7(a) shall apply.

(c) TERMINATION OTHER THAN FOR GOOD REASON. If Executive's employment is terminated by Executive other than for Good Reason as provided in Subparagraph 6(e), then the Company shall, through the Date of Termination, pay Executive his accrued and unpaid Base Salary at the rate in effect at the time Notice of Termination is given. Thereafter, the Company shall have no further obligations to Executive except as otherwise expressly provided under this Agreement, provided any such termination shall not adversely affect or alter Executive's rights under any employee benefit plan of the Company in which Executive, at the Date of Termination, has a vested interest, unless otherwise provided in such employee benefit plan or any agreement or other instrument attendant thereto. In addition, all vested but unexercised stock options held by Executive as of the Date of Termination must be exercised by Executive within three (3) months following the Date of Termination or by the end of the option term, if earlier. All other stock-based grants and awards held by Executive shall vest or be canceled upon the Date of Termination in accordance with their terms.

(d) TERMINATION FOR GOOD REASON. If Executive terminates his employment for Good Reason as provided in Subparagraph 6(e) or if Executive's employment is terminated by the Company without Cause as provided in Subparagraph 6(d), then the Company shall, through the Date of Termination, pay Executive his accrued and unpaid Base Salary at the rate in effect at the time Notice of Termination is given and his accrued and unpaid incentive compensation, if any, under Subparagraph 3(a). In addition, subject to signing by Executive of a general release of claims in a form and manner satisfactory to the Company,

(i) the Company shall pay Executive an amount equal to the sum of Executive's Average Base Salary and his Average Incentive Compensation (the "Severance Amount"). The Severance Amount shall be paid out in substantially equal bi-weekly installments over twelve (12) months, in arrears or in a lump sum. For purposes of this Agreement, "Average Base Salary" shall mean the average of the annual Base Salary received by Executive for each of the three (3) immediately preceding fiscal years or such fewer number of complete fiscal years as Executive may have been employed by the Company or the amount of Base Salary for the prior fiscal year, whichever is higher. For purposes of this Agreement, "Average Incentive Compensation" shall mean the average of the annual incentive compensation under Subparagraph 3(a) received by

Executive for the three (3) immediately preceding fiscal years or such fewer number of complete fiscal years as Executive may have been employed by the Company or the amount of incentive compensation for the prior fiscal year, whichever is higher. In no event shall "Average Incentive Compensation" include any sign-on bonus, retention bonus or any other special bonus. Notwithstanding the foregoing, if the Executive breaches any of the provisions contained in Paragraphs 4 and 5 of this Agreement, all payments of the Severance Amount shall immediately cease. Furthermore, in the event Executive terminates his employment for Good Reason as provided in Subparagraph 6(e), he shall be entitled to the Severance Amount only if he provides the Notice of Termination provided for in Subparagraph 6(f) within thirty (30) days after the occurrence of the event or events which constitute such Good Reason as specified in clauses (A), (B), (C), (D) and (E) of Subparagraph 6(e); and

(ii) upon the Date of Termination, each unvested stock option that would otherwise vest during the next twenty-four (24) months shall accelerate and immediately vest. All other stock-based grants and awards held by Executive that would otherwise vest during the next twenty-four (24) months shall accelerate and immediately vest upon the Date of Termination; and

(iii) in addition to any other benefits to which Executive may be entitled in accordance with the Company's then existing severance policies, the Company shall, for a period of one (1) year commencing on the Date of Termination, pay such health insurance premiums as may be necessary to allow Executive and Executive's spouse and dependents to continue to receive health insurance coverage.

(e) TERMINATION FOR CAUSE. If Executive's employment is terminated by the Company for Cause as provided in Subparagraph 6(c), then the Company shall, through the Date of Termination, pay Executive his accrued and unpaid Base Salary at the rate in effect at the time Notice of Termination is given. Thereafter, the Company shall have no further obligations to Executive except as otherwise expressly provided under this Agreement, provided any such termination shall not adversely affect or alter Executive's rights under any employee benefit plan of the Company in which Executive, at the Date of Termination, has a vested interest, unless otherwise provided in such employee benefit plan or any agreement or other instrument attendant thereto. In addition, all stock options held by Executive as of the Date of Termination shall immediately terminate and be of no further force and effect, and all other stock-based grants and awards shall be canceled or terminated in accordance with their terms.

(f) Nothing contained in the foregoing Subparagraphs 7(a) through 7(e) shall be construed so as to affect Executive's rights or the Company's obligations relating to agreements or benefits which are unrelated to termination of employment.

8. CHANGE IN CONTROL PAYMENT. The provisions of this Paragraph 8 set forth certain terms of an agreement reached between Executive and the Company regarding Executive's rights and obligations upon the occurrence of a Change in Control of the Company. These provisions are

intended to assure and encourage in advance Executive's continued attention and dedication to his assigned duties and his objectivity during the pendency and after the occurrence of any such event. These provisions shall apply in lieu of, and expressly supersede, the provisions of Subparagraph 7(d)(i) regarding severance pay upon a termination of employment, if such termination of employment occurs within eighteen (18) months after the occurrence of the first event constituting a Change of Control, provided that such first event occurs during the Period of Employment. These provisions shall terminate and be of no further force or effect beginning eighteen (18) months after the occurrence of a Change of Control.

(a) CHANGE IN CONTROL.

(i) If within eighteen (18) months after the occurrence of the first event constituting a Change in Control, Executive's employment is terminated by the Company without Cause as provided in Subparagraph 6(d) or Executive terminates his employment for Good Reason as provided in Subparagraph 6(e), then the Company shall pay Executive a lump sum in cash in an amount equal to one and a half (1.5) times the sum of (A) Executive's current or most recent Base Salary plus (B) Executive's most recent annual incentive compensation under Subparagraph 3(a) for the most recent fiscal year, excluding any sign-on bonus, retention bonus or any other special bonus; and

(ii) Notwithstanding anything to the contrary in any applicable option agreement or stock-based award agreement, upon a Change in Control, all stock options and other stock-based awards granted to Executive by the Company shall immediately accelerate and become exercisable or non-forfeitable as of the effective date of such Change in Control. Executive shall also be entitled to any other rights and benefits with respect to stock-related awards, to the extent and upon the terms provided in the employee stock option or incentive plan or any agreement or other instrument attendant thereto pursuant to which such options or awards were granted; and

(iii) The Company shall, for a period of one (1) year commencing on the Date of Termination, pay such health insurance premiums as may be necessary to allow Executive, Executive's spouse and dependents to continue to receive health insurance coverage substantially similar to the coverage they received prior to the Date of Termination.

(b) GROSS UP PAYMENT.

(i) Anything in this Agreement to the contrary notwithstanding, in the event it shall be determined that any compensation, payment or distribution by the Company to or for the benefit of Executive, whether paid or payable or distributed or distributable pursuant to the terms of this Agreement or otherwise (the "Severance Payments"), would be subject to the excise tax imposed by Section 4999 of the Internal Revenue Code of 1986, as amended (the "Code"), or any interest or penalties are incurred by Executive with respect to such excise tax (such excise tax, together with

any such interest and penalties, are hereinafter collectively referred to as the "Excise Tax"), then Executive shall be entitled to receive an additional payment (a "Gross-Up Payment") such that the net amount retained by Executive, after deduction of any Excise Tax on the Severance Payments, any Federal, state, and local income tax, employment tax and Excise Tax upon the payment provided by this subsection, and any interest and/or penalties assessed with respect to such Excise Tax, shall be equal to the Severance Payments.

(ii) Subject to the provisions of Subparagraph 8(b)(iii), all determinations required to be made under this Subparagraph 8(b)(ii), including whether a Gross-Up Payment is required and the amount of such Gross-Up Payment, shall be made by KPMG LLP or any other nationally recognized accounting firm selected by the Company (the "Accounting Firm"), which shall provide detailed supporting calculations both to the Company and Executive within fifteen (15) business days of the Date of Termination, if applicable, or at such earlier time as is reasonably requested by the Company or Executive. For purposes of determining the amount of the Gross-Up Payment, Executive shall be deemed to pay federal income taxes at the highest marginal rate of federal income taxation applicable to individuals for the calendar year in which the Gross-Up Payment is to be made, and state and local income taxes at the highest marginal rates of individual taxation in the state and locality of Executive's residence on the Date of Termination, net of the maximum reduction in federal income taxes which could be obtained from deduction of such state and local taxes. The initial Gross-Up Payment, if any, as determined pursuant to this Subparagraph 8(b)(iii), shall be paid to Executive within five (5) days of the receipt of the Accounting Firm's determination. Any determination by the Accounting Firm shall be binding upon the Company and Executive. As a result of the uncertainty in the application of Section 4999 of the Code at the time of the initial determination by the Accounting Firm hereunder, it is possible that Gross-Up Payments which will not have been made by the Company should have been made (an "Underpayment"). In the event that the Company exhausts its remedies pursuant to Subparagraph 8(b)(iii) and Executive thereafter is required to make a payment of any Excise Tax, the Accounting Firm shall determine the amount of the Underpayment that has occurred, consistent with the calculations required to be made hereunder, and any such Underpayment, and any interest and penalties imposed on the Underpayment and required to be paid by Executive in connection with the proceedings described in Subparagraph 8(b)(iii), shall be promptly paid by the Company to or for the benefit of Executive.

(iii) Executive shall notify the Company in writing of any claim by the Internal Revenue Service that, if successful, would require the payment by the Company of the Gross-up Payment. Such notification shall be given as soon as practicable but no later than ten (10) business days after Executive knows of such claim and shall apprise the Company of the nature of such claim and the date on which such claim is requested to be paid. Executive shall not pay such claim prior to the expiration of the 30-day period following the date on which he gives such notice to the Company

(or such shorter period ending on the date that any payment of taxes with respect to such claim is due). If the Company notifies Executive in writing prior to the expiration of such period that it desires to contest such claim, provided that the Company has set aside adequate reserves to cover the Underpayment and any interest and penalties thereon that may accrue, Executive shall:

(A) give the Company any information reasonably requested by the Company relating to such claim,

(B) take such action in connection with contesting such claim as the Company shall reasonably request in writing from time to time, including, without limitation, accepting legal representation with respect to such claim by an attorney selected by the Company,

(C) cooperate with the Company in good faith in order to effectively contest such claim, and

(D) permit the Company to participate in any proceedings relating to such claim; provided, however, that the Company shall bear and pay directly all costs and expenses (including additional interest and penalties) incurred in connection with such contest and shall indemnify and hold Executive harmless, on an after-tax basis, for any Excise Tax or income tax, including interest and penalties with respect thereto, imposed as a result of such representation and payment of costs and expenses. Without limitation on the foregoing provisions of this Subparagraph 8(b)(iii), the Company shall control all proceedings taken in connection with such contest and, at its sole option, may pursue or forego any and all administrative appeals, proceedings, hearings and conferences with the taxing authority in respect of such claim and may, at its sole option, either direct Executive to pay the tax claimed and sue for a refund or contest the claim in any permissible manner, and Executive agrees to prosecute such contest to a determination before any administrative tribunal, in a court of initial jurisdiction and in one or more appellate courts, as the Company shall determine; provided, however, that if the Company directs Executive to pay such claim and sue for a refund, the Company shall advance the amount of such payment to Executive on an interest-free basis and shall indemnify and hold Executive harmless, on an after-tax basis, from any Excise Tax or income tax, including interest or penalties with respect thereto, imposed with respect to such advance or with respect to any imputed income with respect to such advance; and further provided that any extension of the statute of limitations relating to payment of taxes for the taxable year of Executive with respect to which such contested amount is claimed to be due is limited solely to such contested amount. Furthermore, the Company's control of the contest shall be limited to issues with respect to which a Gross-Up Payment would be payable hereunder and

Executive shall be entitled to settle or contest, as the case may be, any other issues raised by the Internal Revenue Service or any other taxing authority.

(iv) If, after the receipt by Executive of an amount advanced by the Company pursuant to Subparagraph 8(b)(iii), Executive becomes entitled to receive any refund with respect to such claim, Executive shall (subject to the Company's complying with the requirements of Subparagraph 8(b)(iii)) promptly pay to the Company the amount of such refund (together with any interest paid or credited thereon after taxes applicable thereto). If, after the receipt by Executive of an amount advanced by the Company pursuant to Subparagraph 8(b)(iii), a determination is made that Executive shall not be entitled to any refund with respect to such claim and the Company does not notify Executive in writing of its intent to contest such denial of refund prior to the expiration of 30 days after such determination, then such advance shall be forgiven and shall not be required to be repaid and the amount of such advance shall offset, to the extent thereof, the amount of Gross-Up Payment required to be paid.

(c) DEFINITIONS. For purposes of this Paragraph 8, the following terms shall have the following meanings:

"CHANGE IN CONTROL" shall mean any of the following:

(a) any "person," as such term is used in Sections 13(d) and 14(d) of the Securities Exchange Act of 1934, as amended (the "Act") (other than the Company, any of its subsidiaries, or any trustee, fiduciary or other person or entity holding securities under any employee benefit plan or trust of the Company or any of its subsidiaries), together with all "affiliates" and "associates" (as such terms are defined in Rule 12b-2 under the Act) of such person, shall become the "beneficial owner" (as such term is defined in Rule 13d-3 under the Act), directly or indirectly, of securities of the Company representing twenty-five percent (25%) or more of either (A) the combined voting power of the Company's then outstanding securities having the right to vote in an election of the Company's Board ("Voting Securities") or (B) the then outstanding shares of Company's common stock, par value $0.01 per share ("Common Stock") (other than as a result of an acquisition of securities directly from the Company); or

(b) persons who, as of the Commencement Date, constitute the Company's Board (the "Incumbent Directors") cease for any reason, including, without limitation, as a result of a tender offer, proxy contest, merger or similar transaction, to constitute at least a majority of the Board, provided that any person becoming a director of the Company subsequent to the Commencement Date shall be considered an Incumbent Director if such person's election was approved by or such person was nominated for election by a vote of at least a majority of the Incumbent Directors; but provided further, that any such person whose initial assumption of office is in connection with an actual or threatened election contest relating to the election of members of the Board or other actual or threatened solicitation of proxies or consents by or on behalf of a person other

than the Board, including by reason of agreement intended to avoid or settle any such actual or threatened contest or solicitation, shall not be considered an Incumbent Director; or

(c) the stockholders of the Company shall approve (A) any consolidation or merger of the Company where the stockholders of the Company, immediately prior to the consolidation or merger, would not, immediately after the consolidation or merger, beneficially own (as such term is defined in Rule 13d-3 under the Act), directly or indirectly, shares representing in the aggregate more than fifty percent (50%) of the voting shares of the Company issuing cash or securities in the consolidation or merger (or of its ultimate parent corporation, if any), (B) any sale, lease, exchange or other transfer (in one transaction or a series of transactions contemplated or arranged by any party as a single plan) of all or substantially all of the assets of the Company or (C) any plan or proposal for the liquidation or dissolution of the Company.

Notwithstanding the foregoing, a "Change of Control" shall not be deemed to have occurred for purposes of the foregoing clause (a) solely as the result of an acquisition of securities by the Company which, by reducing the number of shares of Common Stock or other Voting Securities outstanding, increases the proportionate number of shares beneficially owned by any person to twenty-five percent (25%) or more of either (A) the combined voting power of all of the then outstanding Voting Securities or (B) Common Stock; PROVIDED, HOWEVER, that if any person referred to in this sentence shall thereafter become the beneficial owner of any additional shares of Voting Securities or Common Stock (other than pursuant to a stock split, stock dividend, or similar transaction or as a result of an acquisition of securities directly from the Company) and immediately thereafter beneficially owns twenty-five percent (25%) or more of either (A) the combined voting power of all of the then outstanding Voting Securities or (B) Common Stock, then a "Change of Control" shall be deemed to have occurred for purposes of the foregoing clause (a).

9. NOTICE. For purposes of this Agreement, notices and all other communications provided for in the Agreement shall be in writing and shall be deemed to have been duly given when delivered or mailed by United States certified mail, return receipt requested, postage prepaid, addressed as follows:

if to the Executive:

At his home address as shown
in the Company's personnel records;

if to the Company:

Harvard Bioscience, Inc.
84 October Hill Road
Holliston, MA 01746-1371
Attention: Board of Directors of Harvard Bioscience, Inc.

with a copy to:

H. David Henken, P.C.
Goodwin, Procter & Hoar LLP
Exchange Place
Boston, MA 02109

or to such other address as either party may have furnished to the other in writing in accordance herewith, except that notices of change of address shall be effective only upon receipt.

10. SUCCESSOR TO COMPANY. The Company shall require any successor (whether direct or indirect, by purchase, merger, consolidation or otherwise) to all or substantially all of the business or assets of the Company expressly to assume and agree to perform this Agreement to the same extent that the Company would be required to perform it if no succession had taken place. Failure of the Company to obtain an assumption of this Agreement at or prior to the effectiveness of any succession shall be a breach of this Agreement and shall constitute Good Reason if the Executive elects to terminate employment.

11. MISCELLANEOUS. No provisions of this Agreement may be modified, waived, or discharged unless such waiver, modification, or discharge is agreed to in writing and signed by Executive and such officer of the Company as may be specifically designated by the Board. No waiver by either party hereto of, or compliance with, any condition or provision of this Agreement to be performed by such other party shall be deemed a waiver of similar or dissimilar provisions or conditions at the same or at any prior or subsequent time. No agreements or representations, oral or otherwise, express or implied, unless specifically referred to herein, with respect to the subject matter hereof have been made by either party which are not set forth expressly in this Agreement. The validity, interpretation, construction, and performance of this Agreement shall be governed by the laws of the Commonwealth of Massachusetts (without regard to principles of conflicts of laws).

12. VALIDITY. The invalidity or unenforceability of any provision or provisions of this Agreement shall not affect the validity or enforceability of any other provision of this Agreement, which shall remain in full force and effect. The invalid portion of this Agreement, if any, shall be modified by any court having jurisdiction to the extent necessary to render such portion enforceable.

13. COUNTERPARTS. This Agreement may be executed in several counterparts, each of which shall be deemed to be an original but all of which together will constitute one and the same instrument.

14. ARBITRATION; OTHER DISPUTES. In the event of any dispute or controversy arising under or in connection with this Agreement, the parties shall first promptly try in good faith to settle such dispute or controversy by mediation under the applicable rules of the American Arbitration Association before resorting to arbitration. In the event such dispute or controversy remains unresolved in whole or in part for a period of thirty (30) days after it arises, the parties will settle any remaining dispute or controversy exclusively by arbitration in Boston, Massachusetts, in accordance with the rules of the American Arbitration Association then in effect. Judgment may be entered on the arbitrator's award in any court having jurisdiction. Notwithstanding the above, the Company shall be entitled to seek a restraining order or injunction in any court of competent jurisdiction to prevent any continuation of any violation of Paragraph 4 or 5 hereof. Furthermore, should a dispute occur concerning Executive's mental or physical capacity as described in Subparagraph 6(b), 6(c) or 7(b), a doctor selected by Executive and a doctor selected by the Company shall be entitled to examine Executive. If the opinion of the Company's doctor and Executive's doctor conflict, the Company's doctor and Executive's doctor shall together agree upon a third doctor, whose opinion shall be binding.

15. THIRD-PARTY AGREEMENTS AND RIGHTS. Executive represents to the Company that Executive's execution of this Agreement, Executive's employment with the Company and the performance of Executive's proposed duties for the Company will not violate any obligations Executive may have to any employer or other party, and Executive will not bring to the premises of the Company any copies or other tangible embodiments of non-public information belonging to or obtained from any such previous employment or other party.

16. LITIGATION AND REGULATORY COOPERATION. During and after Executive's employment, Executive shall reasonably cooperate with the Company in the defense or prosecution of any claims or actions now in existence or which may be brought in the future against or on behalf of the Company which relate to events or occurrences that transpired while Executive was employed by the Company; provided, however, that such cooperation shall not materially and adversely affect Executive or expose Executive to an increased probability of civil or criminal litigation. Executive's cooperation in connection with such claims or actions shall include, but not be limited to, being available to meet with counsel to prepare for discovery or trial and to act as a witness on behalf of the Company at mutually convenient times. During and after Executive's employment, Executive also shall cooperate fully with the Company in connection with any investigation or review of any federal, state or local regulatory authority as any such investigation or review relates to events or occurrences that transpired while Executive was employed by the Company. The Company shall also provide Executive with compensation on an hourly basis at a rate of $99.25 for requested litigation and regulatory cooperation that occurs after his termination of employment, and reimburse Executive for all costs and expenses incurred in connection with his performance under this Paragraph 16, including, but not limited to, reasonable attorneys' fees and costs.

17. GENDER NEUTRAL. Wherever used herein, a pronoun in the masculine gender shall be considered as including the feminine gender unless the context clearly indicates otherwise.

IN WITNESS WHEREOF, the parties have executed this Agreement effective on the date and year first above written.

HARVARD BIOSCIENCE, INC.

By:

Name :
Title:

EXECUTIVE

James Warren

Exhibit 10.9

LEASE AGREEMENT

ARTICLE I - PARTIES

This Lease Agreement (hereinafter "Lease" or "Agreement") made this 16th day of December, 1996.

Seven October Hill LLC, a Massachusetts limited liability corporation, with an address at c/o Parsons Commercial Group, 205 Newbury Street, Framingham, Massachusetts 01701 (hereinafter "LESSOR") which expression shall include its successors, and assigns where the context so admits, does hereby lease to Harvard Apparatus, Inc., a Massachusetts corporation with an address at 22 Pleasant Street, South Natick, Massachusetts 01760 (hereinafter "LESSEE"), which expression shall include its successors, executors, administrators, and assigns where the context so admits, and the LESSEE hereby leases from the LESSOR the following described premises:

ARTICLE II - PREMISES

Suite Numbered L-1 located in the building, consisting of approximately one Hundred Twelve Thousand (112,000) rentable square feet, at 7 October Hill Road, Holliston, Massachusetts 01746 (hereinafter the "Building"), shown as the area outlined in red on Exhibit A attached hereto and made a part hereof, consisting of approximately Fifteen Thousand (15,000) leasable square feet inside the Building (hereinafter referred to as the "Premises" or "Leased Premises"), as measured from and extending to the centerline of party walls and out to but excluding the exterior faces of all other walls, together with the right to use, in common with others entitled thereto, the hallways and stairways necessary for access to the Leased Premises, along with the right to use, in common with others entitled thereto, the parking areas and sidewalks shown on Exhibit B attached hereto and made a part hereof, and the common loading docks as shown on Exhibit B but reserving and excepting to LESSOR the use of the area behind the surface of the demising walls, the area above the ceilings of the Leased Premises and the right to install, maintain, use, repair and replace pipes, ducts, conduits, wires and appurtenant fixtures leading through the Leased Premises in locations which will not materially interfere with LESSEE'S use thereof. The Leased Premises and the Building are located upon the land owned by LESSOR consisting of approximately seven and two one hundredths (7.02) acres in the vicinity of the Building (the "Land") within the industrial park known as New Englander Industrial Park (hereinafter the "Industrial Park").

ARTICLE III - TERM

3.1 LENGTH OF TERM: The term of this Lease shall be for approximately five (5) years commencing March 15, 1997 or such later date as LESSOR has substantially completed the improvements to the Premises to be accomplished by LESSOR in accordance with Article 12 and Exhibit E hereof, and terminating on the day which is the last day of the month preceding the fifth anniversary of the commencement date. For the purposes hereof,

"substantial completion" shall mean completion in such a fashion as to enable LESSOR to obtain a certificate of occupancy and the only items to be completed by LESSOR will not prevent LESSEE from operating its business in the ordinary course.

In the event that the term of this Lease shall commence on a day other than the first day of the month, then rent shall be immediately paid for such fractional month prorated on the basis of a thirty (30) day month and, for the purposes of determining anniversary dates of the commencement date of this Lease, or the termination date of this Lease, the term of the Lease shall be deemed to commence on the first day of the calendar month next succeeding. LESSOR may deliver possession of the Leased Premises to TENANT on or after February 1, 1997 but prior to the commencement of the term. Notwithstanding anything herein contained to the contrary, all terms and conditions of the Lease shall be effective after delivery of possession of the Leased Premises, except that LESSEE shall not be required to pay Minimum Rent on account of any period prior to March 15, 1997. LESSOR shall be deemed to have delivered the Leased Premises to LESSEE upon delivery of the keys to the Leased Premises. By taking occupancy of the Leased Premises, LESSEE shall be deemed to have accepted the Leased Premises, to have acknowledged that the same are in the condition called for hereunder and to have agreed that as of that time, all of the obligations of the LESSOR imposed under this Lease shall have been performed, except for construction items described in a "punch list" which may be given to LESSOR by LESSEE within thirty (30) days of LESSEE'S taking possession of the Leased Premises, which items LESSOR agrees to promptly repair or replace to the extent the same are the responsibility of LESSOR hereunder. At the time of commencement of the term, LESSOR and LESSEE shall execute a memorandum establishing the commencement date of this Lease.

3.2 EXTENSION TO TERM: LESSEE shall have the right to extend this Lease and the term hereunder for one (1) additional term of five (5) years, on the same terms and conditions and provisions as the original term hereof, except the rate of rental set forth in Article 4.1 hereof shall be adjusted as provided in Article 4.2 hereof. Unless the LESSEE shall notify the LESSOR in writing of its intention to extend this Lease at least six (6) months prior to the termination of the original term, then this Lease shall terminate at the end of the original term.

ARTICLE IV - RENT

LESSEE covenants and agrees to pay to LESSOR at the address set out in the heading of this Lease, or at such other place as LESSOR may designate in writing to LESSEE, rental at the rates and times set forth below.

4.1 MINIMUM RENT. Minimum Rent shall be paid at the annual rate of Seventy Four Thousand Seven Hundred Fifty Dollars ($74,750.00) payable in twelve (12) equal installments of Six Thousand Two Hundred Twenty Nine Dollars Seventeen Cents ($6,229.17) in advance on the first day of each calendar month, or part thereof, during the first year of the

term; the Minimum Rent for any portion of a calendar month at the beginning of the term to be apportioned on the basis of a 365-day year.

4.2 INCREASES TO MINIMUM RENT. During the initial term the Minimum Rent shall be increased effective on the first anniversary of the commencement date to an annual amount equal to Eighty Six Thousand Two Hundred Fifty Dollars ($86,250.00) payable in twelve (12) equal monthly installments each year of Seven Thousand One Hundred Eighty Seven Dollars fifty Cents ($7,187.50) on the first, (1st) day of each calendar month.

During the extension term, Minimum Rent shall be equal to Ninety Five Percent (95%) of fair market rental value as determined in accordance with Exhibit D attached hereto and made a part hereof.

4.3 TAX ON RENTALS. The LESSEE shall pay, as additional rent, before any fine, penalty, interest or cost may be added thereto for nonpayment, any tax that may be levied, assessed or imposed upon or measured by the rents reserved hereunder or upon a commercial lease by any governmental authority acting under any present or future law.

4.4 NO SET OFF. LESSEE covenants to pay all rentals when due and payable without any set off, deduction or demand whatsoever. Any reasonable amounts paid or expenses incurred by LESSOR to correct violations of any of the LESSEE's obligations hereunder (following notice to LESSEE of such violations and the expiration without cure of the cure period specified in Article XIX hereof) shall be additional rental. Any additional rental provided for in this Lease becomes due with the next installment of Minimum Rent due after receipt of notice of such additional rental from LESSOR. Rentals and statements required of LESSEE shall be paid or delivered to LESSOR at the place designated for notices to LESSOR. If any payment of rent or additional rent due hereunder is received by LESSOR more than ten (10) days after notice from LESSOR that it is due, then LESSOR may, in addition to any other remedies LESSOR may have for late payment of rent, assess a late charge in the amount of two percent (2%) of the late payment, such late charge to be additional rent under this Lease.

ARTICLE V - TAXES AND OPERATING EXPENSES

5.1 DEFINITIONS. For purposes of this Article:

(i) "Taxes" shall mean the real estate taxes and assessments and special assessments, sewer rents, imposed upon the Building and the Land by any governmental bodies or authorities. If at any time during the term of this Lease, as the same may be extended, the methods of taxation prevailing at the commencement of the term hereof shall be altered so that in lieu of, or as an addition to or as a substitute for the whole or any part of the taxes, assessments, levies, impositions or charges now levied, assessed or imposed on real estate and the improvements thereof, there shall be levied, assessed or imposed (i) a tax, assessment, levy or otherwise on the rents received therefrom, or (ii) a license fee measured by the rent payable

by LESSEE to LESSOR, or (iii) any other such additional or substitute tax, assessments, levy, imposition or charge, then all such taxes, assessments, levies, impositions or charges or the part thereof so measured or based shall be deemed to be included within the term "Taxes" for the purpose hereof.

(ii) "Tax Year" shall mean the fiscal year for which taxes are levied by the governmental authority.

(iii) "LESSEE'S Proportionate Share" shall be Thirteen and Four Tenths Percent (13.4%), which is determined by dividing the rentable square footage of the Leased Premises by the square footage of all rentable area within the Building (e.g. 15,000 DIVIDED BY 112,000). In the event that any change in the Building or Leased Premises results in an increase or decrease in the area of the Leased Premises and/or rentable area of the Building, LESSEE'S Proportionate Share shall be recalculated by LESSOR to reflect the fraction determined by dividing the leasable square footage of the Leased Premises by the square footage of all leasable area within the Building.

(iv) "Operating Expenses" shall mean all reasonable costs of operating, servicing, administering, repairing and maintaining the Building, Common Areas, and the Land (excluding costs paid directly by LESSEE and other lessees in the Building or otherwise reimbursable to LESSOR) , the landscaping of Common Areas of the Building and the Land and the common parking lot(s) contiguous to the Building. All reasonable costs of operating, servicing, administering, repairing and maintaining the Building, Common Areas, and the Land, including any reasonable and necessary costs of operation, maintenance and repair, computed in accordance with generally accepted accounting principles applied on a consistent basis ("GAAP") , and will include, by way of illustration, but not limitation:

(a) all necessary costs of managing, operating and maintaining the Building, Common Areas, and Land, including, without limitation, wages, salaries, fringe benefits and payroll burden for employees on-site utilized in the day to day operation of the Building and Land; water, sewer, heating, air conditioning, ventilating and all other utility charges (other than with respect to utilities separately metered and paid directly by LESSEE or other lessees) serving the common area or all tenants of the Building; the cost of contesting the validity or amount of real estate; janitorial services; access control; maintenance and repair of all HVAC systems whether inside or outside of the Leased Premises, and other utility systems to the extent that repairs or maintenance of the same are the responsibility of LESSOR and not the LESSEE; window cleaning; fire detection and security services; costs of maintaining and installing general information and tenant listings signage on the Industrial Park Directory and Building Directory; gardening and landscape maintenance; all costs of common area snow and ice removal; common area trash, rubbish, garbage and other refuse removal; pest control; painting; common area facade maintenance; common area lighting; exterior wall and demising wall repairs except repairs of damage caused by other lessees; minor non-capital roof repairs, maintenance of all steam, water and other water retention and discharging piping, lakes, culverts, fountains, pumps, weirs, lift stations, catch basins and other areas and facilities;

repair and repainting of sidewalks due to settlement and potholes and general resurfacing and maintenance of parking areas; sanitary control; depreciation of machinery and equipment used in any of such maintenance and repair activities; management fees; union increases; road sidewalk and driveway maintenance; and all other Building and Land maintenance, repairs and insurance.

(b) the costs (amortized together with a reasonable finance charge in accordance with GAAP) of any capital improvements: (i) made to the Building by LESSOR to the extent reducing Operating Expenses or to replace existing Capital Improvements; or (ii) made to the Building by LESSOR primarily to comply with any governmental law or regulation.

(c) the costs of supplies, materials and tools.

(d) all insurance amounts paid by LESSOR for insurance with respect to the Building and Land including, without limitation, workers compensation insurance, fire insurance, and liability insurance.

(e) all costs paid to the New Englander Industrial Park Owners Association (which at the current time includes only costs incident to the use and operation of a pump house) with respect to services provided to the Land or Building.

Operating Expenses shall not include:

(a) depreciation on the Building or any Common Areas;

(b) costs of space planning, lessee improvements, marketing expenses, finders fees and real estate broker commissions;

(c) any and all expenses for which LESSOR is reimbursed (either by an insurer, condemnor or other person or entity), but only to the extent of such reimbursement, and any and all expenses for which LESSOR is reimbursed or entitled to reimbursement by a lessee in the, Building pursuant to a lease provision in LESSEE's Lease;

(d) costs in connection with services or benefits of a type which are not provided to LESSEE, but are provided to another lessee or occupant;

(e) LESSOR's general overhead and administrative expenses not directly allocable to the operation of the Building;

(f) cost of repair or other work necessitated by the negligence or willful misconduct of LESSOR or LESSOR's employees contractors or agents.

(g) costs of making upgrades to septic systems required for compliance with law.

(v) "Common Areas" shall mean all areas and facilities outside the Premises and within the exterior boundaries of the Building or the Land that are not leased to other lessees and that are provided and designated by LESSOR, in its sole discretion from time to time, for the general use and convenience of LESSEE and other lessees of the Building and their authorized representatives, entities, invitees and the general public.

5.2 TAXES.

(a) LESSEE shall pay as additional rent for each Tax Year during the term, an amount equal to LESSEE'S Proportionate Share of the Taxes for such Tax Year (the "Tax Payment"). LESSEE shall pay in advance of the first month and each month thereafter an estimate of one twelfth (1/12) of LESSEE's Proportionate Share of taxes which shall be an amount estimated and billed by LESSOR prior to the beginning of each Tax Year. Such estimate and billing may be revised by LESSOR, at LESSOR's sole option, during the Tax Year based on tax bills or assessments actually received by LESSOR relating to the current Tax Year. Within sixty (60) days of the end of each Tax Year LESSOR shall furnish LESSEE, in reasonable detail, the final computation and allocation of taxes for the preceding Tax Year. If the amount allocated to LESSEE exceeds the sum of the estimated taxes already paid by LESSEE, LESSEE shall pay such excess to LESSOR within thirty (30) days of demand therefor. If the amount allocated to LESSEE is less than that already paid by LESSEE, LESSOR shall credit the difference to future payments of Minimum Rent (or pay the same to LESSEE at the end of the term, if no extra Minimum Rent is due). The Tax Payment shall be prorated, if necessary, to correspond with that portion of a Tax Year occurring within the term of this Lease.

(b) If LESSOR shall receive a refund for any Tax Year(s) in which a Tax Payment shall have been made by LESSEE, LESSOR shall repay to LESSEE LESSEE'S Proportionate Share of such refund up to the amount of such payment after deducting therefrom the costs and expenses of obtaining such refund, which costs and expenses shall be allocated to all of the Tax Years involved. LESSOR agrees to act in good faith in connection with a determination as to whether the filing of abatement applications affecting the Leased Premises would be appropriate.

(c) With respect to any period at the expiration of the term of this Lease, as the same may be extended, which shall constitute a partial Tax Year, LESSOR'S statement shall adjust the amount of the additional rent due hereunder. The obligation of LESSEE in respect to such additional rent applicable for the last year of the term of this Lease as the same may be extended shall survive the expiration of the term of this Lease.

For the purpose of this Lease, the term "Tax Year" shall mean the twelve (12) month period established as the real estate tax year by the taxing authorities having lawful jurisdiction over the Industrial Park.

5.3 OPERATING EXPENSES.

(a) OPERATING EXPENSES RENT. LESSEE shall pay as additional rent LESSEE's Proportionate Share of the Operating Expenses paid or incurred by LESSOR, provided, however, that during the initial five (5) year term, LESSEE shall not be required to pay more than One Dollar Twenty Five Cents ($1.25) per square foot of the Leased Premises per annum for any of the consecutive twelve (12) month periods which begin on the commencement date of the term and on each anniversary of the commencement date occurring during the initial term.

(b) PAYMENT. During December of each calendar year or as soon thereafter as practicable, LESSOR will give LESSEE written notice of its estimate of LESSEE's Proportionate Share of operating Expenses for the ensuing calendar year on or before the first day of each month during the ensuing calendar year, LESSEE will pay to LESSEE One Twelfth (1/12th) of such estimated amounts, provided that if such notice is not given in December, LESSEE will continue to pay on the basis of the prior year's estimate until the month after such notice is given. If at any time or times it appears to LESSOR that the amounts payable for Operating Expenses for the current calendar year will vary from its estimate by more than Ten Percent (10%), LESSOR, by written notice to LESSEE, will revise its estimate for such year, and subsequent payments by LESSEE for such year will be in an amount so that by the end of such year LESSEE will have paid a total sum equal to such revised estimate. LESSOR will indicate in its notice to LESSEE the reasons LESSOR believes its estimate is low or high by more than Ten Percent (10%).

(c) STATEMENT. Within ninety (90) days after the close of each calendar year or as soon after such ninety (90) day period as practicable, LESSOR will deliver to LESSEE a statement of amounts of LESSEE's Proportionate Share of operating Expenses payable under this Lease for such calendar year. If such statement shows an amount owing by LESSEE that is more than the estimated payments for such calendar year previously made by LESSEE, LESSEE will pay the deficiency to LESSOR within thirty (30) days after delivery of the statement. If the statement shows an amount which is less than the estimated payments previously paid by LESSEE for the calendar year, provided LESSEE is not then in default, LESSOR will remit the amount owed LESSEE with the statement. LESSEE has the right, exercisable no more than once each calendar year on reasonable notice and at a time reasonably acceptable to LESSOR, to cause an audit to be performed at LESSEE's sole cost and expense of LESSOR's operations and/or books and records pertaining to Operating Expenses and Taxes and Insurance of the preceding calendar year. LESSOR, at LESSOR's sole discretion, may provide such audit prepared by a certified public accountant in lieu of allowing LESSEE to audit LESSOR's operations and/or books.

(d) PRORATION. If for any reason other than the default of LESSEE, this Lease terminates on a day other than the last day of a calendar year, the amount of LESSEE's Proportionate Share of Operating Expenses payable by LESSEE applicable to the calendar year in which such termination occurs will be prorated on the basis which the number of days from the commencement of such calendar year to and including such termination date bears to Three Hundred Sixty Five (365). Likewise, in the year this Lease commences, LESSEE's Proportionate Share of Operating Expenses shall be prorated based upon the number of days from the Commencement Date to the end of the calendar year in which the Commencement Date occurs.

ARTICLE VI - PARKING/LOADING

6.1 LESSEE's PARKING RIGHTS. Within the Common Areas, LESSOR will provide parking areas with necessary access as shown in Exhibit B. Only automobiles and pickup trucks will be permitted on the parking areas.

6.2 LESSOR's CONTROL OVER PARKING. LESSEE and its authorized representatives will park their cars only in areas specifically designated for that purpose by LESSOR. LESSEE shall have the exclusive use of ten (10) parking spaces in the location outlined in red on Exhibit B. In addition, LESSOR shall ensure that there are at least twenty seven (27) parking spaces available for the use of LESSEE and its agents, employees, and invitees in the location outlined in blue on Exhibit B, and that up to three (3) additional parking spaces in that location shall be specifically designated as being for LESSEE's visitor's use. LESSEE will not park or permit the parking of any vehicles adjacent to loading areas so as to interfere in any way with the use of such areas. LESSOR shall have the right, in LESSOR's sole discretion, to designate parking spaces for the exclusive use of a particular lessee or particular lessees. LESSOR will have the right to institute reasonable procedures and/or methods to enforce the terms of this Section.

6.3 LOADING DOCKS/DRIVE IN DOOR. LESSEE shall have the use of the drive in door serving the Leased Premises and the right, in common with others entitled thereto, to utilize the two (2) loading docks adjacent to the Leased Premises as shown in Exhibit B.

ARTICLE VII - UTILITIES

LESSEE shall pay, as they become due, all bills for gas, electricity, telephone service, and any other utilities furnished to the Leased Premises from and after such date as the term shall commence, including electricity charges in connection with the heating and air conditioning system serving the Leased Premises.

LESSOR shall have no obligation to provide utilities or equipment other than the utilities and equipment within the Leased Premises as of the commencement date of this Lease, all subject to interruption due to any accident, to the making of repairs, alterations, or

improvements, to labor difficulties, to difficulty in obtaining fuel, electricity, service or supplies from the sources from which they are usually obtained for said building, or to any cause beyond LESSOR'S control. In the event LESSEE requires additional utilities or equipment, the installation and maintenance thereof shall be the LESSEE'S sole obligation, provided that such installation shall be subject to written consent of the LESSOR.

ARTICLE VIII - USE OF LEASED PREMISES

The LESSEE shall use the Leased Premises only for offices, storage, and light manufacturing as permitted by law. LESSEE shall not use any portion of the Premises for purposes other than those specified above and no use shall be made or permitted to be made upon the Premises, nor acts done, which will increase the existing rate of insurance upon the Building or cause cancellation of insurance policies covering said Building. Subject to compliance with applicable law, the LESSEE may enter the Premises at any time seven (7) days per week, fifty two (52) weeks per year.

ARTICLE IX - COMPLIANCE WITH LAWS, PROHIBITED AND REQUIRED USES

9.1 MISCELLANEOUS RESTRICTIONS. LESSEE will not use the Premises for or permit in the Premises any offensive, noisy, or dangerous trade, business, manufacture or occupation or interfere with the business of any other lessee in the Building or permit any auction, liquidation, fire or bankruptcy sale to be held or conducted in or about the Premises. LESSEE agrees not to cause, permit or suffer any waste or damage, disfigurement or injury to the Premises or the fixtures or equipment thereof or the Common Areas with the exception of normal wear and tear. LESSEE will not use the Premises for cooking and nothing will be prepared, manufactured or mixed in the Premises which might emit any offensive odor. LESSEE will not keep, display or sell any merchandise or other items outside of the Premises or otherwise obstruct the sidewalks or Common Areas in the Building or use the same for business operations or advertising except as otherwise provided herein. LESSEE will not install, maintain, use or allow in or upon the Premises any pinball machines, coin operated music machine, video game machines or any other coin operated amusement device of any kind. LESSEE will at all times comply with the rules and regulations of the Building attached hereto as Exhibit C and such additional reasonable rules and regulations as may be adopted by LESSOR from time to time. LESSEE will procure and maintain in full force and effect all licenses, permits, variances and the like which may be required for any specific use made of the Leased Premises including, without limitation, any manufacturing use (excluding permits that may be required for general office use such as a certificate of occupancy or the like). LESSEE shall operate its business in the Leased Premises in compliance with all laws and ordinances of all governmental authorities having jurisdiction.

9.2 COMMON AREAS. LESSOR has the right to:

(a) establish and enforce reasonable rules and regulations applicable to all lessees concerning the maintenance, management, use and operation of the Common Areas;

(b) close, if necessary, any of the Common Areas to prevent dedication of any of the Common Areas or the accrual of any rights of any person or of the public to the Common Areas;

(c) close temporarily any of the Common Areas for maintenance purposes; and

(d) select a person, firm or corporation which may be an entity related to LESSOR to maintain and operate any of the Common Areas.

Notwithstanding the provisions of this Section, in exercising its rights hereunder, LESSOR will provide reasonable access to and from the Premises. LESSOR shall make all reasonable efforts to maintain the Common Areas in a clean, unobstructed and functional state, and shall make no permanent changes therein which shall result in a material adverse effect in the access to or use of the Leased Premises except to the extent required by law.

9.3 HAZARDOUS SUBSTANCES. The LESSEE hereby covenants and agrees that it shall not release, or permit any release or threat of release, of any hazardous substances in the Leased Premises, Building, Land, or Industrial Park in violation of applicable law. "Hazardous substances" shall mean oil, hazardous material, hazardous waste or hazardous substance (collectively called "hazardous substances"), as those terms are defined by any applicable law, rule or regulation including without limitation, the Massachusetts Oil and Hazardous Material Release Prevention and Response Act, M.G.L. c.21E, the Massachusetts Hazardous Waste Management Act, M.G.L. c.21C, the Comprehensive Environmental Response, Compensation and Liability Act, as amended, 42 U.S.C. Section 9601 et seq. and the Resource conservation and Recovery Act, as amended, 42 U.S.C. Section 6901 et seq. The LESSEE covenants and agrees that it shall not generate or permit any hazardous substances to be generated in the Leased Premises in violation of applicable law; the LESSEE shall not store or permit hazardous substances to be stored on the Leased Premises in violation of applicable law; the LESSEE shall not permit any lien under said Massachusetts Oil and Hazardous Material Release and Prevention Response Act or said Comprehensive Environmental Response, Compensation and Liability Act to attach to the Leased Premises, Office Building, or Industrial Park, or any portion thereof or interest therein; the LESSEE shall indemnify, exonerate and hold the LESSOR harmless from and against any claim, liability, loss, damage or expense, including reasonable attorneys' fees, arising out of breach of any of the representations, warranties, conditions and covenants of this paragraph. The LESSOR shall have the right, but not the obligation, to enter upon the Leased Premises to expend funds to cure any breach by the LESSEE of the representations, warranties, conditions and covenants of this paragraph, and any amounts paid as a result thereof, together with interest thereon at the rate of eighteen percent (18%) per annum shall be immediately due and payable by the LESSEE to the LESSOR. The LESSEE shall provide the LESSOR with prompt written notice: (a) upon the LESSEE's becoming aware of any release or threat of release of any hazardous substances; (b) upon the LESSEE's receipt of any notice from any federal, state, municipal or other governmental agency or authority in connection with any hazardous

substances located upon or under the Leased Premises, or emanating from the Leased Premises; and (c) upon the LESSEE's obtaining knowledge of any incurrence of any expense by any governmental authority in connection with the assessment, containment or removal of any hazardous substances located upon or under the Leased Premises, or emanating from the Leased Premises.

ARTICLE X - INSURANCE

10.1 LESSOR's FIRE INSURANCE. Throughout the term hereof, LESSOR shall maintain a policy of insurance on the Building against damage by fire and such other risks covered by the so-called Extended Coverage endorsement.

In the case of any loss or damage covered by such insurance, the proceeds of such insurance shall be devoted by LESSOR, so far as may be required hereunder, to the repair, rebuilding or restoration of the Building, provided, however, that this Lease shall not have been terminated.

10.2 PERSONAL PROPERTY INSURANCE. LESSEE shall procure such insurance on its improvements and personal property as it deems appropriate.

10.3 LESSEE's LIABILITY INSURANCE. LESSEE agrees to maintain with respect to the Leased Premises, Building, and the Industrial Park, broad form comprehensive general liability insurance with limits in the minimum amount of One Million Dollars ($1,000,000.00) per occurrence and property damage liability insurance in the minimum amount of Two Hundred Fifty Thousand Dollars ($250,000.00) per occurrence and to submit copies of such policies and certificates of such insurance to LESSOR. The policies shall name LESSOR and LESSEE as insureds, and shall contain a provision that the insurer will not cancel, materially change or renew the insurance without first giving the LESSOR thirty (30) days prior written notice. The insurance shall be in an insurance company approved by LESSOR, which approval will not be unreasonably withheld. LESSEE shall promptly furnish LESSOR with certificates or other evidence acceptable to LESSOR that such insurance is in effect.

10.4 Intentionally Omitted.

10.5 SPRINKLER INSURANCE. LESSEE shall maintain insurance covering damage from leakage or sprinkler systems now or hereafter installed in the Premises in an amount not less than the current replacement cost covering LESSEE'S merchandise, LESSEE'S improvements and LESSEE'S trade fixtures.

10.6 EMPLOYER'S LIABILITY INSURANCE WORKER'S COMPENSATION INSURANCE. LESSEE shall provide employer's liability insurance and worker's compensation insurance providing statutory state benefits for all persons employed by LESSEE in connection with the Premises as required by applicable law.

LESSEE will not do or omit any act, or keep anything in, upon or about the Leased Premises, the Building or the Industrial Park which may prevent or impair obtaining and maintaining any fire, liability or other insurance upon or written in connection with the Leased Premises, the Building, the Industrial Park, or which may make any such insurance void or voidable or otherwise invalidate the obligations of the insurer contained therein, or which may create any extra premiums or increase the rate of any such insurance over that normally applicable to office buildings. LESSEE agrees to pay to LESSOR, upon demand, the amount of any extra premiums or any increase in the rate of such insurance which results from LESSEE's occupancy of or conduct in the Leased Premises, whether or not LESSOR has consented to such business.

ARTICLE XI - MAINTENANCE

11.1 LESSEE'S MAINTENANCE. The LESSEE agrees to maintain the Leased Premises in good condition, ordinary wear and tear, damage by fire and other insured casualty, damage occasioned solely by reason of acts and omissions of LESSOR, and taking by eminent domain, only excepted, and whenever necessary, to replace plate glass and other glass therein, acknowledging as of the commencement date of this Lease that the Leased Premises are in good order and the glass whole. LESSEE shall maintain all utility systems located within the Leased Premises other than the HVAC system. The LESSEE shall not permit the Leased Premises to be overloaded, damaged, stripped, or defaced, nor suffer any waste. LESSEE shall furnish the Leased Premises in a neat and attractive manner, and shall maintain the Leased Premises in a clean, orderly, and professional condition at all times during this Lease or any extension thereof.

LESSEE shall contract for in its own name and pay, as they become due and payable, all charges for rubbish removal from the Leased Premises. LESSEE shall be responsible for providing at its own cost cleaning services for the Leased Premises. All trash shall be kept within the Leased Premises or if outside the Leased Premises only in areas designed by LESSOR and only in closed containers.

11.2 LESSOR's MAINTENANCE. The LESSOR agrees to maintain the structure, including the roof and foundation, the HVAC systems serving the Leased Premises (to the extent not damaged by the negligence of LESSEE, its servants, agents, employee or invitees) and the Common Areas of the Building in the same condition as they are at the commencement of the term, reasonable wear and tear, and damage insured against and with respect to which LESSEE obtains proceeds of insurance only excepted, unless such maintenance is required because of LESSEE or those for whose conduct the LESSEE is legally responsible. The costs of such maintenance shall be included in operating Expenses.

The LESSOR shall be under no responsibility or liability for failure or interruption of any such repairs or services referred to in this Article XI except to the extent resulting from LESSOR's gross negligence, or for any interruption in utility services, caused by breakage, accident, strikes, repairs, inability after exercise of reasonable diligence to obtain supplies or

otherwise furnish services, or for any cause or causes beyond the reasonable control of LESSOR (but LESSOR, in respect of those matters for which LESSOR is responsible, will use reasonable efforts to restore such services or make such repairs as soon as possible), nor in any event for any indirect or consequential damages; and failure or omission on the part of the LESSOR to furnish such service or make such repair under those circumstances and conditions shall not be construed as an eviction of the LESSEE, nor render the LESSOR liable in damages, nor entitle LESSEE to an abatement or rent, nor release the LESSEE from the obligation to fulfill any of the covenants under this Lease.

11.3. CONSTRUCTION. LESSEE acknowledges that LESSOR and/or lessees of the Building, on or after the date hereof , may be making improvements to their Premises, the, Building, or Industrial Park which will require construction work during normal business hours. Notwithstanding anything to the contrary in this Lease, such work may be performed during normal business hours. LESSOR agrees to use all reasonable efforts to reduce any disruption to LESSEE'S use and occupancy of the Leased Premises to a minimum. LESSEE shall have no right to any abatement of rental or other compensation or to any claim of breach of LESSOR'S covenants under this Lease (provided that there is no significant interruption to LESSEE'S access to the Leased Premises) or for loss of business or inconvenience, or in any event for consequential damages on account of such construction work.

ARTICLE XII - CONSTRUCTION AND ALTERATIONS

12.1. Prior to the commencement of the term of this Lease, LESSOR shall substantially complete the work enumerated on Exhibit E attached hereto and made a part hereof and shall have obtained a certificate of occupancy for the Leased Premises. Exhibit E shall define the total scope of work which LESSOR is to perform within the Leased Premises, and, upon the completion of such work, LESSOR shall notify LESSEE that the work has been substantially completed and provide LESSOR with certificates to such effect from LESSOR's architect. Any additional work required for LESSEE to use the Leased Premises for the intended purpose shall be at the sole cost and expense of LESSEE. Any equipment or work other than items specifically enumerated in Exhibit E which the LESSOR installs or constructs in the Leased Premises on the LESSEE's behalf shall be paid for by LESSEE within fifteen (15) business days after receipt of a bill therefor at cost, plus ten percent (10%) for overhead and supervision. If the Leased Premises have not been substantially completed prior to April 1, 1997 for reasons other than conduct by LESSEE or force majeure events, and provided that this Lease is not terminated as set forth below, the LESSEE shall be entitled to an abatement of minimum Rent for a one (1) month period at the commencement of the term. LESSEE may cancel this Leased upon twenty (20) days written notice to LESSOR if the Leased Premises have not been substantially completed on or before April 15, 1997 for reasons other than conduct by LESSEE or force majeure events, and such substantial completion has not been accomplished prior to the expiration of such twenty (20) day period.

12.2 LESSEE'S ALTERATIONS. LESSEE may not make any structural improvement or alteration to the Premises without the prior written consent of LESSOR.

LESSEE may not make any nonstructural improvement or alteration of the Premises costing in excess of Five Thousand Dollars ($5,000.00) without the prior written consent of the LESSOR which shall not be unreasonably withheld or delayed. LESSEE shall prepare, at its sole cost and expense, complete plans and specifications prepared by a professional architect or engineer for all LESSEE'S work, whether original or alterations, and submit such plans and specifications to LESSOR or LESSOR'S designated representative for written approval no later than fifteen (15) days, prior to the planned commencement of any work, together with the name of the contractor or contractors to perform such work. All contractors or others performing work on the Leased Premises shall be approved in writing by LESSOR. All such allowed alterations shall be at LESSEE'S expense, shall be in quality at least equal to the contemplated or then existing construction, as the case may be, and shall be prosecuted diligently and completed in a good and workmanlike manner. Any alterations or improvements made by the LESSEE shall become the property of the LESSOR at the termination of occupancy as provided herein; provided, however, that LESSEE shall be obligated to remove such improvements, fixtures and equipment at the said termination of occupancy as LESSOR shall request prior to such termination, the LESSEE being obligated to repair any damage which such removal may cause. LESSEE agrees that any window treatments installed by LESSEE in the Leased Premises which are visible from the exterior of the Leased Premises shall be of a type and color to be determined by LESSOR or shall be approved in advance by LESSOR.

12.3 NO LIENS. LESSEE shall not suffer or permit any liens to stand against the Leased Premises or Building or the Industrial Park by reason of work, labor, services or materials done for or at the request of LESSEE. LESSEE shall cause any such lien to be discharged within five (5) business days after the date that LESSEE receives notice of filing thereof. If LESSEE shall fail to take such action as shall cause such lien to be discharged within such five (5) day period, LESSOR may pay the amount of such lien or discharge the same by deposit or bonding proceedings, and in the event of such deposit or bonding proceedings, LESSOR may require the lienor to prosecute an appropriate action to enforce the lienor's claim and may pay any judgement recovered on such claim. In the event that LESSOR does any of the things it is by this paragraph empowered to do, LESSEE shall promptly reimburse LESSOR for any sums expended by LESSOR in connection therewith, including any sum paid in discharge of any lien or judgement, for premiums on bonds, or for attorney's fees. All such sums shall be payable upon demand with interest at the rate of eighteen percent (18%) per annum running from the fifteenth (15th) day after demand.

12.4 LESSOR'S ENTRY. LESSOR may, from time to time, enter the Leased Premises to perform construction work or make improvements, benefitting the Common Areas of the Building or other lessees of the Building. LESSOR agrees to give reasonable advance notice to LESSEE of LESSOR'S need to enter the Leased Premises for such purposes and agrees to perform such work in a manner which will minimize any disruption to LESSEE within the Leased Premises.

ARTICLE XIII - ASSIGNMENT/SUBLEASING

LESSEE agrees not to sell, assign, mortgage, pledge, franchise or in any manner transfer this Lease or any estate of interest thereunder and not to sublet the Leased Premises or any part or parts thereof and not to permit any licensee or concessionaire therein without the previous written consent of the LESSOR in each instance first obtained. Consent to a subletting by LESSEE shall not be unreasonably withheld or delayed. Consent by LESSOR to one assignment of this Lease or to one subletting, sale, mortgage, pledge or other transfer including licensing or the grant of a concession shall not be a waiver of LESSOR'S right under this Article as to any subsequent similar action. Notwithstanding any assignment or subletting, LESSEE shall remain fully liable on this Lease and shall not be released from performing any of the terms, covenants and conditions of this Lease.

If, any time during the term of this Lease, LESSEE (and/or the guarantor of LESSEE, if any) is a corporation or a trust (whether or not having shares of beneficial interest) and there shall occur any change in the identity of any of the persons then having power to control the election or appointment of the directors, trustees, or other persons exercising like functions and managing the affairs of LESSEE to other than the families of the principals of LESSEE, the same shall be deemed an assignment requiring consent hereunder, and LESSEE shall so notify LESSOR thereof. This section shall not apply if the LESSEE (and/or guarantor, if any) named herein is a corporation and the outstanding voting stock thereof is listed on a recognized securities exchange or is wholly owned by another corporation whose outstanding voting stock is so listed.

LESSOR'S rights to assign this Lease are and shall remain unqualified. Upon any bona fide sale of the Leased Premises in an arms length transaction and provided the purchaser agrees to assume all past and future obligations of LESSOR under this Lease, LESSOR shall thereupon and not otherwise be entirely freed of all obligations of the LESSOR hereunder and shall not be subject to any liability resulting from any act or omission or event occurring after such conveyance, except that any covenant or obligation of LESSOR hereunder affecting land owned by LESSOR shall continue for its term during such ownership, but no longer. Upon the sale or other transfer of LESSOR'S interest in this Lease, LESSEE agrees to recognize and attorn to such transferee as LESSOR, and LESSEE further agrees to execute and deliver a recordable instrument setting forth the provisions of this paragraph.

ARTICLE XIV - SUBORDINATION

This Lease is and shall be subject and subordinate to all ground leases and mortgages of record, any of which may now or hereafter be placed on or affect the Building, the Leased Premises, or any part thereof and to each advance made or to be made under any such mortgages, and to all renewals, modifications, consolidations, replacements and extensions thereof and all substitutions therefor, provided that said mortgagee agrees in writing delivered to LESSEE to recognize this Lease, and not to disturb LESSEE'S rights thereunder. LESSOR shall deliver such a non-disturbance agreement to LESSEE from any mortgage company

holding a mortgage covering the Building. In confirmation of such subordination, LESSEE shall execute and deliver promptly any nondisturbance, subordination, and attornment agreement that LESSOR and/or any mortgagee or lessor under any ground or underlying lease and/or their respective successors may require so long as the same is in substance similar to those customarily utilized in the Greater Boston, Massachusetts area.

Without limitation of any of the provisions of this Lease, if any ground lessor or mortgagee shall succeed to the interest of LESSOR by reason of the exercise of its rights under such ground lease or mortgage (or the acceptance of voluntary conveyance in lieu thereof) or the expiration or sooner termination of such ground lease, however caused, then such successor shall give written notice to LESSEE (which in the case of a ground lease shall be within thirty (30) days after such expiration or sooner termination) that it is succeeding to the interest of LESSOR under this Lease; and in such event, the LESSEE shall attorn to such successor and shall ipso facto be and become bound directly to such successor in interest to LESSOR to perform and observe all the LESSEE'S obligations under this Lease without the necessity of the execution of any further instrument. Nevertheless, LESSEE agrees at any time and from time to time during the term hereof to execute a suitable instrument in confirmation of LESSEE'S agreement to LESSOR, pr any ground lessor, or such mortgagee, and/or their respective assigns and LESSEE'S attorney-in-fact, to execute and deliver any such agreement of attornment for and on behalf of LESSEE.

ARTICLE XV - LESSOR'S ACCESS

The LESSOR or agents of the LESSOR may, upon reasonable prior notice, at reasonable times, enter to view the Leased Premises and make repairs and alterations as LESSOR should elect to do and may show the Leased Premises to others, and at any time within six (6) months before the expiration of the term, may, affix to any suitable part of the Leased Premises a notice for selling the Leased Premises or property of which the Leased Premises are a part and keep the same so affixed without hindrance or molestation. LESSOR agrees to make such entries in a manner which will minimize any disruption to LESSEE within the Leased Premises.

ARTICLE XVI - INDEMNIFICATION

LESSEE hereby covenants to indemnify and save LESSOR harmless from and against any and all claims, liabilities or penalties asserted by or on behalf of any person, firm, corporation or public authority:

(a) On account of or based upon any injury to person, or loss of or damage to property sustained or occurring on the Leased Premises on account of or based in whole or in part upon the act, omission, fault, negligence or misconduct of any person other than LESSOR or its employees, or agents after delivery of the Leased Premises to LESSEE;

(b) On account of or based in whole or in part upon any injury to person, or loss of or damage to property sustained or occurring in or about the Building or the Industrial Park, arising out of the use or occupancy of the Building or the Leased Premises by the LESSEE or by any person claiming by, through or under LESSEE, in addition to and not in limitation of Section (a) above;

(c) on account of or based upon (including monies due on account of) any work or thing whatsoever done (other than by LESSOR or its contractors or agents or employees of either) on the Leased Premises during the term of this Lease, any further time during which LESSEE occupies the Leased Premises and, to the extent resulting from the actions of LESSEE or its servants, agents or contractors, during the time, if any, prior to the commencement date when LESSEE may have been given access to the Leased Premises; and, in respect of any of the foregoing, from and against all costs, expenses (including, without limitation, reasonable attorneys' fees and expenses) and liabilities incurred in or in connection with any such claim or any action or proceeding brought thereon; and in case any action or proceeding be brought against LESSOR, LESSEE shall at LESSEE'S expense resist and defend such action or proceeding and employ counsel therefor reasonably satisfactory to LESSOR, it being agreed that such counsel as may act for LESSEE'S insurance underwriters engaged in defense shall be deemed satisfactory.

ARTICLE XVII - WAIVER OF SUBROGATION

LESSEE covenants that with respect to any insurance coverage carried by LESSEE in connection with the Leased Premises or the Building or the parcel upon which it is located, (whether or not such insurance is required by the terms of this Lease) such insurance shall provide for the waiver by the insurance carrier of any subrogation rights against LESSOR, its agents, servants and employees.

ARTICLE XVIII - DESTRUCTION OF PREMISES/EMINENT DOMAIN

18.1 PARTIAL DESTRUCTION. In the event of a partial destruction of the Premises during the term hereof, from any cause covered by insurance, LESSOR shall repair the same to the extent such repairs can be made with the insurance proceeds made available to LESSOR and within sixty (60) days under then existing governmental laws and regulations. Such partial destruction shall not terminate this Lease and LESSEE shall be entitled to a proportionate reduction of rent based upon the extent to which the LESSEE shall be deprived of productive use of the Premises if such repairs cannot be made within said sixty (60) days period, LESSOR, at its option, may make the repairs within a reasonable time not to exceed one hundred eighty (180) days. If LESSOR elects to make said repairs, this Lease will continue in effect and the rent will be proportionately abated as stated above. If the repairs cannot be made within sixty (60) days with the available insurance proceeds and LESSOR elects not to make said repairs, this Lease may be terminated at the option of either party.

18.2 MATERIAL/TOTAL DESTRUCTION. If the Building in which the Premises are situated or the Building and Land sustains damage of more than one third (1/3) of the replacement cost thereof, LESSOR may elect to terminate this Lease whether the Premises are injured or not. If the Premises are damaged significantly enough that in LESSOR's reasonable judgment repair of the damage will take over one hundred eighty (180) days, LESSEE may terminate this Lease. A total destruction of the Building in which the Premises are situated or the Building and Land shall terminate this Lease.

18.3 EMINENT DOMAIN.

(a) In the event that a substantial portion of the Leased Premises or the Building or the Land shall be taken or appropriated by eminent domain or shall be condemned for any public or quasi-public use, then this Lease and the term hereof may be terminated at the election of LESSOR by a notice in writing of its election so to terminate, which notice shall be given no later than sixty (60) days following the date on which LESSOR shall have received notice of such taking, appropriation, or condemnation. If the entire Leased Premises or such portion thereof or a substantial portion of the Building or the access thereto shall be so taken, appropriated, or condemned, such that LESSEE shall be precluded from utilizing the Leased Premises substantially as contemplated, then this Lease and the term hereof may be terminated at the election of LESSEE by a notice in writing of its election so to terminate, which notice shall be given no later than sixty (60) days following the date on which LESSEE shall have received notice (clearly stating the effect of such taking upon the Leased Premises and the Industrial Park) of such taking, appropriation or condemnation. Upon the giving of any such notice of termination (either by LESSOR or LESSEE) this Lease and the term hereof shall terminate on or retroactively as of the date on which LESSEE shall be required to vacate any portion of the area so taken, appropriated or condemned or shall be deprived of the means of access thereto or upon ninety (90) days written notice after LESSOR is required to vacate the applicable portion of the Building or the Industrial Park, provided that no portion of the Leased Premises has been taken or condemned. In the event of such termination, this Lease and the term hereof shall expire as of such effective termination date and rent shall be apportioned as of such date.

(b) If neither party (having the right to so) elects to terminate this Lease and the term hereof, LESSOR shall, with reasonable diligence and at LESSOR'S expense, restore the remainder of the Leased Premises (but not LESSEE'S personal property or alterations installed at LESSEE'S expense), and the means of access thereto, as nearly as practicable to the condition which obtained prior to such taking, appropriation or condemnation, in which event the rent shall be adjusted such that a just proportion of the rent shall be abated according to the nature and extent of the taking, appropriation or condemnation. LESSOR shall not be liable for any delays in such restoration which are due to acts of God, as defined herein, nor shall LESSOR be liable for any inconvenience or annoyance to LESSEE or injury to LESSEE'S business resulting from reasonable delays in such restoration (although the same shall be taken into account in connection with any abatement of rent). LESSOR expressly reserves and LESSEE hereby assigns to LESSOR, all rights to compensation and damages

created, accrued or accruing by reason of any such taking, appropriation or condemnation, excluding only rights to compensation or damages relating to LESSEE'S fixtures, property, or equipment or relocation expenses made directly to LESSEE by a governmental agency or entity.

(c) If the Leased Premises or any part thereof or the access thereto shall be taken, appropriated or condemned for any temporary use (i) this Lease shall be and remain unaffected thereby and LESSEE shall continue to pay the full amount of the rent, (ii) LESSEE shall be entitled to receive for itself any award made for such use allocable to the term of this Lease, and (iii) LESSEE shall be responsible for any repairs necessary to restore the Leased Premises to their condition prior to such taking, appropriation or condemnation, provided that if any such taking, appropriation or condemnation extends beyond the term of this Lease, the costs of such repairs shall be allocated between LESSOR and LESSEE in proportion to the amount of any award each receives. Any taking, appropriation or condemnation continuing in excess of six (6) months shall be deemed to be a permanent taking, appropriation or condemnation and shall be governed by Sections (a) and (b) above.

ARTICLE XIX - DEFAULT

19.1 If LESSEE shall default in the payment of rent or any other charges due hereunder and such default shall continue for ten (10) days after written notice to LESSEE, or if LESSEE shall default in the performance of any other of its obligations and such default shall continue for thirty (30) days after written notice thereof to the LESSEE (except that if the LESSEE cannot reasonably cure any such default of its other obligations within said thirty (30) day period, this period may be extended for a reasonable time not exceeding ninety (90) days, provided that the LESSEE commences to cure such default within the thirty (30) day period and proceeds diligently thereafter to effect such cure), or if the LESSEE shall file a petition under any bankruptcy or insolvency law, or if such a petition filed against LESSEE is not dismissed within sixty (60) days, or if the LESSEE shall be adjudicated bankrupt or insolvent according to law, or if the LESSEE shall make any assignment for the benefit of creditors, or if the LESSEE shall file any petition seeking a reorganization, arrangement or similar relief, or if a receiver, custodian, trustee or similar agent of the Leased Premises or of all or a substantial part of LESSEE's assets shall be authorized or appointed or if LESSEE's interest in this Lease is taken upon execution or other process of law in any action against LESSEE, then the LESSOR may lawfully enter the Leased Premises and repossess the same as the former estate of the LESSOR, or terminate this Lease by written notice to LESSEE and, in either event, expel the LESSEE and those claiming through or under the LESSEE, and remove their effects (forcibly, if necessary) without being deemed guilty of any manner of trespass and without prejudice to any other remedy which the LESSOR may have for arrears of rent and other charges due hereunder or proceeding on account of breach of covenant, and upon entry or notice as aforesaid, this Lease shall terminate. LESSEE covenants, in case of any default by LESSEE hereunder (which covenant shall survive the termination of this Lease), to pay LESSOR all costs of enforcing its rights under this Lease (including, without limitation, reasonable attorney's fees and expenses), reletting expenses, expenses incurred putting the

Leased Premises in good order and repair for rental, and brokerage fees together with, as agreed liquidated damages, the greater of either (i) the amount by which, at the termination of the Lease, the aggregate of the rent (including, without limitation, the tax payments projected on the basis of experience under this Lease) and other sums payable hereunder projected over a period from such termination until the termination date stated herein as the same may have been extended exceeds the aggregate projected fair market rental value of the Leased-Premises for such period, or (ii) an amount equal to the rent (including, without limitation, tax payments projected on the basis of experience under this Lease) and other sums which would have been payable had the Lease not so terminated (subject to off-set for net rents actually received from reletting after subtraction of the expenses of reletting), payable upon the due dates as specified herein.

LESSOR may bring legal proceedings for the recovery of such damages, or any installments thereof, from time to time at its election, and nothing contained herein shall be deemed to require LESSOR to postpone suit until the date when the term of this Lease would have expired if it had not been terminated hereunder.

Nothing herein contained shall be construed as limiting or precluding LESSOR'S recovery from LESSEE of any amount or damages (including, without limitation, reasonable attorney's fees and expenses) to which, in addition to the damages particularly provided above, LESSOR may lawfully be entitled by reason of any default hereunder on the part of LESSEE.

LESSOR and LESSEE agree that, for the purpose of computing liquidated damages, increased tax payments for the period between the termination of this Lease pursuant to this Article and the date of termination called for hereunder as the same may have been extended shall be computed upon the assumption that the amount of the tax payment would increase for each fiscal year during the term by an amount determined by applying the average annual percentage increase over the three (3) Tax Years immediately preceding the Tax Year in which the Lease is terminated.

19.2 LESSOR shall not be in default of any of its obligations unless it shall fail to perform such obligations within thirty (30) days (or such further time as is reasonably necessary) after receipt of written notice thereof from LESSEE. LESSEE shall give like notice to any mortgagee which has so requested in writing, which mortgagee shall have like opportunity to cure.

19.3 If LESSEE shall default in the observance or performance of any term, covenant or condition on its part to be observed or performed under this Lease, LESSOR, without being under any obligation to do so and without thereby waiving such default, may remedy such default for the account and at the expense of LESSEE, immediately and without notice in case of emergency, and in any other case after LESSEE shall fail to remedy such default within the time set forth in this Lease, and after LESSOR shall have given notice to LESSEE of such failure. If LESSOR makes any expenditures or incurs any obligations for the payment of money in connection therewith, including, but not limited to, reasonable attorney's fees and

expenses, such sums paid or obligations incurred, with interest at the rate of eighteen percent (18%) shall be paid to LESSOR by LESSEE as rent hereunder.

ARTICLE XX - NOTICE

Any notice from the LESSOR to the LESSEE relating to the Leased Premises or to the occupancy thereof, shall be deemed duly served, if left at the Leased Premises addressed to the LESSEE or if mailed to the Leased Premises, registered or certified mail, return receipt requested, postage prepaid, or by Federal Express or other overnight mail service, addressed to the LESSEE. Any notice from the LESSEE to the LESSOR relating to the Leased Premises or to the occupancy thereof, shall be deemed duly served, if mailed to the LESSOR by registered or certified mail, return receipt requested, postage prepaid, or by Federal Express or other overnight mail service, addressed to the LESSOR c/o Parsons Commercial Group, 205 Newbury Street, Framingham, Massachusetts 01701, or at such other address as the LESSOR may from time to time advise in writing.

ARTICLE XXI - SURRENDER

The LESSEE shall at the expiration or other termination of this Lease remove all LESSEE'S goods and effects from the Leased Premises, (including, without hereby limiting the generality of the foregoing, all signs and lettering affixed or painted by the LESSEE, either inside or outside the Leased Premises). LESSEE shall deliver to the LESSOR the Leased Premises and all keys and locks thereto, and other fixtures connected therewith and all alterations and additions made to or upon the Leased Premises, in good condition, ordinary wear and tear, only excepted. In the event of the LESSEE'S failure to remove any of LESSEE'S property from the Leased Premises, LESSOR is hereby authorized, without liability to LESSEE for loss or damage thereto, and at the sole risk of LESSEE, to remove and store any of said property at LESSEE'S expense, or to retain same under LESSOR'S control or to sell at public or private sale, without notice of any or all of the property not so removed and to apply the net proceeds of such sale to the payment of any sum due hereunder, or to destroy such property.

ARTICLE XXII - COVENANT OF QUIET ENJOYMENT

LESSOR hereby warrants that it and no other person or corporation has the right to Lease the Leased Premises hereby demised. So long as LESSEE shall perform each and every covenant to be performed by LESSEE hereunder (subject to applicable grace periods), LESSEE shall have peaceful and quiet possession of the Leased Premises without hindrance on the part of the LESSOR or persons claiming by or through the LESSOR or anyone under LESSOR'S control.

ARTICLE XXIII - NON-WAIVER

No reference to any specific right or remedy shall preclude LESSOR from exercising any other right or from having any other remedy or from maintaining any action to which it may otherwise be entitled either at law or in equity. LESSOR'S failure to insist upon a strict performance of any covenant of this Lease or to exercise any option or right herein contained shall not be a waiver or relinquishment for the future of such covenant, right or option, but the same shall remain in full force and effect.

ARTICLE XXIV - INTENTIONALLY OMITTED

ARTICLE XXV - APPLICABLE LAW

This Lease shall be construed under the laws of the Commonwealth of Massachusetts. If any provision of this Lease, or portion thereof, or the application thereof to any person or circumstances shall, to any extent, be invalid or unenforceable, the remainder of this Lease shall not be effected thereby and each provision of this Lease shall be valid and enforceable to the fullest extent permitted by law.

ARTICLE XXVI - NO PARTNERSHIP

Any intention to create a joint venture or partnership relation between the parties hereto is hereby expressly disclaimed.

ARTICLE XXVII - LIABILITY

If two or more individuals, corporations, partnerships or other business associations (or any combination of two or more thereof) shall sign this Lease as LESSEE the liability of each individual, corporation, partnership or other business association to pay rent and perform all other obligations hereunder shall be deemed to be joint and several. In a like manner, if the LESSEE named in this Lease shall be a partnership or other business association, the members of which are, by virtue of statute or general law, subject to personal liability, the liability of each such member shall be deemed to be joint and several.

LESSEE shall neither assert nor seek to enforce any claim for breach of this Lease against any of LESSOR'S assets other than LESSOR'S interest in the Building and Industrial Park and in the rents, issues and profits thereof, and LESSEE agrees to look solely to such interest for the satisfaction of any liability of LESSOR under this Lease. In no event shall any individual Trustee or beneficiary of the LESSOR (including without limitation all of the officers, trustees, directors, partners, beneficiaries, joint ventures, members' stockholders or other principals or representatives, disclosed or undisclosed, thereof) ever be personally liable for any such liability or ever be liable for damages, whether direct, consequential, punitive or otherwise. Each LESSOR shall be liable only for events occurring during that person's ownership of LESSOR'S estate.

ARTICLE XVIII - RULES AND REGULATIONS

The rules and regulations attached to this Lease as Exhibit C are made a part of this Lease, and LESSEE agrees to comply with and observe the same. LESSEE'S failure to keep and observe said rules and regulations shall constitute a breach of the terms of this Lease in the manner as if the same were contained herein as covenants. LESSOR reserves the right from time to time to amend or supplement said rules and regulations and to adopt and promulgate additional rules and regulations applicable to the Leased Premises, the Building, and the Industrial Park. Notice of such additional rules and regulations, and amendments and supplements, if any, shall be given to LESSEE and LESSEE agrees thereupon to comply with and observe all such rules and regulations, and amendments thereto and supplements thereof.

ARTICLE XXIX - EXAMINATION

The submission of this Lease for examination does not constitute a reservation of or option for the Leased Premises, and this Lease becomes effective only upon execution and delivery thereof by LESSOR and LESSEE.

ARTICLE XXX - ESTOPPEL

LESSEE agrees that at any time and from time to time at reasonable intervals, within ten (10) days after written request by LESSOR, LESSEE will execute, acknowledge and deliver to LESSOR, LESSOR'S mortgagee, or an assignee designated by LESSOR, a writing ratifying this Lease and certifying: (a) that LESSEE has entered into occupancy of the Leased Premises and the date of such entry if such is the case; (b) that this Lease is in full force and effect, and has not been assigned, modified, supplemented or amended in any way (or if there has been any assignments, modification, supplement or amendment, identifying the same) ; (c) that this Lease represents the entire agreement between LESSOR and LESSEE as to the subject matter hereof (or if there has been any assignment, modification, supplement or amendment, identifying the same) ; (d) the date of commencement and expiration of the term; (e) that all conditions under this Lease to be performed by LESSOR have been satisfied and all required contributions by LESSOR to LESSEE on account of LESSEE'S improvements have been received (and, if not, what conditions remain unperformed or contribution unpaid); (f) that to the knowledge of the signer of such writing, except as otherwise stated, no default exists in the performance or observance of any covenant or condition in this Lease and there are no defense or offsets of which the signer may have knowledge; (g) that Minimum Rent and all other rentals have been paid under this Lease, if such be the case.

ARTICLE XXXI - SECURITY DEPOSIT

LESSEE, contemporaneously with the execution of this Lease, has deposited with LESSOR the sum of Thirteen Thousand Four Hundred Sixteen Dollars Sixty Seven Cents ($13,416.67), receipt of which is hereby acknowledged by LESSOR. In the event that LESSEE commences occupancy of the Premises upon receipt of notice that LESSOR'S work has been completed and otherwise commences performing LESSEE'S obligations as LESSEE

under this Lease, then Six Thousand Two Hundred Twenty Nine Dollars Seventeen Cents ($6,229.17) of the deposit shall be applied to the first full month's Minimum Rent due hereunder. The balance of said deposit shall be held by LESSOR, without liability for interest, as security for the faithful performance by LESSEE of all of the terms, covenants, and conditions of this Lease by said LESSEE to be kept and performed during the term hereof. If at any time during the term of this Lease any of the rent herein reserved shall be overdue and unpaid, the LESSOR may, at the option of the LESSOR, upon written notice to LESSEE, appropriate and apply any portion of said deposit to the payment of any such overdue rent or other sum. In the event of the failure of LESSEE to keep and perform any of the terms, covenants and conditions of this Lease to be kept and performed by LESSEE, then the LESSOR at its option, upon written notice to LESSEE, may appropriate and apply said entire deposit or so much thereof as may be necessary, to compensate the LESSOR for loss or damage sustained or suffered by LESSOR due to such breach on the part of LESSEE. Should the entire deposit, or any portion thereof, be appropriated and applied by LESSOR payment of overdue rent for the payment of overdue rent or other sums due and payable to LESSOR by LESSEE hereunder, then LESSEE shall, upon the written demand of LESSOR, forthwith remit to LESSOR a sufficient amount in cash to restore said security to the original sum deposited (less any amount applied to the first month's rent), and LESSEE'S failure to do so within five (5) days after receipt of such demand shall constitute a breach of this Lease. The said deposit, including any additions thereto (or the balance thereof not applied to the first months rent or obligations of LESSEE provided for herein), shall be returned in full to LESSEE at the end of the term of this Lease.

ARTICLE XXXII - HOLDOVER

If the LESSEE remains in the Leased Premises beyond the expiration of this Lease at the end of the term, or sooner following an early termination as provided for herein, such holding over shall be deemed to create a tenancy-at-will, subject to all of the LESSEE's obligations set forth herein, but at a monthly rate equal to one hundred ten percent (110%) for the first sixty (60) days and one hundred twenty five percent (125%) thereafter of the fixed Minimum Rent and additional rent and other charges provided for under this Lease. The tenancy-at-will may be canceled by either party with a thirty (30) day written notice.

ARTICLE XXXIII - NOTICE OF LEASE

LESSEE agrees that it will not record this Lease. LESSOR and LESSEE shall, upon request of either, execute and deliver a notice of this Lease in such recordable form as may be required by applicable statute.

ARTICLE XXXIV - ALL AMOUNTS ARE RENT

All amounts payable by LESSEE to LESSOR under any provision of this Lease shall be deemed to be rent or additional rent for the use of the Leased Premises, and LESSOR'S remedies for the nonpayment of such amounts shall be the same as for nonpayment of Minimum annual Rental.

ARTICLE XXXV - ACTS OF GOD

In any case where either party is required to do any act other than the payment of rent, delays caused by or resulting from acts of God, war, civil commotion, fire, flood or other casualty, labor difficulties, shortages of labor, materials or equipment, unusual government regulations, unusually severe weather or other causes beyond such party's reasonable control shall not be counted in determining the time during which such act shall be completed, whether such time be designated as a fixed date, a fixed time or "a reasonable time", and such time shall be deemed to be extended by the period of such delay.

ARTICLE XXXVI - NO ACCORD AND SATISFACTION

No acceptance by LESSOR of a lesser sum than the Minimum Rent, additional rent, or any other charge then due shall be deemed to be other than on account of the earliest installment of such amount due, and notwithstanding any endorsement or statement on any check or any letter accompanying any check for payment, LESSOR may accept such check or payment without prejudice to LESSOR'S right to recover the balance of such amount or pursue any other remedy provided in this Lease or by law.

ARTICLE XXXVII - PARTIAL INVALIDITY

The invalidity of one more of the provisions of this Lease shall not affect the remaining portions of this Lease; and, if any one or more of the provisions of this Lease should be declared invalid by final order, decree or judgment of a court of competent jurisdiction, this Lease shall be construed as if such invalid provisions had not been included in this Lease.

ARTICLE XXXVIII - SIGNAGE

LESSOR shall cause LESSEE's name to be lettered on the front of the Building with other lessees of the Building as part of a Building Directory. LESSOR shall also cause LESSEE's name to be posted on the so-called "Park Directory" at the entrance to the Industrial Park. LESSEE shall not install any signage on the exterior of the Leased Premises or visible from outside the Leased Premises, without LESSOR'S prior written approval upon submission of detailed plans. LESSEE may install a free standing sign identifying LESSEE adjacent to the walk in front of the Building, the size and location of which shall be subject to the approval of LESSOR. All of LESSEE'S signage other than the above-mentioned signage for the Building Directory and Industrial Park Directory shall be erected at LESSEE'S sole cost and expense. All such signage must comply in all respects with local legal requirements. LESSOR reserves the right, at any time, to establish sign criteria to which all signs shall be made to conform, at LESSEE'S sole expense.

ARTICLE XXXIX - BROKERS

LESSEE represents that it has not dealt with any person in connection with the Leased Premises or the negotiation or execution of this Lease other than Cushman & Wakefield of Massachusetts, Inc. and Parsons Commercial Group. LESSOR agrees to pay to Cushman & Wakefield of Massachusetts, Inc. and Parsons Commercial Group all fees and/or commission due in connection with this transaction. LESSEE shall indemnify and save harmless the LESSOR from and against all claims, liabilities, costs and expenses incurred as a result of any breach of the foregoing representation by LESSEE.

ARTICLE XL - SUCCESSORS AND ASSIGNS

This Lease and the terms hereof shall be binding upon and inure to the benefit of the parties hereto and their permitted successors and assigns.

ARTICLE XLI - RIGHT OF FIRST REFUSAL

The LESSEE is hereby given the right of first refusal to lease the space adjacent to the Leased Premises designated Suite Number L-2 currently occupied by Conners Design and shown as outlined in blue on Exhibit A (the "Adjacent Premises"). If at any time during the initial term of this Lease (i) while there are at least twenty four (24) months remaining in the initial term, or (ii) after LESSEE has exercised its option to extend hereunder, the Adjacent Premises shall become vacant, LESSEE is not then in default hereunder beyond any applicable grace period, and LESSOR has received an offer to lease all or part of the Adjacent Premises, the LESSOR shall notify the LESSEE of such fact, and the LESSEE shall thereupon have the right within ten (10) days from the receipt of notice from LESSOR to elect to lease such Adjacent Premises. LESSEE may exercise such right only by providing written notice of its election to exercise such right to LESSOR within ten (10) days of receipt of LESSOR'S notice. If the LESSEE shall not so elect within the said period, the LESSOR may then lease said Adjacent Premises or any portion thereof to any potential lessee upon such terms, conditions, and rental as LESSOR, in its sole discretion, determines. If the LESSEE elects to exercise said right of first refusal, the Adjacent Premises shall be delivered in "AS IS" condition on the later of ten (10) days after receipt of LESSEE's notice and the date that the same became vacant. If the LESSEE elects to exercise such right of first refusal, the parties shall enter into an amendment to this Lease providing that the rent per square foot and terms and conditions of lease of the Adjacent Premises shall be the same as contained in this Lease and that this Lease shall be amended to include the Adjacent Premises, and to the extent that LESSEE'S option to extend has or may be exercised with respect to the Premises, it shall also be deemed to have been exercised with respect to the Adjacent Premises. The right of first refusal herein contained shall expire on the first to occur of the following (i) the failure of the LESSOR and LESSEE to execute an amendment to this Lease for any reason whatsoever within ten (10) days after the election by LESSEE to exercise its right of first refusal, or (ii) LESSEE'S failure to notify LESSOR of its exercise of its right to lease the Adjacent Premises after notice duly given by LESSOR.

ARTICLE XLII - OPTION TO EXPAND PREMISES

The LESSEE is hereby given the right during the term to lease the approximately Five Thousand (5,000) square feet in the Building, contiguous to the Premises and outlined in green on Exhibit A (the "Expansion Premises"). At any time during the initial term of this Lease while there are at least twelve (12) months remaining in the initial term, and provided LESSEE is not then in default hereunder, the LESSEE shall have the right to elect to lease such Expansion Premises by providing LESSOR with at least ninety (90) days advance written notice of its election to lease the Expansion Premises beginning no later than twelve (12) months prior to the expiration of the initial term. If the LESSEE elects to exercise said option, the Expansion Premises shall be delivered in "AS IS" condition and this Lease shall be amended to include the Expansion Premises. Such amendment shall provide, inter alia, (i) for Minimum Rent at the annual rate of Four Dollars ($4.00) per square foot during the initial term and at Ninety Five Percent (95%) of fair market value as determined in accordance with Article 4.2 hereof during the extension term, and (ii) that any buildout agreed to between LESSOR and LESSEE which is accomplished by LESSOR shall be amortized over the then remaining term of the Lease.

ARTICLE XLIII - FINANCING REQUIREMENTS

If in connection with obtaining financing for the Office Building, a bank, insurance company, pension trust or other institutional lender shall request reasonable modifications in this Lease as a condition to such financing, LESSEE will not unreasonably withhold, delay, or condition its consent thereto, provided that such modifications do not increase the obligations of LESSEE hereunder or materially adversely affect the leasehold interest hereby created.

ARTICLE XLIV - CAPTIONS AND HEADINGS

The captions and headings used herein are intended only for the convenience of the reference and are not to be used in construing this instrument.

ARTICLE XLV - ENTIRE AGREEMENT

This Lease and the Exhibits hereto constitute the full and complete agreement between the parties hereto and are no other terms, obligations, covenants, representations, warranties or conditions other than contained herein.

IN WITNESS WHEREOF, LESSOR and LESSEE have caused this Lease to be signed, sealed and delivered as of the day first above written.

LESSOR: SEVEN OCTOBER HILL LLC. LESSEE:

By:/S/ John R. Parsons Jr. By: /S/ David Green

Its:Manager Member Its: President

COMMONWEALTH OF MASSACHUSETTS

COUNTY OF MIDDLESEX DECEMBER 16, 1996

On this 16th day of December 1996 before me, personally appeared the above-named John R. Parsons Jr. known to me to be the Manager Member of Seven October Hill LLC., who, being by me duly sworn, acknowledged the foregoing instrument to be his free act and deed as said Managing member of Seven October Hill LLC.

[Notary Seal]

/S/ Illegible Signature

Notary Public
My Commission Expires:

COMMONWEALTH OF MASSACHUSETTS

COUNTY OF MIDDLESEX DECEMBER 16, 1996

On this 16th day of December 1996 before me personally appeared the above-named David Green, as President of Harvard Apparatus, Inc., who, being by me duly sworn, acknowledged the foregoing instrument to be his free act and deed and the free act and deed of the corporation.

[Notary Seal]

/S/ Illegible Signature

Notary Public
My Commission Expires:

Exhibit "A"

This is a floorplan of the basement level of 7 October Hill Road, Holliston, Massachusetts. The floorplan appears on the page sideways in a landscape orientation. The scale, printed in the lower left corner, reads 1 cm = 15 feet. The depicted space is a rectangle measuring 20.5 cm across and 8.5 cm high. There is a small rectangular protrusion on the right wall which is 1.7 cm across and 1.3 cm high. This protrusion is 0.6 cm up from the bottom wall. The floorplan is subdivided into four areas labeled Area A, B, C and D.

Area A occupies the entire 8.5 cm of the left wall. Area A extends 13.4 cm from the left wall at a width of 3.4 cm, as measured from the top of the floorplan down. Area A then tapers to a width of 2.6 cm and extends another 1.6 cm towards the right wall. At the bottom of the floorplan, Area A extends 4 cm from the left wall where it intersects with a stairwell shared with adjacent Area C. Above the shared stairwell, which extends 2.0 cm from the bottom wall, Area A opens out an additional 0.7 cm towards the right wall. Area A is shaded. It includes twenty four spaces divided by internal walls. Two spaces located at the top of the floorplan are labeled Loading Dock Doors 1 and 2.

Area B occupies a rectangular area in the center of the floorplan, measuring 9 cm across by 1.6 cm high. It is situated between Areas A and C. A narrow strip extends from the left side of Area B and runs downward 1.8 cm at a width of 0.8 cm. Area B expands upward 1.0 cm at a point 13.4 cm from the left wall. It extends upward again, in a narrow strip, at a point 14.9 cm from the left wall. This strip measures 1.0 cm across and runs the remaining 2.5 cm to the top wall where it is met by Loading Dock Door 3. Area B contains one space divided by internal walls which is labeled Garage Door.

Area C is a rectangular space extending from the bottom wall measuring 11.5 cm across and 3.5 cm high. It begins 5.7 cm from the left wall. It contains three spaces divided by internal walls. These spaces are labeled Stairs, Sprinkler and Electrical.

Area D occupies the entire 8.5 cm of the right wall as well as the 1.7 cm by 1.3 cm protrusion described in the first paragraph above. It extends 4.4 cm towards the left wall, except as it narrows by 0.1 cm to accommodate a space marked Garage Door. There are three spaces divided by internal walls along the top wall of the floorplan. Loading Dock Door 4 is in Area D. It is located along the top wall 3.6 cm from the right wall.

The bottom left corner of the page contains a small black square which contains a white circle with a line through it. Immediately to the right of the square is printed: A.W. Perry Management Corp. 20 Winthrop Square, Boston, MA 02110.

Exhibit B

NEW ENGLANDER INDUSTRIAL PARK
RTE 126 HOLLISTON, MA

[graphic]

The graphic depicts the layout of the nineteen buildings that comprise New Englander Industrial Park. One building at the bottom of the map is labeled NAM. The remaining buildings are numbered one through eighteen. A note on the top left corner of the map states: F denotes Phase II Conceptual only. Buildings eleven through eighteen are marked with the letter F. Building seven appears at the top of the map and is shaded. The words Subject Building appear above Building seven with an arrow pointing downward to building seven. The Upper Parking Lot is labeled and appears above and slightly to the right of building seven. The map also depicts various lawns and trees within the industrial park.

SEVEN OCTOBER HILLS LLC.

EXHIBIT C

RULES AND REGULATIONS

1. In the event of any conflict between the terms of these rules and regulations and the express provisions of the Lease, the express, applicable provisions of the Lease shall control. LESSOR reserves the right, without the approval of LESSEE, to rescind, add to and amend any rules or regulations, to add new reasonable rules or regulations and to waive any rules or regulations with respect to any lessee or lessees. LESSEE shall provide a copy of these rules and regulations to each of its employees to facilitate compliance with these standards.

2. The sidewalks, plaza entries, corridors and staircases of the Building shall not be obstructed, and shall not be used by LESSEE, or the employees, agents, servants, visitors or invitees of LESSEE, for any purpose other than ingress and egress to and from the Premises. No skateboards, roller skates, roller blades or similar items shall be used in or about the Building.

3. No freight, furniture or other large or bulky merchandise or equipment of any description will be received into the Building except in such a manner, during such hours and using such passageways and loading doors as may be approved or designated by LESSOR, and then only upon having been scheduled in advance. Any hand trucks, carryalls, or similar equipment used for the delivery or receipt of merchandise or equipment shall be equipped with rubber tires, side guards and such other safeguards as LESSOR shall reasonably require. All deliveries and shipments shall be made to the loading docks at the rear of the Premises except for small packages customarily brought to offices by U.S. mail, package delivery services, or couriers. Although LESSOR or its personnel may participate or assist in the supervision of such movement, LESSEE assumes financial responsibility for all risks as to damage to articles moved and injury to persons or public engaged or not engaged in such movement, including any equipment, property or personnel of LESSOR damaged or injured in connection with carrying out this service for LESSEE.

4. LESSOR shall have the right to prescribe the weight, position and manner of installation of safes or other heavy equipment which shall, if considered necessary by LESSOR, be installed in a manner which shall insure satisfactory weight distribution. All damage done to the Building by reason of a safe or any other article of LESSEE's equipment being on the Premises shall be repaired at the expense of LESSEE. The time, routing and manner of moving safes or other heavy equipment shall be subject to proper approval by LESSOR. No objects which cause a loading factor of more than one hundred seventy five (175) pounds per square foot shall be brought into the Premises.

5. Only persons authorized by LESSOR will be permitted to furnish newspapers, ice, drinking water, towels, barbering, shoe shining, janitorial services, floor polishing and other similar services and concessions in the Building, and only at hours and under regulations fixed by LESSOR. Notwithstanding, this paragraph shall not interfere with LESSEE placing a vending machine or some similar device within the Premises for the exclusive use by LESSEE's employees.

6. LESSEE, or the employees, agents, servants, visitors or invitees of LESSEE, shall not at any time place, leave or discard any rubbish, paper, articles or object of any kind whatsoever outside the doors of the Premises or in the corridors or passageways of the Building.

7. Except as otherwise set forth in Lease between LESSOR and LESSEE, LESSEE shall not place, or cause or allow to be placed, any sign, placard, picture, advertisement, notice or lettering whatsoever, in, about or on the exterior of the Premises or Building except in and at such places as may be designated by LESSOR and consented to by LESSOR in writing. Any such sign, placard, advertisement, picture, notice or lettering so placed without such consent may be removed by LESSOR without notice to and at the expense of LESSEE. All lettering and graphics on doors and windows shall conform to the Building standard prescribed by LESSOR.

8. LESSEE shall not place, or cause or allow to be placed, any satellite dish, communications equipment, computer or microwave receiving equipment, antennae or other similar equipment about or on the exterior of the Premises, Building or Land without LESSOR's prior authorization, which may require LESSEE to provide LESSOR of details of equipment and its installation and to execute an agreement which may provide for rent for roof space utilized, for LESSEE's indemnification of LESSOR and other provisions as LESSOR may deem necessary. If LESSEE fails to get LESSOR's approval, any such equipment so placed may be removed by LESSOR without notice to and at the expense of LESSEE.

9. Canvassing, soliciting, or peddling in the Building is prohibited and LESSEE shall cooperate reasonably to prevent same.

10. If LESSEE desires additional security service for the Premises, LESSEE shall have the right (with advance written notification to LESSOR) to obtain such additional service at LESSEE'S sole cost and expense. LESSEE shall keep doors to unattended areas locked and shall otherwise exercise reasonable precautions to protect property from theft, loss or damage. LESSOR shall not be responsible for the theft, loss or damage of any property or for any error--with regard to the exclusion from or admission to the Building of any person. In case of invasion, mob, riot or public incitement, the LESSOR reserves the right to prevent access to the Building during the continuance of same by taking measures for the safety of the lessees and protection of the Building and property or persons therein and shall provide such notice to LESSEE as is practicable under the circumstances.

11. Only workmen employed, designated or approved by LESSOR may be employed for repairs, installations, alterations requiring LESSOR's approval, painting, material moving and other similar work that may be done in or on the Building.

12. LESSEE shall not bring or permit to be brought or kept in or on the Premises or Building in violation or applicable law any flammable, combustible, corrosive, caustic, poisonous, or explosive substance in violation of applicable law, or firearms, in violation of applicable law or cause or permit any odors to permeate in or emanate from the Premises, or permit or suffer the Building to be occupied or used in a manner offensive or objectionable to LESSOR or other occupants of the Building by reason of light, radiation, magnetism, noise, odors and/or vibrations.

13. LESSEE shall not mark, paint, drill into, or in any way deface any part of the Building or the Premises. No boring, driving of nails or screws, cutting or stringing of wires shall be permitted, except with the prior written consent of LESSOR which consent shall not be unreasonably withheld or delayed. LESSEE shall not install any resilient tile or similar floor covering in the Premises except with the prior approval of LESSOR, which approval shall not be unreasonably withheld or delayed. Notwithstanding, LESSEE may hang pictures which are used in the decoration of the Premises.

14. No additional locks or bolts of any kind shall be placed on any door in the Premises and no lock on any door therein shall be changed or altered in any respect. LESSEE shall not make duplicate keys. All keys shall be returned to LESSOR upon the termination of this Lease and LESSEE shall give to LESSOR the explanations of the combinations of all safes, vaults and combination locks remaining with the Premises. LESSOR may at all times keep a pass key to the Premises. All entrance doors to the Premises shall be left closed at all times and left locked when the Premises are not in use.

15. LESSEE shall give immediate notice to LESSOR in case of known theft, unauthorized solicitation or accident in the Premises or in the Building, or of known defects therein or in any fixtures or equipment, or of any known emergency in the Building.

16. LESSEE shall not use the Premises or permit the Premises to be used for photographic, multilith or multigraph reproductions, except in connection with its own business and not as a service for others without LESSOR's prior written permission.

17. No animals or birds shall be brought or kept in or about the Building, with the exception of guide dogs accompanying visually handicapped persons.

18. No awnings, draperies, shutters or other interior or exterior window coverings that are visible from the exterior of the Premises may be installed by LESSEE without LESSOR's prior written consent.

19. LESSEE shall not place, install or operate within the Premises or any other part of the Building any engine, stove, or machinery, or conduct mechanical operations therein other than in the ordinary course of its business, without the prior written consent of LESSOR.

20. No portion of the Premises or any other part of the Building shall at any time be used or occupied as sleeping or lodging quarters.

21. LESSEE shall at all times keep the Premises neat and orderly.

22. The toilet rooms, urinals, wash bowls and other apparatus shall not be used for any purpose other than that for which they were constructed and no foreign substance of any kind whatsoever shall be thrown therein. The expenses of any breakage, stoppage or damage, resulting from the violation of this rule shall be borne by the LESSEE who (or whose employees or invitees) shall have caused such damage.

23. All LESSEE modifications resulting from alterations or physical additions in or to the Premises must conform to all applicable building and fire codes. LESSEE shall obtain written approval from the management office prior to commencement of any such modifications and shall deliver as built plan to the management office upon completion.

24. LESSEE agrees to place all indoor potted plants requiring water within a container capable of collecting any water overflow, such containers to be approved and/or supplied by LESSOR, at LESSEE's sole expense. LESSEE agrees to use caution so that indoor plants do not damage or soil the Premises.

25. LESSEE shall not park (and shall insure that LESSEE's employees, agents, and invitees do not park) in any reserved parking space other than those reserved parking spaces, if any, specifically assigned to LESSEE. Any vehicle improperly parked, or parked in any unauthorized parking area in the Building and Land, shall be towed at the vehicle owner's expense and without further or additional notice.

26. Persons using the parking areas do so at their own risk. LESSOR specifically disclaims all liability, except when caused solely by its gross negligence or willful misconduct, for any personal injury incurred users of the parking areas, their agents, employees, family, friends, guests or invitees, or as a result of damage to, theft of, or destruction of any vehicle or any contents thereof as a result of the operation or parking of vehicles in the parking areas.

SEVEN OCTOBER HILLS LLC.

EXHIBIT D

DETERMINATION OF RENTAL DURING EXTENSION TERM

At least six (6) months prior to the commencement of the extension term, and provided LESSEE has given LESSOR notice of LESSEE'S intention to extend this Lease in accordance with Article 3 hereof, the LESSOR and LESSEE shall meet and negotiate Minimum Rent for the extension term, based upon ninety five percent (95%) of rates then in effect and prevailing for similar space in the greater Ashland/Holliston, Massachusetts area. In the event the parties are unable to mutually agree as to a rental rate for the extension term, the same shall be determined by informal binding arbitration as follows:

A. At any time following the initial meeting of LESSOR and LESSEE above-referenced, either party may commence informal binding arbitration proceedings by providing the other party with written notice of the desire to arbitrate rental.

B. Arbitration shall commence not later than thirty (30) days next following forwarding of notice to arbitrate and be completed not later than thirty (30) days next following the date the same commences unless other time periods are mutually agreed upon by LESSOR and LESSEE.

C. The rules and procedures governing the proceedings shall be agreed upon by the LESSOR and LESSEE, provided that to the extent LESSOR and LESSEE are unable to agree on particular rules or procedures such aspects of the proceedings shall be governed by the rules and procedures of the American Arbitration Association.

D. LESSOR and LESSEE agree to be bound by the following procedure concerning selection of an arbitrator:

a. Arbitration shall be conducted by a single arbitrator mutually acceptable to LESSOR and LESSEE. Absent mutual agreement LESSOR and LESSEE shall each designate a representative who shall meet and appoint an arbitrator. The selection of the representatives shall be final unless the individual selected becomes unavailable in which case the representatives shall again meet and designate a successor.

b. The decision of the arbitrator shall be final and binding as regards the applicable rental rate.

c. Arbitration shall be held in Boston, Massachusetts.

d. The foregoing procedure shall be the exclusive procedure of determination of the rental rate applicable to the extension term.

e. In the event a determination shall not be made regarding rental for the extension term, prior to the beginning of such term, the rate in effect immediately prior to the commencement of the extension term, increased in accordance with Paragraph F hereof, shall be due and owing from LESSEE to LESSOR as provided for in the within Lease, and the same to be retroactively adjusted to the commencement date of such extension term once determined.

f. The sole determination to be made by the arbitrators shall be the rental rates then in effect and prevailing for similar space as the Leased Premises in the Greater Ashland/Holliston, Massachusetts area.

Exhibit "E" (tenant improvements to be completed as per plan)

[graphic]

This is a floorplan of the basement level of 7 October Hill Road, Holliston, Massachusetts. It has the same dimensions and internal divisions as Exhibit A. The area labeled Area A in exhibit "A" contains thirty eight spaces divided by internal walls. None of the other areas, as defined in exhibit "A", have been changed.

Exhibit 10.10

FIRST AMENDMENT TO LEASE

REFERENCE is made to Lease dated December 15, 1996 by and between Seven October Hill LLC ("Lessor"), and Harvard Apparatus, Inc. ("Lessee") for premises at 7 October Hill Road, Holliston, Massachusetts (the "Lease") consisting of approximately Fifteen Thousand (15,000) square feet, previously increased to Seventeen Thousand (17,000) square feet (the "Premises").

The Lessor and Lessee hereby agree that the Lease is amended in the following respects:

1. Lessor has previously delivered and leased to Lessee the approximately Two Thousand (2,000) square foot area in the Building (as defined in the Lease), shown as Area A-1 or Exhibit A, attached hereto and made a part hereof (the "First Expansion Premises") which area has become a part of the Premises. Effective April 1, 1998, Lessee's Proportionate Share, as set forth in Section 5.1(iii) of the Lease was increased to account for the First Expansion Premises.

2. Effective November 1, 1998, Lessee shall lease from the Lessor and Lessor shall lease to the Lessee, pursuant to Article XLII of the Lease, an additional Three Thousand (3,000) square feet in the Building shown as the area marked Area B on Exhibit A the "Second Expansion Premises"). The Second Expansion Premises shall he delivered to LESSEE on November 1, 1998 in the same condition as they are now. The First Expansion Premises and the Second Expansion Premises are hereinafter referred to as the "Expansion Premises". The Expansion Premises shall be subject to all of the terms, covenants and conditions of the Lease and shall be deemed part of the Leased Premises from the dates of their delivery through the balance of the initial term and for the extension term if the right to extend the Lease is exercised by the Lessee.

3. Minimum Rent on account of the Expansion Premises during the initial term shall be payable at a rate of Twelve Thousand Dollars ($12,000.00) per annum for the period commencing November 1, 1998 and ending March 30, 1999, payable in equal monthly installments of One Thousand Dollars ($1,000.00) each on the first day of each month. Commencing April 1, 1999, Minimum Rent on account of the Expansion Premises shall be increased to an annual rate of Twenty Thousand Dollars ($20,000.00), payable in equal monthly installments of One Thousand Six Hundred Sixty Six Dollars Sixty Six Cents ($1,666.66), on the first day of each month through the end of the initial term. During the extension term, Minimum Rent for the Expansion Premises shall be determined in accordance with Section 4.2. and Exhibit D of the Lease.

4. Effective November 1, 1998, Lessee's Proportionate Share, as set forth in Section 5.1.(iii) of the Lease, shall be increased to Seventeen and Nine Tenths Percent (17.9%), which is determined by dividing the rentable square footage of the Leased Premises (including the Expansion Premises) by the square footage of all rentable area within the building.

5. Effective November 15, 1998, the security deposit set forth in Article XXXI of the Lease shall be increased to Eight Thousand Eight Hundred Fifty Three Dollars Fifty Cents ($8,853,50), and contemporaneously with the execution hereof, Lessee shall deliver to Lessor One Thousand Six Hundred Sixty Six Dollars ($1,666.00) as the additional amount to be held as a security deposit.

6. In all other respects the Lease shall remain unchanged.

IN WITNESS WHEREOF, the parties hereto have set their hands and seals this 13th day of November, 1998.

SEVEN OCTOBER HILL LLC.	HARVARD APPARATUS, INC.
By: /S/ John R. Parsons Jr.	By:/S/ Mark Norige
Its: Managing Member	Its: V.P. Operations and Engineering

Exhibit 10.11

DATED 3rd March 1999

THE MASTER FELLOWS AND SCHOLARS OF
TRINITY COLLEGE CAMBRIDGE (1)

BIOCHROM LIMITED (2)

HARVARD APPARATUS INC. (3)

LEASE

- of -

Unit 22 Phase I
Cambridge Science Park
Milton Road, Cambridge

Term:	10 years from 29th September 1998
Initial Rent:	L240,000 per annum
Expiry Date:	28th September 2008

MILLS & REEVE
Cambridge

CONTENTS

THIS LEASE is made on _____ 199 BETWEEN

(1) ("THE LANDLORD") THE MASTER FELLOWS AND SCHOLARS OF THE COLLEGE OF THE HOLY AND UNDIVIDED TRINITY WITHIN THE TOWN AND UNIVERSITY OF CAMBRIDGE OF KING HENRY THE EIGHTH'S FOUNDATION

(2) ("THE TENANT") BIOCHROM LIMITED (company number 3526954) whose registered office is at 22 Cambridge Science Park Milton Road Cambridge CB4 4FJ

(3) ("the Surety") HARVARD APPARATUS INC. a company incorporated in the Commonwealth of Massachusetts of 84 October Hill Road Holliston MA 01746

WHEREAS THE PREMISES ARE HELD BY THE LANDLORD WHICH IS AN EXEMPT CHARITY

NOW THIS LEASE WITNESSETH as follows:

1. DEFINITIONS AND INTERPRETATION

1.1 In this Lease unless the context otherwise requires:

"BASIC RENT" means L240,000 per annum until and including 28th September 2003 and thereafter L270,000 per annum.

"CONNECTED PERSON" means any person, firm or company which is connected with the Tenant for the purposes of section 839 Income and Corporation Taxes Act 1988

"CONSENT" means an approval permission authority licence or other relevant form of approval given by the Landlord in writing

"ENACTMENTS" shall include all present and future Acts of Parliament (including but not limited to the Public Health Acts 1875 to 1961 the Factories Act 1961 the Offices Shops and Railway Premises Act 1963 the Fire Precautions Act 1971 the Defective Premises Act 1972 the Health and Safety at Work etc. Act 1974 and the Planning Acts) and all notices directions orders regulations bye-laws rules and conditions under or in pursuance of or deriving effect therefrom and any reference herein to a specific enactment or enactments (whether by reference to its or their short title or otherwise) shall include a reference to any enactment amending or replacing the same and any future legislation of a like nature

"THE ESTATE" shall mean Cambridge Science Park shown edged blue on the Plan situate adjoining Milton Road partly in the City of Cambridge and partly in the County of Cambridgeshire together with any such further neighbouring area in respect of which the Landlord or its lessees may from time to time or at any time during the Period of Limitation receive planning permission to develop for uses

similar or ancillary to the use of the said area edged blue and which the Landlord during the Period of Limitation elects to include in Cambridge Science Park

"EXISTING ENCUMBRANCES" means the matters set out in part 2 of schedule 2

"GROUP COMPANY" means any company of which the Tenant is a Subsidiary or which has the same Holding Company as the Tenant where Subsidiary and Holding Company have the meanings given to them by section 736 Companies Act 1985

"INSURED RISKS" means at any particular time the risk of loss or damage by fire storm flood explosion riot civil commotion bursting or overflow of water tanks boilers or apparatus impact by road vehicles or aircraft and other aerial devices or articles dropped therefrom and the risk of any other kind of loss or damage which the Landlord may from time to time in their absolute discretion deem it desirable to insure against and against which they shall at that particular time have a policy of insurance in effect subject to such exclusions and limitations as the insurers may impose and subject in every case to the availability of insurance cover against the risk and subject to the conditions on which and to the extent that insurance cover against each risk is generally available in relation to property such as the Premises

"INTEREST" shall mean interest at the yearly rate of four per cent above the base rate published from time to time by Barclays Bank PLC or (in the event of base rate or Barclays Bank PLC ceasing to exist) such other equivalent rate of interest as the Landlord may from time to time in writing specify

"LANDLORD" includes the immediate reversioner to this Lease from time to time

"LANDLORD'S NEIGHBOURING PREMISES" means any land or buildings now or hereafter during the Period of Limitation erected adjoining or neighbouring the Premises (whether beside under or over) which belong to the Landlord now or hereafter during the Period of Limitation

"LETTABLE UNIT" shall mean a part of the building on the Premises designed or intended for letting or exclusive occupation or capable of being used for separate self-contained occupation which does not prejudice the use of the remainder of the building on the Premises for separate self-contained occupation

"PERIOD OF LIMITATION" means the period of eighty years commencing on the date hereof or such longer period as the law may permit (which period is hereby specified as the perpetuity period applicable to this Lease under the rule against perpetuities)

"THE PLAN" means the plan annexed hereto

"THE PLANNING ACTS" means the Town and Country Planning Acts 1948 to 1990 the Planning (Hazardous Substances) Act 1990 the Planning (Listed Buildings and Conservation Areas) Act 1990 the Local Government Planning and Land Act 1980 and all notices directions orders regulations byelaws rules and conditions under or in pursuance of or deriving effect therefrom from time to time and any reference herein to these or any other Act or Acts shall include a reference to any statutory modification or re-enactment thereof for the time being in force and any future legislation of a like nature

"THE PLANNING AGREEMENTS" shall mean

(a) an agreement dated 8th November 1971 made pursuant to section 37 of the Town and Country Planning Act 1962 between the County Council of the Administrative County of Cambridgeshire and Isle of Ely (1) and the Landlord (2) and

(b) an agreement dated 19th August 1975 made pursuant to section 52 of the Town and Country Planning Act 1971 between the same parties and in the same order as the section 37 agreement and

(c) an agreement dated 2nd February 1982 made pursuant to section 52 of the Town and Country Planning Act 1971 between South Cambridgeshire District Council (1) and the Landlord (2) and

(d) an agreement dated 26th June 1984 made pursuant to section 52 of the Town and Country Planning Act 1971 between South Cambridgeshire District Council (1) and the Landlord (2) and

(e) an agreement dated 2nd June 1988 made pursuant to section 52 of the Town and Country Planning Act 1971 between South Cambridgeshire District Council (1) and the Landlord (2)

"THE PREMISES" means the property hereby demised as described in part 1 of schedule 1 including all Service Channels in on or under such property and fixtures and fittings (other than trade or tenants fixtures and fittings) therein together with all additions alterations and improvements to such property

"SERVICE CHANNELS" means all such flues sewers drains ditches pipes wires watercourses cables channels gutters ducts and other conductors of services and plumbing and ventilating equipment and motors appurtenant thereto as are now existing or which may be constructed or laid during the Term and within the Period of Limitation as herein defined

"THE SURETY" shall include the Surety's successors whether by substitution or otherwise including personal representatives

"SURVEYOR" means the surveyors consulting engineers and agents for the time being of the Landlord

"THE TENANT" shall include the person in whom the Term is presently vested

"THE TENANT'S NEW WORKS" shall mean the works described in schedule 8

"THE TERM" means the total period of demise hereby granted and (other than in the case of the references to the term in the habendum of this Lease) includes any period of holding over or any extension or continuance of the contractual term by Enactment or otherwise

1.2 Words importing the masculine gender only include the feminine gender and vice versa and include any body of persons corporate or unincorporate words importing the singular number only include the plural number and vice versa and the word "person" shall include any body of persons corporate or unincorporate and all covenants by any party hereto shall be deemed to be joint and several covenants where that party is more than one person and any covenant by the Tenant not to do or not to do or omit to do an act or thing shall be deemed to include an obligation not to permit or suffer such act or thing to be done or omitted

1.3 (a) References to numbered clauses and schedules are references to the relevant clause or schedule to this Lease and references to numbered paragraphs are references to the numbered paragraphs of that schedule or the part of the schedule in which they appear

(b) The clause paragraph and schedule headings do not form part of this lease and are not to be taken into account when construing it

1.4 This instrument

(a) is executed as a deed and by its execution the parties authorise their solicitors to deliver it for them when it is dated

(b) was delivered when it was dated

1.5 This Lease is a new tenancy for the purposes of the Landlord and Tenant (Covenants) Act 1995

2. THE DEMISE HABENDUM AND REDDENDUM

2.1 In consideration of the several rents and covenants on the part of the Tenant and the Surety herein respectively reserved and contained the Landlord HEREBY DEMISES unto the Tenant the Premises TOGETHER WITH (in common with the Landlord their lessees and assigns and all other persons from time to time

having the like rights) the rights set out in part 2 of schedule 1 EXCEPT AND RESERVING UNTO THE LANDLORD and its successors in title assigns and lessees and all persons from time to time authorised by it the interests rights reservations and exceptions more particularly set out in part 1 of schedule 2 TO HOLD the Premises unto the Tenant SUBJECT to any or all easements and other rights (if any) now subsisting over or which may affect the same (including any such as are more particularly set out in part 2 of schedule 2) AND SUBJECT TO AND WITH THE BENEFIT OF FIRSTLY a lease dated 30th September 1974 and made between the Landlord (1) LKB Instruments Limited (2) and LKB Biochrom Limited (3) as varied by a Deed of Variation dated 6th June 1986 made between the same parties and SECONDLY to two subleases made between Pharmacia Biotech (Biochrom) Limited (1) and Innovir Limited (2) both dated 5th February 1998 and any deeds and documents supplemental to those subleases from 29th September 1998 to 28th September 2008 but determinable nevertheless as hereinafter provided YIELDING AND PAYING THEREFOR unto the Landlord during the Term by way of rent

(a) yearly and proportionately for any fraction of a year the Basic Rent the first such payment or a proportionate part thereof in respect of the period from to the next quarter day following the date of this Lease (in so far as it has not already been made) to be made on the date hereof and thereafter such rents to be paid by equal quarterly instalments in advance on the four usual quarter days in every year

(b) on demand the rents specified in schedule 3

(c) any other sums which may become due from the Tenant to the Landlord under the provisions of this Lease

all such payments to be made without any deduction

3. TENANT'S COVENANTS

3.1 The Tenant HEREBY COVENANTS with the Landlord to observe and perform all the covenants and provisions on the Tenant's part set out in schedule 4

4. LANDLORD'S COVENANTS

4.1 The Landlord HEREBY COVENANTS with the Tenant whilst the reversion to this Lease is vested in the Landlord to observe and perform all the covenants and provisions on the Landlord's part set out in schedule 5 but not so as to impose any personal liability upon the Landlord except for the Landlord's own acts and defaults

5. PROVISO AGREEMENT AND DECLARATION

5.1 FORFEITURE

Without prejudice to any other rights of the Landlord if:

(a) the whole or part of the rent remains unpaid twenty one days after becoming due (whether demanded or not) or

(b) any of the Tenant's covenants in this Lease are not performed or observed or

(c) the Tenant or any guarantor or surety of the Tenants obligations under this Lease (including the Surety)

(i) proposes or enters into any composition or arrangement with its creditors generally or any class of its creditors or

(ii) is the subject of any judgment or order made against it which is not complied with within seven days or is the subject of any execution distress sequestration or other process levied upon or enforced against any part of its undertaking property assets or revenue or

(iii) being a company:

(a) is the subject of a petition presented or an order made or a resolution passed or analogous proceedings taken for appointing an administrator of or winding up such company (save for the purpose of and followed within four months by an amalgamation or reconstruction which does not involve or arise out of insolvency or give rise to a reduction in capital and which is on terms previously approved by the Landlord) or

(b) an encumbrancer takes possession or exercises or attempts to exercise any power of sale or a receiver or administrative receiver is appointed of the whole or any part of the undertaking property assets or revenues of such company or

(c) stops payment or agrees to declare a moratorium or becomes or is deemed to be insolvent or unable to pay its debts within the meaning of section 123 Insolvency Act 1986 or

(d) without prior Consent ceases or threatens to cease to carry on its business in the normal course or

(iv) being an individual:

(a) is the subject of a bankruptcy petition or bankruptcy order or

(b) is the subject of an application or order or appointment under section 253 or section 273 or section 286 Insolvency Act 1986 or

(c) is unable to pay or has no reasonable prospect of being able to pay his debts within the meaning of sections 267 and 268 Insolvency Act 1986

(d) any event occurs or proceedings are taken with respect to the Tenant or any guarantor of the Tenant's obligations under this Lease (including the Surety) in any jurisdiction to which it is subject which has an effect equivalent or similar to any of the events mentioned in clause 5.1(c)

then and in any of such cases the Landlord may at any time (and notwithstanding the waiver of any previous right of re-entry) re-enter the Premises whereupon this Lease shall absolutely determine but without prejudice to any right of action of the Landlord in respect of any previous breach by the Tenant of this Lease

5.2 NOTICES

Any notice under this Lease shall be in writing and any notice

(a) to the Tenant or the Surety shall be deemed to be sufficiently served if

(i) left addressed to the Tenant or the Surety on the Premises or

(ii) sent to the Tenant or the Surety by post at the last known address or (if a Company) registered office of the Tenant or the Surety and

(b) to the Landlord shall be deemed to be sufficiently served if

(i) sent to the Landlord by post at the last known address or (if a Company) registered office of the Landlord

(ii) whilst the reversion immediately expectant on the determination of the Term is vested in the original Landlord (as named herein)

addressed to the Landlord's Senior Bursar and delivered to him personally or sent to him by post

5.3 RENT ABATEMENT

(a) If the Premises are destroyed or rendered wholly or partly unfit for use by any of the Insured Risks then (provided the destruction or damage is not caused by the act or default of the Tenant or any person on the Premises with the Tenant's express or implied authority or any predecessor in title of any of them so that the insurance policy effected by the Landlord is vitiated or payment of any part of the policy money is withheld) the whole or a fair proportion of the Basic Rent and (in the case of the Premises being wholly unfit for use) the rents specified in paragraphs 2 and 3 of schedule 3 according to the extent of the damage sustained shall cease to be payable for the shorter of a period of three years or the period during which the Premises remain unfit for use and any dispute with reference to this proviso shall be referred to arbitration in accordance with the Arbitration Act 1996

(b) If the Premises are destroyed aforesaid and are not rendered fit for use by the expiration of three years from the date of the damage or destruction the Tenant shall be entitled to terminate this Lease by notice served at any time within three months of the end of that period and upon service of such notice the Lease shall immediately determine and absolutely cease but without prejudice to any rights or remedies that may have accrued to either party against the other in respect of any breach of any of its covenants and conditions contained in this Lease

5.4 PART II LANDLORD AND TENANT ACT 1954

If this Lease is within Part II of the Landlord and Tenant Act 1954 then subject to the provisions of subsection (2) of section 38 of that Act neither the Tenant nor any assignee or undertenant of the Term or of the Premises shall be entitled on quitting the Premises to any compensation under section 37 of that Act

5.5 WARRANTIES

The Tenant hereby acknowledges and admits that the Landlord has not given or made any representation or warranty that the use of the Premises herein authorised is or will remain a permitted use under the Planning Acts

5.6 LANDLORD'S POWERS TO DEAL WITH THE LANDLORD'S NEIGHBOURING PREMISES

Notwithstanding anything herein contained the Landlord and all persons authorised by the Landlord shall have power without obtaining any consent from

or making any compensation to the Tenant to deal as the Landlord may think fit with the Estate and the Landlord's Neighbouring Premises and to erect thereon or on any part thereof any building whatsoever and to make any repairs alterations or additions and carry out any demolition or rebuilding whatsoever (whether or not affecting the light or air to the Premises) which the Landlord may think fit or desire to do PROVIDED THAT in the exercise of such power the Landlord will not so far as the Landlord is able substantially restrict access to and from the Premises to employees and potential customers of the Tenant during normal business hours

5.7 ARBITRATION

(Unless the Lease otherwise provides) if any dispute or difference shall arise between the parties hereto touching these presents or the rights or obligations of the parties hereunder such dispute and difference shall in the event of this Lease expressly so providing and otherwise may by agreement between the parties be referred to a single arbitrator to be agreed upon by the parties hereto or in default of agreement to be nominated by the President or Vice President for the time being of the Royal Institution of Chartered Surveyors on the application of any party in accordance with and subject to the provisions of the Arbitration Act 1996

5.8 LANDLORD'S OBLIGATION

Nothing herein contained shall render the Landlord liable (whether by implication of law or otherwise howsoever) to do any act or thing which the Landlord has not expressly covenanted to carry out provide or do in schedule 5

5.9 VALUE ADDED TAX PROVISO

Any consideration on supplies made by the Landlord under this Lease is exclusive of value added tax (or any substituted tax)

6. EXCLUSION OF SECURITY OF TENURE

Having been so authorised by an Order of the Mayor's and City of London Court dated 1999 under the provisions of section 38(4) of the Landlord and Tenant Act 1954 the parties agree that sections 24 to 28 (inclusive) of that Act shall be excluded in relation to this Lease

7. NO AGREEMENT FOR LEASE

We hereby certify that there is no agreement for lease to which this Lease give effect

8. SURETY'S COVENANT

The Surety (in consideration of this demise having been made at the Surety's request) hereby covenants with the Landlord (as principal and not merely as guarantor) that the Surety will observe and perform the covenants agreements and declarations set out in schedule 6

9. PROPER LAW

9.1 This Lease shall be governed by English Law and the Tenant and the Surety irrevocably submit to the non-exclusive jurisdiction of the English Courts

9.2 The Surety irrevocably authorises and appoints Cameron McKenna of Mitre House 160 Aldersgate Street London ECIA 4DD (ref: IGH) (or such other firm of solicitors resident in England and Wales as it may from time to time by written notice to the Landlord substitute) to accept service of all legal process arising out of or connected with this Lease and service on Cameron McKenna (or such substitute) shall be deemed to be service on the Surety

SCHEDULE L
THE PROPERTY AND RIGHTS INCLUDED IN THIS DEMISE
PART 1 - THE PROPERTY

ALL THAT piece or parcel of land forming part of Cambridge Science Park known as Unit 22 as the same is more particularly delineated on the Plan and thereon edged red together with the buildings standing thereon or on some part thereof

PART 2 - THE RIGHTS

1. RIGHT TO SERVICES

1.1 At all times hereafter the right of passage and running of appropriate services (including but not limited to gas water electricity telecommunication surface water and foul water) through the Service Channels now under or across the Estate or the Landlord's Neighbouring Premises and to make connection with such Service Channels or any of them for the purpose of exercising the said rights and all such rights of access for the Tenant and the Tenant's lessees and employees as may from time to time be reasonably required for the purpose of laying inspecting cleansing repairing maintaining renewing or adding to such Service Channels or any of them but the enjoyment of the aforesaid rights shall be subject to the Tenant or other the person or persons exercising the same or having the benefit thereof being liable to make good all damage to the Estate or the Landlord's Neighbouring Premises thereby occasioned with reasonable dispatch

2. RIGHT OF WAY

2.1 The right of way for all purposes reasonably necessary for the use and enjoyment of the Premises for the purposes herein authorised but not further or otherwise with or without vehicles over the roadways coloured brown on the Plan

3. RIGHT TO PARK

3.1 The right to park 82 cars within such areas of the adjoining car park or such other part or parts of the Estate (at the Landlord's absolute discretion) as are from time to time specified by the Landlord

4. RIGHT TO SUPPORT

4.1 The right of support and shelter from the Estate and the Landlord's Neighbouring Premises

SCHEDULE 2

PART 1 - EXCEPTIONS AND RESERVATIONS IN FAVOUR OF THE LANDLORD

1. RIGHT TO SERVICES

1.1 At all times hereafter the right of passage and running of appropriate services through the Service Channels forming part of the Premises and to make connection with such Service Channels or any of them for the purpose of exercising the said rights and all such rights of access following reasonable prior notice (save in emergency) for the Landlord the Surveyor and the Landlord's lessees and employees and all persons from time to time authorised by the Landlord as may from time to time be reasonably required for the purpose of laying inspecting cleansing repairing maintaining renewing or adding to such Service Channels or any of them but the enjoyment of the aforesaid rights shall be subject to the Landlord or other the person or persons exercising the same or having the benefit thereof being liable to make good all damage to the Premises thereby occasioned with reasonable dispatch

2. RIGHT TO LIGHT AND AIR

2.1 The Tenant shall not be entitled to any right of access of light or air to the Premises which would restrict or interfere with the user of the Estate or any of the Estate or the Landlord's Neighbouring Premises for building or otherwise howsoever

3. RIGHT TO SUPPORT

3.1 The right to support and shelter and all other rights and privileges in the nature of easements and quasi-easements now or hereafter belonging to or enjoyed by the Estate or the Landlord's Neighbouring Premises

4. RIGHT TO ENTER

4.1 At all times during the Term the right with or without the Surveyor the Landlord's employees and workmen and any persons authorised by them to enter the Premises for the purpose of doing any act matter or thing in respect of which the Landlord is permitted entry to the Premises under schedule 4 upon the terms therein stated and for all such other requirements of the Landlord as in the opinion of the Landlord shall be reasonably necessary such reservation to be in addition to and not in substitution for or limitation of any other rights exceptions or reservations to which the Landlord is entitled hereunder

5. RIGHT TO ENTER TO CULTIVATE

5.1 A right of access at all times together with the Surveyor the Landlord's employees servants workmen and all persons authorised by the Landlord to all such parts of the Premises as shall from time to time be unbuilt upon for the purpose of cultivating planting maintaining and landscaping the same in such manner as shall in the absolute discretion of the Landlord from time to time seem appropriate

PART 2 - EXISTING ENCUMBRANCES

1. The easements rights covenants and other matters contained or referred to in the Planning Agreements and the following documents:

DATE	DOCUMENT	PARTIES
28th October 1957	Deed	The Landlord (1) Eastern Gas Board (2)

2. All easements rights covenants and other matters relating to the foul sewer and manhole across the north east comer of the Premises

3. All other easements rights covenants and other matters affecting the Premises

SCHEDULE 3
RENTS PAYABLE UPON DEMAND

1. INSURANCE RENT

1.1 A sum or sums of money equal to the amount or amounts which the Landlord shall from time to time incur in or in respect of effecting or maintaining the insurance of the Premises in accordance with the Landlord's covenant contained in paragraph 2 of schedule 5 and all professional fees which the Landlord may from time to time incur in connection with the valuation of the Premises for insurance purposes

2. RENT FOR COMMON PARTS

2.1 A proper proportion attributable to the Premises of the reasonable cost and expense properly incurred of making repairing maintaining renewing rebuilding cleansing and operating all ways roads pavements Service Channels yards bicycle stores vehicle parks and gardens fences party walls and structures and any installations equipment fittings fixtures easements appurtenances or conveniences which shall belong to or be used by the Premises in common with the Estate and the Landlord's Neighbouring Premises and with any other premises adjoining or neighbouring or over or under the Premises (or any of them) (but excluding anything comprised in the service rent) including architect's and surveyor's fees properly incurred in connection with such works (such proper proportion to be certified by the Surveyor whose certificate shall be final and binding on the Tenant)

3. SERVICE RENT

3.1 A service rent in respect of

(a) The maintenance repair cultivation and management of the Estate including all roads ways and paths service channels amenity grounds and cultivated areas (whether situate thereon or otherwise serving the same) and

(b) All such other matters whatsoever which in the opinion of the Surveyor (acting reasonably) shall be necessary to maintain high standards for a development of such a character including (without prejudice to the generality hereof) a notional figure as certified by the Surveyor equivalent to the reasonable market rental for the time being of any premises provided by the Landlord on the Estate being used or occupied (whether with or without rental) to enable the Landlord the Surveyor and their respective servants or employees to implement and carry out such maintenance repairs cultivation and management of the Estate and all

other matters as aforesaid but less any rental thereof received by the Landlord

such service rent to be in the reasonable opinion of the Surveyor such as shall be just and equitable in all the circumstances PROVIDED ALWAYS THAT such service rent shall not include any sum in respect of the cost of the initial laying out or construction of the matters referred to in paragraphs 3.1(a) and 3.1(b) above or any work or costs arising out of or in connection with such initial construction

4. INTEREST ON ARREARS

4.1 Interest on any monies payable by the Tenant to the Landlord under any covenant or provision of this Lease which remain unpaid for seven days shall be payable by the Tenant such Interest to be calculated from the date when such monies were due until the date when such monies are received by the Landlord PROVIDED THAT the provisions of this paragraph 4.1 shall not prejudice any rights or remedies of the Landlord in respect of any breach of any of the covenants on the part of the Tenant herein contained

5. INSURANCE EXCESS

5.1 If a claim arising under any policy of insurance effected by the Landlord upon the Premises shall be subject to any insurance excess the Tenant shall reimburse or otherwise indemnify the Landlord against the amount of such excess

SCHEDULE 4
TENANT'S COVENANTS

1. TO PAY RENT

1.1 To pay to the Landlord the rents hereby reserved at the times and in the manner herein appointed for payment thereof without any deduction set off or (except as provided by clause 5.3 of this Lease) abatement whatsoever and to pay the Basic Rent by standing order to the U.K. bankers of the Landlord or as it shall direct

2. TO PAY OUTGOINGS

2.1 To pay and discharge all rates taxes duties assessments charges impositions outgoings whatsoever (whether parliamentary local public utility or of any other description and whether or not of a recurrent nature) now or at any time during the Term taxed assessed charged imposed upon or payable in respect of the Premises or any part thereof or by the Landlord or Tenant or owner or occupier in respect thereof other than in relation to a dealing with the Landlord's reversion

3. TO REPAIR AND DECORATE

3.1 Well and substantially to cleanse maintain and repair the Premises and every part thereof (including all additions thereto and all fixtures fittings plant and machinery therein and improvements thereto and the Service Channels forming part of the Premises and exclusively serving the Premises and the boundary structures (if any) of the Premises) and the drains connecting the Premises to and as far as the common drain

3.2 As and when reasonably required by the Landlord to clean (and repoint where appropriate) all external surfaces of the buildings from time to time comprised in the Premises

3.3 Without prejudice to the generality of paragraphs 3.1 and 3.2 to paint (or otherwise decorate) with two coats at least of best paint (or other suitable materials) all such parts of the Premises as have been usually painted (or otherwise decorated) such painting (or other decoration) to be

(a) as to the outside in the years 2001 and 2004 of the Term and with such colours as have been approved by the Surveyor and

(b) as to the inside in the fifth year of the Term

and otherwise as the Landlord may reasonably so require

3.4 Not to remove or damage any of the Landlord's fixtures and fittings in the Premises and to replace with similar articles of at least equal quality such fixtures and fittings as may be lost or worn out or become unfit for use

PROVIDED THAT all work referred to in this paragraph 3 shall be done in a good and workmanlike manner and to the reasonable satisfaction of the Surveyor AND PROVIDED FURTHER THAT the liability of the Tenant under this paragraph shall not extend to damage caused by any of the Insured Risks unless the insurance shall have been vitiated or insurance monies rendered irrecoverable in whole or in part by any act omission neglect or default of the Tenant any undertenant or their respective employees servants agents independent contractors customers visitors licensees invitees or any other person under the Tenant's or the undertenant's control AND PROVIDED FURTHER THAT the liability of the Tenant under this paragraph shall not extend to any work which would result in the Premises being put into a better state of repair and condition then shall exist immediately following completion of the Tenant's New Works

3.5 The Tenant shall give written notice to the Landlord immediately on becoming aware of:

(a) any damage to or destruction of the Premises or

(b) any defect or want of repair in the Premises (including without limitation any relevant defect within the meaning of section 4 Defective Premises Act 1972) which the Landlord is liable to repair under this Lease or which the Landlord is or may be liable to repair under common law or by virtue of any Enactment

4. NOT TO MAKE ALTERATIONS

4.1 Not to make any alteration or addition to the Premises which would reduce or otherwise adversely affect the value of the Landlord's reversionary interest in the Premises or the prospects of re-letting or the letting or re-letting value thereof (as to which the decision of the Surveyor shall be conclusive)

4.2 Without prejudice to the prohibition in paragraph 4.1 not to demolish the existing buildings comprising the Premises or construct new buildings or make any alteration addition or improvement to the Premises whether structural or otherwise except as expressly permitted under paragraph 4.3

4.3 The Tenant may carry out alterations additions or improvements to the Premises which do not affect any part of the exterior or structure of the Premises where:

(a) the Tenant has submitted to the Landlord detailed plans and specifications showing the works and

(b) the Tenant has given to the Landlord such covenants relating to the carrying out of the works as the Landlord may reasonably require (including (but not limited to) reinstatement of the Premises at the expiration or sooner determination of the Term)

(c) the Tenant has if so reasonably required by the Landlord provided the Landlord with suitable security which will allow the Landlord to carry out and complete the works if the Tenant fails to do so and

(d) the Tenant has obtained Consent to the works (which shall not be unreasonably withheld)

PROVIDED THAT the Tenant shall indemnify the Landlord against any liability for any tax assessed upon the Landlord by reason of any such alteration erection or addition to the Premises carried out by or on behalf of the Tenant

4.4 Without prejudice to any other rights of the Landlord immediately upon the Landlord by notice in writing to that effect requiring them so to do to remove all additional buildings erections works alterations or additions whatsoever to the

Premises for which Consent has not first been obtained pursuant to the provisions of paragraph 4.3 (herein called "THE UNAUTHORISED WORKS") and make good and restore the Premises to the state and condition thereof before the Unauthorised Works were carried out and if the Tenant shall neglect to do so for seven days after such notice then it shall be lawful for the Surveyor the Landlord and the Landlord's servants contractors agents and workmen to enter upon the Premises and to remove the Unauthorised Works and to make good and restore the same to the state and condition existing before the carrying out of the Unauthorised Works and all expenses of so doing shall be repaid to the Landlord by the Tenant within seven days of a written demand in that behalf

4.5 The Tenant may erect alter or remove demountable partitioning which does not affect the structure of the Premises or adversely impact on the operation of the plant within the Premises without Consent PROVIDED THAT the Tenant provides the Landlord with full details of such works within a period of one month after carrying them out

5. TO PERMIT ENTRY

5.1 To permit the Landlord the Surveyor and their respective workmen and persons duly authorised by them respectively on reasonable notice (except in emergency) at reasonable hours to enter the Premises for the purposes of

(a) viewing the same

(b) taking Inventories of the fixtures fittings appliances and equipment to be yielded up at the expiration or sooner determination of the Term

(c) inspecting for defects in and recording the condition of the Premises or any other breaches of covenant on the part of the Tenant

(d) inspecting cleansing maintaining repairing altering renewing or adding to the Estate or the Landlord's Neighbouring Premises or any other premises adjoining the Premises (whether beside under or over) or any Service Channels not comprised within the Premises

(e) performing any covenant complying with any condition or pursuant to any reservation contained in this Lease

or any other reasonable purpose connected with the management of the Premises or the Estate or the Landlord's Neighbouring Premises or the Landlord's interest therein PROVIDED THAT the Landlord shall make good all damage to the Premises caused by such entry as soon as practicable without the payment of compensation to the Tenant

6. TO REPAIR ON NOTICE

6.1 To make good to the reasonable satisfaction of the Surveyor within two months or sooner if requisite (or immediately in case of emergency) any defect in the repair or decoration of the Premises for which the Tenant is liable hereunder or any other want of compliance with any of the obligations on the part of the Tenant under this Lease of which the Landlord or the Surveyor has given notice in writing to the Tenant or left notice in writing at the Premises

6.2 If the Tenant shall not comply with paragraph 6.1 the Tenant shall permit the Landlord the Surveyor and their respective workmen (without prejudice to any other remedy of the Landlord) to enter the Premises and make good such defect breach or want of compliance as aforesaid without the payment of any compensation to the Tenant and all expenses of so doing (including legal costs and Surveyor's fees properly incurred) shall be paid by the Tenant to the Landlord on demand and shall be recoverable as rent in arrear

7. TO PAY LANDLORD'S COSTS

7.1 To pay the Landlord's costs and expenses (including legal costs and Surveyor's and other professional fees) which in respect of sub-clauses (d) and (e) shall be reasonable

(a) In or in contemplation of any proceedings relating to the Premises under sections 146 and/or 147 of the Law of Property Act 1925 or the preparation and service of notices thereunder (whether or not any right of re-entry or forfeiture has been waived by the Landlord or a notice serviced under the said section 146 is complied with by the Tenant or the Tenant has been relieved under the provisions of the said Act and notwithstanding that forfeiture is avoided otherwise than by relief granted by the Court)

(b) In the preparation and service of any Schedule of Dilapidations at any time during the term PROVIDED THAT no Schedule of Dilapidations shall require the Tenant to carry out any works which would result in the Premises being put into a better state of repair and condition then shall exist immediately following completion of the Tenant's New Works

(c) In connection with the recovery of arrears of rent due from the Tenant hereunder (including but not limited to bailiff's commission incurred by the Landlord of and incidental to every distress levied by the Landlord on the Tenant's goods for the recovery of overdue rent or other sums due under this Lease)

(d) In connection with approving plans and specifications required hereunder and the supervision and inspection of alterations erections additions and any other works carried out by the Tenant and any undertenant

(e) Reasonably incurred in respect of any application for Consent required by this Lease whether or not such Consent is granted

8. AS TO USE AND SAFETY

8.1 Not to keep or use or permit or suffer to be kept or used on the Premises any materials which are inflammable explosive or otherwise dangerous nor any machinery apparatus or equipment or any other thing which may attack or in any way injure by percolation corrosion vibration excessive weight strain or otherwise the surfaces floors ceilings roofs contents or structure of any building comprised therein and in the Estate or in the Landlord's Neighbouring Premises (or either of them) the keeping or using whereof may contravene any Enactments PROVIDED THAT small quantities of chemicals and other substances used by the Tenant in connection with the permitted use of the Premises may be kept and used in accordance with the relevant Enactments and codes of practice and with any recommendations of the Landlord's insurers which have been notified to the Tenant

9. NOT TO USE FOR UNLAWFUL OR ILLEGAL PURPOSES OR CAUSE NUISANCE

9.1 Not to

(a) use or permit or suffer the Premises or any part thereof to be used for any unlawful illegal or immoral purpose or for the manufacture sale or consumption of intoxicating liquors or for the manufacture sale or consumption of Controlled Drugs as defined by the Misuse of Drugs Act 1971 (otherwise than by a practitioner or pharmacist as defined by that Act) or for the manufacture publication or sale of any article or thing which may in the opinion of the Landlord be pornographic offensive or obscene or for betting gaming or lotteries or as a hotel club billiards saloon dance hall funfair or amusement premises or for an auction or for any noisy noxious or offensive trade or business and

(b) do or permit or suffer to be done on the Premises or any part thereof anything which may be or become or cause an annoyance inconvenience nuisance damage disturbance injury or danger of or to the Landlord or the owners lessees or occupiers of any premises in the neighbourhood or which in the opinion of the Landlord acting reasonably might be detrimental to the use or development of the Premises the Estate and of any Landlord's Neighbouring Premises (of any of them) and to pay to the Landlord all reasonable costs charges and expenses which may be properly

incurred by the Landlord in abating any nuisance on or arising from the Premises and executing all works as may be necessary for such purpose

(c) use any radio television video or sound system audible outside the Premises or play or suffer to be played any musical instrument audible outside the Premises

10. NOT TO RESIDE

10.1 Not to reside on the Premises and not to create or permit or suffer to be created any residential tenancy or residential occupation of the Premises or any part thereof

11. AS TO USER

11.1 Not to use the Premises or any part thereof other than for a purpose appropriate to a Science Park that is to say any one or more of the following uses:

(a) scientific research associated with industrial production

(b) light industrial production of a kind which is dependent on regular consultation with either or both of the following:

(i) the Tenant's own research development and design staff established in the Cambridge Study Area

(ii) the scientific staff or facilities of the University or of local scientific institutions

(c) ancillary buildings and works appropriate in the sole opinion of the Landlord to the use of the Premises as an integral part of a Science Park

12. TO KEEP OPEN AND SECURITY

12.1 Not to permit the Premises to remain vacant or unattended unless it is first made fully secure

12.2 To indemnify the Landlord against any empty property rate or penal rate levied or assessed upon the Landlord by reason of the Premises having been left empty

12.3 To ensure that the Landlord at all times has written notice of the name and address and telephone number of at least one keyholder of the Premises

13. DISPLAYS AND ADVERTISEMENTS

13.1 Not to display or permit to be displayed on any part of the Premises so as to be visible outside the Premises any name writing notice sign placard sticker or advertisement of whatsoever nature other than a notice or sign (not being a "Neon" notice or sign or any notice or sign of a similar nature) displaying the name of the Tenant and the name of the building comprised within the demise (if any) first approved in writing by the Landlord such approval not to be unreasonably withheld or delayed and not to place leave or install any merchandise or display outside the Premises and on any breach by the Tenant the Landlord the Surveyor and their respective workmen may without notice and without prejudice to any other remedy of the Landlord remove the cause of the breach of this covenant and shall not be liable to make good any loss or pay compensation for so doing

14. TO KEEP CLEAN

14.1 Not to allow any rubbish or refuse of any description to accumulate upon the Premises save in suitably located dustbins provided by the Tenant for that purpose and so often as it shall be necessary or desirable and in any event at least once a week to cause such dustbins to be emptied

14.2 Generally to keep the Premises (including but not limited to forecourts roads and paths) clean and tidy and properly lighted internally and externally

14.3 To clean the inside and outside of all windows in the Premises at least once each month

14.4 Not to bring or keep or suffer to be brought or kept upon the Premises anything which in the opinion of the Landlord acting reasonably are or may become unclean unsightly or detrimental to the Premises the Estate or the Landlord's Neighbouring Premises and nearby premises (or any of them)

14.5 Not to discharge into any Service Channels oil grease solids or other deleterious matter or any substance which might be or become a source of danger or injury to the drainage system of the Premises the Estate or the Landlord's Neighbouring Premises (or any of them) or which may pollute the water of any watercourse so as to render the Landlord liable to action or proceedings by any person or body and generally to keep the Service Channels comprised within the demise unobstructed

15. TO COMPLY WITH ENACTMENTS AND GIVE NOTICE

15.1 At the Tenant's own expense to comply with the provisions and requirements of all Enactments or as prescribed or required by any competent authority court or

body so far as they relate to or affect the Premises or the owner or occupier thereof

15.2 At the Tenant's own expense to do all works and all other things so as to comply with paragraph 15.1 above including (without prejudice to the generality of the foregoing) the obtaining of any fire certificate required for the Premises

15.3 Within seven days of receipt of notice thereof to give to the Landlord particulars of any provision or requirement of all Enactments or as prescribed or required by any competent authority court or body or proposal therefor relating to the Premises the Estate or the Landlord's Neighbouring Premises (or any of them) or the condition or use thereof respectively and at the request of the Landlord (but at the cost of the Tenant) to make or join with the Landlord in making such objection or representation against any such proposal as the Landlord shall deem expedient

15.4 To pay to the Landlord upon demand a due proportion of all reasonable costs charges and expenses (including the Surveyor's and other professional advisers' fees) properly incurred by the Landlord of or incidental to

(a) complying with all provisions and requirements of all Enactments or as prescribed or required by any competent authority court or body and

(b) doing all works and other things so as to comply therewith

so far as the same relate to any premises capable of being used or enjoyed by the Tenant in common or jointly with any other person or the use thereof

16. TO COMPLY WITH THE PLANNING ACTS

16.1 At all times during the Term to comply in all respects with the provisions and requirements of the Planning Acts and any regulations or orders made thereunder and all licences consents permissions and conditions (if any) granted or imposed thereunder so far as the same respectively relate to or affect the Premises or any part thereof and to keep the Landlord fully and effectually indemnified against all actions proceedings damages costs expenses claims and demands whatsoever in respect of or arising out of any contravention of the Planning Acts and against the cost of any permissions and consents thereunder and the implementation thereof

16.2 In the event of the Landlord giving Consent to any of the matters in respect of which the Landlord's Consent shall be required pursuant to the provisions of any covenant or condition contained in this Lease to apply at the cost of the Tenant to the local and planning authorities for all necessary consents and permissions in connection therewith and to give notice to the Landlord of the granting or refusal

(as the case may be) of all such consents and permissions forthwith on the receipt thereof

16.3 In the event of the said Planning Authority agreeing to grant such necessary consent or permission only with modifications or subject to conditions to give to the Landlord forthwith full particulars of such modifications or conditions AND if such modifications or such conditions shall in the reasonable opinion of the Landlord be undesirable then the Tenant shall not implement or proceed with the matters works or change of use to which the application relates

16.4 If the Tenant shall receive any compensation in respect of the Premises under or by virtue of the Planning Acts forthwith to make such provision as is just and equitable for the Landlord to receive their due benefit from such compensation

16.5 Not to apply for or implement any planning permission in respect of the whole or any part of the Premises if such application or the implementation thereof would or might give rise to any tax charge or other levy payable by the Landlord

16.6 Unless the Landlord shall otherwise direct to carry out before the expiration or sooner determination of the Term any works stipulated to be carried out to the Premises by a date subsequent to such expiration or sooner determination as a condition of the grant of any planning permission obtained by the Tenant during the Term

17. INSURANCE

17.1 Not to do or omit to do (or permit or suffer to be done or omitted to be done) anything whereby the policy or policies of insurance on the Premises against the Insured Risks may become void or voidable or whereby the rate of premium thereon or upon the Estate or the Landlord's Neighbouring Premises (or any of them) may be increased or cause the insurers to impose more onerous terms in such policy or policies and to repay to the Landlord all sums paid by way of increased premiums and any expenses incurred by the Landlord in or about any renewal of such policy or policies consequent upon a breach of this covenant and all such sums shall be added to the rent herein reserved and be recoverable upon demand as rent and in the event of the Premises or any part thereof being damaged by the Insured Risks and the insurance money under any insurance effected against the same being wholly or partly irrecoverable by reason solely or in part of any act omission neglect or default of the Tenant or any undertenant or their respective employees servants agents independent contractors customers visitors licensees invitees or any other person under the Tenant's or the undertenant's control then and in every such case the Tenant will forthwith pay to the Landlord the whole or (as the case may require) an appropriate proportion of the costs of completely rebuilding and reinstating the Premises

17.2 To comply with any requirements or recommendations of the insurers of the Premises

17.3 To insure and keep insured in the joint names of the Landlord and the Tenant the plate and other glass windows doors and partitions in the Premises against breakage or damage howsoever caused in its full reinstatement value for the time being with some Insurance Office approved in writing by the Landlord and whenever so required to produce to the Landlord the policy of such insurance and the receipt for the current year's premium

17.4 On each occasion that the plate or other glass if broken or damaged to reinstate the same forthwith with glass of at least the same nature thickness and quality

18. TO INDEMNIFY

18.1 To keep the Landlord fully and effectually indemnified from and against all liability in respect of losses damages proceedings claims costs expenses and any other liability whatsoever arising from or in connection with

(a) the injury or death of any person

(b) damage to or destruction of any property whatsoever

(c) the infringement disturbance or destruction of any rights easements or privileges

(d) the breach by the Tenant of any of the terms covenants and conditions on the part of the Tenant herein contained

arising directly or indirectly out of:

(i) the repair condition or use of the Premises or of any alteration to the Premises or works carried out or in the course of being carried out to the Premises by the Tenant its undertenants their respective employees customers and invitees and anyone else under their potential control

(ii) anything now or hereafter attached to or projecting from the Premises

(iii) any act default or negligence of any person or body other than the Landlord

and to insure against such liability in a reputable Insurance Office

19. DEALINGS WITH THE PREMISES

19.1 Unless expressly permitted under paragraph 19.9 or by a Consent granted under paragraphs 19.2 19.3 or 19.4 or the Tenant shall not assign underlet charge part with or share possession or occupation of all or any part of the Premises nor hold the Premises on trust for any other person

19.2 The Landlord shall not unreasonably withhold Consent to a legal charge of the whole of the Premises

19.3 The Landlord shall not unreasonably withhold Consent to an assignment of the whole of the Premises but the Landlord and the Tenant agree for the purposes of section 19(1A) Landlord and Tenant Act 1927 that the Landlord may withhold that Consent unless the following conditions are satisfied:

(a) in relation to either a prospective assignee or any prospective guarantor or guarantors

(i) that party shall in the reasonable opinion of the Landlord be a substantial and respectable body or person whose registered office principal place of business or address is within the United Kingdom and

(ii) that party has submitted references reasonably satisfactory to the Landlord

(b) the prospective assignee is not a Group Company or a Connected Person unless the proposed assignment is to a Group Company in connection with a bona fide reconstruction or amalgamation of the Tenant's group of companies

(c) in the reasonable opinion of the Landlord the prospective assignee is of sufficient financial standing to enable it to comply with the Tenant's covenants in this Lease

(d) the Tenant and the Surety (and any former Tenant or Surety who by virtue of there having been an "excluded assignment" as defined in section 11 of the Landlord and Tenant (Covenants) Act 1995 has not been released from the Tenant's covenants in this Lease) enters into an authorised guarantee agreement within the meaning of the Landlord and Tenant (Covenants) Act 1995 with the Landlord in the form set out in schedule 7 or on such other terms as the Landlord may reasonably require

(e) if the Landlord reasonably requires a guarantor or guarantors acceptable to the Landlord acting reasonably has guaranteed to the Landlord the due

performance of the prospective assignee's obligations in the form set out in schedule 6 or on such other such terms as the Landlord may reasonably require and

(f) any security for the Tenant's obligations under this Lease which the Landlord holds immediately before the assignment is continued or renewed if the Landlord reasonably so requires and in each case on such terms as the Landlord may reasonably require in respect of the Tenant's liability under the authorised guarantee agreement referred to in paragraph 19.3(d) (but this paragraph shall not apply to any authorised guarantee agreement entered into by a former Tenant or by any guarantor of a former Tenant) and

(g) any sum due from the Tenant to the Landlord under this Lease (or any deed of variation licence Consent or other document supplemental to or associated with this Lease) is paid and any other material breach of the Tenant's covenants in this Lease (or any deed of variation licence Consent or other document supplemental to or associated with this lease) is remedied; and

(h) the Landlord has received an undertaking from the Tenant's solicitors for an amount not exceeding a fixed sum reasonably estimated by the Landlord's solicitors in respect of costs to be incurred in such form as the Landlord may reasonably require to pay the Landlord on demand the reasonable legal and surveyor's costs and disbursements (including Value Added Tax) incurred by the Landlord in considering the Tenant's application and preparing negotiating and entering into any relevant documentation whether or not the application is withdrawn or the Consent is granted

19.4 The Landlord shall not unreasonably withhold Consent to an underletting of the whole or any Lettable Unit where all of the following conditions are satisfied:

(a) the prospective undertenant has produced references in a form reasonably acceptable to the Landlord

(b) the prospective undertenant has covenanted with the Landlord to observe and perform until it assigns the underlease with Consent as required by the underlease the Tenant's covenants and obligations in this Lease (except the covenant to pay rent and insofar only as such covenants affect the underlet premises)

(c) if the Landlord reasonably requires a guarantor or guarantors acceptable to the Landlord has guaranteed the due performance by the undertenant of its above covenant in such terms as the Landlord may reasonably require and

(d) no fine or premium is taken for the grant of the underlease and

(e) the basic rent payable under the underlease is not less than the greater of the best rent reasonably obtainable in the open market for the underlease and a due proportion of the Basic Rent and

(f) any rent free period or other financial inducements given to the undertenant are no greater than is usual at the time in all the circumstances and

(g) the form of the underlease has been approved in writing by the Landlord (approval not to be unreasonably withheld or delayed where the provisions of it are consistent with the provisions of this Lease)

(h) any such underlease shall be excluded from the operation of sections 24-28 Landlord and Tenant Act 1954

(i) the total number of such underleases which may subsist at any time during the Term shall not exceed three and

(j) any such underlease shall contain provisions enabling the Tenant (as lessor) to recover from the undertenant by way of rent a due proportion of the sums due under this Lease in respect of insurance of the Premises and of the cost to the Tenant or repairing decorating and operating the Premises

(k) any such underlease shall preclude further underletting of all or part of the underlet premises and

(l) any such underlease shall contain any upwards only rent review at 29th September 2003

19.5 The Tenant shall:

(a) enforce against any undertenant the provisions of any underlease and shall not waive them and

(b) operate the rent review provisions contained in any underlease so as to ensure that the rent is reviewed at the correct times and in accordance with those provisions

(c) not accept a surrender of part only of the underlet premises

19.6 The Tenant shall not without Consent (which shall not be unreasonably withheld):

(a) vary the terms of any underlease or

(b) agree any review of the rent under any underlease

19.7 The Tenant shall not require or permit any rent reserved by any underlease to be commuted or to be paid more than one quarter in advance or to be reduced

19.8 Any Consent granted under this paragraph 19 shall (unless it expressly states otherwise) only be valid if the dealing to which it relates is completed within two months after the date of the Consent

19.9 The Tenant may (after giving written notice to the Landlord containing all relevant information) share occupation of the Premises with any Group Company on condition that the sharing shall not create any relationship of landlord and tenant and that on any occupier ceasing to be a Group Company the occupation shall immediately cease or shall be otherwise documented in accordance with this paragraph 19

20. TO GIVE NOTICE OF ASSIGNMENTS, DEVOLUTIONS ETC.

20.1 To produce a certified copy of every assignment underlease transfer charge Probate Letters of Administration order instrument or other writing effecting or evidencing any transmission or devolution of any estate or interest in the Premises or any part thereof to the solicitors of the Landlord for registration within one month from the date thereof and to pay to the Landlord's solicitors their reasonable fees for each such registration

20.2 Within seven days of an assignment of this Lease to give to the Landlord written notice of the person to whom future rent demands should be sent

20.3 Upon being requested so to do by the Landlord from time to time to supply the Landlord with such details of the occupiers of the Premises and the terms upon which they occupy

21. AS TO LOSS OR ACQUISITION OF EASEMENTS

21.1 Not to permit any easement or right comprised in belonging to or used with the Premises or any part thereof from being obstructed or lost

21.2 Not to give to any third party any acknowledgement that the Tenant enjoys the access of light to any of the windows or openings in the Premises by the consent of such third party nor to pay to such third party any sum of money nor to enter into any agreement with such third party for the purpose of inducing or binding such third party to abstain from obstructing the access of light to any such windows or openings

21.3 To take all such steps as may be necessary to prevent the acquisition of any easement or right against over upon or under the Premises or any part thereof and any encroachment thereon and to give to the Landlord immediate notice of any encroachment or threatened encroachment upon the Premises or any attempt to acquire any easement or right under or over the Premises which shall be within the Tenant's knowledge and to do all such things as may be necessary to prevent any encroachment being made or any new easement being acquired

22. TO PRODUCE PLANS/DOCUMENTS

22.1 If and whenever reasonably called upon so to do to produce to the Landlord or the Surveyor all such plans documents or other evidence as the Landlord may from time to time require to satisfy themselves that the Tenant has complied in all respects with the provisions of the Tenant's covenants herein

23. NOT TO INTERFERE WITH RESERVED RIGHTS

23.1 Not to interrupt or interfere with the reasonable exercise of the rights contained or referred to in schedule 2

24. TO PERMIT ENTRY FOR RELETTING ETC.

24.1 During the last six months before the expiration or sooner determination of the Term or after the expiration thereof (or at any time during the Term in the event of a sale of the Landlord's interest in the Premises) to permit the Landlord and the Surveyor to enter upon the Premises following reasonable prior notice and to affix upon any suitable part or parts thereof a notice board or boards for reletting or other disposal of the Premises and not to remove or obscure the same and at all reasonable times in the daytime to permit all persons authorised by the Landlord or the Surveyor to enter and inspect the Premises following reasonable prior notice

25. TO YIELD UP

25.1 At the expiration or sooner determination of the Term peaceably and quietly to surrender and yield up to the Landlord the Premises (together with all keys thereto) with vacant possession so repaired maintained decorated cleansed glazed painted and kept as herein provided and if so required by the Landlord to remove such tenants and trade fixtures as the Landlord may specify the Tenant making good all damage caused by the removal of these to the satisfaction of the Surveyor PROVIDED THAT if this Lease shall expire by effluxion of time (but not earlier) then the Tenant shall not be required to carry out any such repairs decoration or other works

26. NEW SURETY

26.1 If during the Term any surety (which expression in this paragraph 26 includes any guarantor) for the time being of the Tenant's obligations under this lease (or any of them if there is more than one):

(a) (being an individual) dies has a bankruptcy order made against the surety or an interim receiver appointed in respect of the surety's property; or

(b) (being a company) enters into liquidation has an administration order made in respect of the surety or has a receiver (administrative or otherwise) appointed of any of the surety's undertaking or assets

the Tenant in respect of which the surety was provided will give the Landlord notice of that fact within fourteen days of occurrence of the event and if required by the Landlord will within twenty eight days of the event procure that some other person acceptable to the Landlord enters into a deed of covenant with the Landlord in the same terms (mutatis mutandis) as the original surety

27. AS TO VALUE ADDED TAX

27.1 On demand to discharge any liabilities of the Landlord relating to value added tax (or any substituted tax) in respect of any supply of goods or services for value added tax purposes made pursuant to or in consequence of this Lease

27.2 For the purposes of this paragraph:

(a) "VAT" means value added tax or any tax charged in addition to or substitution for it

(b) "VAT ACT" means the Value Added Tax Act 1994

(c) any reference to a statute or statutory instrument includes a reference to any later statute or statutory instrument replacing or amending it

27.3 The Tenant covenants

(a) to be at the time of grant of this Lease and to remain at all times during the Term and at any time any supply under this Lease is made to the Tenant a taxable person within the meaning of the VAT Act; and

(b) not to use or intend to use or permit the use of the Premises at any time during the Term for any purpose or purposes other than eligible purposes (within the meaning of Article 3A of Schedule 10 VAT Act)

27.4 The parties intend that the supplies effected by this Lease are standard rated for VAT purposes and the Tenant covenants not to negate or challenge the treatment of such supplies as standard rated for VAT purposes

28. AS TO MAINTENANCE CONTRACTS

28.1 Where there are within the Premises any lifts hoists boilers or air-conditioning or central heating installations to enter into and maintain throughout the Term maintenance and safety contracts with reputable engineers for the maintenance and safety of the same and to produce to the Landlord on demand any such contract and the receipt for the current payments or premiums thereunder

29. STATUTORY ACQUISITIONS

29.1 Not to do or omit to do any act matter or thing as a consequence whereof the Landlord's reversion immediately expectant upon the determination of the Term shall become liable to acquisition pursuant to any Enactments

30. FIRE FIGHTING APPLIANCES

30.1 To keep the Premises sufficiently supplied and equipped with such suitable fire fighting and extinguishing appliances as shall from time to time be required by law or by the local or other competent authority and by the Landlord's insurers and such appliances shall be open to inspection and shall be properly maintained and also not to obstruct the access to or means of working such appliances or the means of escape from the Premises in case of fire

31. EXISTING ENCUMBRANCES

31.1 To observe and perform all covenants in respect of the Premises arising from the Existing Encumbrances so far as they affect the Premises and are still subsisting

32. NOT TO OBSTRUCT

32.1 Not to permit any vehicles under the Tenant's express or implied control or that of the Tenant's undertenants their respective employees customers and invitees or anyone else under their respective control to stand on the roadways comprised within the Estate or on any other part of the Estate except on such parts as shall from time to time have been authorised by the Landlord or shall have been designated by the Landlord as a loading bay for the Tenant (but during the period of loading and unloading of vehicles only) and not to park on or obstruct any communal part of the Estate

33. TO COMPLY WITH REGULATIONS

33.1 To comply with all reasonable regulations made by the Landlord from time to time for the management of the Estate and of any land or premises used or to be used in common or jointly with any other person and to procure that the Tenant's employees and all persons under the control of the Tenant shall at all times observe and perform the same

34. AS TO WATER SUPPLY

34.1 Not to use or permit or suffer to be used the supply of water to the Estate for any purpose other than the Tenant's purposes hereby permitted and not in any event to use the same or permit or suffer the same to be used for research or industrial purposes without the provision of a proper recirculation system to a specification first approved by the Statutory Water Undertaker or otherwise in compliance with the reasonable recommendations of the Water Authority

35. TO COMPLY WITH PLANNING AGREEMENTS

35.1 In addition to and not in substitution for or limitation of the covenants contained herein and in particular the Tenants covenants as to the use of the Premises or any part thereof to observe and perform all the covenants on the Landlord's part in the Planning Agreements respectively contained and the agreements and provisions of the Planning Agreements to the extent that the same affect the Premises or any part thereof and at all times to indemnify the Landlord against any breach or non-observance of the same

36. TO PAY COST OF DAMAGE

36.1 Without prejudice to any other provisions herein contained to pay to the Landlord on demand the full cost as assessed by the Surveyor of making good any damage to the said roads coloured brown on Plan A and any road fittings including but not limited to lighting and signs or any other part of the Estate whether occasioned by the Tenant any undertenant or their respective employees servants agents independent contractors customers visitors licensees invitees or any other person under the Tenant's or the undertenant's control

37. TO CARRY OUT THE TENANT'S NEW WORKS

37.1 At the Tenant's own expense forthwith to apply for and diligently seek to obtain all licences approvals plans consents and permissions and other things necessary (if any) for the carrying out of the Tenant's New Works from any relevant Authority and at the Tenant's expense to carry out the Tenant's New Works in compliance with all Enactments relating thereto the Tenant's New Works to be executed in a good and substantial manner employing good materials and

workmanship and in conformity in every respect with the specifications plans and drawings first approved in writing by the Surveyor (whose approval shall not be unreasonably withheld or delayed) and in all respects to the reasonable satisfaction of the Surveyor and any relevant authority and complete the Tenant's New Works in all respects as aforesaid by 31st July 1999

37.2 To carry out and complete Tenant's New Works in accordance with all statutes from time to time in force which affect the Tenant's New Works (including without limitation the Construction (Design and Management) Regulations 1994) ("THE CONDAM REGULATIONS")

SCHEDULE 5
LANDLORD'S COVENANTS

1. AS TO QUIET ENJOYMENT

1.1 That the Tenant Paying the rents hereby reserved at the times and in the manner herein appointed and performing and observing the covenants on the Tenant's part and the conditions agreements and stipulations herein contained may peaceably enjoy the Premises for the Term without any lawful interruption from the Landlord or any person lawfully claiming under or in trust for the Landlord

2. TO INSURE

2.1 That the Landlord will during the Term insure and keep insured in some established Insurance Office the Premises (excluding all plate and other glass therein) against the Insured Risks with a sum assured to cover the following

(a) the full reinstatement value thereof (excluding the amount of any insurance excess for which the Tenant shall be liable) to be determined from time to time by the Landlord and

(b) architect's surveyor's and other professional fees demolition site clearance and the cost of boarding and propping including a due allowance for cost increases over any likely rebuilding period and

(c) three years' loss of rent and

(d) liability attaching to the Landlord as owners or landlords of the Premises

(e) incidental expenses

AND where there are within the Premises goods or passenger lifts hoists air conditioning or central heating installations the Landlord may insure the same (or

any of them) separately in such manner and for such amount as the Landlord may from time to time determine

2.2 The Landlord shall have full power to settle and adjust with the insurers all questions with regard to the liability of the insurers and the amount or amounts payable under any policy

2.3 The Landlord will whenever reasonably requested but not more than once in every year produce to the Tenant a copy of the insurance policy (or a summary of the terms of it) and evidence of payment of the current premium

3. TO REINSTATE

3.1 In case the Premises or any part thereof shall at any time during the Term be destroyed or damaged by the Insured Risks so as to be unfit for occupation or use then (unless any monies payable under any policy of the Landlord shall be refused either by reason of any act omission neglect or default of the Tenant any undertenant or their respective employees servants agents independent contractors customers visitors licensees invitees or any other person under the Tenant's or the undertenant's control or by reason of any breach of the provisions of paragraph 17 of schedule 4) and subject to the Landlord obtaining all necessary consents licences or approvals as soon as reasonably practicable and when lawful so to do the Landlord will apply all monies received (other than in respect of loss of rent fees demolition site clearance the cost of boarding and propping and any sums paid to the Landlord to indemnify the Landlord for any liability as owner or as landlord of the Premises or otherwise payable on the occurrence of a risk not involving damage to the Premises all of which shall in all circumstances belong to the Landlord) by virtue of such insurance as aforesaid towards making good the damage to the Premises caused by the Insured Risks but this obligation shall be conditional upon the Tenant's performance of the covenants on the Tenant's part contained in paragraph 17 of schedule 4 and shall make up out of its own money any shortfall in the insurance money in order to complete such reinstatement

SCHEDULE 6
SURETY'S COVENANTS AND AGREEMENTS

1. COVENANTS BY SURETY

1.1 The Surety HEREBY COVENANTS with and guarantees to the Landlord that

(a) at all times during the Term and until this demise is lawfully brought to an end and the Landlord has beneficial occupation of the Premises or until the Tenant assigns this Lease as a whole with Consent as required by this Lease (if earlier) or otherwise if the Tenant remains liable for payment

under the Landlord and Tenant Act 1954 to pay the rents hereby reserved and all other sum and payments covenanted and or agreed to be paid by the Tenant at the respective times and in manner herein appointed for payment thereof and will also duly perform and observe and keep the several covenants and provisions on the Tenant's part herein contained and

(b) the Surety will pay and make good to the Landlord all losses liabilities costs and expenses sustained by the Landlord through the default of the Tenant in respect of any of the before mentioned matters and

(c) that any neglect or forbearance of the Landlord in endeavouring to obtain payment of the said several rents and payments as and when the same become due or their delay to take any steps to enforce performance or observance of the several covenants and provisions herein on the Tenant's part contained and any time which may be given by the Landlord to the Tenant shall not release or in any way lessen or affect the liability of the Surety under the guarantee on the Surety's part herein contained and

(d) if the Tenant (being a Company) shall become subject to an administration order or be the subject of a winding up order by the Court or otherwise go into liquidation or if the Tenant (being an individual) shall be adjudged bankrupt and the Liquidator or Administrator or the Trustee of the bankrupt's estate (as the case may be) shall disclaim this Lease and if the Landlord shall within three months after such disclaimer by notice in writing require the Surety to accept a lease of the Premises for a term equal to the residue which if there had been no such disclaimer would have remained of the Term at the same rents and under the like covenants and provisions as are reserved by and contained in the Lease the said new lease and the rights and liabilities thereunder to take effect as from the date of the said disclaimer then and in such case the Surety shall accept such lease accordingly and execute and deliver to the Landlord a counterpart thereof in all respects at the sole cost of the Surety and

(e) upon demand to pay to the Landlord Interest on all amounts due under this paragraph 1 from the date the same respectively fell due until the date of payment thereof

2. AGREEMENTS BY SURETY

2.1 It is hereby agreed and declared that

(a) the Surety covenants as principal debtor and not as guarantor and accordingly (for the avoidance of doubt)

(i) it shall not be necessary for the Landlord to resort to or seek to enforce any other guarantee or security (whether from the Tenant or otherwise) before claiming payment hereunder and

(ii) until all monies and liabilities due or incurred by the Tenant to the Landlord have been paid or discharged in full notwithstanding payment in whole or in part of the amount by the Surety or any purported release or cancellation hereof the Surety shall not by virtue of any such payment or by any other means or on any other ground

(a) claim any set off or counter claim against the Tenant in respect of any liability on the part of the Surety to the Landlord and

(b) make or enforce any claim or right against the Tenant or prove in competition with the Landlord or exercise any right as a preferential creditor against the Tenant or against the assets of the Tenant

and

(b) the Surety's covenants herein contained shall not be affected or modified in any way by the liquidation or dissolution of the Tenant or the appointment of any receiver administrator or manager and

(c) the Landlord shall be at liberty at all times without affecting or discharging the Surety's liability hereunder

(i) to vary release or modify the rights of the Landlord against the Tenant hereunder without the Surety's consent and

(ii) to compound with discharge release or vary the liability of the Tenant or any other guarantor or other person and

(iii) to appropriate any payment the Landlord may receive from the Tenant the Surety or any other person towards such monies due under this Lease as the Landlord shall in their absolute discretion think fit

(d) the Landlord and the Tenant shall be at liberty to review the rent hereunder from time to time in accordance with the provisions of this Lease without reference to the Surety and the covenants conditions agreements and declarations on the part of the Surety contained in this Lease shall apply to

the rent as reviewed from time to time as much as to the rent reserved hereby at the commencement of the Term

SCHEDULE 7
GUARANTEE AGREEMENT

THIS DEED dated _____ is made BETWEEN:

(1) ("THE GUARANTOR")

(2) ("THE LANDLORD")

1. DEFINITIONS AND INTERPRETATION

1.1 In this deed:

"Basic Rent", "Consent", "Premises" and "Term" have the same meanings as in the Lease

"the Lease" means [this lease] and includes where relevant any deed of variation licence Consent or other document supplemental to or associated with the Lease by which the Tenant is bound whether presently existing or not

"Relevant Variation" means a relevant variation as defined in section 18(4) of the Landlord and Tenant (Covenants) Act 1995

"Rent" means

(a) the Basic Rent
(b) the rents specified in schedule 3 to the Lease
(c) any other sums which may become due to the Landlord under the provisions of the Lease

"Rent Day" means each of the four usual quarter days in every year

"Secured Obligations" means the obligation to pay all sums from time to time due or expressed to be due to the Landlord from the Tenant under the Lease and to perform all other obligations which from time to time are or are expressed to be obligations of the Tenant under the Lease

"the Tenant" means [the proposed assignee]

1.2 In this deed unless the context otherwise requires:

(a) references to the singular include the plural and vice versa any reference to a person includes a reference to a body corporate and words importing any gender include every gender

(b) references to numbered clauses are references to the relevant clause in this deed

1.3 The clause headings do not form part of this deed and are not to be taken into account when construing it

1.4 This instrument:

(a) is executed as a deed and by its execution the parties authorise their solicitors to deliver it for them when it is dated

(b) was delivered when it was dated

2. GUARANTEE

2.1 This guarantee is given pursuant to a provision in the Lease requiring it to be given and is an authorised guarantee agreement for the purposes of section 16 of the Landlord and Tenant (Covenants) Act 1995

2.2 The Guarantor unconditionally and irrevocably covenants with and guarantees to the Landlord that Tenant will until the Tenant assigns the Lease as a whole with Consent pay and discharge the Secured Obligations when they fall due or are expressed to fall due under the Lease for payment and discharge

2.3 The Guarantor shall upon being requested to do so by the Landlord enter into any deed of variation licence Consent or other document to which in each case the Tenant is a party and which is in each case supplemental to the Lease for the purpose of acknowledging that the Guarantor's liabilities under this deed extend to it but to the extent that the document effects a Relevant Variation paragraph 5.3 shall apply

2.4 The guarantee and covenant in paragraph 2.2 shall impose on the Guarantor the same liability as if the Guarantor were the principal debtor in respect of the Tenant's obligations under the Lease and that liability shall continue notwithstanding (and will not be discharged in whole or in part or otherwise affected by):

(a) any forbearance by the Landlord to enforce against the Tenant the tenant's covenants in the Lease

(b) the giving of time or other concessions or the taking or holding of or varying realising releasing or not enforcing any other security for the liabilities of the Tenant

(c) any legal limitation or incapacity relating to the Tenant

(d) the Tenant ceasing to exist

(e) the giving and subsequent withdrawal of any notice to determine the Lease

(f) any increase or reduction in the extent of the Premises or in the rent payable under the Lease or any other variation to the Lease

(g) the disclaimer of the Lease

(h) any other act or omission of the Landlord or any other circumstances which but for this paragraph 2.4 would discharge the Guarantor

and for the purposes of this paragraph 2 the Tenant shall be deemed liable to continue to pay and discharge the Secured Obligations notwithstanding any of the above matters and any money expressed to be payable by the Tenant which may not be recoverable for any such reason shall be recoverable by the Landlord from the Guarantor as principal debtor

3. NEW LEASE

3.1 The Guarantor shall if required by the Landlord in writing within the period beginning on the day of a disclaimer of this lease and expiring three months after the Landlord has been notified in writing by the Guarantor or the Tenant of that disclaimer accept a lease of the Premises for the residue of the contractual term unexpired at and with effect from the date of the disclaimer at the same Basic Rent as reserved by the Lease and subject to the same covenants and provisos and the Tenant on execution of the new lease will pay Rent for the period from the date of the disclaimer to the Rent Day following the date of the lease and the costs of and incidental to the new lease and will execute and deliver to the Landlord a counterpart

3.2 If the Landlord requires more than one guarantor to take a new lease those guarantors shall take that new lease as joint tenants

4. SECURITY TAKEN BY GUARANTOR

4.1 Until the Secured Obligations have been paid and discharged in full the Guarantor shall not without Consent exercise any rights:

(a) of subrogation or indemnity in respect of the Secured Obligations

(b) to take the benefit of share in or enforce any security or other guarantee or indemnity for the Secured Obligations

(c) to prove in the liquidation of the Tenant in competition with the Landlord

4.2 The Guarantor has not taken any security from the Tenant and will not do so

4.3 Any security taken by the Guarantor in breach of paragraph 4.2 and all money at any time received in respect of it shall be held in trust for the Landlord as security for the liability of the Guarantor under this deed

5. LIMITATION ON GUARANTOR'S LIABILITY

5.1 Nothing in this agreement shall operate so as to make the Guarantor liable for anything in respect of which the Tenant is released from liability by the provisions of the Landlord and Tenant (Covenants) Act 1995

5.2 To the extent that this deed purports to impose on the Guarantor any liability for anything in respect of which the Tenant is released from liability by the provisions of the Landlord and Tenant (Covenants) Act 1995 the relevant provision of this deed shall to that extent be void but that shall not affect:

(a) enforceability of that provision except to that extent or

(b) the enforceability of any other provision of this deed

5.3 The Secured Obligations shall not include obligations arising under a Relevant Variation but the making of a Relevant Variation shall not discharge the Guarantor's liability under this deed

6. JOINT AND SEVERAL GUARANTORS

6.1 The liability of the Guarantor under this deed shall be the joint and several liability of all parties who have executed this deed as Guarantor and all other parties who from time to time guarantee the Tenants obligations to the Landlord and any demand for payment by the Landlord on any one or more of such persons jointly and severally liable shall be deemed to be a demand made on all such persons

6.2 Each person who has executed this deed as Guarantor or on whose behalf this deed has been so executed agrees to be bound by this deed notwithstanding that the other person intended to execute or be bound by this deed may not do so or may not be effectually bound and notwithstanding that this deed may be determined or become invalid or unenforceable against any other person whether or not the deficiency is known to the Landlord.]

[Executed by the Guarantor and the Landlord as a deed]

SCHEDULE 8
THE TENANT'S NEW WORKS

The following items which are taken from a survey report dated 9th February 1996 prepared by JSS Cardoe:

1. Allow for thoroughly cleaning down the profiled metal cladding to the north and west elevations of the property.

2. New 2 no. 1500 x 2m profiled metal sheets. Allow for renewal of approximately 30 sq m of profiled metal cladding to match original.

3. Remove 3 nail fixings through the cladding to the west elevation.

4. Undertake the following repairs to the external ended cladding. Take off exposed hardboard to north elevation east end (5 sq m). Trim back supporting studs as necessary and fix 18mm WBP plywood panels.

5. Fix breather membrane to plywood and EML and 2 coat render with final butter coat to take matching granite chippings. Base of panels above windows to be terminated with a render stop bead.

6. Form mastic joints to repaired sections of panelling to match adjacent.

7. Take down one 5 sq m area of panelling adjacent to the above area and renew as per the above details.

8. Repair crack to rendered panelling to south end of east elevation below first floor windows.

9. Repair one small area to the west side of the main entrance doors at ground storey level (2 sq m).

10. Allow for a further 25 sq m of defective panelling which may become evident upon hammer testing of the entire elevations.

11. Clean down windows internally and externally (glazing and frames).

12. Allow for renewal of 50% of the mastic sealants and beadings to the windows particularly taking care to repair the mastic at low level above the sills. Allow for renewal of 50% of the mastic to the rendered panels, to the north and east elevations to match original.

13. Touch up paint finish to windows particularly sill sections to the south and east elevations. Allow for easing and adjusting of the windows and ensuring that all furniture is in sound condition and operational.

14. Cut out area of wet rot to frame to fire exit doors to north elevation west end.

15. Repair rusted frame to fire exist doors to west elevation.

16. Repair 6 panels of loading door to front south elevation and repair bowed wicket gate.

17. Repair tubular steel barrier where bent adjacent to loading door.

18. Cut out rotted sections of timber frame to loading door at low level on both sides and piece in with new treated timber to match.

19. Allow for renewal of the painted finish to the main entrance doors to the property and repair draught seals at low level.

20. Allow for external redecoration to all previously painted or stained surfaces to the exterior of the property (2 coats of paint or stain to be applied).

Signed as a deed by BIOCHROM)
LIMITED acting by:)
)

/s/ David Green
- ----------
Director

/s/ Chane Graziano
- ----------
Director

Signed as a deed by HARVARD)
APPARATUS, INC. by its duly)
authorized representatives in)
accordance with the laws of the)
territory in which Harvard)
Apparatus, Inc. is incorporated:)

/s/ David Green
- ----------
Director

/s/ Chane Graziano
- ----------
Director

Exhibit 10.12

CERTIFIED TRANSLATION

TRANSLATION FROM THE GERMAN LANGUAGE
TRANSLATOR'S NOTES
****

LEASE AGREEMENT FOR COMMERCIAL PREMISES

MADE BETWEEN

MR. HEINZ DEHNERT,
GRUNSTRASSE 1, 79232 MARCH-HUGSTETTEN

- LESSOR -

AND

THE COMPANY OF HARVARD APPARATUS GMBH
C/O ATTORNEYS AT LAW MEINECKE, SEIBT, KAISER
KAISER-JOSEPH-STRASSE 271, 79098 FREIBURG

- LESSEE -

Section 1

CONTRACTING PARTIES, OBJECT OF THE LEASE, PURPOSE OF THE AGREEMENT

Lessor shall let out to Lessee a partial surface of the real-estate registered in the Land Register of March-Hugstetten, Page 121, lot No. 1341 and 1344, Grunstrasse 1, 79232 March-Hugstetten, including buildings erected upon for the operation of a company for production and distribution of scientific devices. Any substantial change of use requires the prior written approval of Lessor. The leased premises and free spaces are marked with red ink on the enclosed layout. This layout shall be part of the Lease Agreement.

Section 2

RENT AND INCIDENTALS

The monthly rent shall be 8,000.00 DM plus the respectively applicable statutory value-added tax. In addition, Lessee shall bear the following costs:

Running public burdens imposed on the real-estate, cost of electricity and water supply as well as drainage, cost of heating and warm water, cost of tree and sidewalk cleaning, waste removal costs, house cleaning costs, cost of garden maintenance including the cutting of hedges, general illumination, chimney sweeping, costs of fire, property, and public-liability insurance as well as a other operational costs, such as costs for piping and gutter cleaning, maintenance of fire-extinguishing devices and lightning conductors, waste disposal and so on.

The above incidentals are to be paid by Lessee to the possible extent directly to the respective service or utility companies. The incidentals remaining thereafter shall be invoiced separately in proportion to their occurrence and shall be paid by Lessee to the Lessor immediately.

Section 3

PAYMENT MODE

The rent plus value-added tax are to be paid monthly in advance, at the latest by the 3rd working day of a calendar month at no cost to Lessor into Lessor's account No. 14486 with the Volksbank Emmendingen-Kaiserstuhl eG, sort code 68092000. The relevant date as to the due date of payment shall be the date of crediting in the account of Lessor.

Section 4

RENT CHANGES

If the monthly price index of living as determined by the Federal Statistical Office for all private households of the entire territory of the Federal Republic (1995=100) by more than 10 points compared to the level as of the date of the last determination of the rent, the respectively last rent owed shall be modified accordingly from the 1st day of the month following the modification of the index, without any separate modification request from any of the contracting parties being required. The starting basis shall then be the index level in month 12/1999.

If the agreed index is discontinued during the term of the Agreement, the contracting parties shall agree on a regulation coming the closest possible to the commercial objective of this clause.

Section 5

DURATION OF THE LEASE/TERMINATION

1. The tenancy shall commence on 11.11.1999 and end on 30.11.2004. Upon the lapse of this period, Lessor shall have the right to requests a prolongation of the tenancy by additional five years on the same lease conditions. Such a request for prolongation shall be made in writing and reach Lessee at the latest six months prior to the end of the Agreement.

2. Each contracting party shall have the right to terminate the tenancy without notice if the respective other contracting party, at its own fault, breaches its obligations to such an extent, especially in that it causes a disturbance of the domestic peace so lastingly that

the continuation of the tenancy would be unreasonable to the respective other party (Section 554 a "BGB" *German Civil Code*).

3. Lessor shall have the right to terminate the tenancy without notice if

a) Lessee defaults payment of a non-negligible portion of the rent for successive due dates, or if it continues to owe parts of the rent at multiple occasions and the balance overdue reaches the amount of the rent being due for two months (Section 554 section 1 sentence 1 no. 1 "BGB").

b) Lessee, or the party to whom Lessee has left the object of the lease for use, respectively, despite a warning from the side of Lessor, continues any agreement-breaching use of the object of the lease in a manner which impairs Lessor's rights to a considerable extent, especially in that Lessee continues to tolerate any authorized use by third parties, or in that Lessee considerably endangers the object of the lease by way of neglecting its due-diligence obligations (Section 553 "BGB").

4. In particular, Lessor may terminate the Agreement without notice if Lessee is insolvent, or if insolvency proceedings into its property were applied for, opened, or rejected for lack of funds.

5. Termination shall be made by registered mail with an indication of grounds.

Section 6

UPKEEP AND REPAIR

1. Upkeep work

Lessor shall have maintained all technical of appliances and equipment which it is authorised to use at the required intervals by a specialist, and it shall provide Lessor with a proof of such maintenance. This applies in particular to gas, oil-heating, electrical, and air-conditioning equipment.

2. Repair work

Lessee shall be repair any damages and disturbances to structural and technical equipment within the object of the lease immediately (in the case of Lyons, up to the point of connection to the main line), if they are caused by the use of the object of the lease. Broken window panes within the area of the leased premises as well as any damage occurring to company signs of Lessee are to be replaced by Lessee.

Section 7

IMPROVEMENTS

1. Any improvement-repair work shall be borne by Lessee.

   Improvement repair work shall include painting and wall-papering of the ceilings and walls, painting of the heating radiators as well as the expert special cleaning of the floor coatings.

2. Lessee shall not bear any tear or wear other than its own. It shall perform the improvement repair work at its own discretion, but in any case upon termination of the tenancy.

Section 8

ADVERTISING SIGNS

Lessee shall have the right to affix advertising signs in the hall to the legally permitted extent. Lessee shall be responsible for obtaining any official authorisations required.

Section 9

DEFECTS TO THE OBJECT OF THE LEASE/SETTING OFF

1. Lessor shall not be liable for defects which were already present at the time of entering into the Agreement. Lessee shall not have any damage claims towards Lessor for reason of defects occurring after the execution of the Agreement, unless such damage was caused wilfully or by gross negligence on the side of Lessor or its agents.

2. Lessee shall have the right to set off Lessor's rent claims against undisputed or legally founded claims.

Section 10

ACCESS TO THE OBJECT OF THE LEASE

For the purpose of verifying its condition or for the purpose of reading off metres, Lessor or its agents shall have the right to access the object of the lease at reasonable intervals and after proper notification. If Lessor wishes to sell the real estate, or if the Lease Agreement is terminated, Lessor or his agents, even together with prospective purchasers or tenants, shall have the right to access the object of the lease upon notification in due time. As for the rest, Lessor shall have the right to access the object of the lease without prior notification in the case of imminent danger.

Section 11

HANDING OVER OF THE OBJECT OF THE LEASE

Lessee shall take over the object of the lease in its as-is condition. Lessee acknowledges this condition as being in accordance with the Agreement.

Section 12

DUE-DILIGENCE OBLIGATIONS OF LESSEE

1. Cleaning obligation of Lessee

   Lessee agrees to keep clean the path in front of the object of the lease including the access to the garage and the parking lots, to keep them free of snow, and to grit/salt them in the case of ice. Lessee shall assume this obligation to maintain traffic safety with the commencement of the tenancy.

2. Lessee agrees to treat the leased premises including the equipment being jointly used together with other parties in a caring and responsible manner. In addition, Lessee shall keep the outer surfaces as at any time in a clean condition.

3. Lessee shall bear the costs of cleaning agents and grit; it shall make available and maintain the proper condition of the cleaning tools. It shall observe any regulation applicable under public law.

4. Lessee shall be liable for damages occurring by reason of any breaches of its due-diligence and notification obligations by its own fault, or by unauthorised changes in use. The same shall apply in the case of guilt on the side of employees of visitors of Lessee.

5. Lessor or its agents shall be informed immediately of any damage occurring to the house or to the leased promises. Lessee shall be liable for additional damages caused by delayed notification.

Section 13

SUBLETTING

1. Any subletting or transfer for use to third parties by Lessee shall require the prior written approval of Lessor. Such approval must only be withheld for cause. If such a permission has been granted, Lessor shall have the right to revoke it for cause. Such a cause shall be present in particular if the sub-tenants deviate considerably from the agreed transfer for use.

2. Lessee shall notify Lessor of any moving in or out of persons to whom it transfers the premises for use.

Section 14

STRUCTURAL MODIFICATIONS BY LESSOR

Lessee shall tolerate any measures required for the preservation of the leased premises or the building. Likewise, Lessee shall tolerate any measures for the improvement of the leased premises or any other parts of the building, if such work affects these promises or building parts only to a minor degree.

To the extent to which Lessee is required tolerate measures in accordance with the preceding sentences, Lessee shall have no right to reduce the rent or to exercise any withholding right, or claim any damages. If measures are required which exclude the use of the premises for the agreed purposes or which impair such use considerably, Lessor agrees to reduce the rent for the duration of the impairment to a reasonable extent.

Section 15

STRUCTURAL MODIFICATIONS/INTEGRATION OF EQUIPMENT BY LESSEE

Structural modifications made by Lessor, in particular modifications of the building or components built in by Lessee* "tenant's improvements"* and installations, require the prior approval of Lessor. If Lessor grants this approval, Lessee shall be responsible for obtaining any permits under the building low and bear any costs in this context.

Section 16

TERMINATION OF THE TENANCY

Lessee agrees to return the object of the lease on termination of the tenancy in a clear and property cleaned condition.

Lessee shall return any keys, including those procured by itself. Lessee shall be responsible for each and any damage incurred by Lessor or by a subsequent tenant for reason of any breach of these obligations.

When requested by Lessor, Lessee shall remove until the termination of the tenancy any equipment which it has incorporated in the leased premises and restore its initial condition.

Section 17

CHANGE IN THE LEGAL FORM/SALE OF THE OPERATION

Should the legal form of the company of Lessee change, or should there be are any changes in the Register of Trade, in the registration of trade, or in any other circumstances being of any relevance with regard to the tenancy, Lessee shall inform Lessor immediately.

If the operation of Lessee should be sold in whole or in part, the transfer of the Agreement upon the legal successor requires a previous agreement with Lessor. Lessor agrees to accept any transfer of the Agreement, unless important reasons should oppose to such a acceptance.

Section 18

WRITTEN FORM

The present Agreement contains the entirety of the agreements made. Any modifications and supplements of or to the present Agreement shall be made in writing.

This provision shall also apply to any deviation from the requirement of the written form.

Section 19

SPECIAL AGREEMENTS

1. Lessee shall be liable to damages for any damage to the leased premises or to the building as well as to the installations belonging to the leased premises or to the building, to the extent to which such damages were caused by a fault on the side of Lessee or any of the following persons: employees, staff members, members of the company, sub-tenants, other persons to whom Lessee leaves the object of the lease for use, as well as visitors, customers, suppliers and craftsmen, to the extent to which the latter get in touch with object of the lease at the instance of Lessee.

2. Lessee is aware of the fact that the leased surface is subiect to the burden of a transit right for the respective owner of the lot no. 1341. Lessee agrees to observe this transit right.

Section 20

SALVADORIAN CLAUSE

Should any of the provisions of the present Lease Agreement become invalid, the validity of the remaining provisions of this Agreement shall not be affected.

Place, date

- Lessor -

Place, date

- Lessee -

D- Heidelberg, November 26, 1999

[Notary Stamp]

Translation certified correct:

/S/ Albrecht Hull

Albrecht Hull

INDEPENDENT AUDITORS' CONSENT

The Board of Directors
Harvard Apparatus, Inc.:

We consent to the inclusion of our report dated October 19, 2000, except as to note 20 which is as of October 25, 2000, with respect to the consolidated balance sheets of Harvard Apparatus, Inc. and subsidiaries as of September 30, 2000, December 31, 1999 and 1998 and the related consolidated statements of operations, stockholders' equity (deficit) and comprehensive income (loss), and cash flows for the nine months ended September 30, 2000 and for each of the years in the three-year period ended December 31, 1999 which report appears in this Registration Statement, and to the reference to our firm under the heading "Experts" in this Registration Statement.

/s/ KPMG LLP

Boston, Massachusetts
November 8, 2000

EXHIBIT 23.3

CONSENT OF INDEPENDENT ACCOUNTANTS

We hereby consent to the use in this Registration Statement on Form S-1 of our reports dated February 26, 1998 (for the year ended December 31, 1997) and April 9, 1999 (for the year ended December 31, 1998), except for the US GAAP reconciliation as described in Note 24 which is at September 15, 2000, relating to the financial statements and financial statement schedules of Pharmacia & Upjohn (Cambridge) Limited, which appear in the Registration Statement. We also consent to the references to us under the heading "Experts" in such Registration Statement.

/s/ PricewaterhouseCoopers

PRICEWATERHOUSECOOPERS
Cambridge, England
November 8, 2000

Exhibit 99.3

CONSENT TO BE NAMED AS A DIRECTOR OF HARVARD BIOSCIENCE, INC.

I hereby consent to be named as a person to become a director of Harvard Bioscience, Inc., a Delaware corporation (the "Company"), in the registration statement on Form S-1 filed by the Company with the Securities and Exchange Commission with respect to the public offering of Common Stock of the Company.

/S/ JOHN F. KENNEDY

Name: John F. Kennedy
Date: October 24, 2000