SECURITIES AND EXCHANGE COMMISSION

WASHINGTON, DC 20549

FORM 10-K

☒ **Annual report pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934**

For the fiscal year ended December 31, 2001

or

☐ **Transition report pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934**

For the transition period from to

Commission file number 000-31923

HARVARD BIOSCIENCE, INC.

(Exact Name of Registrant as Specified in Its Charter)

Delaware	**04-3306140**
(State or Other Jurisdiction of Incorporation or Organization)	(IRS Employer Identification No.)

(508) 893-8999
(Registrant's telephone number, including area code)

84 October Hill Road, Holliston, MA	**01746**
(Address of Principal Executive Offices)	(Zip Code)

Securities registered pursuant to Section 12(b) of the Act: None

Securities registered pursuant to Section 12(g) of the Act:
Common Stock, $.01 par value per share
(Title of Class)

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days.
☒ **YES** ☐ **NO**

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K is not contained herein, and will not be contained, to the best of registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K.

The aggregate market value of 17,652,352 shares of voting stock held by non-affiliates of the registrant as of March 22, 2002 was approximately $158,695,000 based on the last sale price of such stock on such date.

Common Stock Outstanding as of March 22, 2002: 26,759,946 shares.

DOCUMENTS INCORPORATED BY REFERENCE.
Portions of the Company's definitive Proxy Statement in connection with the 2002 Annual Meeting of Stockholders to be held on May 23, 2002 are incorporated by reference into Part III of this Form 10-K.

PART I

This Annual Report on Form 10-K contains statements that are not statements of historical fact and are forward-looking statements within the meaning of Section 27A of the Securities Act of 1933 and Section 21E of the Securities Exchange Act of 1934. The forward-looking statements are principally contained in "Item 1: Business" and "Item 7: Management's Discussion and Analysis of Financial Condition and Results of Operations." These statements involve known and unknown risks, uncertainties and other factors that 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, statements about our business strategy, the market opportunity for our products, our estimates regarding our capital requirements, the timing of future product introductions, our expectations in connection with current litigation, and our plans, objectives, expectations and intentions 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 detail under the heading "Important Factors That May Affect Future Operating Results" beginning on page 25. You should carefully review all of these factors, and you should be aware that there may be other factors, including factors of which we are not currently aware, that could cause these differences. Also, these forward-looking statements represent our estimates and assumptions only as of the date of this report. 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.

Item 1. *Business.*

Overview

We are a global provider of innovative, research enabling tools that solve problems in 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. We focus on alleviating bottlenecks in the drug discovery process including target validation, assay development and ADMET (absorption, distribution, metabolism, elimination and toxicology) screening.

To address these critical bottlenecks, we have recently introduced several new proprietary tools. For target validation, these tools include novel pipette tips, micro-dialyzers, plate readers and COPAS™ high throughput/high relevance model organism screening systems. For ADMET screening, these tools include NaviCyte diffusion chambers for drug absorption testing, 96 well equilibrium dialysis plates for drug distribution testing, MitoScan high throughput toxicology assays and COPAS™ high throughput/high relevance model organism toxicology testing systems.

We have an established product base in target validation. This product base consists of DNA/RNA/protein calculators, life science spectrophotometers and amino acid analysis systems. We also have an established product base in ADMET screening which includes precision infusion pumps, organ testing systems, ventilators, cell biology and electrophysiology products.

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, COPAS™, CPK, GeneQuant, GeneQuant Pro, MitoScan, NaviCyte, NovaSpec, PrepTip, PureTip, Stronghold, UltroSpec, Union Biometrica and Warner Instruments. This Annual Report on Form 10-K also contains the trademarks and trade names of other entities that are the property of their respective owners.

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 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 the focus of the Company to participate in the high growth areas (bottlenecks) within drug discovery by acquiring and licensing innovative technologies while continuing to grow the existing business through internal product development and marketing, partnerships and acquisitions. Through December 31, 2001, we have completed eleven business acquisitions, licensed key new technology for in vitro toxicology assays and drug absorption measurement, internally developed new product lines including new generation syringe pumps, DNA/RNA/protein calculators, spectrophotometers and plate readers, and mailed expanded new catalogs.

Our Strategy

Our strategy is to become the leading provider of innovative, enabling technologies and products for target validation and screening research in the drug discovery process. Key elements of our strategy are to be innovative by developing new products; to acquire businesses that we believe will either strengthen our core business or provide major breakthroughs for drug discovery research; and to partner with people who have expertise we do not.

Innovative New Tools For Drug Discovery

We have focused on becoming a leading provider of tools for target validation and ADMET screening. We believe that there is a demand for new and innovative tools that reduce drug discovery time and expense. Since 1996, we have introduced several new tools for target validation and ADMET screening such as our protein and DNA purification pipette tips, protein purification dialyzers, NaviCyte diffusion chambers and the COPAS™ model organism screening systems. In 2001, we introduced new plate readers, new spectrophotometers, a new high throughput toxicology assay called MitoScan™, a new ventilator, and COPAS™ technology for high throughput model organism research. We intend to continue our efforts to identify, develop and introduce new tools to alleviate bottlenecks in all stages of the drug discovery process.

Acquire Complementary Technologies

We intend to selectively acquire companies and technologies that we believe will strengthen our product offering, particularly in the areas of target validation and ADMET screening. Since 1996, we have completed nine acquisitions involving the integration of acquired products and technology into our existing manufacturing base or distribution channels, and five technology acquisition or licensing transactions. In 2001, we acquired Asys Hitech in Austria for its plate readers and low volume dispensers; Scie-Plas in England for its electrophoresis and DNA analysis products; International Market Supply in England for its anesthesiology products; Warner Instruments in the United States for its cell and tissue electrophysiology products; and Union Biometrica in the United States for its high throughput/high content model organism technology. In the future, we may pursue acquisitions of new products and technologies through business acquisitions, partnerships or licensing arrangements.

Partnerships

We intend to leverage our technologies through collaborations with people who have expertise and capabilities we do not. In 2001, we partnered with a major pharmaceutical company for the development of low volume dispensers; two major pharmaceutical companies for the further development of COPAS™ technology; and Amersham Biosciences (formerly Amersham Pharmacia Biotech) for distribution of many of our products for DNA, RNA and protein analysis.

Our Products

Our product lines consist of both proprietary and non-proprietary products. Our broad array of proprietary products consist of those set forth in the table below and those described in the “Other Proprietary Products” section below the table:

Product Category	Representative Product Areas	Description	Number of Products
TARGET VALIDATION			
RNA/DNA ANALYSIS	Molecular Biology Spectrophotometers	Range of Spectrophotometers	6
	DNA/RNA Protein Calculators	Spectrophotometers with application software	2
	Multi-Well Plate Readers	Range of automated readers	
		• absorbance	3
		• luminescence	
		• flourescence	
	Amino Acid Analysis Systems	Ninhydrin-based amino acid detection systems	2
	Liquid Dispensers	Low volume high throughput	3
COPAS™	Model Organism Testing	High throughput screening and sorting	
		• Fruit flies	1
		• Worms	1
PURIFICATION	Purification Pipette Tips	Disposable pipette tips	
		• coated with purification media	
		• loaded with purification media	50
	Equilibrium Dialyzers	Membrane separating two plastic chambers	9
		• disposable	
		• plates with 96 wells	
HIGH THROUGHPUT/ HIGH CONTENT SCREENING			
ADMET SCREENING			
Absorption (in vitro)	NaviCyte Diffusion Chambers	Simulated digestive tract / blood stream interfaces	6
Distribution	Equilibrium Dialysis Plate	Membrane separating two chambers	9
Metabolism/Elimination	Organ Testing Systems	Chambers with stimulators, perfusion and recording devices	8
Toxicology	MitoScan™ Assay	High throughput toxicology assay	1
	Precision Infusion Pumps	Syringe pumps	80
	COPAS™ Reflex	Zebrafish	1
ASSAY DEVELOPMENT/ EFFICACY SCREENING	COPAS™ Reflex	Compound library screening	
		• Fruit flies	1
		• Worms	1
		• Zebrafish	1

Target Validation-RNA/DNA 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 Biosciences.

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 GeneQuant Pro. Launched in 1993, we believe that it was the first such instrument sold. These products are manufactured by our Biochrom subsidiary and sold primarily through Amersham Biosciences.

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. Plate readers use light to detect chemical interactions. We introduced a range of these products in 2001 beginning with absorbance readers and followed by luminescence readers. These products are sold primarily through Amersham Biosciences.

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.

Low volume, High Throughput Liquid Dispensers

A liquid dispenser dispenses low volumes of liquids into high density microtitre plates used in high throughput screening processes in drug discovery. Our unique technology enables dispensing to take place without the need for contact between the droplet and the liquid already present in the plate, thereby removing any risk of cross-contamination from the process. We acquired Asys Hitech in December 2001 through our Biochrom subsidiary. Asys Hitech developed and markets both the liquid dispensers and a line of OEM plate readers.

Target Validation-COPAS™

COPAS™ Systems

The COPAS™ system uses large bore flow cytometry and a novel proprietary technique to rapidly analyze and sort the model organisms *C. elegans* (worm), *D. melanogaster* (fly), and *D. rerio* (Zebra fish). Automation of the handling of these organisms through the use of the COPAS™ system provides scientists a complete integrated solution to rapidly produce and evaluate model organisms. In May 2001, we acquired Union Biometrica, the inventor and developer of the COPAS™ technology.

Target Validation-Protein Purification

Protein Purification Pipette Tips

Our proprietary PrepTip consists 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 such as 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.

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. 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. These disposable products are particularly useful for binding studies involving radioactively labeled compounds because the dialyzer does not require cleaning after use.

High Throughput/High Content Screening-ADMET Screening

The goal of ADMET screening is to identify compounds that have toxic side effects or undesirable pharmacological properties. These pharmacological properties consist of absorption, distribution, metabolism and elimination, which together with toxicology, form the acronym ADMET. 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 equilibrium is established. Once equilibrium is established, the concentration of the drug can be measured thereby indicating the strength of the 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. Studies on isolated livers are useful in determining metabolism and studies on kidneys are useful in determining elimination. We have sold basic versions of these systems for many years, but significantly expanded our product offerings through our November 1999 acquisition of Hugo Sachs Elektronik.

MitoScan™ High Throughput Toxicology Screening

Our proprietary MitoScan high throughput in vitro toxicology assay uses submitochondrial particles, or SMP, which are part of the inner membrane of mitochondria. Mitochondria, the power source within a cell, are evolutionarily conserved across the entire animal kingdom and are extremely vulnerable to toxic insult. The SMP, processed from mitochondria, retain this sensitivity and when used in toxicity assays provide a highly relevant toxicologic endpoint indicative of mitochondrial and whole organism responses.

Precision Infusion Pumps

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

COPAS™ Reflex System

The COPAS™ Reflex system can be used in toxicology testing on the Zebrafish. The Zebrafish has a brain, heart, liver, kidneys, and reproductive organs as well as circulatory, nervous and immune systems making it very similar to the organ system of humans. Also, the Zebrafish can be dosed with drugs relatively easily, which in combination with the high throughput capabilities of the COPAS™ system, provides a major advantage over other live model organism testing systems such as the mouse.

High Throughput/High Content Screening-Efficacy Screening

The COPAS™ Reflex system provides high throughput screening of combinatorial chemical libraries. Before the invention of COPAS™, library screening on organisms was simply impractical since it could only be done one organism at a time, under a microscope. The COPAS™ system can analyze about one million *C. elegans* in a normal eight hour day.

Other Proprietary 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.

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 our proprietary, manufactured products, we buy and resell products through our catalog that are 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 represented more than two percent of our revenues for the year ended December 31, 2001. Distributed products accounted for approximately 18% of our revenues for the year ended December 31, 2001. 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 proprietary, manufactured products are often leaders in their fields but researchers often need complementary products in order to conduct particular experiments. Most of these complementary products come from small companies that do not have our extensive distribution and marketing capabilities.

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, OrthoMcNeil, Duke University, Massachusetts General Hospital, Stowers Institute and the University of California.

We conduct direct sales in the United States, the United Kingdom, Germany, France, Belgium, Spain, the Netherlands and Canada. We also maintain distributors in other countries. Aggregate sales to our largest customer, Amersham Biosciences, a distributor with end users similar to ours, accounted for approximately 30% of our revenues for the year ended December 31, 2001. We have several thousand customers worldwide and no other customer accounted for more than five percent of our revenues for such period.

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, which can also be accessed on our website, through our worldwide subsidiaries. Our manufactured products accounted for approximately 82% of our revenues for the year ended December 31, 2001. Our market leadership position in many of our manufactured products create traffic to the catalog and web site and enables cross-selling and facilitates the introduction of new products. In addition to the comprehensive catalog, we create and mail abridged catalogs that focus on specific product areas along with direct mailers, which introduce or promote new products.

Amersham Biosciences Distributor

In August 2001, we entered into a new agreement with Amersham Biosciences. Under the terms of the agreement Amersham Biosciences serves as our exclusive distributor, marketer and seller of a majority of the product of our Biochrom subsidiary. This agreement has a five year finite life and may be terminated by either party upon 18 months prior written notice. Additionally, upon breach of certain terms of the agreement by either party, such as pricing, exclusivity, and delivery, the agreement may be terminated with a 30 day notice period.

Research and Development

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

Our research and development expenditures were $3.2 million (excluding in-process research and development charges of $5.4 million), $1.5 million and $1.2 million in 2001, 2000 and 1999, respectively. 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 most of our manufacturing facilities to design and develop new products. In-house development is focused on our current technologies. As the result of the acquisition of Union Biometrica, we opened a European model organism laboratory in Geel, Belgium in the third quarter of 2001. This laboratory will focus on extending the use of and developing new applications for the COPAS™ technology. 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 principal manufacturing facilities located in the United States, the United Kingdom, Austria 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 primarily to assemble and test. Our manufacturing of syringe pumps, ventilators, cell injectors and protein purification products takes place in Holliston, Massachusetts. The manufacture of our cell biology and electrophysiology products takes place in our Hamden, Connecticut facility. The COPAS™ technology instruments are manufactured in our Somerville, Massachusetts facility. Our MitoScan toxicology assay is manufactured in Madison, Wisconsin. Our manufacturing of spectrophotometers and amino acid analysis systems takes place in our Cambridge, England facility which is certified to ISO 9001. 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 electrophoresis products are manufactured at our Warwickshire, England facility and our low volume, high throughput liquid dispensers and our plate readers are manufactured in our facility in Eugendorf, Austria.

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 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 target validation and screening technologies to companies engaged in drug discovery. We are not aware of any competitor that offers a product line of comparable breadth within the target validation and screening 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 target validation 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, 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 eleven issued U.S. patents and have eight pending applications. We also hold exclusive licenses for the technologies used in our MitoScan high throughput 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 be issued 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 December 31, 2001, we had 257 full-time employees and 25 part-time employees, 111 of whom resided in the United States, 126 of whom resided in the United Kingdom, 17 of whom reside in Austria, 14 of whom resided in Germany, 4 of whom resided in Canada, 4 of whom resided in Belgium, 3 of whom resided in France, 2 of whom resided in the Netherlands, and 1 who resided in Spain. None of our employees is subject to any collective bargaining agreement. We believe that our relationship with our employees is good.

Item 2. *Properties.*

Our eleven 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,
- a leased 18,000 square foot facility in Warwickshire, England,
- an owned 15,500 square foot facility in Edenbridge, England,
- a leased 9,000 square foot facility in March-Hugstetten, Germany,
- a leased 7,800 square foot facility in Somerville, Massachusetts,
- a leased 7,500 square foot facility in Hamden, Connecticut,
- a leased 4,700 square foot facility in Eugendorf, Austria,
- a leased 3,300 square foot facility in Somerville, Massachusetts,
- a leased 1,400 square foot facility in Madison, Wisconsin and
- a leased 1,300 square foot facility in Geel, Belgium.

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

Item 3. *Legal Proceedings.*

On December 26, 2000, Harvard University filed a lawsuit in U.S. District Court, District of Massachusetts alleging that our use of the "Harvard Bioscience" and "Harvard Apparatus" names infringes on Harvard University's trademarks. Harvard University is seeking both injunctive relief and monetary damages. We believe that these claims are without merit, and we are vigorously defending against such claims. On April 10, 2001, the U.S. District Court, District of Massachusetts denied Harvard University's request for a preliminary injunction prohibiting us from using the names "Harvard Bioscience" and "Harvard Apparatus". The Court did issue an order directing us not to use the "Harvard" name in the color crimson or in a font similar to the font used by Harvard University.

We believe that the defense of these claims could involve significant litigation-related expenses, but that defense of these claims and compliance with the court order will not have a material adverse effect on our business, financial condition or results of operations.

On February 4, 2002, Paul D. Grindle, the former owner of Harvard Apparatus, Inc., initiated an arbitration proceeding against the Company and certain directors before JAMS, an arbitration firm in Boston, Massachusetts. Mr Grindle's claims arise out of post-closing purchase price adjustments related to the Company's purchase of the assets and business of Harvard Apparatus by virtue of an Asset Purchase Agreement dated March 15, 1996 and certain related agreements. In the arbitration demand, Mr. Grindle sought the return of 1,563,851 shares of stock in the Company, or the disgorgement of the profits of the Company's sale of the stock, as well as punitive damages and attorney's fees under Mass. Gen. Laws, chapter 93A. In a demand letter that was attached to the Arbitration Demand, Mr. Grindle asserted losses in the amount of $15 million, representing the value of the 1,563,851 shares of the Company's stock as of January 2, 2002. The Company believes that Mr. Grindle's claims are without merit and intends to defend them vigorously. The Company also believes that Mr. Grindle's claims are barred by the terms of certain releases executed by him and further barred by the applicable statutes of limitation.

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.

Item 4. ***Submission of Matters to a Vote of Security Holders.***

None.

Item 4.A. ***Executive Officers of the Registrant.***

The following table shows information about our executive officers as of December 31, 2001.

Name	Age	Position
Chane Graziano	63	Chief Executive Officer and Director
David Green	37	President and Director
Susan Luscinski	45	Chief Financial Officer
Mark Norige	47	Chief Operating Officer

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 38 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.

Susan Luscinski has served as our Chief Financial Officer since August 2001. Ms. Luscinski served as our Vice President of Finance and Administration from May 1999 until August 2001. 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.

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.

PART II

Item 5. ***Market for Registrant's Common Equity and Related Stockholder Matters.***

Price Range of Common Stock.

Our common stock has been quoted on the Nasdaq National Market since our initial public offering on December 7, 2000 and currently trades under the symbol "HBIO." The following table sets forth the range of the high and low closing prices per share of our common stock as reported on the Nasdaq National Market for the quarterly periods indicated.

Year Ended December 31, 2001	High	Low
First Quarter	$ 11.75	$ 6.06
Second Quarter	$ 11.10	$ 5.90
Third Quarter	$ 14.20	$ 8.19
Fourth Quarter	$ 12.12	$ 7.87

Year Ended December 31, 2000	High	Low
Fourth Quarter (from December 7, 2000 through December 31, 2000)	$ 13.50	$ 8.00

On March 22, 2002, the closing sale price of our common stock on the Nasdaq National Market was $8.99 per share. The number of record holders of our common stock as of March 22, 2002 was approximately 100. We believe that the number of beneficial owners of our common stock at that date was substantially greater.

Dividend Policy.

We have never declared or paid dividends on our common stock in the past and do not intend to pay dividends 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.

Recent Sales of Unregistered Securities.

None.

Use of Proceeds from Registered Securities.

On December 7, 2000, the Company sold, pursuant to an underwritten initial public offering, 6,250,000 shares of common stock at a price of $8 per share. Following the offering, proceeds were used to repay substantially all of the Company's debt as well as redeem its redeemable preferred stock. On January 9, 2001, the underwriters exercised their allotment option whereby the Company sold an additional 937,500 shares of its common stock at a price of $8 per share. The net proceeds to the Company for the initial public offering and the underwriters exercise of their allotment was $51.8 million.

The effective date of the Securities Act registration statement for which the use of proceeds information is being disclosed was December 6, 2000, and the Commission file number assigned to the registration statement is 333-45996. From April 2, 2001 (the date of the filing of our Annual Report on Form 10-K) to the date hereof, we used the net proceeds as follows: (i) approximately $2.6 million was used to fund the acquisition of substantially all of the assets of Warner Instruments, (ii) approximately $7.0 million was used to purchase Union Biometrica, (iii) approximately $1.5 million was used to purchase IMS, (iv) approximately $0.6 million was used to repay debt assumed in the Union Biometrica acquisition, (v) approximately $0.6 million in legal and accounting fees directly associated with the Union Biometrica, Warner Instruments and IMS acquisitions, (vi) approximately $4.1 million was used to purchase Scie-Plas Ltd; (vii) approximately $2.0 million was used to purchase Asys Hitech Gmbh and (viii) approximately $3.1 million was used to fund working capital needs of Union Biometrica, Inc.. The use of proceeds from our initial public offering described do not represent a material change in the use of proceeds described in our prospectus and in our Annual Report on Form 10-K for the period ended December 31, 2000.

Item 6. ***Selected Financial Data.***

	Years Ended December 31,				
	2001	2000	1999	1998	1997
Statement of Operations Data:	(in thousands, except share and per share data)				
Revenues	$ 40,868	$ 30,575	$ 26,178	$ 12,154	$ 11,464
Costs and Expenses					
Cost of product revenues	20,179	15,833	13,547	5,351	5,128
General and administrative expense	7,001	5,181	4,147	2,317	2,338
Severance and related costs	460	—	—	—	—
Sales and marketing expense	4,840	3,186	2,448	1,722	1,672
Research and development	3,179	1,533	1,188	325	207
Stock compensation expense	2,679	14,676	3,284	—	—
In-process research and development	5,447	—	—	—	—
Amortization of goodwill and other intangibles	1,744	604	368	27	—
Operating income (loss)	(4,661)	(10,438)	1,196	2,412	2,119
Other (expense) income:					
Foreign currency (loss) gain	(99)	(324)	(48)	21	(96)
Common stock warrant interest expense	—	(36,885)	(29,694)	(1,379)	(117)
Interest income (expense), net	1,352	(756)	(657)	(210)	(223)
Amortization of deferred financing costs	—	(153)	(63)	—	—
Other	(10)	45	(17)	10	106
Other (expense) income, net	1,243	(38,073)	(30,479)	(1,558)	(330)
(Loss) income before income taxes	(3,418)	(48,511)	(29,283)	854	1,789
Income taxes	1,790	1,359	137	783	682
Net (loss) income	(5,208)	(49,870)	(29,420)	71	1,107
Preferred stock dividends	—	(136)	(157)	(122)	(122)
Net (loss) income available to common shareholders	$ (5,208)	$ (50,006)	$ (29,577)	$ (51)	$ 985
(Loss) income per share:					
Basic	$ (0.20)	$ (6.25)	$ (5.28)	$ (0.01)	$ 0.13
Diluted	$ (0.20)	$ (6.25)	$ (5.28)	$ (0.01)	$ 0.06
Weighted average common shares:					
Basic	25,784,852	8,005,386	5,598,626	5,598,626	7,406,486
Diluted	25,784,852	8,005,386	5,598,626	5,598,626	17,500,194

	As of December 31,				
	2001	2000	1999	1998	1997
Balance Sheet Data:	(in thousands)				
Cash and cash equivalents	$ 29,385	$ 35,817	$ 2,396	$ 957	$ 707
Working capital	32,565	40,552	3,783	2,205	1,698
Total assets	82,362	58,809	20,610	7,220	6,161
Long-term debt , net of current portion	637	1	5,073	638	829
Preferred stock	—	—	2,500	1,500	1,621
Common stock warrants	—	—	31,194	1,500	—
Stockholders' equity (deficit)	66,812	52,335	(25,711)	678	737

Quarterly Financial Information (Unaudited)

Statement of Operations Data:	First Quarter	Second Quarter	Third Quarter	Fourth Quarter	Fiscal Year
2001:	(in thousands, except per share data)				
Revenues	$ 8,607	$ 9,711	$ 10,643	$ 11,907	$ 40,868
Operating Expenses	8,089	15,032	10,619	11,789	45,529
Net Income (Loss) available to common shareholders:	272	(5,365)	319	(434)	(5,208)
Income (Loss) per share:					
Basic:	$ 0.01	$ (0.21)	$ 0.01	$ (0.02)	$ (0.20)
Diluted:	$ 0.01	$ (0.21)	$ 0.01	$ (0.02)	$ (0.20)
2000:					
Revenue	$ 7,068	$ 7,390	$ 7,611	$ 8,506	$ 30,575
Operating Expenses	5,883	6,426	20,208	8,496	41,013
Net Income (Loss) available to common shareholders:	(4,408)	(62,360)	(17,216)	33,978	(50,006)
Income (Loss) per share:					
Basic	$ (0.76)	$ (9.32)	$ (2.56)	$ 2.66	$ (6.25)
Diluted	$ (0.76)	$ (9.32)	$ (2.56)	$ 1.69	$ (6.25)

Item 7. ***Management's Discussion and Analysis of Financial Condition and Results of Operations.***

Forward-Looking Statements

The following section of this Annual Report on Form 10-K entitled "Management's Discussion and Analysis of Financial Condition and Results of Operations" contains statements that are not statements of historical fact and are forward-looking statements within the meaning of Federal securities laws. These statements involve known and unknown risks, uncertainties and other factors that 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. These statements reflect our current views with respect to future events and are based on assumptions and subject to risks and uncertainties. We discuss many of these risks in detail under the heading "Important Factors That May Affect Future Operating Results" beginning on page 25. You should carefully review all of these factors, as well as the comprehensive discussion of forward-looking statements on page 2 of this Annual Report on Form 10-K.

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 critical bottlenecks in the drug discovery process - target validation, assay development and ADMET screening. Our ADMET screening products 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, tissue/organ systems, cell biology and electrophysiology products. Since 1996, we have built upon our base business and brand recognition by adding new technologies in the areas of target validation, assay development 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 February 1999, we acquired Biochrom Ltd., 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 $730,000 in cash,
- In May 2000, we acquired certain assets of Biotronik, consisting primarily of products for amino acid analysis, for $469,000 in cash,
- 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,
- In December 2000, we acquired substantially all the assets and certain liabilities of MitoScan Corporation, a company that produces tools for toxicity testing for $383,000 in cash and future milestone payments and royalties,

- In May 2001, we acquired substantially all the assets of Warner Instruments Corporation, a company that designs, produces and markets electro-physiology products for approximately $2.6 million in cash,

- In May 2001, we acquired all the outstanding stock of Union Biometrica, Inc. for a combination of cash and stock of approximately $17.5 million. Union Biometrica invented, developed and initiated marketing of COPAS™, high throughput, high relevance model organism screening systems,

- In June 2001, for cash of approximately $1.5 million, we acquired through Harvard Apparatus, Ltd., one of our United Kingdom subsidiaries, substantially all the assets of International Market Supply Ltd, a company that produces and markets anesthesiology products,

- In November 2001, for cash of approximately $4.1 million, we acquired Scie-Plas Ltd. for its electrophoresis based sample preparation products and

- In December 2001, for cash of approximately $2.0 million, we acquired Asys Hitech GmbH for its plate readers and low volume liquid dispensers.

Revenues. We generate revenues by selling instruments, devices and consumables through our catalog, our direct sales force, our distributors and our website. Every one to three years, we intend to distribute a new, comprehensive catalog initially in a series of bulk mailings, first to our existing customers, followed by mailings to targeted markets of potential customers. Over the life of the catalog, distribution will also be made periodically to potential and existing customers through direct mail and trade shows and in response to telephone inquiries. From time to time, we also intend to distribute catalog supplements that promote selected areas of our catalog or new products to targeted subsets of our customer base. Future distributions of our comprehensive catalog and our catalog supplements 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.

For the year ended December 31, 2001, approximately 82% of our revenues were derived from products we manufacture or from collaboration and research grant projects. The remaining 18% of our revenues were derived from complementary products we distribute in order to provide the researcher with a single source for all equipment needed to conduct a particular experiment. For the year ended December 31, 2001, approximately 57% of our revenues were 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 year ended December 31, 2001, approximately 60% 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 Biosciences, the distributor for our spectrophotometers, amino acid analyzers and plate readers. Amersham Biosciences 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 year ended December 31, 2001 if we had shipped our products directly to our end users.

Cost of product revenues. Cost of product revenues includes material, labor and manufacturing overhead costs, obsolescence charges, packaging costs, warranty costs, shipping costs and royalties. Our costs of product revenues 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 higher cost of goods sold because the profit is effectively shared with the original manufacturer. We anticipate that our manufactured products will continue to have a lower cost of goods sold as a percentage of revenues as compared with the cost of non-manufactured products for the foreseeable 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, insurances 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 supplements, and the maintenance of our web sites. We may from time to time 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 and to support collaboration agreements. 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 to make these investments in order to realize the potential of new technologies that we develop, license or acquire.

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 grant date for those options considered fixed awards. Stock compensation expense is also recorded for stock option grants that were considered variable awards because the number of shares to be acquired by employees was indeterminable at the date of grant. Stock compensation on fixed awards is amortized as a charge to operations over the vesting period of the options.

Common stock warrant interest expense. On March 15, 1996, in connection with the issuance of redeemable preferred stock and subordinated debentures, 8,509,905 common stock warrants were issued. The related common stock warrant interest expense represented an accrual of a liability to warrant holders that would have required 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 our initial public offering of common stock in December 2000, the warrants were exercised for common stock and, as a result, the right to be paid cash terminated.

Our business has historically been affected by a number of factors that cause revenue and earnings to vary from quarter to quarter, including catalog mailings, new product introductions, and our substantial European business, which in summer months defers purchases and acquisitions. As a result, we believe that revenue and earnings in one quarter of the year may not be indicative of revenue and earnings in a subsequent quarter.

Critical Accounting Policies

Our critical accounting policies are as follows:

- valuation of identifiable intangible assets and in process research and development in business combinations;
- valuation of long-lived and intangible assets and goodwill;
- accounting for income taxes;
- revenue recognition and
- inventory.

Valuation of identifiable intangible assets in business combinations. Identifiable intangible assets consist primarily of trademarks, assembled workforce, and acquired technology. Such intangible assets arise from the allocation of purchase price of businesses acquired to identifiable intangible assets based on their respective fair market value. Amounts assigned to such identifiable intangible assets are based on independent appraisals using established valuation techniques. The value assigned to trademarks was determined by estimating the royalty income that would be negotiated at an arm's-length transaction if the asset were licensed from a third party. A discount factor, ranging from 28.5% to 31.5%, which represents both the business and financial risks of such investments, was used to determine the present value of the future streams of income attributable to trademarks. The specific approach used to value trademarks was the Relief from Royalty ("RFR") method. The RFR method assumes that an intangible asset is valuable because the owner of the asset avoids the cost of licensing that asset. The royalty savings are then calculated by multiplying a royalty rate times a determined royalty base, i.e., the applicable level of future revenues. In determining an appropriate royalty rate, a sample of guideline, arm's length royalty and licensing agreements are analyzed. In determining the royalty base, forecasts are used based on management's judgments of expected conditions and expected courses of actions. Assembled workforce was valued by estimating the current cost necessary to create a similar replacement workforce including costs to recruit, hire and train. The value assigned to acquired technology was determined by using a discounted cash flow model which measures what a buyer would be willing to pay currently for the future cash stream potential of existing technology. The specific method used to value the technologies involved estimating future cash flows to be derived as a direct result of those technologies, and discounting those future streams to their present value. The discount factors used, ranging from 33.5% to 36%, reflects the business and financial risks of an investment in

technologies. Forecasts of future cash flows are based on managements' judgment of expected conditions and expected courses of action.

Valuation of in-process research and development in business combinations. Purchase price allocation to in-process research and development represents the estimated fair value of research and development projects that have no alternative future use. The value assigned to in-process research and development was determined by independent appraisal by estimating the cost to develop the purchased in-process research and development into commercially feasible products, estimating the percentage of completion at the acquisition date, estimating the resulting net risk-adjusted cash flows from the projects and discounting the net cash flows to their present value. The discount rates used in determining the in process research and development expenditure reflects a higher risk of investment because of the higher level of uncertainty due in part to the nature of the Company and the industry to constantly develop new technology for future product releases and ranged from 37.5% to 43.5%. The forecasts used by the Company in valuing in-process research and development were based on assumptions the Company believes to be reasonable, but which are inherently uncertain and unpredictable. Given the uncertainties of the development process, no assurance can be given that deviations from the Company's estimates will occur and no assurance can be given that the in-process research and development projects identified will ever reach either technological or commercial success. The amounts allocated in 2001 to in-process research and development of $5,447,000 were expensed as of the acquisition dates.

Valuation of long-lived and intangible assets and goodwill. In accordance with the provisions of Statement of Financial Accounting Standards (SFAS) No. 121, *Accounting for the Impairment of Long-Lived Assets and for Long-Lived Assets to Be Disposed Of*, we assess the impairment of identifiable intangibles, long-lived assets and goodwill whenever events or changes in circumstances indicate that the carrying value may not be recoverable. Factors we consider important which could trigger an impairment review include the following: significant underperformance relative to expected historical or projected future operating results; significant changes in the manner of our use of the acquired assets or the strategy for our overall business; significant negative industry or economic trends; significant decline in our stock price for a sustained period; and our market capitalization relative to net book value.

If we were to determine that the value of long-lived assets, intangibles and goodwill were not recoverable based on the existence of one or more of the aforementioned factors, 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 an asset. If such assets are considered to be impaired, the impairment to be recognized is measured by the amount by which the carrying value 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 dispose.

In June 2001, SFAS No. 142, "Goodwill and Other Intangible Assets" was issued. SFAS No. 142 addresses financial accounting and reporting for acquired goodwill and other intangible assets. Among other things, SFAS No. 142 requires that goodwill and intangible assets with indefinite useful lives no longer be amortized, but rather tested annually for impairment. Accordingly, the Company adopted SFAS No. 142 on January 1, 2002 and will cease to recognize approximately $1.5 million of goodwill amortization expense in 2002. At December 31, 2001, the Company has goodwill and intangibles with indefinite future lives of approximately $24 million on its consolidated balance sheet. In lieu of amortization, we are required to perform an initial impairment review of our goodwill in 2002 and an annual impairment review thereafter. We expect to complete our initial review during the second quarter of 2002.

Accounting for income taxes. We are required to estimate our income tax expense in each of the jurisdictions in which we operate. This involves us estimating our current and deferred income tax expense as well as accounting for differences between the financial statement carrying amounts of existing assets and liabilities and their respective tax bases. The future tax consequences attributable to these differences result in deferred tax assets and liabilities, which are included in our consolidated balances sheets. We must assess the recoverability of the deferred tax assets by considering whether it is more likely than not that some portion or all of the deferred tax assets will not be realized. To the extent we believe that recovery does not meet this "more likely than not" standard, we must establish a valuation allowance. If a valuation allowance is established or increased in a period, we must allocate the related income tax expense to income from continuing operations in the consolidated statement of operations. To the extent a valuation is attributable to income tax benefits allocated to shareholders' equity, the related valuation allowance must be allocated accordingly to stockholders' equity.

Management judgment is required in determining our income tax provision, deferred tax assets and liabilities and any valuation allowance recorded against net deferred tax assets. At December 31, 2001, we have not established a

valuation allowance as we believe that the deferred tax assets at December 31, 2001 will more likely than not be realized in the carryback and carryforward periods based on the criteria set forth in SFAS 109, *Accounting for Income Taxes.* We will review the recoverability of deferred tax assets during each reporting period.

Revenue recognition. The Company recognizes revenue from product sales generally upon shipment or installation, if applicable, provided that persuasive evidence of an arrangement exists, the sales price is fixed or determinable, collectability is reasonably assured and title and risk of loss have passed to the customer. The Company has no obligations to customers after the date products are shipped or installed, if applicable, other than pursuant to warranty obligations. The Company provides for the estimated costs to fulfill customer warranty obligations upon the recognition of the related revenue. The Company provides for the estimated amount of future returns upon shipment of products or installation, if applicable, based on historical experience. While product returns and warranty costs have historically not been significant, they have been within our expectations and the provisions established, however, there is no assurance that we will continue to experience the same return rates and warranty repair costs that we have in the past. Any significant increase in product return rates or a significant increase in the cost to repair our products could have a material adverse impact on our operating results for the period or periods in which such returns or increased costs materialize. The Company makes estimates evaluating its allowance for doubtful accounts. The Company continuously monitors collections and payments from its customers and maintains a provision for estimated credit losses based upon our historical experience and any specific customer collection issues that we have identified. While such credit losses have historically not been significant, they have been within our expectations and the provisions established, however, there is no assurance that we will continue to experience the same credit loss rates that we have in the past. A significant change in the liquidity or financial position of our customers could have a material adverse impact on the collectability of our accounts receivable and our future operating results.

Inventory. The Company values its inventory at the lower of the actual cost to purchase (first-in, first-out method) and/or manufacture the inventory or the current estimated market value of the inventory. The Company regularly reviews inventory quantities on hand and records a provision to write down excess and obsolete inventory to its estimated net realizable value if less than cost, based primarily on its estimated forecast of product. Since forecasted product demand quite often is a function of previous and current demand, a significant decrease in demand could result in an increase in the charges for excess inventory quantities on hand. In addition, the Company's industry is subject to technological change and new product development, and technological advances could result in an increase in the amount of obsolete inventory quantities on hand. Therefore, any significant unanticipated changes in demand or technological developments could have a significant impact on the value of the Company's inventory and its reported operating results.

Results of Operations

Year Ended December 31, 2001 Compared to Year Ended December 31, 2000

Revenues. Revenues increased $10.3 million, or 34%, to $40.9 million in 2001 from $30.6 million in 2000. Approximately $4.0 million of the $10.3 million increase, or 39%, represented the base revenues, revenues stream prior to acquisition, for the acquisitions made in 2001 and the full period effect of base revenues from acquisitions made in 2000. The balance of the increase was from existing businesses that introduced new products including new lines of spectrophotometers and plate readers and from the leveraged growth in acquisitions. Revenues for 2001 would have been approximately $42.0 million if our sales denominated in foreign currencies were translated into U.S. dollars using 2000 exchange rates, an increase of 37% over 2000.

Cost of product revenues. Cost of product revenues increased $4.3 million, or 27%, to $20.2 million in 2001 from $15.8 million in 2000. As a percentage of total revenues, cost of product revenues for 2001 was lower by 2.4 % compared to 2000 due to a combination of product mix and collaboration revenue. A significant portion of the expenses associated with collaboration revenue is included in research and development expense.

General and administrative expense. General and administrative expense increased $1.8 million, or 35%, to $7.0 million in 2001 from $5.2 million in 2000 due primarily to acquisitions. Excluding the general and administrative spending from the acquisitions, general and administrative expense increased $0.7 million, or 14%, due to the full period effect of the additional costs associated with public company status, additional headcount to support expanding operations, and legal expense in connection with the suit against us by Harvard University (see "Factors Affecting Future Operating Results"). As a percentage of revenues, general and administrative expense remained constant at approximately 17%.

Sales and marketing expense. Sales and marketing expense increased $1.7 million, or 52%, to $4.8 million in 2001 from $3.2 million in 2000 due primarily to acquisitions. Excluding the effect of acquisitions, sales and marketing expense grew $244,000, or 8%, due primarily to the addition of customer and technical support personnel as a result of our growing customer base and revenues. As a percentage of revenues, sales and marketing expense was 12% in 2001 compared to 10% in 2000. This increasing percentage reflects the continued addition of sales and marketing personnel to promote technology acquired in 2000 and 2001.

Research and development expense. Research and development spending was $3.2 million in 2001, $1.8 million of which resulted from 2001 acquisitions. Excluding the acquired research and development programs, spending in 2001 was approximately $1.4 million, basically unchanged from spending in 2000. As a percentage of revenues, research and development was 8% in 2001 compared to 5% in 2000. This higher level resulted primarily from the acquisition of Union Biometrica, which, as an early stage commercial technology company, spends a higher percentage of revenues on research and development than our traditional businesses. The Union Biometrica acquisition is expected to result in research and development spending at a higher level as a percentage of revenues than we have traditionally experienced.

In-process research and development expense. As of the date of the acquisitions of Warner Instruments and Union Biometrica, we recorded $159,000 and $5.3 million respectively of in-process research and development expense representing the estimated fair value of acquired research and development projects with no alternative future use.

Stock compensation expense. We recorded $2.7 million of stock compensation expense in the twelve months ended December 31, 2001. We will recognize approximately $2.0 million of additional expense over the remaining vesting life of the options. In 2000, we recorded stock compensation expense of approximately $4.7 million in connection with the grant of stock options to employees and we recorded $10.0 million of non-recurring stock compensation expense in connection with options granted in 1996 and 1999.

Amortization of goodwill and other intangibles. Amortization of goodwill and other intangibles, including amortization of acquired technology, was $1.7 million in 2001 and $604,000 in 2000. This increase of $1.1 million was

the result of amortizing additional goodwill and other intangibles incurred in connection with our acquisitions in 2001 and the full year effect of our 2000 acquisitions.

Other income (expense), net. Other income, net, was $1.2 million in 2001 compared to other expense, net, of $38.1 million in 2000. In 2000, other expense, net, included a non-cash charge for common stock warrant interest expense of $36.9 million. Common stock warrant interest expense represents the difference between the fair value of common stock warrants for financial reporting purposes and their exercise price. This liability represented 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 our initial public offering in December 2000, the warrants were exercised for common stock and the right to be paid cash terminated. The liability previously recorded became part of common stock and additional-paid-in capital. Net interest income for 2001 was $1.4 million compared to net interest expense of $756,000 in 2000. Net interest income for 2001 was the result of interest earned on the proceeds from our December 2000 initial public offering and the underwriters exercise of the over allotment in January 2001. The 2000 net interest expense resulted primarily from debt, which was incurred to finance acquisitions, partially offset by interest income on proceeds from the initial public offering. Foreign currency loss in 2001 decreased approximately $225,000 to $100,000 due primarily to a decline in dollar denominated debt in foreign subsidiaries and to less unfavorable exchange rates during 2001.

Income taxes. The Company's effective income tax rates were 37% for 2001 and 36% for 2000 not withstanding the effects of the nondeductible in-process research and development charges for 2001, certain stock compensation expense and certain amortization of goodwill and intangibles for 2001 and 2000, and common stock warrant interest expense for 2000. The increase in the income tax rate was principally due to increased taxable income in jurisdictions that have higher statutory income tax rates, primarily in Germany.

Year Ended December 31, 2000 Compared to Year Ended December 31, 1999

Revenues. Revenues increased $4.4 million, or 17%, to $30.6 million in 2000 from $26.2 million in 1999. Approximately $2.2 million of the $4.4 million increase, or 50%, was attributable to the full period effect of revenues from the acquisition of our Hugo Sachs subsidiary in November 1999. Approximately $1.9 million of the increase was from existing business revenue growth and the balance was from product line acquisitions made in the second half of 1999. Revenues for 2000 would have been approximately $31.8 million if our sales denominated in foreign currencies were translated into U.S. dollars using 1999 exchange rates, an increase of 22% over 1999.

Cost of product revenues. Cost of product revenues increased $2.3 million, or 17%, to $15.8 million in 2000 from $13.5 million in 1999. As a percentage of revenues, cost of product revenues was virtually unchanged for 2000 compared to 1999.

General and administrative expense. General and administrative expense increased $1.0 million, or 25%, to $5.2 million in 2000 from $4.2 million in 1999 due primarily to increased headcount and additional expenses related to being a public company as well as the full period effect of the Biochrom subsidiary which was acquired in February 1999. As a percentage of revenues, general and administrative expense increased to 17% in 2000 from 16% in 1999.

Sales and marketing expense. Sales and marketing expense increased $737,000, or 30%, to $3.2 million in 2000 from $2.5 million in 1999. The increase was primarily due to additional sales and marketing expenses incurred in acquired businesses and to a lesser extent the addition of marketing personnel and additional catalog costs. As a percentage of revenues, sales and marketing expense was 10% in 2000 compared to 9% in 1999. This increasing percentage reflected the addition of marketing personnel to promote newly acquired technology.

Research and development expense. Research and development spending increased $345,000, or 29%, to $1.5 million in 2000 from $1.2 million in 1999. The increase in research and development expense resulted from additional research and development expenses incurred in acquired businesses, 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 5% in each of 2000 and 1999.

Stock compensation expense. We recorded $14.7 million of stock compensation expense in 2000. In connection with the grant of stock options to employees in 2000, we recorded stock compensation expense of approximately $4.7 million In addition, in 2000, we also recorded $10.0 million of non-recurring stock compensation expense in connection with

options granted in 1996 and 1999. In 1999, we recorded $3.3 million of stock compensation expense related to these 1996 and 1999 option grants.

Amortization of goodwill. Amortization of goodwill was $604,000 in 2000 and $368,000 in 1999. This increase of $236,000, or 64%, was the result of amortizing additional goodwill incurred in connection with our acquisitions in 2000 and the full year effect of our 1999 acquisitions.

Other expense, net. Other expense, net, was $38.1 million in 2000 compared to $30.5 million in 1999. Other expense, net, included a non-cash charge for common stock warrant interest expense of $36.9 million in 2000 and $29.7 million in 1999. Common stock warrant interest expense represents the difference between the fair value of the common stock warrants for financial reporting purposes and their exercise price. This liability represented 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 our initial public offering in December 2000, the warrants were exercised for common stock and the right to be paid cash terminated. The liability previously recorded became part of common stock and additional-paid-in capital. Net interest expense increased $100,000, or 15%, to $756,000 in 2000 from $656,000 in 1999. The increase resulted primarily from higher debt balances in 2000, which were incurred to finance acquisitions, partially offset by interest income on proceeds from the initial public offering. Foreign currency loss increased $276,000 to $324,000 due primarily to dollar denominated debt in a foreign subsidiary and more unfavorable exchange rates in 2000.

Income taxes. The Company's effective income tax rates were 36% for 2000 and 33% for 1999 notwithstanding the impact of common stock warrant interest expense, certain stock compensation expense and certain amortization of goodwill and other intangibles which is not deductible for income tax purposes. The increase in the rate was principally due to increased taxable income in certain foreign jurisdictions that have higher statutory income tax rates, primarily in Germany.

Liquidity and Capital Resources

Historically, we have financed our business through cash provided by operating activities, the issuance of common stock, 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 December 31, 2001, we had cash and cash equivalents of $29.4 million. Since 1996, we have raised $65.0 million, consisting of $2.5 million of preferred and common stock issued in private placements or upon exercise of stock options and warrants, $11.7 million of debt and $51.8 million from issuance of common stock in our initial public offering in December 2000 and the subsequent exercise of the underwriters over allotment in January 2001. Upon receipt of the initial public offering proceeds on December 12, 2000, we repaid all debt and redeemed all outstanding preferred stock.

Our operating activities generated cash of $4.1 million in 2001, $2.1 million in 2000 and $2.9 million in 1999. 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 $20.2 million in 2001, $5.3 million in 2000 and $8.5 million in 1999. Cash has been used in the following technology and business acquisitions:

- $2.0 million for Asys Hitech GmbH in December 2001,
- $4.1 million for Scie-Plas Ltd. in November 2001,
- $1.6 million for IMS in June 2001,
- $7.5 million for Union Biometrica, Inc. in May 2001,
- $2.7 million for Warner Instruments Corporation in May 2001,

- $383,000 for substantially all the assets of MitoScan Corporation in December 2000,
- $3.1 million for substantially all the assets of AmiKa Corporation in July 2000,
- $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,
- $730,000 for Hugo Sachs Elektronik in November 1999,
- $349,000 for intracellular research products from Clark Electromedical Instruments in September 1999 and
- $7.0 million for Biochrom in February 1999.

Our financing activities have historically consisted of borrowings under a revolving credit facility, long-term debt and the issuance of preferred stock and common stock, including the common stock issued in our initial public offering. Financing activities provided cash of $9.7 million in 2001 and $36.5 million in 2000, and $7.0 million in 1999. 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 initial public offering, the convertible preferred stock was converted into common stock and we used $1.5 million of the offering proceeds to redeem our series A redeemable preferred stock and $10.4 million to repay the bank term loan, the subordinated debt and the revolving credit facility.

Based on our operating plans, we expect that the remaining proceeds from our initial public offering and cash generated from operations will be sufficient to finance operations and capital expenditures for the foreseeable future, however, we may use substantial amounts of capital to accelerate product development, expand our sales and marketing activities or make acquisitions. We may need to raise additional capital to the extent that we exhaust our available capital through these activities. Additional capital raising activities may be dilutive to existing stockholders to the extent we raise capital by issuing equity securities. Moreover, 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.

Disclosures about Contractual Obligations

The following schedule represents our contractual obligations as of December 31, 2001.

	Payments Due by Period						
Contractual Obligation	**Total**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007 and beyond**
Long-term debt	$ 4,333,174	$ 3,821,390	$ 511,784	$ —	$ —	$ —	$ —
Capital leases	242,737	91,113	77,733	36,381	18,032	19,478	—
Operating leases	5,176,459	995,285	988,251	905,135	683,328	556,140	1,048,320
Total	$ 9,752,370	$ 4,907,788	$ 1,577,768	$ 941,516	$ 701,360	$ 575,618	$ 1,048,320

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. For fiscal years 2001 and 2000, the U.S. dollar strengthened against these currencies resulting in reduced consolidated revenue and earnings growth, as expressed in U.S. dollars as well as, resulting in reduced foreign equity as expressed in U.S. dollars. For fiscal years 2001 and 2000, the loss associated with the translation of foreign equity into U.S. dollars was approximately $235,000 and $500,000 respectively. In addition, the currency fluctuations resulted in foreign currency losses of approximately $100,000 in 2001 and $324,000 in 2000 related primarily to dollar denominated debt at our foreign subsidiaries.

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 $2.9 million as of December 31, 2001 and $2.8 million as of December 31, 2000. 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 typically ship our backlog at any given time within 90 days.

Recently Issued Accounting Pronouncements

In June 2001, SFAS 141, "Business Combinations" was issued. SFAS No. 141, which is effective for acquisitions initiated after June 30, 2001, prohibits the use of pooling of interests method of accounting for business combinations and amends the accounting and financial reporting requirements for business combinations accounted for by the purchase method. SFAS No. 141 establishes the criteria that intangible assets acquired in a purchase method business combination must meet to be recognized and reported apart from goodwill. The Company has adopted SFAS No. 141 for all business combinations initiated after June 30, 2001. Goodwill and intangible assets determined to have an indefinite useful life acquired in a purchase business combination completed after June 30, 2001 will not be amortized, but will continue to be evaluated for impairment. Goodwill and intangible assets acquired in business combinations completed before July 1, 2001 will continue to be amortized and tested for impairment prior to the full adoption of SFAS No. 142, "Goodwill and Other Intangible Assets".

In June 2001, SFAS No. 142, "Goodwill and Other Intangible Assets" was issued. SFAS No. 142, addresses financial accounting and reporting for acquired goodwill and other intangible assets. Among other things, SFAS No. 142 requires that goodwill and intangible assets with indefinite useful lives no longer be amortized, but rather tested annually for impairment. This statement is effective for fiscal years beginning after December 15, 2001. Accordingly, the Company adopted SFAS No. 142 on January 1, 2002 and will cease to recognize approximately $1.5 million of goodwill amortization expense in 2002. At December 31, 2001, there was approximately $24 million of goodwill and intangible assets with indefinite lives on the consolidated balance sheet.

In June 2001, SFAS No. 143, "Accounting for Assets Retirement Obligations" was issued. SFAS No. 143 applies to legal obligations associated with the retirement of certain tangible long-lived assets. This statement is effective for fiscal years beginning after June 15, 2002. Accordingly, the Company will adopt SFAS No. 143 on January 1, 2003. The Company does not expect that the adoption of this statement will have a material impact on consolidated results of operations or financial position.

In August 2001, SFAS No. 144, "Accounting for the Impairment or Disposal of Long-Lived Assets" was issued. This statement addresses the financial accounting and reporting for the impairment or disposal of long-lived assets. It supersedes SFAS No. 121, "Accounting for the Impairment of Long Lived Assets and for Long Lived Assets to be Disposed Of". SFAS No. 144 is effective for fiscal years beginning after December 15, 2001. Accordingly, the Company adopted SFAS No. 144 on January 1, 2002. The adoption of this statement did not have a material impact on the consolidated results of operations or financial position.

Impact of Inflation

We believe that our revenues and results of operations have not been significantly impacted by inflation during the past three years.

Important Factors That May Affect Future Operating Results

Our operating results may vary significantly from quarter to quarter depending on a number of factors, including:

If we are unable to achieve and sustain market acceptance of our new target validation 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 target validation and ADMET screening technologies to meet our customers' expanding needs and demands, an example of which is the COPAS™ technology obtained from our 2001 acquisition of Union Biometrica. 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 that 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 that 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 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 that could cause problems or delays resulting in lost revenue. 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 in some cases 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 Biosciences (formerly 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 year ended December 31, 2001, approximately 30% of our revenues were generated through an agreement with Amersham Biosciences, which was renegotiated in August 2001, under which Amersham Biosciences 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 Amersham Biosciences or its authorized sub-distributors. We have little or no control over Amersham Biosciences' marketing and sales activities or the use of its resources. Amersham Biosciences may fail to purchase sufficient quantities of products from us or perform appropriate marketing and sales activities. The failure by Amersham Biosciences 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 Amersham Biosciences for product distribution, could materially impede the growth of our business and our ability to generate sufficient revenue. Our agreement with Amersham Biosciences may be terminated with 30 day notice under some circumstances, including in

the event of a breach of a material term by us. This agreement has a five year term; however, it may be terminated in accordance with its terms by either party upon 18 months prior written notice. While we believe our relationship with Amersham Biosciences is good, we cannot guarantee that the contract will be renewed or that Amersham Biosciences will aggressively market our products in the future.

We may be adversely affected by litigation involving Harvard University. On December 26, 2000, Harvard University filed a lawsuit in U.S. District Court, District of Massachusetts alleging that our use of the "Harvard Bioscience" and "Harvard Apparatus" names infringes on Harvard University's trademarks. Harvard University is seeking both injunctive relief and monetary damages. We believe that these claims are without merit, and we are vigorously defending against such claims. On April 10, 2001, the U.S. District Court, District of Massachusetts denied Harvard University's request for a preliminary injunction prohibiting Harvard Bioscience from using the names "Harvard Bioscience" and "Harvard Apparatus". The Court did issue an order directing Harvard Bioscience not to use the "Harvard" name in the color crimson or in a font similar to the font used by Harvard University. We believe that the defense of these claims could involve significant litigation-related expenses, but that it will not have a material adverse effect on our business, financial condition or results of operations. If claims for injunctive relief or other damages 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.

We may be adversely affected by litigation involving Paul D. Grindle. On February 4, 2002, Paul D. Grindle, the former owner of Harvard Apparatus, Inc., initiated an arbitration proceeding against the Company and certain directors before JAMS, an arbitration firm in Boston, Massachusetts. Mr Grindle's claims arise out of post-closing purchase price adjustments related to the Company's purchase of the assets and business of Harvard Apparatus by virtue of an Asset Purchase Agreement dated March 15, 1996 and certain related agreements. In the arbitration demand, Mr. Grindle sought the return of 1,563,851 shares of stock in the Company, or the disgorgement of the profits of the Company's sale of the stock, as well as punitive damages and attorney's fees under Mass. Gen. Laws, chapter 93A. In a demand letter that was attached to the Arbitration Demand, Mr. Grindle asserted losses in the amount of $15 million, representing the value of the 1,563,851 shares of the Company's stock as of January 2, 2002. The Company believes that Mr. Grindle's claims are without merit and intends to defend them vigorously. The Company also believes that Mr. Grindle's claims are barred by the terms of certain releases executed by him and further barred by the applicable statutes of limitation. We believe that the defense of these claims could involve significant litigation-related expenses, but that it will not have a material adverse effect on our business, financial condition or results of operations. If claims for injunctive relief or other damages are decided against us, we could suffer monetary damages.

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 that 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 eleven U.S. patents and have eight 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 that 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 that 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, 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 have historically amortized goodwill purchased in our acquisitions on a straight-line basis ranging from 5 to 15 years. Upon the adoption

of SFAS No. 142, "Goodwill and Other Intangible Assets", goodwill and intangible assets with indefinite lives from acquisitions after June 30, 2001 and existing as of December 31, 2001 will not be amortized, but instead will be evaluated annually to determine 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 will be required to write off that portion of our goodwill which could have an adverse effect on our net income for the period in which the write off occurs. At December 31, 2001, we had unamortized goodwill and intangible assets with indefinite lives of approximately $24.0 million, or 27% of total assets.

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. While we do not currently derive a material portion of our revenue from products that depend on these licensed technologies, we may in the future. If our license 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 that use these licensed technologies. 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 could be subject to the effects of a generally weakened global economy. The global economy, including the U.S. economy, is much weaker now than it has been in recent history, and as a result our business is subject to the associated risks. We do not believe that our business has suffered materially from the recent economic downturn, however we cannot guarantee that it will not suffer in the future. If the general condition of both the global economy and the U.S. economy persists or worsens, we may experience parts shortages if our suppliers are negatively impacted by the weakened economy. This may in turn cause us to lose revenues from not being able to supply products to our customers. We may also experience a loss of revenues if our customers reduce spending in response to the state of the economy. Additionally, our stock price could be significantly impacted by a continued weakened or worsening economy simply by the nature of the market.

Our business is subject to risks associated with significant acts of terrorism. Prior to September 11, 2001, acts of terrorism such as occurred on that day were unprecedented in the U.S. and around the world. Since September 11, 2001, it has become evident that such acts are indeed possible and could cause significant disruption and harm, to not only our business, but to the businesses of all our customers and suppliers both within the U.S. and around the rest of the world. We cannot guarantee that another such event will not adversely impact our ability to continue to operate.

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 60% of our total revenues for the year ended December 31, 2001. 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 current loss of approximately $100,000 and a reduction of foreign equity of approximately $235,000 for the year ended December 31, 2001,
- changes in a specific country's or region's political or economic conditions, including Western Europe, in particular,
- 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.

Our quarterly revenues will likely be affected by various factors, including the seasonal nature of purchasing in Europe and the timing of capital equipment purchases by customers. Our revenues may vary from quarter to quarter due to a number of factors, including the timing of catalog mailings and new product introductions, future acquisitions and our substantial sales to European customers, who in summer months often defer purchases. Therefore, we expect our revenues from European sales to be lower during the summer season and as a result our quarter-to-quarter revenues will likely experience fluctuations. With the acquisition of Union Biometrica in May 2001, an increasing portion of our revenues may result from sales of relatively high priced products. Delays in receipt, manufacture, shipment or receivables collection of these relatively high priced products could lead to substantial variability in revenues, operating results and working capital requirements from quarter-to-quarter, which could adversely affect our stock price.

We may lose money when we exchange foreign currency received from international revenues into U.S. dollars. For the year ended December 31, 2001, approximately 60% 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 our stockholders' ownership and could cause us to incur debt, expose us to future liabilities and result in amortization expenses related to 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.

Because our stock price may become 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 may become volatile and could decline, perhaps substantially, 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 that 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 our initial public offering will enable us to maintain currently planned operations for the foreseeable future. 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, existing percentages of 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.

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.

Cash dividends will not be paid on our common stock. We intend to retain all of our earnings to finance the expansion and development of our business and do not anticipate paying any cash dividends in the foreseeable future. As a result, capital appreciation, if any, of our common stock will be our stockholders' sole source of gain for the foreseeable future.

An active trading market for our common stock may not be sustained. Although our common stock is quoted on the Nasdaq National Market, an active trading market for our shares may not be sustained.

Item 7A. ***Quantitative and Qualitative Disclosures about Market Risk.***

We manufacture and test the majority of products in research centers in the United States, the United Kingdom, Germany and Austria. We sell our products globally through our direct catalog sales, direct sales force and indirect distributor channels. As a result, our financial results are affected by factors such as changes in foreign currency exchange rates and weak economic conditions in foreign markets.

We collect amounts representing a substantial portion of our revenues and pay amounts representing a substantial portion of our operating expenses in foreign currencies. As a result, changes in currency exchange rates from time to time may affect our operating results. 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 currency risks and we may enter into foreign exchange contracts from time to time to mitigate foreign currency exposure.

Item 8. ***Financial Statements and Supplementary Data.***

The consolidated financial statements filed as part of this Annual Report on Form 10-K are listed under Item 14 below.

Item 9. ***Changes and Disagreements with Accountants on Accounting and Financial Disclosure.***

None.

PART III

Item 10. ***Directors and Executive Officers of Registrant.***

Incorporated by reference to the Company's definitive Proxy Statement to be filed pursuant to Regulation 14A, in connection with the 2002 Annual Meeting of Stockholders. Information concerning executive officers of the Registrant is included in Part I of this Report as Item 4.A.

Item 11. ***Executive Compensation.***

Incorporated by reference to the Company's definitive Proxy Statement to be filed pursuant to Regulation 14A, in connection with the 2002 Annual Meeting of Stockholders.

Item 12. ***Security Ownership of Certain Beneficial Owners and Management.***

Incorporated by reference to the Company's definitive Proxy Statement to be filed pursuant to Regulation 14A, in connection with the 2002 Annual Meeting of Stockholders.

Item 13. ***Certain Relationships and Related Transactions.***

Incorporated by reference to the Company's definitive Proxy Statement to be filed pursuant to Regulation 14A, in connection with the 2002 Annual Meeting of Stockholders.

PART IV

Item 14. ***Exhibits, Financial Statement Schedules, and Reports on Form 8-K.***

(a) (1) Financial Statements.

The following documents are filed as part of this report:

1. Independent Auditors' Report.
2. Consolidated Balance Sheets as of December 31, 2001 and 2000.
3. Consolidated Statements of Operations for the years ended December 31, 2001, 2000 and 1999.
4. Consolidated Statements of Stockholders' Equity (Deficit) and Comprehensive Loss for the years ended December 31, 2001, 2000 and 1999.
5. Consolidated Statements of Cash Flows for the years ended December 31, 2001, 2000 and 1999.
6. Notes to Consolidated Financial Statements.

(a) (2) Consolidated Financial Statement Schedules.

None required.

(a) (3) Exhibits.

The following exhibits are filed as part of this report. Where such filing is made by incorporation by reference to a previously filed document, such document is identified.

*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.

*2.2	Asset Purchase Agreement dated July 14, 2000 by and between Harvard Apparatus, Inc., AmiKa Corporation and Ashok Shukla.
**2.3	Agreement and Plan of Merger dated as of May 31, 2001 by and among Harvard Bioscience, Inc., Union Biometrica, Inc. and Union Biometrica, Inc.
*3.1	Second Amended and Restated Certificate of Incorporation of the Registrant.
*3.2	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 Partnership II, Pioneer Capital Corp., First New England Capital, L.P. and Citizens Capital, Inc. and Chane Graziano and David Green.
*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 August 1, 2002 by and between Biochrom Limited and Amersham Pharmacia Biotech UK Limited.
*10.5	Employment Agreement between Harvard Bioscience and Chane Graziano.
*10.6	Employment Agreement between Harvard Bioscience and David Green.
*10.8	Form of Director Indemnification Agreement.
10.9	Lease Agreement dated January 3, 2002 between Seven October Hill LLC and Harvard Bioscience, 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 6, 1999 made between Mr. Heinz Dehnert, Grunstrabe 1, 79232 March-Hugstetten, Lessor and the Company of Harvard Apparatus GmbH, Lessee.
*10.13	Amended and Restated Loan and Security Agreement dated March 2, 1999 between Brown Brothers Harriman & Co., BankBoston N.A. and Harvard Apparatus, Inc.
*10.14	Amendment and Waiver dated December 31, 1999 to Amended and Restated Loan and Security Agreement between Brown Brothers Harriman & Co., Fleet National Bank (formerly known as BankBoston N.A.) and Harvard Apparatus, Inc.
*10.15	Second Amendment dated July 14, 2000 to Amended and Restated Loan and Security Agreement between Brown Brothers Harriman & Co., Fleet National Bank (formerly known as BankBoston N.A.) and Harvard Apparatus, Inc.
*10.16	Third Amendment dated October 25, 2000 to Amended and Restated Loan and Security Agreement between Brown Brothers Harriman & Co., Fleet National Bank (formerly known as BankBoston N.A.) and Harvard Apparatus, Inc.
21.1	Subsidiaries of the Registrant.

23.1 Consent of KPMG LLP.

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* Previously filed as an exhibit to the Company's Registration Statement on Form S-1 (File No. 333-45996) and incorporated by reference thereto.

** Previously filed as an exhibit to the Company's report on Form 8-K/A (filed August 14, 2001 and incorporated by reference thereto.)

+ Certain portions of this document have been omitted pursuant to a confidential treatment request filed with the Securities and Exchange Commission (the "Commission"). The omitted portions have been filed separately with the Commission.

The Company will furnish to stockholders a copy of any exhibit without charge upon written request.

(b) Reports on Form 8-K.

None.

INDEPENDENT AUDITORS' REPORT

The Board of Directors
Harvard Bioscience, Inc.:

We have audited the accompanying consolidated balance sheets of Harvard Bioscience, Inc. and subsidiaries (the "Company") as of December 31, 2001 and 2000, and the related consolidated statements of operations, stockholders' equity (deficit) and comprehensive loss, and cash flows for each of the years in the three-year period ended December 31, 2001. 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 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. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall 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 Bioscience, Inc. and subsidiaries as of December 31, 2001 and 2000, and the results of their operations and their cash flows for each of the years in the three-year period ended December 31, 2001, in conformity with accounting principles generally accepted in the United States of America.

As discussed in Note 2 to the consolidated financial statements, effective July 1, 2001, the Company adopted the provisions of Statement of Financial Accounting Standards ("SFAS") 141, "Business Combinations" and certain provisions of SFAS 142, "Goodwill and Other Intangible Assets" as required for goodwill and intangible assets resulting from business combinations consummated after June 30, 2001.

/s/ KPMG LLP
February 15, 2002
Boston, Massachusetts

HARVARD BIOSCIENCE, INC. AND SUBSIDIARIES

CONSOLIDATED BALANCE SHEETS

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Assets	December 31, 2001	December 31, 2000
Current assets:		
Cash and cash equivalents (note 6)	$ 29,385,455	$ 35,816,994
Trade accounts receivable, net of reserve for uncollectible accounts of $97,597 and $88,955 at December 31, 2001 and 2000, respectively, (note 18)	6,490,189	4,697,663
Other receivable and other assets	1,114,142	1,237,414
Inventories (note 4)	5,972,708	3,722,180
Catalog costs	243,878	453,209
Prepaid expenses	700,227	478,562
Deferred tax asset (note 12)	846,291	513,458
Total current assets	44,752,890	46,919,480
Property, plant and equipment, net (notes 5 and 9)	3,505,742	1,715,726
Other assets:		
Catalog costs, less current portion	60,225	105,182
Deferred tax asset (note 12)	256,131	57,478
Goodwill and other intangibles, net of accumulated amortization of $2,743,908 and $1,000,087 at December 31, 2001 and 2000, respectively (note 3)	33,194,508	9,562,385
Other assets (note 11)	592,275	448,273
Total other assets	34,103,139	10,173,318
Total assets	$ 82,361,771	$ 58,808,524
Current liabilities:		
Current installments of long-term debt (note 6)	$ 3,894,088	$ 6,644
Trade accounts payable	3,100,414	2,117,446
Deferred revenue	599,535	—
Accrued income taxes payable	1,442,311	669,788
Accrued expenses (note 16)	2,912,201	3,305,560
Other liabilities	207,339	268,075
Total current liabilities	12,155,888	6,367,513
Long-term debt, less current installments (note 6)	637,153	1,142
Deferred income tax liability (note 12)	2,756,861	104,946
Total long-term liabilities	3,394,014	106,088
Total liabilities	15,549,902	6,473,601
Stockholders' equity (notes 7,8,13 and 19):		
Common stock, par value $.01 per share, 80,000,000 shares authorized; 31,339,373 and 29,442,632 shares issued and outstanding at December 31 2001 and 2000, respectively	313,394	294,426
Additional paid-in-capital — stock options	5,837,474	4,635,949
Additional paid-in-capital — common stock	147,455,103	128,594,672
Accumulated deficit	(83,588,285)	(78,379,867)
Accumulated other comprehensive loss	(789,134)	(554,573)
Notes receivable	(1,748,938)	(1,587,939)
Treasury stock, 4,660,784 common shares, at cost	(667,745)	(667,745)
Total stockholders' equity	66,811,869	52,334,923
Total liabilities and stockholders' equity	$ 82,361,771	$ 58,808,524

See accompanying notes to consolidated financial statements.

HARVARD BIOSCIENCE, INC. AND SUBSIDIARIES

CONSOLIDATED STATEMENTS OF OPERATIONS

	Years Ended December 31,		
	2001	2000	1999
Product revenues	$ 40,005,442	$ 30,574,800	$ 26,177,814
Research revenues	862,945	—	—
Total revenues (notes 14 and 18)	40,868,387	30,574,800	26,177,814
Costs and expenses:			
Cost of product revenue	20,179,762	15,833,338	13,546,933
General and administrative expense	7,000,638	5,181,299	4,146,564
Severance and other related costs	459,925	—	—
Sales and marketing expense	4,840,468	3,185,340	2,448,505
Research and development expense	3,178,591	1,532,896	1,187,584
Stock compensation expense	2,678,743	14,675,299	3,283,164
In-process research and development expense (note 3)	5,447,000	—	—
Amortization of goodwill and other intangibles	1,743,821	604,191	368,235
Operating (loss) income	(4,660,561)	(10,437,563)	1,196,829
Other income (expense) income:			
Foreign currency loss	(99,566)	(324,153)	(47,982)
Common stock warrant interest expense (note 8)	—	(36,884,915)	(29,694,019)
Interest expense	(6,869)	(916,210)	(679,122)
Interest income	1,358,554	159,849	22,767
Amortization of deferred financing costs	—	(152,683)	(63,442)
Other	(10,023)	45,291	(17,468)
Other income (expense), net	1,242,096	(38,072,821)	(30,479,266)
Loss before income taxes	(3,418,465)	(48,510,384)	(29,282,437)
Income taxes (note 12)	1,789,953	1,359,401	137,480
Net loss	(5,208,418)	(49,869,785)	(29,419,917)
Accrual of preferred stock dividends	—	(136,151)	(156,586)
Net loss available to common shareholders	$ (5,208,418)	$ (50,005,936)	$ (29,576,503)
Loss per share (note 15):			
Basic	$ (0.20)	$ (6.25)	$ (5.28)
Diluted	$ (0.20)	$ (6.25)	$ (5.28)
Weighted average common shares:			
Basic	25,784,852	8,005,386	5,598,626
Diluted	25,784,852	8,005,386	5,598,626

See accompanying notes to consolidated financial statements.

HARVARD BIOSCIENCE, INC. AND SUBSIDIARIES

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

	Number Of shares Outstanding	Common Stock	Additional Paid-in Capital-Stock Options	Additional Paid-in Capital-Stock Options	Retained Earnings (Accumulated Deficit)	Accumulated Other Comprehensive Loss	Notes Receivable	Treasury Stock	Total Stockholders' Equity(Deficit)
Balance at December 31, 1998	10,259,410	$ 102,604	$ —	$ —	$ 1,277,398	$ (34,720)	$ —	$ (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 loss:									
Net loss		—	—	—	(29,419,917)	—	—	—	(29,419,917)
Translation adjustments		—	—	—	—	(19,970)	—	—	(19,970)
Total comprehensive loss									(29,439,887)
Balance at December 31, 1999	10,259,410	102,604	3,283,164	—	(28,373,931)	(54,690)	—	(667,745)	(25,710,598)
Preferred stock dividends	—	—	—	—	(136,151)	—	—	—	(136,151)
Issuance of common stock									
Initial public offering	6,250,000	62,500	—	44,731,292	—	—	—	—	44,793,792
Preferred stock conversion	955,935	9,559	—	990,441	—	—	—	—	1,000,000
Common stock warrants	8,509,333	85,093	—	67,994,187	—	—	—	—	68,079,280
Stock option exercises	3,467,954	34,670	(13,322,514)	14,878,752	—	—	(1,587,939)	—	2,969
Stock compensation expense		—	14,675,299	—	—	—	—	—	14,675,299
Comprehensive loss:									
Net loss		—	—	—	(49,869,785)	—	—	—	(49,869,785)
Translation adjustments		—	—	—	—	(499,883)	—	—	(499,883)
Total comprehensive loss									(50,369,668)
Balance at December 31, 2000	29,442,632	294,426	4,635,949	128,594,672	(78,379,867)	(554,573)	(1,587,939)	(667,745)	52,334,923
Issuance of common stock									
Underwriters overallotment	937,500	9,375	—	6,964,735	—	—	—	—	6,974,110
Business acquisitions	659,282	6,593	2,781,222	7,140,024	—	—	—	—	9,927,839
Stock option exercises	288,075	2,881	(4,419,439)	4,653,564	—	—	—	—	237,006
Stock purchase plan	11,884	119	—	102,108	—	—	—	—	102,227
Stock compensation expense		—	2,678,743	—	—	—	—	—	2,678,743
Accrued interest shareholder note	–	–	160,999	–	–	–	(160,999)	–	–
Comprehensive loss:									
Net loss		—	—	—	(5,208,418)	—	—	—	(5,208,418)
Translation adjustments		—	—	—	—	(234,561)	—	—	(234,561)
Total comprehensive loss									(5,442,979)
Balance at December 31, 2001	31,339,373	$ 313,394	$ 5,837,474	$ 147,455,103	$ (83,588,285)	$ (789,134)	$ (1,748,938)	$ (667,745)	$ 66,811,869

See accompanying notes to consolidated financial statements.

HARVARD BIOSCIENCE, INC. AND SUBSIDIARIES

CONSOLIDATED STATEMENTS OF CASH FLOWS

	Years Ended December 31,		
	2001	2000	1999
Cash flows from operating activities:			
Net loss	$ (5,208,418)	$ (49,869,785)	$ (29,419,917)
Adjustments to reconcile net loss to net cash provided by operating activities:			
Common stock warrant interest expense	—	36,884,915	29,694,019
Stock compensation expense	2,678,743	14,675,299	3,283,164
In-process research and development expense	5,447,000	—	—
Impairment loss on write down of intangible assets	162,090	—	—
Depreciation	622,090	393,357	331,822
Amortization of catalog costs	605,108	340,037	493,428
Loss (gain) on sale of fixed assets	(36)	(2,207)	7,584
Provision for bad debts	8,978	2,430	26,877
Amortization of goodwill and other intangibles	1,743,821	604,191	368,235
Amortization and write-off of deferred financing costs	—	152,683	63,442
Deferred income taxes	(193,628)	927,665	(1,310,325)
Changes in operating assets and liabilities, net of effects of business acquisitions:			
(Increase) decrease in accounts receivable	(691,318)	(737,414)	(2,282,344)
(Increase) decrease in other receivables	37,433	(1,045,776)	(113,949)
(Increase) decrease in inventories	(637,426)	(737,737)	215,152
(Increase) decrease in prepaid expenses and other assets	11,272	85,555	(260,285)
(Increase) decrease in other assets	396,962	(108,492)	(202,460)
Increase (decrease) in trade accounts payable	(47,727)	324,672	541,065
Increase (decrease) in accrued income taxes payable	631,716	(225,672)	797,633
Increase in accrued expenses	234,614	442,794	666,637
Decrease in deferred revenue	(1,204,386)	—	—
Increase (decrease) in other liabilities	(501,857)	39,395	26,663
Net cash provided by operating activities	4,095,032	2,145,810	2,926,441
Cash flows from investing activities:			
Additions to property, plant and equipment	(1,838,851)	(629,518)	(332,474)
Additions to catalog costs	(358,402)	(673,811)	(121,644)
Proceeds from sales of fixed assets	5,626	2,658	34,566
Acquisition of businesses, net of cash acquired	(17,984,128)	(4,031,625)	(8,126,656)
Net cash used in investing activities	(20,175,755)	(5,332,296)	(8,546,208)
Cash flows from financing activities:			
Proceeds from short-term debt	—	1,600,000	2,300,000
Repayments of short-term debt	—	(3,800,000)	(1,150,000)
Proceeds from long-term debt	4,325,519	2,000,000	5,500,000
Repayments of long-term debt	(507,395)	(7,859,328)	(460,663)
Dividends paid	—	(171,072)	(121,666)
Net proceeds from issuance of preferred stock	—	—	925,174
Redemption of preferred stock	—	(1,500,000)	—
Net proceeds from issuance of common stock	5,880,318	46,250,994	—
Net cash provided by financing activities	9,698,442	36,520,594	6,992,845
Effect of exchange rate changes on cash	(49,258)	86,833	66,204
Increase (decrease) in cash and cash equivalents	(6,431,539)	33,420,941	1,439,282
Cash and cash equivalents at the beginning of year	35,816,994	2,396,053	956,771
Cash and cash equivalents at the end of year	$ 29,385,455	$ 35,816,994	$ 2,396,053
Non cash investing and financing activity:			
Common stock and options issued for acquisition	$ 9,927,839	—	—
Supplemental disclosures of cash flow information:			
Cash paid for interest	$ 6,600	$ 1,008,673	$ 671,452
Cash paid for income taxes	$ 729,886	$ 1,571,192	$ 686,675

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). 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. On November 29, 2000, Harvard Apparatus, Inc. changed its name to Harvard Bioscience, Inc.

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 critical bottlenecks in the drug discovery process - target validation, assay development and ADMET screening. Our ADMET screening products enables our customers to test drug candidates to determine their absorption, distribution, metabolism, elimination and toxicology properties prior to conducting costly clinical trials.

(2)` Summary of Significant Accounting Policies

(a) Principles of Consolidation

The consolidated financial statements include the accounts of Harvard Bioscience, Inc. and its wholly-owned subsidiaries (the "Company"). All intercompany balances and transactions have been eliminated in consolidation.

(b) Use of Estimates

The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America 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 periods, tax and reserves for bad debts. Actual results could differ from those estimates.

(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 the first-out (FIFO) method.

(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

Property and equipment held under capital leases and leasehold improvements are amortized straight line over the shorter of the lease term or estimated useful life of the asset. Amortization of assets held under capital leases is included with depreciation expense.

(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 one 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 seven 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 accumulated other comprehensive loss in the consolidated balance sheets.

(i) Stock Based Compensation

The Company accounts for stock-based employee compensation arrangements in accordance with the provisions of Accounting Principle Board Opinion No. 25, *Accounting for Stock Issued to Employees* (APB No. 25) and complies with the disclosure provisions of SFAS No. 123, *Accounting for Stock-Based Compensation*. Under APB 25, compensation cost is recognized based on the difference, if any, on the date of grant between the fair value of the Company's stock and the amount an employee must pay to acquire the stock.

(j) Income (Loss) Per Share

Basic income (loss) per share is computed by dividing the net income (loss) available to common shareholders by the weighted average number of shares of common stock outstanding during the periods presented. The computation of diluted income per share is similar to the computation of basic income per share, except that the denominator is increased for the assumed exercise of dilutive options and other potentially dilutive securities using the treasury stock method unless the effect is antidilutive. For all periods presented, diluted loss per share is the same as basic loss per share as the inclusion of common stock equivalents would be antidilutive.

(k) Comprehensive Income (Loss)

The Company follows SFAS No. 130, Reporting Comprehensive Income (Loss). SFAS No. 130 requires companies to report all changes in equity during a period, resulting from net income (loss) and transactions from non-owner sources, in a financial statement in the period in which they are recognized.

The Company has chosen to disclose comprehensive income (loss) , which encompasses net loss and foreign currency translation adjustments, in the consolidated statements of stockholders' equity (deficit).

(l) Revenue Recognition

The Company recognizes revenue from product sales at the time of shipment or installation when applicable. Product returns are estimated and provided for based on historical experience. For long term collaboration agreements, revenue is recognized based on the costs incurred, which are included as part of research and development expense, as the related work on the contracts progress.

(m) Goodwill and Other Intangibles

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. At December 31, 2001 and December 31, 2000, goodwill totaled $22.2 million and $9.6 million, net of accumulated amortization of $2.1 million and $1.0 million, respectively.

At December 31, 2001, other intangible assets consist of acquired technologies of $8.5 million, workforce in place of $1.5 million, and trademarks of $1.0 million, respectively, net of accumulated amortization of $0.6 million. At December 31, 2000, there were no corresponding balances. Other intangibles are amortized on a straight line basis over the expected periods to be benefited , as follows: acquired technologies, 10 years; workforce in place and trademarks, 15 years.

The Company continually evaluates whether events or circumstances have occurred that indicate that the remaining useful life of goodwill and other intangibles may warrant revision or that the remaining balance may not be recoverable. When factors indicate that goodwill and other intangibles should be evaluated for possible impairment, the Company estimates the undiscounted cash flow of the acquired asset over its remaining life in determining whether the asset is recoverable. Charges for impairment of goodwill and other intangibles would be recorded to the extent unamortized book value exceeds the related future discounted cash flow. The discount factor would be the long-term debt rate currently obtainable by the Company.

(n) 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.

(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 fair value, which approximates the carrying amount of the Company's long-term debt, is based on the amount of future cash flows associated with the debt discounted using the Company's current borrowing rate for similar debt instruments of comparable maturity.

(p) Recently Issued Accounting Pronouncements

In June 2001, SFAS 141, "Business Combinations" was issued. SFAS No. 141, which is effective for acquisitions initiated after June 30, 2001, prohibits the use of pooling of interests method of accounting for business combinations and amends the accounting and financial reporting requirements for business combinations accounted for by the purchase method. SFAS No. 141 establishes the criteria that intangible assets acquired in a purchase method business combination must meet to be recognized and reported apart from goodwill. The Company has adopted SFAS No. 141 for all business combinations initiated after June 30, 2001. Goodwill and intangible assets determined to have an indefinite useful life acquired in a purchase business combination completed after June 30, 2001 will not be amortized, but will continue to be evaluated for impairment. Goodwill and intangible assets acquired in business combinations completed before July 1, 2001 will continue to be amortized and tested for impairment prior to the full adoption of SFAS No. 142, "Goodwill and Other Intangible Assets".

In June 2001, SFAS No. 142, "Goodwill and Other Intangible Assets" was issued. SFAS No. 142, addresses financial accounting and reporting for acquired goodwill and other intangible assets. Among other things, SFAS No. 142 requires that goodwill and intangible assets with indefinite useful lives no longer be amortized, but rather be tested annually for impairment. This statement is effective for fiscal years beginning after December 15, 2001. Accordingly, the Company adopted SFAS No. 142 on January 1, 2002 and will cease to recognize approximately $1.5 million of goodwill amortization expense in 2002. At December 31, 2001, the Company has goodwill and intangibles with indefinite future lives of approximately $24 million on its consolidated balance sheet.

In June 2001, SFAS No. 143, "Accounting for Assets Retirement Obligations" was issued. SFAS No. 143 applies to legal obligations associated with the retirement of certain tangible long-lived assets. This statement is effective for fiscal years beginning after June 15, 2002. Accordingly, the Company will adopt SFAS No. 143 on January 1, 2003. The Company does not expect that the adoption of this statement will have a material impact on consolidated results of operations or financial position.

In August 2001, SFAS No. 144, "Accounting for the Impairment or Disposal of Long-Lived Assets" was issued. This statement addresses the financial accounting and reporting for the impairment or disposal of long-lived assets. It supersedes SFAS No. 121, "Accounting for the Impairment of Long Lived Assets and for Long Lived Assets to be Disposed Of". SFAS No. 144 is effective for fiscal years beginning after December 15, 2001. Accordingly, the Company adopted SFAS No. 144 on January 1, 2002. The adoption of this statement did not have a material impact on the consolidated results of operations or financial position.

(3) Acquisition of Businesses

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. 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.

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.

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 $730,000 was paid for the assets (including approximately $162,000 of acquisition related expenses), 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 $251,000 to goodwill.

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 costs 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 $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 $3,100,000 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 $3,015,000 to goodwill. 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.

On December 21, 2000, the Company acquired substantially all the assets and certain liabilities of MitoScan Corporation, a manufacturer of a submitochondrial particle toxicity testing products for cash and future contingent payments based on future product revenues. Cash consideration of approximately $383,000 was paid for the assets (including approximately $83,000 of acquisition related expenses). The cost of the acquisition allocated on the basis of fair market value of assets acquired and the purchase method of accounting resulted in an allocation of approximately $386,000 to goodwill.

On May 1, 2001, the Company acquired substantially all the assets and certain liabilities of Warner Instruments Corporation ("Warner Instruments"), a developer, manufacturer and marketer of cell and tissue electro-physiology products. Cash consideration of $2,700,000 (including approximately $69,000 of acquisition related expenses) was paid for the assets. The cost of the acquisition allocation on the basis of fair market value of assets acquired and the purchase method of accounting resulted in the following allocation: current assets of $951,000, property, plant and equipment of $34,000, purchased intangibles of $1.9 million which included: trade name of $320,000, workforce in place of $380,000, acquired technologies of $1.0 million , patents of $9,000, in process research and development of $159,000 and goodwill of $136,000 and liabilities assumed of $234,000.

On May 31, 2001, the Company acquired all of the outstanding common and preferred shares of Union Biometrica, Inc. ("Union Biometrica") for $17.5 million. Union Biometrica develops, manufactures and markets instruments that enable high throughput analysis and sorting of model organisms used in drug discovery research. The transaction was accounted for using the purchase method of accounting. The aggregate purchase price of $17.5 million, net of cash acquired of $562,000, included 659,282 common shares and 263,202 common stock options that had an estimated fair value of $10 million. The purchase price which has been allocated on the basis of fair market value of assets acquired and liabilities assumed resulted in the following allocation: current assets of $0.5 million, property, plant and equipment of $0.2 million, other assets of $1.6 million, purchased intangibles of $10.1 million, which included work force in place of $1.4 million, acquired technologies of $8 million and trademarks of $0.8 million, in process research and development of $5.3 million, goodwill of $6.2 million and liabilities assumed of $6.5 million.

On June 29, 2001, Harvard Apparatus Ltd, a United Kingdom subsidiary of the Company, acquired all the stock of International Market Supply, Ltd ("IMS"), a company engaged in developing, manufacturing and marketing respiration products. Cash consideration of approximately $1,600,000 (including approximately $114,000 of acquisition related expenses) was paid for the stock. The cost of the acquisition allocation on the basis of fair market value of assets acquired and the purchase method of accounting resulted in an allocation of approximately $1,402,000 to goodwill, $462,000 to current assets, $39,000 to property, plant and equipment and $277,000 in liabilities assumed.

On November 1, 2001, Biochrom Ltd, a United Kingdom subsidiary of the Company, acquired all the stock of Scie-Plas, Ltd., a designer, manufacturer and marketer of electrophoresis tools for molecular biology. Cash consideration of $4,133,000 (including approximately $81,000 of acquisition related expenses) was paid for the stock. The Company has not finalized the allocation of purchase price as of December 31, 2001. An estimation of the allocation was prepared and included as part of these financial statements. The purchase price has been allocated as follows: $3,908,000 to goodwill and other intangibles, $327,000 to property, plant and equipment, current assets of $804,000, other assets of $23,000 and liabilities assumed of $929,000.

On December 6, 2001, Biochrom Ltd, a United Kingdom subsidiary of the Company, acquired all the stock of Asys Hitech GmbH, a designer, manufacturer and marketer of low volume, high throughput, liquid dispensers used for high throughput screening in drug discovery research. Cash consideration of $2,042,000 (including approximately $98,000 of acquisition related expenses) was paid for the stock. The Company has not finalized the allocation of purchase price as of December 31, 2001. An estimation of the allocation was prepared and has been included as part of these financial statements. The purchase price has been allocated as follows: $1,970,000 to goodwill and other intangibles, $23,000 to property, plant and equipment, current assets of $517,000, other assets of $46,000 and liabilities assumed of $514,000.

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.

In connection with the acquisition of Warner Instruments and Union Biometrica, certain research and development projects acquired were determined to have no alternative future use. Accordingly, $159,000 and $5,288,000, repectively, of purchased in process research and development was expensed in the second quarter of 2001. The amount was established by identifying research projects for which technological feasibility had not been established and for which no alternative future uses existed. The value of the projects identified to be in progress were determined by estimating future cash flows from the projects once commercially feasible, discounting net cash flows back to their present value and then applying a percentage of completion to the calculated value. The discount rate used averaged 44% for the projects identified. Development of the technologies remains a substantial risk to the Company due to factors including the remaining effort to achieve technological feasibility, rapidly changing customer markets and competitive threats from other companies. Additionally, the value of other intangible assets acquired may become impaired.

The following unaudited pro forma results of operations gives effect to the acquisition of Union Biometrica as if it had occurred as of January 1, 2000. Such pro forma information reflects certain adjustments including amortization of goodwill, 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 acquisitions taken place as described and is not necessarily indicative of results that may be obtained in the future.

	Years Ended December 31,	
	2001	2000
	(Unaudited)	
Pro forma revenues	$ 41,488,751	$ 32,972,580
Pro forma net loss	$ (1,649,549)	$ (52,101,323)
Pro forma basic net loss per share:		
Basic and diluted	$ (0.06)	$ (6.01)
Pro forma weighted average common shares:		
Basic and diluted	25,784,852	8,664,668

(4) Inventories

Inventories consist of the following:

	December 31,	
	2001	2000
Finished goods	$ 3,329,336	$ 1,414,951
Work in process	593,833	399,064
Raw materials	2,049,539	1,908,165
	$ 5,972,708	$ 3,722,180

(5) Property, Plant and Equipment

Property, plant and equipment consists of the following:

	December 31,	
	2001	2000
Land and buildings	$ 756,232	$ 588,187
Machinery and equipment	2,688,150	1,051,458
Computer equipment	1,331,204	535,596
Furniture and fixtures	478,015	356,264
Automobiles	177,613	139,399
	5,431,214	2,670,904
Less accumulated depreciation	1,925,472	955,178
	$ 3,505,742	$ 1,715,726

(6) Long-Term Debt

Long-term debt consists of the following:

	December 31,	
	2001	2000
Notes payable	$ 4,333,174	—
Capital lease obligations (note 9)	198,067	7,786
	4,531,241	7,786
Less current installments	3,894,088	6,644
	$ 637,153	$ 1,142

On November 1, 2001, at the request of the sellers of Scie-Plas Ltd., the Company entered into a loan agreement with the sellers to defer payment of approximately $3.9 million of the purchase price for the outstanding shares of Scie-Plas Ltd. (see note 3). The loan is secured with cash in an equal amount and accrues interest at the same rate of interest earned by the cash. Approximately $3.5 million of the note is payable on November 1, 2002, and the remaining $.4 million is due April 1, 2003.

On December 5, 2001, in connection with the purchase of the outstanding shares of Asys Hitech, GmbH, the Company assumed liability of $278,000 related to amounts owed to a shareholder of Asys Hitech. Approximately $167,000 of this debt will be paid during 2002, with the remaining $111,000 due and payable on September 6, 2003.

The remaining debt of $200,000, will be paid or reduced upon agreement of the final statement of net assets acquired from Asys Hitech.

(7) 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 (see note 3). The net proceeds from this issuance were $925,174. The Company's Series B convertible redeemable preferred stock had a dividend preference over the Series A preferred stock, and as a result, no dividends were paid in respect of shares of Series A preferred stock unless all accrued dividends that became payable in respect of Series B preferred stock were paid. The Series B redeemable convertible preferred stock was 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. In December 2000, the convertible preferred stock was converted to 955,935 shares of common stock of the Company simultaneously with the initial public offering of the Company's common stock.

Redeemable preferred Series A stock paid 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 were payable a year in arrears on March 3, 2001, and thereafter quarterly in arrears. In December 2000, the redeemable preferred stock was redeemed in full simultaneously with the initial public offering of the Company's common stock.

(8) Common Stock Warrants

At December 31, 1999, there were outstanding 8,509,905 warrants, which enabled 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 have at any time required 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 have been 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 2000 and 1999 interest expense of $36,884,915 and $29,694,019, respectively, was recorded 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*.

In December 2000, the holders of the outstanding common stock warrants terminated the requirement of the Company to repurchase the warrants. Accordingly, the outstanding common stock warrants were converted to 8,509,337 shares of the Company's common stock simultaneously with the initial public offering of the Company's common stock and the liability previously recorded was reclassified to stockholders' equity.

(9) Leases

The Company leases automobiles and equipment under various leases that are classified as capital leases. The carrying value of automobiles and equipment under capital leases at December 31, 2001, 2000 and 1999 was $199,822, $7,265 and $14,532, respectively, which is net of $12,834, $30,735 and $68,602, 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 years ended December 31, 2001, 2000 and 1999 was approximately $744,000, $541,000 and $484,000, respectively.

Future minimum lease payments for both capital and operating leases, with initial or remaining terms in excess of one year at December 31, 2001, are as follows:

	Capital Leases	Operating Leases
2002	$ 91,113	$ 995,285
2003	77,733	988,251
2004	36,381	905,135
2005	18,032	683,328
2006	19,478	556,140
Thereafter	—	1,048,320
Net minimum lease payments	242,737	$ 5,176,459
Less amount representing interest	44,670	
Present value of net minimum lease payments	$ 198,067	

(10) 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 for the years ended December 31, 2000 and 1999 was $294,583 and $258,437, respectively.

(11) Employee Benefit Plans

The Company sponsors profit sharing retirement plans 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 years ended December 31, 2001, 2000, and 1999, the Company contributed approximately $142,000, $81,000 and $67,000, respectively, to the plans.

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 years ended December 31, 2001 and 2000 follow:

	Years Ended December 31,		
	2001	2000	1999
Components of net periodic benefit cost:			
Service cost	$ 390,223	$ 319,053	$ 288,640
Interest cost	418,178	347,215	250,437
Expected return on plan assets	(512,564)	(527,397)	(364,684)
Net amortization gain	17,581	(20,769)	6,965
Net periodic benefit cost	$ 313,418	$ 118,102	$ 181,358

The funded status of the Company's defined benefit pension plans and the amount recognized in the balance sheet at December 31, 2001 and 2000 follow:

	Years Ended December 31,	
	2001	2000
Change in benefit obligation:		
Balance at beginning of year	$ 7,221,941	$ 5,829,403
Service cost	390,223	319,053
Interest cost	418,178	347,215
Participants' contributions	94,357	81,369
Actuarial (gain) loss	(606,776)	1,158,295
Benefits paid	(68,592)	(46,058)
Currency translation adjustment	(176,611)	(467,336)
Balance at end of year	$ 7,272,720	$ 7,221,941
Change in fair value of plan assets:		
Balance at beginning of year	$ 6,744,668	$ 7,062,645
Actual return on plan assets	(421,810)	(51,692)
Participants' contributions	94,357	81,369
Employer contributions	243,428	258,756
Benefits paid	(68,592)	(46,058)
Currency translation adjustment	(149,251)	(560,352)
Balance at end of year	$ 6,442,800	$ 6,744,668

	Years Ended December 31,	
	2001	2000
Funded status:		
Plan assets less than benefit obligation	$ (829,920)	$ (477,273)
Unrecognized loss	1,211,987	921,611
Prepaid pension expense in consolidated balance sheets	$ 382,067	$ 444,338

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

	Years Ended December 31,	
	2001	2000
Weighted average assumptions:		
Discount rate	6.0%	6.0%
Expected return on assets	8.0%	7.0-8.0%
Rate of compensation increase	4.0%	4.5%

(12) Income Taxes

The significant components of the Company's deferred tax assets and liabilities at December 31, 2001 and 2000 are as follows:

	Years Ended December 31,	
	2001	2000
Deferred tax assets:		
Accounts receivable	$ 1,055	$ 31,755
Inventory	286,868	185,990
Operating loss and credit carryforwards	1,467,814	175,998
Accrued expenses	56,793	82,698
Goodwill	35,782	51,368
Property, plant and equipment	21,897	—
Other accrued liabilities	293,211	—
Total deferred tax assets	2,163,420	527,809
Deferred tax liabilities:		
Catalog costs	—	12,141
Pension fund asset	—	22,010
Property, plant and equipment	39,616	15,927
Intangible assets	3,778,243	—
Other	—	11,741
Total deferred tax liabilities	3,817,859	61,819
Net deferred tax asset (liability)	$ (1,654,439)	$ 465,990

The amount recorded as gross deferred tax assets as of December 31, 2001 and December 31, 2000 represents the amount of tax benefits of existing deductible temporary differences or carryforwards that are more likely than not to be realized through the generation of sufficient future taxable income within the carryforward period. The Company believes that the gross deferred tax asset at December 31, 2001 will more likely than not be realized in the carryforward period. Management reviews the recoverability of deferred tax assets during each reporting period.

At December 31, 2001, the Company had federal and state net operating loss carryfowards available to offset future taxable income of approximately $2,599,000 and $3,470,000, respectively. The federal operating loss carryfowards generated in years 2001 and 2000 expire in years 2021 and 2020, respectively. The state net operating loss carryforwards generated in years 2001 and 2000 expire in year 2006 and 2005, respectively. Furthermore, the Company had foreign operating carryforwards to offset future taxable income of approximately $500,000. These foreign net operating loss carryforwards generated in 2001 begin to expire in 2006. The Company has also generated business credit and minimum tax credit carryforwards of approximately $79,000 and $56,000, respectively, available to reduce future regular income taxes. The tax credit carryforward generated in years 2000 and 2001 begin to expire in year 2019. Utilization of the net operating losses may be subject to an annual limitation imposed by change in ownership provision of Section 382 of the Internal Revenue Code and similar state provisions.

In accordance with SFAS No.109, *Accounting for Income Taxes,* the accounting for the tax benefits of acquired deductible temporary differences which are not recognized at the acquisition date because a valuation allowance may be established, and recognized subsequent to the acquisitions will be applied first to reduce to zero, any goodwill and other noncurrent intangible assets related to the acquisitions. Any remaining benefits would be recognized as reduction of income tax expense. As of December 31, 2001, approximately $1,908,000 of the Company's deferred tax asset pertains to acquired companies. If the Company concludes in a subsequent period, that a valuation allowance is required for previously recognized tax benefits from acquisition, the establishment or reestablishment of that valuation allowance would be recognized as income tax expense attributable to income from continuing operations, not as an increase in goodwill related to the acquisition. The Company's deferred tax liability relates significantly to the financial statement and tax carrying basis amount of certain acquired indentifiable intangible assets.

Income tax expense is based on the following pre-tax income (loss) for the years ended December 31, 2001, 2000 and 1999:

	Y ears Ended December 31,		
	2001	2000	1999
Domestic	$ (7,408,456)	$ (51,098,496)	$ (32,040,219)
Foreign	3,989,991	2,588,112	2,757,782
	$ (3,418,465)	$ (48,510,384)	$ (29,282,437)

Income tax expense (benefit) attributable to income (loss) from continuing operations for the years ended December 31, 2001, 2000 and 1999 consisted of:

	Years Ended December 31,		
	2001	2000	1999
Current income tax expense (benefit):			
Federal and state	$ (158,835)	$ (560,364)	$ 403,149
Foreign	1,755,161	992,100	1,043,539
	1,596,326	431,736	1,446,688
Deferred income tax (benefit) expense:			
Federal and state	396,038	903,168	(1,238,399)
Foreign	(202,410)	24,497	(70,809)
	193,628	927,665	(1,309,208)
Total income tax expense	$ 1,789,953	$ 1,359,401	$ 137,480

The income tax benefits derived from certain stock-based compensation, amounting to $121,275, $0 and $0 for the years ended December 31,2001, 2000 and 1999, respectively, were allocated to stockholders' equity.

Income tax expense for the years ended December 31, 2001, 2000 and 1999 differed from the amount computed by applying the U.S. federal income tax rate of 34% to pretax income (loss) as a result of the following:

	Years Ended December 31,		
	2001	2000	1999
Computed "expected" income tax benefit	$ (1,162,278)	$ (16,493,531)	$ (9,956,029)
Increase (decrease) in income taxes resulting from:			
Foreign tax rate and regulation differential	195,561	112,097	35,804
State income taxes, net of federal income tax benefit	(73,725)	63,600	(154,569)
Interest expense (common stock warrants)	—	12,539,403	10,254,946
Foreign Sales Corporation tax benefits	(30,195)	(32,596)	(28,761)
Other	54,889	(26,721)	(13,911)
Nondeductible acquisition goodwill, trademark and workforce	127,234	—	—
Nondeductible in-process research and development	1,851,980	—	—
Stock compensation expense in excess of allowable tax benefits on exercise of options	826,487	5,197,149	—
Total income tax expense	$ 1,789,953	$ 1,359,401	$ 137,480

Undistributed earnings of the Company's foreign subsidiaries amounted to approximately $7,736,580, $5,297,594 and $2,992,805 at December 31, 2001, 2000 and 1999, respectively. The Company's policy is that these earnings are 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 (less foreign tax credits) and withholding taxes in the various foreign countries.

(13) Stock Compensation Plans

In 2000, the Company approved a stock purchase plan allowing employees to purchase the Company's common stock at 85% of the lesser of beginning or ending fair market value at six month intervals. Under this plan, 500,000 shares of common stock are authorized for issuance of which 11,884 shares were issued as of December 31, 2001.

In 1996, the Company adopted the 1996 Stock Option and Grant Plan (the "1996 Plan") and in 2000, the Company adopted the 2000 Stock Option and Incentive Plan (the "2000 Plan" and, together with the 1996 Plan the "Plans") pursuant to which the Company's Board of Directors can grant stock options to employees, directors and consultants . The Plans authorize grants of options to purchase up to 4,589,081 shares of authorized but unissued stock.

As of December 31, 2001, 2000 and 1999, 1,790,176, 1,582,910 and 1,119,725 "Incentive Stock Options," and 2,827,367, 2,519,576 and 1,812,295 "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 Stock Options granted prior to 1999 became vested during 2000 as the fair market value of the Company's common stock was determined to be, on a fully diluted basis, not less than $1.42 per common share. For non-qualified options granted under the 1996 Plan during 1999, prior to an amendment to the 1996 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 were 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 resulted in a per share valuation, on a fully diluted basis, of not less than $2.09 per share. As a result of the 1996 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 Plans. 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 year ended December 31, 2001, 52,621 stock options were granted to employees at an exercise price of $1.87 for 42,766 of the options and 1.05 for 9,855 of the options, which was estimated to be less than the fair market value of the Company's common stock on the date of grant. During the year ended December 31, 2000, 1,140,466 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, for the years ended December 31, 2001 and 2000, compensation expense of $2,678,743 and $4,635,949, respectively, was recognized on these stock option grants. As of December 31, 2001 additional compensation expense of approximately $2.0 million 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 were considered variable awards as the number of shares to be acquired by the employees was indeterminable at the date of grant. Accordingly, for the year ended December 31, 1999 the Company recognized compensation expense of $3,283,164 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 year ended December 31, 2000, the Company recognized compensation expense of $10,039,350 on the non-qualified options granted in 1999.

On September 29, 2000, two officers 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 $1,673,025 and $3,217,154 has been recognized as stock compensation expense for the years ended December 31, 2001 and 2000, respectively. The remaining unearned compensation of approximately $1.3 million is being amortized to expense over the four year vesting period. Also on September 29, 2000, two officers 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.

The following is a summary of stock option activity.

	Employee Stock Options	
	Options Outstanding	Weighted Average Exercise Price
Balance at December 31, 1998	2,015,505	0.02
Options granted	916,515	1.05
Balance at December 31, 1999	2,932,020	0.33
Options exercised	(3,467,955)	0.45
Options forfeited	(5,421)	1.05
Options granted	1,170,466	1.23
Balance at December 31, 2000	629,110	1.33
Options exercised	(288,075)	0.40
Options forfeited	(150,027)	3.20
Options granted	515,057	4.14
Balance at December 31, 2001	706,065	$3.37

During 2001, 2000 and 1999, 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 2001, 2000 and 1999 was $8.74, $9.70, and $1.05, respectively.

The following is a summary of information relating to stock options outstanding at December 31, 2001:

	Options Outstanding			Options Exercisable	
Range of Exercise price	Number outstanding at December 31, 2001	Weighted-average remaining contractual life	Weighted-average exercise price	Shares exercisable at December 31, 2001	Weighted-average exercise price
$ 0.01	59,721	6.1 years	$ 0.01	59,721	$ 0.01
$ 1.05-1.87	414,346	8.3 years	$ 1.10	109,751	$ 1.19
$ 7.12-8.00	182,000	9.5 years	$ 7.79	9,999	$ 8.00
$ 9.05-10.60	50,000	9.7 years	$ 10.04	0	$ 0.00
$ 0.01-10.60	706,067	8.5 years	$ 3.37	179,471	$ 1.18

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,		
	2001	2000	1999
Net loss available to common shareholders	$ (5,208,418)	$ (50,005,936)	$ (29,576,503)
Pro forma net loss available to common shareholders	$ (5,710,339)	$ (50,157,740)	$ (29,576,619)
Basic net loss per share	$ (0.20)	$ (6.25)	$ (5.28)
Pro forma basic net loss per share	$ (0.22)	$ (6.27)	$ (5.28)
Diluted net loss per share	$ (0.20)	$ (6.25)	$ (5.28)
Diluted pro forma net loss per share	$ (0.22)	$ (6.27)	$ (5.28)

The fair value of each option grant for the Company's Plans is estimated on the date of the grant using the Black-Scholes pricing model, with the following weighted average assumptions used for grants in 2001, 2000 and 1999.

	Years Ended December 31,		
	2001	2000	1999
Risk free interest rates	5.4%	5.9%	5.6%
Expected option lives	2 years	2 years	7 years
Expected dividend yields	0%	0%	0%
Expected volatility	89.12%	80.90%	0%

(14) Segment and Related Information

The Company operates in one significant business segment.

Revenues by geographic area consists of the following:

	Years Ended December 31,		
	2001	2000	1999
United States	$ 16,504,892	$ 9,379,986	$ 8,169,470
United Kingdom	19,098,428	15,828,225	15,353,761
Canada and Europe	5,265,067	5,366,589	2,654,583
	$ 40,868,387	$ 30,574,800	$ 26,177,814

Long lived assets by geographic area consists of the following:

	December 31,		
	2001	2000	1999
United States	$ 23,297,647	$ 5,337,151	$ 1,955,630
United Kingdom	11,167,486	5,712,663	6,036,137
Canada and Europe	2,235,117	228,297	151,509
	$ 36,700,250	$ 11,278,111	$ 8,143,276

(15) Income (Loss) Per Share

Basic income (loss) per share is based upon net income (loss) 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 December 31,		
	2001	2000	1999
Net income (loss) available to common shareholders	$ (5,208,418)	$ (50,005,936)	$ (29,576,503)
Effect of dilutive securities:			
Common stock warrants	—	—	—
Net income (loss), assuming dilution	$ (5,208,418)	$ (50,005,936)	$ (29,576,503)
Weighted average common shares outstanding during the year	25,784,852	8,005,386	5,598,626
Effect of dilutive securities:			
Common stock warrants	—	—	—
Common stock options	—	—	—
	25,784,852	8,005,386	5,598,626

For the years ended December 31, 2001, 2000 and 1999, common equivalent shares of 597,517, 7,456,010 and 11,378,110 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.

(16) Accrued Expenses

Accrued expenses consist of:

	December 31,	
	2001	2000
Accrued compensation and payroll	$ 1,643,321	$ 1,188,553
Accrued legal and professional fees	367,198	1,843,644
Warranty costs	279,331	20,928
Other	622,351	252,435
	$ 2,912,201	$ 3,305,560

(17) 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.

(18) Concentrations of Credit Risk

One commercial customer accounted for 30%, 39% and 44% of revenues for the year ended December 31, 2001, 2000 and 1999, respectively. At December 31, 2001 and 2000, one customer accounted for 26% and 35% of accounts receivable, respectively. Except as noted above, no other individual customer accounted for more than 10% of revenues for the years ended December 31, 2001, 2000 and 1999. In addition, except as noted above, no other individual customer accounted for more than 10% of accounts receivable at December 31, 2001 and 2000.

(19) Initial Public Offering

On December 7, 2000, the Company sold, pursuant to an underwritten initial public offering, 6,250,000 shares of common stock at a price of $8 per share. Following the offering, proceeds were used to repay substantially all of the Company's short term and long term debt as well as redeem its redeemable preferred stock (see notes 7 and 8). On January 4, 2001, the underwriters exercised their allotment option whereby the Company sold an additional 937,500 shares of its common stock at a price of $8 per share. The net proceeds to the Company as a result of these offerings was approximately $51.8 million.

(20) Asserted Legal Claim

On December 26, 2000, Harvard University filed a lawsuit in U.S. District Court, District of Massachusetts alleging that our use of the "Harvard Bioscience" and "Harvard Apparatus" names infringes on Harvard University's trademarks. Harvard University is seeking both injunctive relief and monetary damages. The Company believes that these claims are without merit, and are vigorously defending against such claims. On April 10, 2001, the U.S. District Court, District of Massachusetts denied Harvard University's request for a preliminary injunction prohibiting the Company from using the name "Harvard Bioscience" and "Harvard Apparatus". The Court did issue an order directing the Company not to use the "Harvard" name in the color crimson or in a font similar to the font used by Harvard University.

On February 4, 2002, Paul D. Grindle, the former owner of Harvard Apparatus, Inc., initiated an arbitration proceeding against the Company and certain directors before JAMS, an arbitration firm in Boston, Massachusetts. Mr Grindle's claims arise out of post-closing purchase price adjustments related to the Company's purchase of the assets and business of Harvard Apparatus by virtue of an Asset Purchase Agreement dated March 15, 1996 and certain related agreements. In the arbitration demand, Mr. Grindle sought the return of 1,563,851 shares of stock in the Company, or the disgorgement of the profits of the Company's sale of the stock, as well as punitive damages and attorney's fees under Mass. Gen. Laws, chapter 93A. In a demand letter that was attached to the Arbitration Demand, Mr. Grindle asserted losses in the amount of $15 million, representing the value of the 1,563,851 shares of the Company's stock as of January 2, 2002. The Company believes that Mr. Grindle's claims are without merit and intends to defend them vigorously. The Company also believes that Mr. Grindle's claims are barred by the terms of certain releases executed by him and further barred by the applicable statutes of limitation.

Pursuant to the requirements of Section 13 and 15(d) of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

HARVARD BIOSCIENCE, INC.

Date: April 1, 2002

By: /s/ Chane Graziano
Chane Graziano
Chief Executive Officer

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the registrant and in the capacities and on the dates indicated:

Signature	Title	Date
/s/ Chane Graziano Chane Graziano	Chief Executive Officer and Director (Principal Executive Officer)	April 1 2002
/s/ Susan M Luscinski Susan M. Luscinski	Chief Financial Officer (Principal Financial Officer and Principal Accounting Officer)	April 1, 2002
/s/ David Green David Green	President and Director	April 1, 2002
/s/ Christopher W. Dick Christopher W. Dick	Director	April 1, 2002
/s/ Richard C. Klaffky, Jr. Richard C. Klaffky, Jr.	Director	April 1, 2002
/s/ Robert Dishman Robert Dishman	Director	April 1, 2002
/s/ John F. Kennedy John F. Kennedy	Director	April 1, 2002
/s/ Earl R. Lewis Earl R. Lewis	Director	April 1, 2002

CONFIDENTIAL INFORMATION HAS BEEN OMITTED PURSUANT TO RULE 24b-2 UNDER THE SECURITIES EXCHANGE ACT AND HAS BEEN FILED SEPARATELY, WITH THE COMMISSION. THE LOCATIONS OF THE OMITTED INFORMATION HAVE BEEN INDICATED WITH ASTERISKS.

DISTRIBUTION AGREEMENT

This Agreement, made on the 1st of August 2001, (the "Commencement Date"), by and between

BIOCHROM LIMITED, a company incorporated in England, having its registered office at 22 Cambridge Science Park, Milton Road, Cambridge CB4 0FJ, England ("Biochrom"); and

AMERSHAM PHARMACIA BIOTECH UK LIMITED, a company incorporated in England, having its registered office at Amersham Place, Little Chalfont, Buckinghamshire, HP7 9NA, England ("AP Biotech").

WHEREAS:

(A) Under the First Agreement (defined below), Biochrom appointed Amersham Pharmacia Biotech AB, a company in the same Group as Amersham Pharmacia Biotech UK Limited, as a distributor of the Products.

(B) From the Commencement Date of this Agreement, the First Agreement is terminated with immediate effect and superseded by this Agreement, subject to the provisions of Section 2(a).

NOW, THEREFORE, in consideration of the above premises and of the mutual agreements and understandings set forth herein, the parties hereby agree as follows:

SECTION 1: DEFINITIONS

(a) As used in this Agreement, the following terms shall have the following meanings:

"Accessories"	shall mean those accessories, consumables and spare parts for the Current Instruments listed in the Price List (Schedule B attached).
"AP Biotech"	shall mean Amersham Pharmacia Biotech UK Limited and any affiliate of that Company where affiliate means any company controlling, controlled by or under common control with Amersham Pharmacia Biotech UK Limited, where control means direct or indirect ownership of at least 50% of the voting stock or interest in a company or control of the composition of the board of directors.
"Current Instruments"	shall mean those instruments listed in the Price List (Schedule B attached).
"Customer Information"	shall mean any information, such as contact names, addresses and telephone numbers of AP Biotech's customers, supplied by AP Biotech to Biochrom or by any third party to Biochrom.
"First Agreement"	shall mean the agreement made between Biochrom and Amersham Pharmacia Biotech AB, concerning the distribution of Products, dated 2nd March 1999.
"GBP"	shall mean British Pounds Sterling.
"Group"	shall mean in relation to any company, that company and any other company which, at the relevant time, is that company's holding company or subsidiary (as defined by s736 of the Companies Act 1985 as amended by the Companies Act 1989), or the subsidiary of any such holding company (as so defined) and a "Member" of a Group has a corresponding meaning.

"Products"	shall mean all products supplied by Biochrom to AP Biotech for sale by AP Biotech, namely the Current Instruments and the Accessories.
"Quarter"	shall mean each three calendar month period during any Year, beginning at the start of that Year and continuing consecutively thereafter.
"RPI"	shall mean the Index of Retail Prices published from time to time by the Department of Trade and Industry of the United Kingdom (or any successor Government Department).
"Territory"	shall mean the areas of the world, as defined in Schedule A, attached, where AP Biotech is permitted to sell the Current Instruments and Accessories.
"Trade Marks"	shall have the meaning set forth in Section 13(a) hereof.
"Year"	shall mean any period from 1st of January to 31st of December during which this Agreement remains in force.
"Year One"	shall mean the period starting on the Commencement Date and finishing on the 31st of December of that same calendar year.

SECTION 2: APPOINTMENTS

(a) In consideration of AP Biotech entering into this Agreement, Biochrom agrees that the First Agreement shall terminate with effect from the Commencement Date of this Agreement. No obligations and/or liabilities accrued under the First Agreement or provisions intended to survive it shall remain in force other than those contained in Section 5 (to the extent that any obligations thereunder remain outstanding). Other than any obligations outstanding from Section 5, the First Agreement shall be entirely superseded by this Agreement. Biochrom hereby expressly agrees that it shall under no circumstances deliver to the Boston Safe Deposit and Trust Company ("the Escrow Agent") any letter of instruction requiring the Escrow Agent to deliver AP Biotech's Customer Information (referred to in the First Agreement as the "Escrowed Customer Information") to Biochrom.

(b) (i) Biochrom hereby appoints AP Biotech and AP Biotech hereby accepts the appointment, as the exclusive distributor, marketer and seller of the Current Instruments under the Names in the Territory, on the terms and subject to the conditions set forth herein. Biochrom 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 Instruments in the Territory. Biochrom shall not itself sell, distribute or market the Current Instruments in the Territory. 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). Biochrom shall not be liable where any 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 Biochrom) into the Territory in accordance with such principle.

(ii) AP Biotech shall be entitled to appoint sub-distributors provided that AP Biotech shall have agreements with all such sub-distributors (the "Sub-Distribution Agreement"); provided, however, that in no event shall any such Sub-Distribution Agreement impose any obligations upon Biochrom 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 Sub-Distribution Agreement, AP Biotech shall remain solely responsible to Biochrom for any and all actions or inactions of its sub-distributors in connection with any such Sub-Distribution Agreement and AP Biotech shall not be relieved from responsibility for its obligations under this Agreement.

Biochrom shall not be required to seek fulfilment of, or otherwise enforce such obligations from or against any sub-distributor or any party other than AP Biotech. Accordingly, AP Biotech hereby indemnifies and holds harmless Biochrom, its agents, employees, representatives, directors, licensees, subcontractors and assigns against any and all losses, damages, costs, claims, expenses and liabilities incurred by any of the aforesaid due to any act, negligence, breach or default of any sub-distributor appointed under this paragraph (ii).

(c) Except during the Notice Period, when Section 16(h)(ii) shall apply in place of this Section 2(c) and notwithstanding the provisions set forth in Section 2(b) above, Biochrom shall be entitled to sell (or appoint other distributors to sell) products similar to the Current Instruments, in the Territory, that is to say products with the same base function and internal components as the Current Instruments, but with different names, branding, external appearance and design and not bearing the Names or the Trade Marks. However, since AP Biotech is Biochrom's chosen distributor in the Life Science Market in the Territory, Biochrom will not actively promote these products in the Life Science Market and will not appoint distributors, in the Territory, whose primary focus is the Life Science Market. In addition, Biochrom will seek to ensure that these products are less attractive to customers in the Life Science Market than the equivalent Current Instruments, by reducing functionality that supports Life Science research applications. For example, the specific DNA and protein quantification software will be removed from the products.

(d) Except during the Notice Period when this Section 2(d) will cease to apply, if Biochrom, or any distributor appointed by Biochrom, sells the products defined in 2(c) above, to a Life Science customer, to be used for a Life Science application, in the Territory, then subject to AP Biotech notifying Biochrom in writing, within three (3) months of the product being delivered to the customer, Biochrom will compensate AP Biotech by a payment of 50% of the transfer price (as set out in Schedule B) of the equivalent Products from Biochrom to AP Biotech.

(e) Notwithstanding the provisions set forth in Section 2(c) above, Biochrom shall be entitled to sell the Current Instruments, with different names and branding and not bearing the names and/or the Trade Marks outside the Territory.

(f) Biochrom shall furthermore supply to AP Biotech during the term of this Agreement, on a non-exclusive basis, such Accessories as AP Biotech may require for resale to its customers. The Accessories shall be paid for and delivered according to the provisions of Sections 4 to 6 inclusive.

(g) Biochrom may also, in its absolute discretion, appoint AP Biotech as a distributor of new products developed by Biochrom. The price at which Biochrom sells any such new product to AP Biotech shall be the subject of negotiation between the two parties.

SECTION 3: ORDERS

Purchase orders shall specify, (i) the Current Instruments and/or Accessories, including quantity of each, to be purchased by AP Biotech, (ii) instructions for delivery and (iii) the requested delivery date, subject to Section 6(b).

SECTION 4: PRICES

(a) The prices for the Current Instruments and Accessories (which includes spare parts, see Section 1(a) "Accessories") during Year One shall be those set forth in the Price List (Schedule B). In each subsequent Year, the prices shall be those fixed in accordance with Section 4. Orders shipped by Biochrom to AP Biotech shall be billed at the price in effect at the time that the order was placed if the delivery date requested by AP Biotech is within thirty (30) days of the order date, even if such delivery date falls in the following Year. If the delivery date requested by AP Biotech is more than thirty (30) days from the order date and falls in the following Year, then the price shall be that prevailing at the specified time of delivery.

(b) Notwithstanding the contents of Section 4(a) above, if Biochrom delivers at a later time than the requested and agreed delivery date, AP Biotech will be invoiced at the price which would have been applied had Biochrom delivered on the requested and agreed delivery date.

(c) The parties shall meet on or before the 1st of August each Year to agree revised prices for the following Year provided that, if the parties, following good faith negotiations, fail to agree such revised prices after 30 days, the prices implemented shall comprise the prices then in force, increased, as a maximum, in line with any increase in the RPI since the commencement of the current Year.

(d) Price lists for those Years subsequent to Year One shall be prepared in accordance with the provisions of Section 4(c) and will be issued by Biochrom each September, for implementation on the 1st of January of the following Year, with the prices remaining fixed for the full Year, unless agreed in writing by both parties.

SECTION 5: PAYMENTS

(a) Payment of invoices shall be made in full by AP Biotech to Biochrom for all orders shipped by Biochrom to AP Biotech, no later than the date forty-five (45) days from the date of invoice in GBP. If at any time GPB ceases to be legal tender in the United Kingdom, then all transactions between the Parties under this Agreement shall thereafter be effected in such currency as replaces GPB as legal tender in the United Kingdom and any conversion from GPB to such other currency that may be required in order to give effect to this Agreement shall be at the conversion rate which applied by law upon such cessation.

(b) No invoice shall be issued by Biochrom prior to the date of shipment of the Products from Biochrom's production facility.

(c) Without prejudice to any other rights available to Biochrom under this Agreement, 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 judgement) by AP Biotech to Biochrom on the invoice amount at a rate of one (1) percent, per month, for the number of days elapsed.

(d) All payments to be made by AP Biotech to Biochrom hereunder shall be made by wire transfer in immediately available funds to such bank account as Biochrom shall specify in writing to AP Biotech.

(e) No deduction is to be taken for returns or damage claims without a credit memo from Biochrom 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 Biochrom to AP Biotech shall be shipped FCA to such carrier as AP Biotech shall name, at Biochrom's production facility located in Cambridge, England. The term "FCA" as used in this Section 6(a) shall be as defined in Incoterms 2000.

(b) Biochrom will make shipments 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 Biochrom receives such order. If the delivery date specified in the purchase order does not comply with the timing requirement for the delivery of such Products detailed in the foregoing sentence, Biochrom may deem the delivery date for such purchase order to be thirty (30) days from the date Biochrom received such purchase order and delivery will be in accordance with such schedule. AP Biotech shall be promptly notified in writing, by Biochrom, of any anticipated delays in delivery. Save as provided in Section 6(c) below, Biochrom shall be in no manner liable to AP Biotech for any failure to deliver Products to AP Biotech by any agreed or deemed delivery date.

(c) If a customer of AP Biotech cancels an order for a Product prior to shipment from Biochrom due to late delivery of that Product by Biochrom and Biochrom has been notified of such cancellation in writing, AP Biotech shall not be required to accept delivery of or pay for such Product. However, if 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) Biochrom shall print its own catalogue and lot numbers (if applicable) and expiration dates (if applicable) conspicuously on outer shipping cartons, as well as inner shelf packs and inner units of all multiple unit packed Products.

(e) Biochrom 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 Biochrom. Biochrom shall accept return, for full invoice credit plus shipping charges, of any dated Product shipped in breach of the provisions of this paragraph 6(e).

(f) Claims for shortage or damage incurred during shipment for reasons other than Biochrom's negligence, may only be made to the carrier and Biochrom shall be in no manner liable for any such shortage or damage.

SECTION 7: CURRENT PRODUCTS, ACCESSORIES AND TERRITORY

(a) The Current Instruments and Accessories, listed in the Price List (Schedule B) may be amended from time to time in the following way;

(i) by mutual agreement in writing between the two Parties, Current Instruments and Accessories may be added to the Price List (Schedule B); or

(ii) Biochrom may remove Current Instruments and Accessories from the Price List (Schedule B), by giving AP Biotech twelve (12) months notice, in writing. Such removal shall take place twelve (12) months from the notice date, unless a shorter notice period is mutually agreed, in writing, by the two Parties.

(b) The countries contained within the Territory (Schedule A) may be amended from time to time, subject to the agreement, in writing, of both parties.

SECTION 8: DUTIES OF BIOCHROM

(a) With respect to Products sold by Biochrom to AP Biotech in accordance with the terms of this Agreement, Biochrom shall, except as otherwise provided below, at its sole expense;

(i) assist AP Biotech in its sales and marketing program concerning the Products, provided however, that AP Biotech is solely responsible for all costs of marketing and sales efforts, except where agreed in advance and in writing, by Biochrom.

(ii) provide to AP Biotech such number of demonstration models of the Current Instruments and Accessories as they shall mutually agree.

(iii) provide sales, demonstration and support training which AP Biotech and Biochrom 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. Biochrom will provide instructors with training materials, schematic drawings for circuit boards, service manuals and Products for demonstrations in connection with such training activities, provided that AP Biotech acknowledges that ownership of all rights (including intellectual property rights) in such materials remains vested in Biochrom. Accordingly, AP Biotech undertakes not to amend or copy any such materials without Biochrom's consent in writing and if this Agreement terminates, to

immediately return all such materials (together with any copies or amended versions allowed as aforesaid) to Biochrom.

(iv) when new Current Instruments are to be launched, Biochrom will, prior to the launch date, provide AP Biotech with a Service Manual, Spare Parts List, Preventative Maintenance Procedure and Visit Record, in English, in Microsoft Word or Adobe Acrobat electronic format.

(v) update AP Biotech with all available information reasonably necessary or desirable for the effective marketing of Products and promptly notify AP Biotech, in suitable electronic format, of any instrument modifications or changes.

(vi) provide back-up technical support and new Product launch training, refresher training and training for new engineers to AP Biotech and its distributors' technical service and sales personnel in connection with the Products as provided in Biochrom's standard terms of training and support, a current copy of which comprises Schedule C. Biochrom may amend these terms at any time on written notice. Provided that Biochrom shall be in no manner liable for any failure to supply support during the periods or adhere to the response times contemplated in Schedule C (or any amended terms).

(vii) participate as mutually agreed 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 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

(viii) refer to Central Marketing at AP Biotech all leads received by Biochrom for Current Instruments in the Territory, within seven (7) days of receipt of the lead. In order to obtain such leads, Biochrom shall be permitted to promote the Current Instruments and Accessories in catalogues, via the Internet and at Trade Shows, but in all cases only with AP Biotech's prior agreement.

(b) Biochrom shall make available for purchase all necessary consumables, accessories and spare parts for the operation, repair and proper servicing of each of the Products to AP Biotech and each customer of AP Biotech for a period of seven (7) years following the date of discontinuation of the Product.

(c) Biochrom shall provide operating manuals with each shipped Current Instrument.

(d) Biochrom shall manufacture and sell Products that conform to quality standards consistent with Biochrom's ISO9001 Accreditation, certificate No. 890333. In addition, during the Warranty Period (defined in Section 11(a)), Current Instruments are guaranteed to conform to their specifications, published in Schedule E (see Section 11 Warranty).

(e) Biochrom and AP Biotech will discuss (on a quarterly basis, as a minimum) the contents of the Price List (Schedule B) and subject to agreement between the two Parties, Biochrom will regularly improve the range of Current Instruments and Accessories made available to AP Biotech.

(f) Biochrom shall comply with all applicable export control regulations relating to Biochrom's export of Current Instruments and Accessories to AP Biotech, pursuant to this Agreement and shall provide information and documentation reasonably requested to assist AP Biotech in complying with its obligations under applicable export control laws.

SECTION 9: DUTIES OF AP BIOTECH

With respect to Products sold by Biochrom to AP Biotech in accordance with the terms of this Agreement, AP Biotech shall, at its sole expense:

(a) subject to Biochrom fulfilling its duties contained in Section 8 above, especially 8(e), AP Biotech will use reasonable endeavours to sell the Current Instruments and Accessories within the Territory.

(b) include the Current Instruments in the AP Biotech Bio Directory Catalogue or any substitute or successor catalogue that exists from time to time.

(c) include the Current Instruments on AP Biotech's web site.

(d) establish and maintain an inventory of the Current Instruments and Accessories, appropriate to meet the needs of purchasers and end-users.

(e) provide post-sales support for the Products, to include installation (where requested by the customer), routine maintenance and repair.

(f) notify Biochrom if it becomes aware of any substantial improper or wrongful use of the Products, any complaints or allegations of product liability in respect of the Products, or of any unauthorised use and/or exploitation of the intellectual property contained in the Products (excluding the Trade Marks) and provide such assistance as Biochrom may reasonably request (at Biochrom's expense) in connection with any action concerning such unauthorised use or exploitation.

(g) on a quarterly basis, as a minimum, brief Biochrom with any information regarding sales of the Current Instruments and Accessories, that AP Biotech believes would be of benefit to the business relationship between the two parties, to include the suggestion of new Current Instruments and Accessories.

(h) in August of each year, provide Biochrom with a forecast for unit sales of the Current Instruments for the following calendar year, broken down on a quarterly basis and at the end of each quarter, if requested by Biochrom, provide an updated forecast for unit sales for the following quarter and remainder of the current year.

(i) not misrepresent Biochrom's descriptions or instructions for the use of the Products.

SECTION 10: INSURANCE

(a) From and after the Commencement Date, for so long as this Agreement shall remain in effect and for five (5) years thereafter, Biochrom shall maintain or have maintained on its behalf, product liability insurance coverage (but excluding liability for the circumstances covered by Section 10(b) below) on an occurrence basis for all occurrences relating to the Products sold by Biochrom to AP Biotech with limits of liability not less than Two Million GBP (£2,000,000) combined single limit for bodily injury and property damage. Biochrom shall, on demand, provide to AP Biotech a certificate evidencing coverage of such policy.

(b) From and after the Commencement Date, for so long as this Agreement shall remain in effect and for five (5) years thereafter, AP Biotech shall maintain insurance coverage on an occurrence basis for all occurrences relating to the Products caused by the act, negligence, breach or default of AP Biotech or any of its agents, representatives or sub-distributors with limits of liability not less than Two Million GPB (£2,000,000) combined single limit for bodily injury and property damage. AP Biotech shall, if requested, provide to Biochrom a certificate evidencing coverage of such policy.

SECTION 11: WARRANTY

(a) With respect to Products sold by Biochrom to AP Biotech under this Agreement, Biochrom warrants for a period of twelve (12) months from the date of sale of a Product by AP Biotech to a customer, or a period of fifteen (15) months from the date of sale of a Product by Biochrom to AP Biotech, whichever period expires first (the "Warranty Period"), that Products will be free of defects in material and/or workmanship and will conform to the published specifications set

forth in Schedule E, packaging, inserts, materials and/or other documentation prepared by Biochrom. Except as expressly stated in this Section 11(a), Biochrom makes no representation and gives no warranties, oral or written, express or implied, including without limitation implied warranties as to quality of fitness for a particular purpose regarding or in relation to the Products.

(b) Should a Product supplied by Biochrom fail within the Warranty Period described in 11(a), then the following course of action will be taken;

(i) AP Biotech will repair the Product at its expense, using any required spare parts supplied free of charge by Biochrom, subject to AP Biotech returning the defective part(s), against a returns number supplied by Biochrom, within thirty (30) days of Biochrom shipping the replacement part(s) unless an alternative arrangement is agreed, in writing, between the two parties.

(ii) notwithstanding the contents of Section 11(b)(i), if a Product fails upon installation at the customer's premises, then AP Biotech has the right, at their sole discretion, to return the Product to Biochrom for repair or replacement, provided that AP Biotech pays the cost of shipping the defective Product back to Biochrom and Biochrom pays the cost of shipping the repaired or replacement Product back to AP Biotech.

(iii) notwithstanding the contents of Sections 11(b)(i) and 11(b)(ii), if a Product fails during the Warranty Period, then subject to agreement in writing between the two parties, the Product may be returned to Biochrom for repair or replacement, provided that AP Biotech pays the cost of shipping the defective Product back to Biochrom and Biochrom pays the cost of shipping the repaired or replacement Product back to AP Biotech.

(iv) notwithstanding the contents of Sections 11(b)(i), 11(b)(ii) and 11(b)(iii), if a Product fails during the Warranty Period, then subject to the agreement in writing between the two parties, Biochrom may repair the Product at the customers premises, provided that each party shall pay one half of any reasonable out-of-pocket travel and accommodation expenses associated with such on-site repair.

(c) If non-customary warranty service (as determined in accordance with past practice) is performed by AP Biotech at Biochrom's request, Biochrom shall credit AP Biotech the cost of parts and labour (at AP Biotech's then current internal hourly rate), reasonably incurred in servicing such Products, owned by end users, which fail during the Warranty Period.

(d) Biochrom shall pay all costs, as defined in Section 11(c) for Biochrom-requested hardware or software corrections or updates to Products sold by Biochrom to AP Biotech in the hands of AP Biotech or any of its customers. Corrected software will be provided as a master version of an EPROM or as downloadable software via a PC.

(e) Biochrom represents and warrants that the marketing and sales of any Products using the Names and in accordance with the terms of this Agreement will not infringe any patent, copyright, trademark or other similar intellectual property rights enforceable within the Territory.

SECTION 12: INDEMNIFICATION: LIMITED LIABILITY

(a) Biochrom 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 sub-distributors not included within the defined term "AP Biotech") 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 Biochrom of any Product, (ii) any breach by Biochrom of any of its obligations under this Agreement, or (iii) any breach of the warranty contained in Section 11(e). Notwithstanding anything contained herein to the contrary, Biochrom shall not be required to provide indemnification with respect to any Third Party Damages to the extent

that they result from negligence, gross negligence, breach, default or misconduct of AP Biotech or any third party.

(b) AP Biotech shall defend, indemnify and hold harmless Biochrom and any officers, directors, agents, shareholders, legal representatives, employees, successors and assigns of Biochrom from and against any and all Third Party Damages arising from or in connection with: (i) the distribution by AP Biotech of Products pursuant to the terms of this Agreement, (ii) any actions or inactions of any sub-distributor appointed by AP Biotech under the terms of this Agreement in connection with any Sub-distribution Agreement, or (iii) any breach by AP Biotech (or by any sub-distributor 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 Biochrom.

(c) Notwithstanding the contents of Sections 12(a) and 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 or loss under current or future contracts, arising out of or relating to this Agreement.

SECTION 13: TRADE MARKS ETC

(a) The trade name "Amersham" and all related and associated logos and trade marks with respect thereto are and shall remain the sole property of Nycomed Amersham plc (the "Amersham Name"). The trade name "Pharmacia Biotech" and all related and associated logos and trade marks 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 ("Trade Marks").

(b) Biochrom warrants that it is the registered owner of the Names and/or has or will enter into license agreements as licensee for the use of the Names. Biochrom warrants that it has the necessary rights in the Names and/or Trade marks to enable it to enter into this Agreement and to make the appointments contained in Clause 2. The License Agreements shall be attached hereto at Schedule D within six (6) months of the Commencement date.

(c) The Names are vested in Biochrom and Amersham undertakes not to use them in any manner whatsoever if this Agreement terminates for whatever reason.

SECTION 14: CONFIDENTIALITY

Each of Biochrom and AP Biotech agrees that for the term of this Agreement and for ten (10) years thereafter, 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") 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.

(b) information which after the date hereof becomes available to the public other than through an act or omission of Biochrom 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. Provided that it first informs the other party of any disclosure so required and limits it to what is absolutely necessary.

SECTION 15: CUSTOMER INFORMATION

Biochrom undertakes, during the term of this Agreement, not to use any Customer Information made available to it, in order to approach any customer of AP Biotech in connection with the supply of Products, in the Territory. The Parties acknowledge that Customer Information is made available to Biochrom (i) to provide support for the Products or (ii) subject to agreement between the two Parties, to effect a smooth transition of AP Biotech's obligations to its customers, from AP Biotech to Biochrom, should this Agreement terminate.

SECTION 16: TERM: TERMINATION

(a) This agreement will enter into force on the Commencement Date and shall remain in force for an initial period of three (3) years, to be followed by a two (2) year period of automatic renewal, unless terminated earlier by either party, subject to the terms contained within Section 16 and PROVIDED ALWAYS THAT this Agreement shall under no circumstances whatsoever remain in force for a total period of more than five (5) years.

(b) At any time after the Commencement Date, either party may terminate this Agreement without cause by providing eighteen (18) calendar months' prior written notice of termination to the other party, which such termination shall be effective upon the expiration of such eighteen (18) calendar month period.

(c) In the event of a material breach: (A) in the case of Biochrom, of its obligations pursuant to Section 2(b)(i), 4(a), 8, 10(a), 11, 12(a), 13(b) or 14 and (B) in the case of AP Biotech, of its obligations pursuant to Section 5(a), 9, 10(b), 12(b), 14 or 17, which shall (if capable of remedy) 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), the Agreement shall terminate effective upon the expiration of such thirty (30) day period.

(d) A party shall have the right to terminate this Agreement by immediate written notice to the other party, upon the occurrence of an Insolvency Event with respect to the other party.

(e) Either party shall be entitled to terminate this Agreement by immediate written notice if during its term the other party undergoes a Change of Control, which, in the reasonable opinion of the terminating party could preclude the other party from substantially performing its obligations under this Agreement. For the purposes of this paragraph (e) "Change of Control" shall mean:-

(i) a merger or consolidation in which the other party is not the surviving corporation, or

(ii) a reverse merger in which the other party is the surviving corporation but the shares of its voting stock outstanding immediately preceding the merger, are converted by virtue of the merger into other property, whether in form of securities, cash or otherwise or;

(iii) if, after giving effect to any agreements among shareholders of the other party, any person which previously did not do so before that Change of Control holds and may vote in excess of 50% of such party's voting stock.

(f) The provisions of Sections 10, 12, 14, 17, 19(c) and 19(d) hereof shall survive termination of this Agreement. The provisions of Sections 5, 8(b), 11 and 16 hereof shall survive termination of this Agreement to the extent that any obligations thereunder remain outstanding.

(g) If this Agreement terminates for whatever reason:-

"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 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 shall have been presented against that party or such an order shall have been made. (3) a receiver, administrator 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 steps (including starting negotiations) with a view to making 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.
"Licence Agreements"	shall mean the Name and Trade Mark licence agreements and other evidence of entitlement to use the Names and Trade Marks which shall be attached hereto in Schedule D in accordance with the terms of Clause 13(b).
"Life Science Market"	shall mean and include biology, biochemistry, genetics, molecular biology, biotechnology and all other branches of science and technology related to the biological sciences and "Life Science" shall be construed accordingly.
"Names"	shall mean the Product names "Novaspec", "Ultrospec", "GeneQuant", "UViMicro" and any logos, trademarks or trade names associated therewith.
"Notice Period"	shall mean the eighteen (18) month period following service of notice of termination in accordance with Clause 16(b).
"Price List"	shall mean the contents of Schedule B, which is a list of all the Current Instruments and Accessories, including the part number, description and transfer price to AP Biotech.

(i) each party shall promptly return to the other party any Confidential Information of the other party (except to the extent necessary for either party to perform continuing obligations under Section 16(g)(iii)) below.

(ii) Biochrom shall only be obliged to supply AP Biotech with further Products in respect of orders already accepted by AP Biotech. Furthermore, AP Biotech shall be free to sell remaining quantities of Products to customers, after the termination date, as permitted under this Agreement but shall in all other respects cease to hold itself out as a distributor of Biochrom.

(iii) AP Biotech shall continue to be responsible for the support of customers of the Products sold by AP Biotech, unless this is otherwise agreed, in writing, between the two Parties.

(iv) for a period of six (6) months after the termination of this agreement, Biochrom agrees to pay AP Biotech a commission in the amount of five (5) percent of the actual selling price for each sale of a Current Instrument by Biochrom, or any distributor of Biochrom, to a customer in the Territory that was identified to Biochrom in writing and evidenced by a copy of a written quotation, for the sale of a Current Instrument, prior to such termination and;

(v) AP Biotech may offer for return to Biochrom any inventory of the Products held by it, provided that Biochrom at its sole discretion may agree to repurchase the goods or otherwise.

(h) If this Agreement terminates under Section 16(b),

(i) AP Biotech undertakes during the Notice Period at AP Biotech's option and in such proportion as AP Biotech elects either;

(a) to purchase those quantities of Products; or
(b) to make payments of equivalent value

to equal in total the value of 80% for the first twelve (12) months and 50% for the next six (6) months of the aggregate purchases made by AP Biotech during the twelve (12) calendar month period immediately preceding the Notice Period ("Termination Minimum"). If the notice of termination is served during Year One, the Termination Minimum shall be calculated taking into account any purchases during the preceding twelve (12) calendar months, made by AP Biotech under the First Agreement. If by the effective date of termination, AP Biotech shall have failed make purchases or payments equalling the Termination Minimum, it shall promptly pay to Biochrom the shortfall by wire transfer into such account as Biochrom advises it of in writing. PROVIDED ALWAYS THAT, if during such notice period AP Biotech yields entirely to Biochrom the sale of Products in respect of any customer or part of the Territory, the Termination Minimum shall be reduced by an amount equal to 80% of the aggregate sales made by AP Biotech to that customer or in that part of the Territory (as applicable) during the 12 calendar month period immediately preceding the Notice Period. Which customers or parts of the Territory should be yielded in this manner, (and when they shall be yielded), shall in each case be by agreement between the two parties.

(ii) During the Notice Period, the following will apply in place of Section 2(c);

"Notwithstanding the provisions set forth in Section 2(b) above, Biochrom shall during the Notice Period be entitled to sell (or appoint other distributors to sell) products similar to the Current Instruments, in the Territory, that is to say products with the same base function and internal components as the Current Instruments, but with different names, branding, external appearance and design and not bearing the Names or the Trade Marks".

SECTION 17: NON-COMPETITION

(a) During the term of this Agreement, AP Biotech will not, either solely or jointly with any person or entity, directly or indirectly at any time, engage in the Territory in the manufacture, distribution or sale of any Spectrophotometer products directly competitive with the Current Instruments. 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 spectrometers technology is utilised, (B) chromatography instruments and related products or instruments in which spectrophotometer technology is utilised, or (C) electrophoresis instruments and related products or instruments in which electrophoresis technology is utilised, including, without limitation, DNA sequencing instruments.

(b) While the undertaking 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) The benefit of the undertaking contained in Section 17(a) above may be assigned in whole or in part by Biochrom in accordance with the terms of Section 19(c) 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, draught, 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) Notices. All notices required or authorised 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:

Biochrom Limited
22 Cambridge Science Park
Milton Road
Cambridge
CB4 0FJ
England
Attention: David Parr
Facsimile No: 01223 420238

with a copy to:

Harvard Apparatus, Inc.
80 October Hill Road
Holliston, MA 01746
Attention: David Green
Facsimile No: 001 508 429 5732

If to AP Biotech, to:

Amersham Pharmacia Biotech UK Limited
Amersham Place
Little Chalfont
Buckinghamshire
HP9 9NA
England
Attention: The Company Secretary
Facsimile No: 01494 542242

Any notice sent by registered mail, which is not returned to the sender as undelivered, shall be deemed to have been given on the second 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.

(b) Dispute Resolution

(i) The parties will attempt in good faith to resolve any dispute or claim arising out of or relating to this Agreement promptly through negotiation between representatives of the parties who are duly authorised to resolve the dispute or claim.

(ii) If such dispute is not resolved through such good faith negotiations within fourteen (14) days, the parties shall attempt in good faith to resolve the dispute through an alternative dispute resolution ("ADR") procedure as recommended to the parties by the Centre for Dispute Resolution in England.

(iii) If the matter has not been resolved by an ADR procedure within forty-five (45) days of the initiation of such procedure, or if either of the parties will not participate in such ADR procedure, the parties shall be entitled to resolve the dispute or claim by recourse to the courts.

In the event of the dispute being referred to the courts under Section 19(b)(iii):

(x) any controversy or claim of whatsoever nature arising out of or relating in any manner whatsoever to this Agreement or any breach of any terms of this Agreement shall be governed by and construed in accordance with the laws of England and

(y) each party irrevocably acknowledges and agrees that the Courts of England shall have exclusive jurisdiction to resolve any controversy or claim of whatsoever nature arising out of or relating in any manner to this Agreement, any terms of this Agreement or any breach of this Agreement or any such terms.

(c) 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 either party shall be entitled to assign its rights and obligations hereunder without obtaining the prior written consent of the other party to a Group company

(d) 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.

(e) 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.

(f) Amendment

This Agreement may not be amended except in writing, duly and validly executed by each party hereto.

(g) 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.

(h) Third Party Rights

A person who is not a party to this Agreement has no right under the Contracts (Rights of Third Parties) Act 1999 to enforce any term of this Agreement, but this does not affect any right or remedy of a third party which exists or is available apart from that Act.

IN WITNESS WHEREOF, the parties hereto have duly executed this Agreement as of the date first above written.

AMERSHAM PHARMACIA BIOTECH UK LIMITED

By: /s/ [ILLEGIBLE]

Name: [ILLEGIBLE]

Title: VP Finance, APB UK Ltd.

BIOCHROM LIMITED

By: /s/ David Parr

Name: David Parr

Title: Managing Director

Date: 24/7/2001

SCHEDULE A

Definition of Territory for Current Instruments and Accessories.

The World

excluding the following countries;

Angola
Botswana
Canada
Lesotho
Madagascar
Malawi
Mauritius
Mozambique
Namibia
New Zealand
Seychelles
South Africa
Swaziland
Zimbabwe

SCHEDULE B

Price List of all Current Products and Accessories, including their part number, description and transfer price to AP Biotech, as well as the Trade Marks under which they are sold.

Product Group 200

Spectrophotometry cells, accessories, consumables and spares

APBiotech Transfer Prices for 2001 in GBP

Item Number	Description	APB Transfer Price 2001	Line	Type
Current Instruments				
80-2088-64	Novaspec II	***		
80-2103-98	GeneQuant	***		
80-2110-98	GeneQuant pro	***		
80-2109-10	Ultrospec 1000	***		
80-2112-21/22/27/28	Ultrospec 2100 pro (4 colour options)	***		
80-2112-31/32/37/39	Ultrospec 3100 pro (4 colour options)	***		
80-2112-33/34/35/36	Ultrospec 3300 pro (4 colour options)	***		
80-2112-43/44/45/46	Ultrospec 4300 pro (4 colour options)	***		
Accessories				
Cells				
80-2109-87	MICROSAMPLE VIEWER	***	4001	2
80-2001-97	CASE FOR 6*10MM CELLS	***	4001	2
80-2106-85	SET OF CELL SPACERS	***	4001	2
80-2107-70	CELL PACKERS (8) FOR 1MM PATHLENGTH CELLS)	***	4001	2
80-2107-71	CELL PACKERS (8) FOR 5MM PATHLENGTH CELLS)	***	4001	2
80-2004-53	DISP CUVETTE, UV and VIS METHACRYLATE (PKT)	***	4001	3
80-2055-13	TUBING KIT FOR FLOWCELL	***	4001	3
80-2080-60	10MM FLOWCELL AUTOFILL II/III/PLUS/4060	***	4001	3
80-2002-50	10MM TDS FLOWCELL AND MOUNT	***	4001	3
80-2002-51	1MM PATHLENGTH TDS FLOWCELL	***	4001	3
80-2002-54	1MM CELL TYPE O UV SILICA	***	4001	3
80-2002-57	5MM CELL TYPE O UV SILICA	***	4001	3
80-2002-58	10MM CELL TYPE O UV SILICA	***	4001	3
80-2002-63	50MM CELL TYPE O UV SILICA	***	4001	3
80-2002-70	10MM CELL TYPE 1 UV SILICA	***	4001	3
80-2002-77	10MM CELL TYPE 4 UV SILICA	***	4001	3
80-2002-81	10MM CELL TYPE 5 UV SILICA	***	4001	3
80-2002-95	10MM CELL TYPE 8 UV SILICA	***	4001	3
80-2002-99	10MM CELL TYPE 9 UV SILICA	***	4001	3
80-2003-05	10MM CELL TYPE 10 UV SILICA	***	4001	3
80-2003-09	10MM CELL TYPE 11 UV SILICA	***	4001	3
80-2003-12	100MM CELL TYPE 12 UV SILICA	***	4001	3
80-2003-13	40MM FUNNEL FLOWCELL	***	4001	3
80-2003-14	50MM FUNNEL FLOWCELL	***	4001	3
80-2003-15	1MM STANDARD CELL - TDS	***	4001	3
80-2003-83	1MM CELL TYPE O GLASS	***	4001	3
80-2003-85	5MM CELL TYPE O GLASS	***	4001	3
80-2003-87	10MM CELL TYPE O GLASS	***	4001	3
80-2003-93	50MM CELL TYPE O GLASS	***	4001	3
80-2003-98	10MM CELL TYPE I GLASS	***	4001	3
80-2004-15	10MM CELL TYPE 4 GLASS	***	4001	3
80-2004-41	10MM CELL TYPE 10 GLASS	***	4001	3
80-2004-45	10MM CELL TYPE 11 GLASS	***	4001	3
80-2004-49	TALL SERIES RECTANGULAR CELL	***	4001	3
80-2004-50	TEST TUBE GLASS 12MM PACK OF 10	***	4001	3
80-2004-51	TEST TUBE GLASS 24MM PACK OF 10	***	4001	3
80-2076-38	10MM 50 MICRO L UV SILICA CELL	***	4001	3
80-2079-60	FUNNEL FLOWCELL NOVASPEC II	***	4001	3
80-2099-89	2 MTCHD CELL STD REC LID UVS 10MMP	***	4001	3
80-2099-91	6 MTCHD CELL STD REC LID UVS 10MMP	***	4001	3
80-2099-97	6 MTCHD CELL STD REC LID GLS 10MMP	***	4001	3
80-2100-13	2 MTCHD CELL S/MICRO LID UVS 10MMP	***	4001	3
80-2100-15	6 MTCHD CELL S/MICRO LID UVS 10MM P/L	***	4001	3
80-2100-22	2 MTCHD CELL S/MICRO STP UVS 10MMP	***	4001	3
80-2100-25	2 MTCHD CELL MICRO LID UVS 10MM PL	***	4001	3
80-2100-27	6 MTCHD CELL MICRO LID UVS 10MM PL	***	4001	3

80-2103-68	ULTRA MICRO VOLUME CELL (5-7uL WORKING VOL	***	4001	3
80-2103-69	MICRO VOLUME CELL (70 UL WORKING VOLUME)	***	4001	3
80-2104-66	“HELIX” CAPILLARY CELL + 100 QUARTZ CAPILL	***	4001	3
80-2104-67	SPARE QUARTZ CAPILLARIES (100)	***	4001	3
80-2004-65	10 MM STANDARD CELL TDS	***	4001	3
80-2004-67	1 MM TDS FLOWCELL AND MOUNT	***	4001	3
80-2071-11	10MM FUNNEL F/CELL FOR ULTROSPEC II/III	***	4001	3
80-2108-12	TDS Flowcell 10mm P/L	***	4001	3
80-2108-13	TDS Flowcell 1mm P/L	***	4001	3
80-2109-79	CRISTASEAL PACK OF 10	***	4001	3
80-2109-80	8 MTCHD CELL STD REC LID UV 10MMP	***	4001	3
80-2109-81	8 MTCHD CELL STD REC LID GLS 10MMP	***	4001	3
80-2109-82	8 MTCHD CELL S/MICRO LID UV 10MMP	***	4001	3
80-2109-83	8 MTCHD CELL MICRO LID UV 10MMP	***	4001	3
80-2110-94	UViMICRO DISPOSABLE CELLS, 100	***	4001	3
80-2009-85	F/CELL+TUBING SPARES KIT ULTROSPEC 2000 SE	***	4001	4
Ultrospec 1000				
80-2109-02	SERIAL INTERFACE ADAPTOR LEAD and SPREADSH	***	4010	2
80-2109-03	CHART RECORDER LEAD	***	4010	2
80-2109-04	2 POSITION MANUAL CELL CHANGER	***	4010	2
80-2109-05	50mm PATHLENGTH CELL HOLDER	***	4010	2
80-2109-06	WATER HEATED CELL HOLDER U1000	***	4010	2
80-2109-08	FITTING KIT FOR EXTERNAL SAMPLE DELIVERY	***	4010	2
80-2109-09	SPARE SINGLE CELL HOLDER	***	4010	2
80-2109-13	DUST COVER	***	4010	2
80-2109-33	TEST TUBE HOLDER, U1000	***	4010	2
80-2110-00	SWIFT 1000 APPLICATIONS SOFTWARE	***	4010	2
80-2108-63	BASIC UV/VIS SPECTRO BOOKLET	***	4010	2
80-2109-07	ELECTRICALLY HEATED CELL HOLDER U1000	***	4010	2
80-2109-12	USER MANUAL FOR ULTROSPEC 1000	***	4010	2
80-2109-15	ULTROSPEC 1000E TECHNICAL / USER MANUAL	***	4010	2
80-2109-34	COMBINED SERIAL / CHART INTERFACE (U1000)	***	4010	2
80-2109-45	DEMONSTRATION KIT USER MANUAL	***	4010	2
80-2110-18	USER MANUAL - SWIFT 1000 AND NOVASWIFT SOF	***	4010	2
80-2109-11	DEUTERIUM LAMP ASSY, 4010	***	4010	3
80-2109-36	POWER SUPPLY ASSY U1000	***	4010	4
80-2109-37	MAIN PCB ASSY U1000	***	4010	4
80-2109-38	PHOTOMETER PCB ASSY 4010	***	4010	4
80-2109-39	LAMP-SELECT MOTOR 4010	***	4010	4
80-2109-40	FILTER MOTOR ASSY 4010/4082	***	4010	4
80-2109-41	FILTER QUADRANT 4010	***	4010	4
80-2109-44	FAN 4010 SERIES	***	4010	4
80-2110-11	MAIN PCB ASSEMBLY, 4010 ISSUE 4	***	4010	4
80-2110-17	KEYBOARD/DISPLAY ASSY 4010	***	4010	4
80-2108-67	ULTROSPEC 1000 SERVICE MANUAL	***	4010	4
80-2109-12	KEYBD/DISPLAY ASSY U1000	***	4010	4
80-2110-68	CONTROL EPROM V1.8 4010 IC102	***	4010	4
80-2109-29	ULTROSPEC 1000E SHORT FORM CARD	***	4011	2
80-2109-01	TEMPERATURE CONTROLLER	***	4020	2
80-2109-46	CONTROLLER IC3 V1.0 (4020)	***	4020	4
Novaspec II				
80-2001-10	TEST TUBE COVER (100MM) NOVASPEC II	***	4040	2
80-2103-70	NOVASPEC II USER MANUAL (PHARMACIA)	***	4040	2
80-2104-65	NOVASPEC FUNNEL F/CELL COVER ASSEMBLY	***	4040	2
80-2105-19	5 MM CELL HOLDER FOR NOVASPEC II	***	4040	2
80-2108-79	SEIKO DPU-414 SERIAL PRINTER	***	4040	2
80-2109-95	NOVASWIFT APPLICATIONS SOFTWARE	***	4040	2
80-2110-19	TEST TUBE HOLDER 12-20MM DIAMETER	***	4040	2
80-2001-11	SPECTRAL LIGHT PIPE NOVASPEC	***	4040	2
80-2077-57	MULTI-SIZE SAMPLE HOLDER NOVASPEC II	***	4040	2
80-2078-89	SPECTRAL LIGHT PIPE NOVASPEC II	***	4040	2

80-2079-61	10MM FUNNEL FLOWCELL VENTURI - NOVASPEC II	***	4040	2
80-2089-80	16 MM TEST TUBE HOLDER NOVASPEC II	***	4040	2
80-2094-88	FUNNEL FLOWCELL HOLDER S/A	***	4040	2
80-2095-03	WATER HEATED CELL HOLDER NOVASPEC II	***	4040	2
80-2103-16	RS 232C LEAD, SPECTRO TO EPSON P40 PRINTER	***	4040	2
80-2107-26	FUSE KIT 0 - NOVASPEC II	***	4040	3
80-2075-02	CONNECTOR 25 WAY “D” TYPE FEMALE SOCKET	***	4040	4
80-2077-48	GRATING ASSY	***	4040	4

80-2077-51	4040 FILTER WHEEL & MOTOR ASSEMBLY	***	4040	4
80-2077-52	FILTER WHEEL S/A-4040	***	4040	4
80-2077-56	MOUNTING BLOCK SUB ASSY 4040	***	4040	4
80-2077-69	PHOTOMETER PCB	***	4040	4
80-2077-71	FILTER WHEEL MOTOR S/A 4040	***	4040	4
80-2077-72	4040 GRATING MOTOR ASSEMBLY	***	4040	4
80-2077-82	LAMPHOLDER MOUNTING BLOCK - 4040	***	4040	4
80-2078-04	FILTER 10 DIA * 1 THK	***	4040	4
80-2078-04	FILTER 10 DIA * 1 THK	***	4040	4
80-2078-23	FUSE CARRIER (DOUBLE)	***	4040	4
80-2078-70	4040 LAMP HOLDER	***	4040	4
80-2086-52	SPINDLE	***	4040	4
80-2086-53	SPRING - 4040	***	4040	4
80-2090-96	4040+DIA MEMBRANE KEYBOARD	***	4040	4
80-2099-27	SAMPLE COVER S/A	***	4040	4
80-2101-32	DISPLAY WINDOW 4040	***	4040	4
80-2104-54	COLLIMATING MIRROR	***	4040	4
80-2107-34	MAIN PCB 4040 (CE)	***	4040	4
80-2107-35	TRANSFORMER 4040 (CE)	***	4040	4
80-2107-36	MAINS INLET (CE)	***	4040	4
80-2063-23	IC SN74LSOON	***	4040	4
80-2075-72	PULLEY	***	4040	4
80-2080-53	CELL SPRING CLIP NOVASPEC II	***	4040	4
80-2086-68	SERVICE MANUAL - 4040	***	4040	4
80-2088-93	E.U. (40 00 4563/80200597)	***	4040	4
80-2088-94	E.U. (40 00 7042/80207768)	***	4040	4
80-2101-57	CONTROL EPROM V1.2 DIA	***	4040	4
80-2106-40	NOVASPEC CLINICAL EPROM V1.0 (4040)	***	4040	4
80-2110-45	EPROM V2.3 (4040)IC100	***	4040	4
GeneQuant				
80-2105-20	GENEQUANT USER MANUAL	***	4080	2
80-2104-56	DEUTERIUM LAMP GENEQUANT	***	4080	3
80-2104-57	MAIN PCB 4080	***	4080	4
80-2105-18	GENEQUANT DUST COVER	***	4080	4
80-2105-44	EPROM V2.2 (4080)P IC106	***	4080	4
80-2105-64	SIDE ARM SPRING CLIP FOR GENEQUANT	***	4080	4
80-2106-21	KEYBOARD - GENEQUANT	***	4080	4
80-2106-23	DISPLAY - GENEQUANT	***	4080	4
80-2107-37	TRANSFORMER / REAR PANEL 4080 (CE)	***	4080	4
80-2104-59	OPTICAL UNIT 4080	***	4080	4
80-2104-60	TOP COVER ASSEMBLY 4080	***	4080	4
80-2107-33	MoQ FILTER SET (MEDELCO) FOR GENEQUANT	***	4080	4
80-2110-54	CONTROL EPROM ASSY VI.8 ICI06 4080	***	4080	4

GeneQuant pro

80-2109-88	GENEQUANT CALIBRATION CHECK FILTER SET	***	4082	2
80-2109-96	PRINTER STAND - GENEQUANT/ULTROSPEC 1000	***	4082	2
80-2110-42	GENEQUANT CAL CHECK FILTER SET USER MANUAL	***	4082	2
80-2110-51	GENEQUANT PRO SHORT FORM CARD	***	4082	2
80-2110-89	USER MANUAL GENEQUANT pro (APB)	***	4082	2
80-2109-86	DEUTERIUM LAMP ASSY 4082 (GENEQUANT PRO)	***	4082	3
80-2109-99	USER MANUAL GQ PRO	***	4082	3
80-2110-32	TOP COVER ASSY 4082	***	4082	4
80-2110-33	PHOTOMETER PCB's 4082	***	4082	4
80-2110-34	FILTER WHEEL ASSY 4082	***	4082	4
80-2110-35	MAIN PCB ASSY 4082	***	4082	4
80-2110-36	BOOT MODE SWITCH 4082	***	4082	4
80-2110-37	GENEQUANT PRO FLASH PROGRAMMER SOFTWARE	***	4082	4
80-2110-93	GENEQUANT pro TOP COVER ASSY (LARGE DISPLAY	***	4082	4

Ultrospec pro series accessories, consumables and spares

80-2105-49	TEMPERATURE CONTROL UNIT	***	4090	2
80-2105-88	SWIFT-SCAN SOFTWARE	***	4090	2
80-2105-89	SWIFT-KIN SOFTWARE	***	4090	2
80-2105-90	SWIFT-TIME SOFTWARE	***	4090	2
80-2105-91	SWIFT-QUANT SOFTWARE	***	4090	2
80-2105-92	SWIFT-MULTI SOFTWARE	***	4090	2
80-2105-93	SWIFT-FRAC SOFTWARE	***	4090	2
80-2105-97	RS232C I/F CABLE M/F 9 INST TO 9 COMP	***	4090	2
80-2106-01	4 POSITION CELL HOLDER	***	4090	2
80-2106-04	6 POSITION PELTIER HEATED CELL CHANGER	***	4090	2
80-2106-05	10MM SINGLE CELL HOLDER	***	4090	2
80-2106-06	ULTRAMICROVOLUME CELL HOLDER, 2 AXIS ADJUS	***	4090	2
80-2106-07	50MM SINGLE CELL HOLDER	***	4090	2
80-2106-08	WATER HEATED SINGLE CELL HOLDER	***	4090	2
80-2106-09	MICROVOLUME CELL HOLDER (50 UL)	***	4090	2
80-2106-10	CYLINDRICAL CELL HOLDER	***	4090	2
80-2106-11	HPLC CELL HOLDER AND FLOWCELL	***	4090	2
80-2106-12	10MM ELECTRICALLY HEATED CELL HOLDER	***	4090	2
80-2106-13	10MM PELTIER HEATED CELL HOLDER	***	4090	2
80-2106-14	Tm PROGRAMMABLE HEATED CELL HOLDER AND SO	***	4090	2
80-2106-15	SIPPER	***	4090	2
80-2106-19	DUST COVER 4090	***	4090	2
80-2106-24	ULTROSPEC 2000 USER MANUAL	***	4090	2
80-2106-26	SWIFT-LAB SOFTWARE	***	4090	2
80-2106-31	SWIFT-METHOD SOFTWARE	***	4090	2
80-2106-51	RS232C I/F CABLE M/F 9 INST TO 25 COMP	***	4090	2
80-2106-59	SWIFT SOFTWARE USER MANUAL	***	4090	2
80-2106-60	PRINTER STAND	***	4090	2
80-2108-80	SEIKO DPU-414 PARALLEL PRINTER	***	4090	2
80-2109-70	8 POSITION WATER HEATED CELL CHANGER	***	4090	2
80-2104-96	AUTOSAMPLER INTERFACE KIT (2000/3000/4000)	***	4090	2
80-2105-95	CHART RECORDER CABLE	***	4090	2
80-2106-78	ACCESSORIES USER MANUAL	***	4090	2

80-2107-14	100MM SINGLE CELL HOLDER	***	4090	2
80-2108-10	SINGLE CELL HOLDER - USE WITH MAGNETIC STI	***	4090	2
80-2108-64	SPECTROPHOTOMETRY DEMO KIT	***	4090	2
80-2009-80	PRINTER PAPER (PACKET 5) THERMAL, 40 CHAR	***	4090	3
80-2106-16	TUNGSTEN HALOGEN LAMP 4090	***	4090	3
80-2106-17	DEUTERIUM LAMP ASSY, 4090	***	4090	3
80-2080-74	PUMP TUBING (PKT OF 6)	***	4090	3
80-2106-99	VITON PUMP TUBING	***	4090	3
80-2106-18	BASEPLATE PLUG FOR 4090 SAMPLE COMPARTMENT	***	4090	4
80-2106-44	PHOTOMETER PCB ASSY 4090	***	4090	4
80-2106-45	LAMP-SELECT MOTOR ASSY	***	4090	4
80-2106-46	FILTER MOTOR ASSY	***	4090	4
80-2106-48	CELL MOTOR ASSY 4090	***	4090	4
80-2106-49	DISPLAY MODULE 4090	***	4090	4
80-2106-50	KEYBOARD + WINDOW 4090	***	4090	4
80-2106-61	CELL CHANGER THUMB SCREW	***	4090	4
80-2106-80	CONCAVE DIFFRACTION GRATING	***	4090	4
80-2107-38	MAIN PCB ASSY 4090 (CE)	***	4090	4
80-2107-39	POWER SUPPLY ASSY 4090 (CE)	***	4090	4
80-2107-47	FAN 4090 SERIES	***	4090	4
80-2107-48	FILTER QUADRANT ASSY	***	4090	4
80-2108-62	LAMP SELECT MIRROR 4090	***	4090	4
80-2106-52	ULTROSPEC 2000 SERVICE MANUAL	***	4090	4
80-2106-83	HEIGHT GAUGE	***	4090	4
80-2107-00	EPROM V2.0 (IC14) TEMP CONTROL UNIT	***	4090	4
80-2107-18	CALIBRATION SOFTWARE AND FILTERS-ACCRED EN	***	4090	4
80-2107-66	EPROM V1.90 4090 IC105 VAN DER HEYDEN	***	4090	4
80-2108-60	LAMP ACCESS COVER 4090	***	4090	4
80-2108-61	CELL COMPARTMENT ACCESS COVER (4090)	***	4090	4
80-2108-96	ELSA SERVICE CD-ROM	***	4090	4
80-2109-59	EPROM V2.2 4090 IC105	***	4090	4
80-2109-65	SET OF SUPPORT PILLARS FOR ULTROSPEC	***	4090	4
80-2110-21	SLAVE MICROCONTROLLER V1.9 4090/4094 IC127	***	4090	4
80-2110-73	SPREADSHEET INTERFACE SOFTWARE	***	4094	2
80-2106-55	VGA DRIVER PCB 4094	***	4094	4
80-2106-56	VGA DISPLAY 4094	***	4094	4
80-2106-57	KEYBOARD + WINDOW 4094	***	4094	4
80-2110-58	U3000 INTERFACE PCB KIT (INCLUDES EPROM)	***	4094	4
80-2106-53	ULTROSPEC 3000 SERVICE MANUAL	***	4094	4
80-2108-97	EPROM V2.1 (4094)	***	4094	4
80-2110-65	U3000/3000pro INTERFACE PCB (4094/4095)	***	4095	4
80-2111-31	KEYBOARD & WINDOW 4095	***	4095	4
80-2111-31-DX	KEYBOARD AND WINDOW 4095	***	4095	

80-2111-33	SLAVE MICROCONTROLLER V2.1 4095 IC127	***	4095	4
80-2111-37	EPROM V1.1 4095 IC105	***	4095	4
80-2108-31	SWIFT II - METHOD S/W	***	4096	2
80-2109-50	QUAL/PERF VERIF LOGBOOK FOR PCB UV/VIS SPE	***	4096	2
80-2110-63	SWIFT II CULTURE S/W	***	4096	2
80-2107-88	SWIFT II - SCAN S/W	***	4096	2
80-2107-89	SWIFT II - KIN S/W	***	4096	2
80-2107-90	SWIFT II - TIME S/W	***	4096	2
80-2107-91	SWIFT II - QUANT S/W	***	4096	2
80-2107-92	SWIFT II - MULTI S/W	***	4096	2
80-2107-93	SWIFT II - FRAC S/W	***	4096	2
80-2108-01	8 POSITION CELL CHANGER	***	4096	2
80-2108-03	SUPPORT PLINTH	***	4096	2
80-2108-04	ULTROSPEC 4000 USER MANUAL	***	4096	2
80-2108-14	VINYL TUBE KIT FOR TDS	***	4096	2
80-2108-15	TDS FLOWCELL KIT 10mm PL NO SOFTWARE	***	4096	2
80-2108-16	TDS FLOWCELL KIT 1mm PL NO SOFTWARE	***	4096	2
80-2108-25	SWIFT II USER MANUAL	***	4096	2
80-2108-26	SWIFT II - LAB S/W	***	4096	2
80-2108-59	CELL ACCESS COVER TDS	***	4096	2
80-2110-74	FILTER QUADRANT ASSY	***	4096	4
80-2108-05	ULTROSPEC 4000 SERVICE MANUAL	***	4096	4
80-2108-09	PHOTOMETER PCB ASSY 4096	***	4096	4
80-2109-63	SLAVE MICROCONTROLLER V1.3 4096 IC127	***	4096	4
80-2109-64	EPROM V2.1 4096 IC105	***	4096	4
80-2110-16	EPROM V2.2 4096 IC105	***	4096	4
80-2110-28	FILTER QUADRANT UPDATE KIT INC SLAVE V1.5	***	4096	4
Ultrospec 2100 pro				
80-2111-63	USER REFERENCE GUIDE - ULTROSPEC 2100 pro	***	4190	2
80-2111-76	USER MANUAL ULTROSPEC 2100 pro	***	4190	2
80-2112-13	PRINTER STAND ULTROSPEC 2100 pro	***	4190	2
80-2112-14	SUPPORT PLINTH ULTROSPEC pro SERIES	***	4190	2
80-2112-15	SIPPER - ULTROSPEC pro SERIES	***	4190	2
80-2111-22	MAIN PCB ASSY U2 100 SPARES ITEM	***	4190	4
80-2111-23	HITACHI LCD DISPLAY U2 100 SPARES ITEM	***	4190	4
80-2111-24	PHOTOMETER REF CH. ASSY U2100 SPARES ITEM	***	4190	4
80-2111-25	PHOTOMETER SIGNAL CH. ASSY SPARES ITEM	***	4190	4
80-2111-26	XENON PSU PCB ASSY U2100 SPARES ITEM	***	4190	4
80-2111-27	DC-DC CONVERTER ASSY U2100 SPARES ITEM	***	4190	4
80-2111-28	POWER SUPPLY U2100 SPARES ITEM	***	4190	4
80-2111-29	XENON LAMP SPARES ITEM	***	4190	4
80-2111-39	FILTER QUADRANT ASSY U21/3100 SPARES ITEM	***	4190	4

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80-2111-78	USER MANUAL ULTROSPEC 3300 pro	***	4195	2
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SCHEDULE C

Biochrom's standard terms of training and support.

[BIOCHROM LOGO] [SEAL]

2001

TRAINING AND SUPPORT

AMINO ACID ANALYSERS
AND
SPECTROPHOTOMETERS

Biochrom Ltd
Cambridge Science Park
Milton Road
Cambridge CB4 0FJ
England

Telephone:	+44 (0) 1223 423723
Telefax:	+44 (0) 1223 420164
E-mail:	biochrom@biochrom.co.uk
Enquiries:	enquiries@biochrom.co.uk

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BIOCHROM SUPPORT TEAM

SALES AND MARKETING MANAGER: **Mike Human**

Responsible for all aspects of sales and marketing for Spectrophotometers and Amino Acid Analysers.

Direct phone: +44 (0)1223 427813 E-mail: mike.human@biochrom.co.uk

AAA BUSINESS MANAGER: **Mark Longster**

AAA Marketing, Product Support for AAA.

Direct phone: +44 (0)1223 427820 E-mail: mark.longster@biochrom.co.uk

EUROPEAN SALES AND MARKETING MANAGER: **Kees de Rijke**

Responsible for sales and marketing of Biochrom products in Europe.

Direct phone: +31 65341 0502 E-mail: kees.derijke@biochrom.co.uk
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AAA SOFTWARE SUPPORT: **Rob Snelling**

Product Support for AAA Software.

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SERVICE SUPPORT MANAGER: **Henry Ibanez**

Analysers and Spectrophotometers service.
Training, service documentation, field support, technical support, installation.

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SERVICE SUPPORT ENGINEER: **Keith Jest**

Analysers and Spectrophotometers service.
Training, service documentation, field support, technical support.

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APPLICATIONS MANAGER: **Mike Davies**

Advice on customer applications, customer training, pre-sales and customer sample analysis, evaluation of new methods, chemical development for both Spectrophotometry and AAA products.

Direct phone: +44 (0)1223 427809 E-mail: mike.davies@biochrom.co.uk

PROJECTS AND QUALITY SYSTEMS MANAGER: **Warren Reeves**

Chemical quality complaints and column support.

Direct phone: +44 (0)1223 427830 E-mail: warren.reeves@biochrom.co.uk

APPLICATIONS CHEMIST: **Ghulam Jumah**

Applications, customer sample analysis, customer training.

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SPECTROPHOTOMETRY BUSINESS MANAGER: **Andrew Dadd**

Spectrophotometer Marketing, product support for spectrophotometers.

Direct phone: +44 (0)1223 427810 E-mail: andrew.dadd@biochrom.co.uk

BUSINESS COMMUNICATIONS CO-ORDINATOR: **Natasha Bond**

Responsible for general marketing co-ordination and all arrangements for training courses.

Direct phone: +44 (0)1223 427812 E-mail: natasha.bond@biochrom.co.uk

E-MAIL SUPPORT

In addition, you can contact us at the e-mail addresses listed below:

aaa.support@biochrom.co.uk for analysers support

spectro.support@biochrom.co.uk for spectrophotometers support

TRAINING AND SUPPORT INFORMATION

INTRODUCTION

During 2001, we will be offering several courses for AAA and Spectrophotometry service and AAA customer training. All details are given in this booklet.

IN-HOUSE TRAINING

To give the customer the type of service we wish, we have to invest in training our engineers. Being well trained and professional leads to customer satisfaction which in turn can lead to future sales, but the biggest benefit is the pride of the engineer.

The training course charges have been calculated fairly (we are not going to make a profit short-term to jeopardise our long term business). It will enable us to invest in training materials and equipment to ensure your engineers return home equipped to solve the problems. We are also helping by keeping the same prices as in previous years.

SALES SUPPORT

All pre-sales activities will be free of charge, i.e. brochures, application notes and technical support by telephone, telefax and e-mail.

It is the sales subsidiary's responsibility to install instruments and train the customers, but if a sales subsidiary requests assistance or retraining by Biochrom specialist (either applications or service) then we will endeavour to accommodate you.

Expenses vary from country to country but include daily allowance, airfare, transportation and hotel accommodation. We will supply all literature in English free of charge but should you wish to have our literature printed in your own language, we will be happy to quote you for the costs, provided we have your translation.

REGIONAL TRAINING AND INSTALLATIONS

The Instrument Support team will be happy to provide regional (local) training. The charges are listed below. Expenses comprise: Hotel Accommodation + Flights + Transportation + Daily Allowance) and Service Manuals. This may prove more cost effective for sales subsidiaries with large service centers. The same policy will be applied for installations.

Charges for 2001 are detailed below:

AAA Installation (including initial customer training) Four/Five days:	***	expenses
Regional Training	***	per day + expenses + Service Manuals
Local Support or extra days	***	per day + expenses

NEW PRODUCT TRAINING

New product launch training tuition will be available free of charge.

INSTRUMENT SERVICE TRAINING – ANALYSERS

Biochrom Ltd offer service training courses for dedicated amino acid analyser engineers.

These service training courses provide the engineers with a total introduction to the Biochrom 20 Plus and the Biochrom 20 Amino Acid Analysers, and the EZChrom integration system.

These service courses also provide an in-depth look at instrument operation, servicing and fault-finding theory.

The dates for these courses are as follows:

Week 13	26th March - 29th March	AAA Service
Week 41	10th October - 13th October	AAA Service

The fees for 2001 are per person, per course which includes tuition, all service manuals, transportation to and from course, lunches and one course dinner. Hotel accommodation is not included.

AAA Service course fees:	***	- 4 Days + VAT
Should you require extra days or specific training, this will be charged	***	VAT per day.

Note: A charge of *** will be made if places are cancelled 3 weeks or less before a course.

For registration for 2001 Service Training Courses, please photocopy the Telefax form on page 15 of this booklet, complete and return to Natasha Bond, Business Communications Co-ordinator, at Biochrom Ltd.

INSTRUMENT SERVICE TRAINING - SPECTROPHOTOMETERS

The first three days course covers basic theory and servicing of instruments within the support period (Ultrospec III, Ultrospec Plus and Biochrom 4060). The following four days course covers basic theory and servicing of instruments of the current product range: GeneQuant, I, II and *pro*, Novaspec II and the Ultrospecs 1000, 2000, 3000, 3000*pro*, 4000, 2100*pro*, 3100*pro*, 3300*pro* and 4300*pro*.

The Calibration Software and NPL–traceable Filter Kit 80-2107-18 for UV/Vis instruments and the Calibration Filter Kit for the GeneQuant*pro* 80-2109-88 are available as an optional extras to delegates attending either accreditation course. The filter kits allow you to test the calibration of all of our spectrophotometers or the GeneQuant*pro* and print out a certificate of the test results. We strongly recommend that you purchase these when coming for training if you don't already own a set. In addition to the potential of setting-up your own calibration service, much of the courses will be centred around a structured approach to the calibration of spectrophotometers.

The dates for these courses are as follows:

Week 11	14th March – 16th March	Spectrophotometry Accreditation I - Support Period Instruments
Week 12	19th March – 22nd March	Spectrophotometry Accreditation II - Current Instruments
Week 42	17th October – 19th October	Spectrophotometry Accreditation I - Support Period Instruments
Week 43	22nd October – 25th October	Spectrophotometry Accreditation II - Current Instruments

The fees for 2001 are per person, per course which includes, tuition, all service manuals, transportation to and from course, all lunches and one course dinner. Hotel accommodation is not included.

Spectrophotometry Accreditation Course Fees:	***	+ VAT - 7 days (both courses)
	***	+ VAT - 4 days (current instruments)
	***	+ VAT - 5 days (support instruments)
Should you require extra days or specific training, this will be charged	***	+ VAT per day

Note: A charge of *** will be made if places are cancelled 3 weeks or less before a course.

Calibration Kits

80-2107-18	Calibration Software Package, manual, and NPL-traceable calibration filters - for UV/Vis spectrophotometers	***	+ VAT + freight
	Recalibration of Software and Filter Kit(1) (recommended every two-years)	***	+ VAT + freight
80-2109-88	Calibration filter kit for GeneQuant pro	***	+ VAT + freight
	Recalibration of filter kit(2) (recommended every two years)	***	+ VAT + freight

(1) Recalibration of absorbance standards is NAMAS accredited
(2) Recalibration is NIST accredited

For registration for 2001 Service Training Courses, please photocopy the Telefax form on page 15 of this booklet, complete and return to Natasha Bond, Business Communications Co-ordinator, at Biochrom Ltd.

AMINO ACID ANALYSIS TRAINING - CUSTOMERS

Biochrom Ltd offers courses for customers who have recently purchased a Biochrom 20 Plus. The courses are therefore aimed at customers who have been operating their instrument in their own workplace, following installation and on-site training.

The courses provide a theoretical introduction to amino acid analysers, daily operating and maintenance procedures. Simple trouble-shooting and fault-finding are also a valuable part of the course. Chemical systems and sample preparation are discussed in detail as are the other parameters which affect the instrument's performance.

Also included is training on the Biochrom 20 Plus software and current integration software. However Windows™ training is not given as it is assumed that the customer is already competent in this area. If this is not the case then the customer should attend a Windows training course before coming to Biochrom.

The duration of courses is 4 days (09:00 – 17:00), except Mondays (09:30 – 17:00).

Note: All delegates are advised to bring their own laboratory coats with them.

The dates for these courses are as follows:

Week 6	5th February - 8th February
Week 10	5th March - 8th March
Week 20	14th May - 17th May
Week 25	18th June - 21st June
Week 30	23rd July - 26th July
Week 36	3rd September - 6th September
Week 40	1st October - 4th October
Week 48	26th November - 29th November

Customer Training courses at Biochrom Ltd	Four day course ***

These fees are per person, per course. This includes tuition, course material, lunches and one evening dinner.

They do not include accommodation, breakfast or evening meals; these are payable by the customer during their stay.

They do not include Transport to/from the airport and to/from Biochrom Ltd; this will initially be paid for Biochrom and the appropriate sales company will be billed following the completion of the course.

Tailored Customer Training/Regional Training	***	per day + Expenses

All booking are to be made via the local sales office who will be billed by Biochrom Ltd following the completion of the course.

For registration for 2001 Customer Training Courses, please photocopy the Telefax form on page 15 of this booklet, complete and return to Natasha Bond, Business Communications Co-ordinator, at Biochrom Ltd.

PRODUCT SPECIALIST TRAINING

AMINO ACID ANALYSIS PRODUCT SPECIALIST TRAINING

This course will provide the product specialist with all information necessary to support the AAA range. We tailor the course individually and provide the theory of AAA as well as routine maintenance and installation techniques. Applications and competitor analysis will also be included.

The dates for these courses are as follows:

Week 23	4th June – 7th June
Week 44	28th October – 1st November

Amino Acid Analysers Specialist courses.	Four days: *** + VAT

The fees are per person, per course, which includes tuition, course material documents, transportation between the hotel and Biochrom, lunches and one course dinner.

All courses are conducted in English and comprise of four days training.

For registration for 2001 Training Courses, please photocopy the Telefax form on page 15 of this booklet, complete and return to Natasha Bond, Business Communications Co-ordinator, at Biochrom Ltd.

SAMPLE ANALYSIS AND COLUMN CLEANING

SAMPLE ANALYSIS

Pre-sales sample analysis will be charged for at the rates detailed below but will be credited if the prospective customer subsequently purchases an Amino Acid Analyser.

Our Applications Laboratory will be happy to analyse samples for potential customers. Check details of the analyses required with Mike Davies, prior to acceptance of samples.

Sample Running + specialised applications + non standard	***	+ VAT per hour
Protein Hydrolysate Sample	***	+ VAT per sample
Oxidised Feedstuffs Protein Hydrolysate Sample	***	+ VAT per sample
Physiological Fluid Sample	***	+ VAT per sample

COLUMN CLEANING

During 2001 we shall continue to offer this service which has been very popular with our customers.

Most columns benefit from cleaning but there are certain contaminants which are difficult to remove and therefore we require full details about the column and its use before we agree to carry out any work.

To return a column the return authorisation procedure on page 11 should be followed.

We are able to provide top up resin as long as the batch is available from our stock.

Analytical Column Cleaning, Repacking and Testing	***	+ VAT per column
1g Top Up Resin	***	+ VAT (REUP)
	***	+ VAT (T.P.)
6g New Resin	***	+ VAT (REUP)
	***	+ VAT (T.P.)
Pre-Wash Column Cleaning/Repacking	***	+ VAT

We do not advise the mixing of batches of resin because differences of cross-linkage can give high back pressure and affect chromatography.

RETURN AUTHORISATION PROCEDURE

Return for Repair

This procedure is for all instruments, accessories or spare parts that cannot be repaired by the sales subsidiary (for PCBs see below). A Return Authorisation form, included in page 16, must be completed and faxed to Warren Reeves at Biochrom Ltd, together with the service report form and a clear and precise description of the fault and what action has been taken to try and effect repair. A service/Repair Order number (S/RO) will be faxed/E-mailed to you.

Ensure the goods being returned are securely packaged and the RO number appears on the outside of the package and on all accompanying paperwork. If goods being returned for repair are still under warranty, please provide information on date of purchase and serial number, if applicable.

ACCESSORIES OR INSTRUMENTS WITH A LIST PRICE OF LESS THAN *** WILL NOT BE ACCEPTED FOR REPAIR

SPARE PARTS WITH A LIST PRICE OF LESS THAN *** WILL NOT BE ACCEPTED FOR REPAIR

RE-WORK FEES FOR 2001 *** PER HOUR

All other return procedures as detailed below require a Return Authorisation form to be completed but this should be directed to Central Distribution, Uppsala who will handle the request:

Warranty Claim - Missing parts
Warranty Claim - Malfunctioning instrument or accessory
Warranty Claim - Malfunctioning spare parts
Return for Repurchase
Goods damaged in transit

PCB Exchange Scheme

Biochrom PCBs are available through the Uppsala PCB Exchange Scheme. Please return all faulty PCBs to Uppsala and order a replacement board at the same time. You will be credited in the usual way.

HEALTH AND SAFETY DECLARATION

All instruments authorised for return must be accompanied by a Health and Safety Declaration form, completed and signed. This form is enclosed in page 17 of this booklet. Any instruments returned without this form duly completed and signed will be returned without work being carried out and any shipping charges will be carried by the customer.

WARRANTY STATEMENT - SPECTROPHOTOMETERS

Spectrophotometer Product Range - New Instruments

With effect from 1st Jan 2000, all instruments (including GeneQuant) carry a warranty for 15 months from the date of manufacture or 12 months from date of officially supplied installation, whichever is the sooner.

Spectrophotometry Product Range - Reconditioned Instruments

The warranty period for reconditioned instruments is 90 days from date of purchase.

Repair Policy

For all instruments, accessories and space parts required at Biochrom Ltd, a warranty period of 90 days will apply unless the item is already covered by one of the warranty periods described above.

If difficulty is being experienced with a repair under warranty, please contact us for help and advice prior to carrying out expensive repairs which may be uneconomic or unnecessary.

The general warranty conditions are only valid if the merchandise has been used within its specification and in all respects has been operated and maintained in a normal, proper manner in accordance with the User Manual. Lamps are not included under these conditions but Deuterium and Xenon lamps are covered by a separate guarantee (see page 14).

The general warranty conditions are not valid if the defect is due to accident, unauthorised modification, unauthorised repair attempt, incorrect operation or transport damage.

WARRANTY STATEMENT - AMINO ACID ANALYSERS

Biochrom 20 Plus - New Instruments

Biochrom Ltd guarantees that the product supplied has been thoroughly tested to ensure that it meets its published specification. This warranty is valid only if the product has been used within its specification and in all respects has been operated and maintained in a normal, proper manner in accordance with the Instruction Manual.

Chromatographic performance is guaranteed to our specification only if the columns, chemicals and reagents used are provided or approved by Biochrom Ltd. Use of other third party supplied columns, reagents, etc, will invalidate this warranty.

The general warranty conditions are not valid if the defect is due to accident, unauthorised modification, unauthorised repair attempt, incorrect operation or transport damage.

Biochrom Ltd can accept no liability for loss or damage, however caused, arising from the faulty or incorrect use of this product.

Reconditioned Instruments

The warranty period for reconditioned instruments is 90 days from date of purchase.

AAA - Chemicals

All chemicals manufactured supporting the AAA product range do not carry an expiry date, but we advise use within 3 years of manufacture if stored correctly.

Repair Policy

For all instruments, accessories and spare parts repaired at Biochrom Ltd a warranty period of 90 days will apply unless the item is already covered by one of the warranty periods described above.

If difficulty is being experienced with a repair under warranty, please contact us for help and advice prior to carrying out expensive repairs which may be uneconomic or unnecessary.

The general warranty conditions are only valid if the merchandise has been used within its specification and in all respects has been operated and maintained in a normal, proper manner in accordance with the Instruction Manual.

The general warranty conditions are not valid if the defect is due to accident, unauthorised modification, unauthorised repair attempt, incorrect operation or transport damage.

DEUTERIUM AND XENON LAMPS WARRANTY POLICY

The Deuterium Lamp is considered to be a consumable item but it is also covered by a separate warranty to the instrument. Lamp changing (i.e. engineers time) is not covered by warranty as we believe customers should be able to do this themselves.

Ultrospec Range

We will credit you the cost of a whole new Deuterium Lamp if the lamp fails when it is less than 15 months old (since date of manufacture) AND has been used for less than 750 hours.

The age of the lamp can be determined by the serial number (2 letters and 4 digits) engraved on the metal plate on the opposite side to the lamp emitting window. Please fax the information to Henry Ibanez at Biochrom Ltd to confirm the manufacture date.

The hours used can be determined from the "hour-meter" inside the Ultrospec III (remember this reads from right to left, representing 0 to 1000 hours) or the appropriate function in the Ultrospec 1000, 2000, 3000 and 4000 product range.

Biochrom 4060

For the Biochrom 4060 the policy is the same as for the Ultrospec range. The serial number is in the same place, but the hours need to be read form the "configure" button on the instrument control panel.

GeneQuant

Due to the new "demand-switched" mode of operation, the Deuterium Lamp in the GeneQuant (RNA/DNA Calculator) is guaranteed for 1 year regardless of hours used.

The procedure for checking the age of the lamp is the same as that for Ultrospec range and Biochrom 4060.

The correct procedure is:

1. Confirm with Henry Ibanez that the lamp is covered by warranty and get an RO Number.
2. Return the lamp to Biochrom.
3. We will issue credit once lamp failure is confirmed.

The Xenon lamp has a 3-year warranty. Note that this lamp cannot be fitted by a customer and has to be fitted by an accredited engineer

For all of the above:

Warranty will only be given once we have received the lamp and confirmed with our supplier that it is faulty. Do not send any Lamps back until we have confirmed they are within the warranty period and given you an S/RO Number (see page 11 for the Return Authorisation procedure).

TELEFAX

To:	Natasha Bond	**Company:**	Biochrom Ltd
From:		**Country:**	
Fax No:	+44(0)1223 420164	**Direct phone:**	+44(0)1223 427812

E-Mail address: natasha.bond@biochrom.co.uk

Pre-Course Registration Form

Sales Company/Representative:

Contact:

Delegate Name:

Please tick where appropriate:

Type of course:	AAA Customer		☐
	Instrument type:	Biochrom 20 Plus	☐
	Instrument type:	Biochrom 20	☐
	Instrument Serial Number		
	Data Handling system		
	AAA Product Specialist		☐
	AAA Service Training		☐
	Spectrophotometer Accreditation I		☐
	Spectrophotometer Accreditation II		☐
	Is the Software and Filter Kit required? (Please order 60-2107-18 from Biochrom)		☐

Course Date:

Week Number:

RETURN AUTHORISATION FORM - Request for S/RO number

This form MUST be filled in before any item is returned to Warren Reeves in Biochrom Ltd. Any items returned without the Service/Repair Order (S/RO) authorisation number will be held in quarantine until this form is completed.

SECTION 1 (Identification)

Contact Name — Position
Sales Company — Country

Users Name — Institution

Item Part Number or Instrument Type — Appropriate Delivery Date / Serial Number

Is there a fault with the item? YES ☐ Go to Section 2
NO ☐ Go to Section 3

Why are you returning it?

(continue on a separate sheet if necessary)

SECTION 2 (Fault information)

When was the fault noticed? UNPACKING/SWITCH ON/DURING OPERATION

How long have you had the item/instrument?

In what application is it being used?

Brief description of the fault and any actions taken

(continue on a separate sheet if necessary)

SECTION 3 (Action)

Do you want:
(a) This item repaired and returned? ☐
(b) A credit note for the cost of this item? ☐
(c) A replacement item? ☐

Please Note: We cannot issue an S/RO number until this form is fully completed.
We cannot accept any item without an S/RO number.

Important: Has the Health and Safety Declaration form been filled and enclosed? ☐
See page 18.

Signature — Date

SECTION 4 (Biochrom use only)

S/RO Number — Customer Compliant Form required? ☐

Date item/instrument received — CCF Number

S/RO Number input on MFG/PRO? ☐ — Action from Section 3 taken? ☐

Warranty or Billable? — Date closed

[BIOCHROM LOGO]

Health and Safety Declaration Form

1. Please note that instrumentation will not be accepted for servicing or return until this form is properly completed.
2. We cannot accept non-decontaminated, non-sanitised instruments.
3. Failure to complete the form or comply with the Health and Safety clearance procedure can endanger Biochrom Ltd service personnel and lead to delays in servicing the equipment.

Equipment:

Serial No:

Name:

Phone No:

Liquid in instrument is:

☐ Water ☐ Ethanol ☐ Other ☐ None, empty

Specify if the equipment has been in contact with any of the following

☐ Radioactivity * ☐ Blood borne pathogens *

☐ Caustic chemicals ☐ Other (please specify)

* If box checked please circle one: Cleaned Not cleaned

I hereby certify that the equipment has been decontaminated and/or sanitised as per OSHA/DOT regulations.

I also agree to give Biochrom Ltd sole control of the system/instruments as specified above.

Signed Position Date

SCHEDULE D

Trade Mark License Agreements.

To be added within six (6) months of the commencement of the Distribution Agreement, see Section 1, Definitions “Licence Agreements” and Clause 13 (b)

SCHEDULE E

Technical Specifications of all Current Instruments.

Ultrospec 3300 pro Technical Specifications

Wavelength range	190-1100nm, in 0.1nm steps
Monochromator	Concave grating with 1200 lines/mm
Wavelength calibration	automatic upon switch-on
Spectral bandwidth	1.8nm
Wavelength accuracy	±0.7nm
Wavelength reproducibility	±0.2nm
Light sources	Tungsten halogen and deuterium arc
Detector	Single solid state silicon photodiode
Photometric range	-3.000 to 3.000A, 0.01 to 99999 concentration units, -0.1 to 200%T
Photometric linearity	±0.5% or ±0.003A to 3.000A at 546nm, whichever is the greater
Photometric reproducibility	Within 0.5% of absorbance value to 3.000A (at 546nm)
Stray Light	Typically <0.025%T at 220nm using NaI, <0.025%T at 340nm using $NaNO_2$
Stability	±0.001A/h at 340nm at 0A after warm up
Noise	±0.001A near 0A and 0.002A near 2A at 546nm
Abs% T	Yes
Absorbance ratio	Preset 260/280nm mode or user selectable
Absorbance difference	Built in
3 point net	Built in
Multi-wavelength	Built in
Concentration with factor	Built in
Peak check	Scan - built-in
Standard curve generation	Built in
Scanning software	Built in (6200nm/minute)
Enzyme kinetics	Built in
Michaelis Menten equations	SWIFT II software
Substrate concentration	Built in
Time drive	Built in
Fraction analysis	SWIFT II software
Analogue output	No
Digital output	9 pin serial and Centronics parallel, direct output to Excel spreadsheet
Printer	Option
Sample compartment size	140 x 220 x 80mm
Multi-position changer	8-position as standard
Single cell holder	Normal and micro options
Test-tube holder	No
Water-jacketed cell holder	1 and 8-position options
Funnel flowcell holder	No
Sipper system	Option (with or without thermostatting)
Autosampler capability	Yes
Single position Peltier heating	Option
Multi position Peltier heating	6-position option
Tm measurement	Option
Dimensions	510 * 350 * 2200mm
Weight	13kg
Power requirements	90-265V AC, 50/60Hz, 150VA

Ultrospec 4300 pro Technical Specifications

Wavelength range	190-110nm, in 0.1nm steps
Monochromator	Concave grating with 1200 lines/mm
Wavelength calibration	automatic upon switch-on
Spectral bandwidth	1.8nm
Wavelength accuracy	±0.7nm
Wavelength reproducibility	±0.2nm
Light sources	Tungsten halogen and deuterium arc
Detector	Single solid state silicon photodiode
Photometric range	-3.000 to 3.000A, 0.01 to 99999 concentration units, -0.1 to 200%T
Photometric linearity	±0.5% or ±0.003A to 3.000A at 546nm, whichever is the greater
Photometric reproducibility	Within 0.5% of absorbance value to 3.000A (at 546nm)
Stray Light	Typically <0.025%T at 220nm using NaI, <0.025%T at 340nm using NaNO
Stability	±0.001A/h at 340 nm at 0A after warm up
Noise	±0.001A near 0A and 0.002A near 2A at 546nm
Abs% T	SWIFT II Software
Absorbance ratio	SWIFT II Software
Absorbance difference	SWIFT II Software
3 point net	SWIFT II Software
Multi-wavelength	SWIFT II Software
Concentration with factor	SWIFT II Software
Peak check	SWIFT II Software
Standard curve generation	SWIFT II Software
Scanning software	SWIFT II Software
Enzyme kinetics	SWIFT II Software
Michaelis Menten equations	SWIFT II Software
Substrate concentration	SWIFT II Software
Time drive	SWIFT II Software
Fraction analysis	SWIFT II Software
Analogue output	No
Digital output	Serial
Printer	Yes (with PC)
Sample compartment size	140 x 220 x 80mm
Multi-position changer	8-position as standard
Single cell holder	Normal and micro options
Test-tube holder	No
Water-jacketed cell holder	1 and 8-position options
Funnel flowcell holder	No
Sipper system	Option (with or without thermostatting)
Autosampler capability	No
Single position Peltier heating	Option
Multi position Peltier heating	6 position option
Tm measurement	Option
Dimensions	510 * 350 * 160mm
Weight	13kg
Power requirements	90-265V AC, 50/60Hz, 150VA

Ultrospec 3100 pro Technical Specifications

Wavelength range	190-900nm
Monochromator	Concave grating with 1200 lines/mm
Wavelength calibration	automatic upon switch-on
Spectral bandwidth	3nm
Wavelength accuracy	± 1nm
Wavelength reproducibility	±0.5nm
Light sources	Xenon lamp
Detector	Dual solid state silicon photodiode
Photometric range	-3.000 to 3.000A, 0.01 to 99999 concentration units, -0.1 to 200%T
Photometric linearity	±0.5% or ±0.003A to 3.000A at 546nm, whichever is the greater
Photometric reproducibility	Within 0.5% of absorbance value to 3.000A (at 546nm)
Stray Light	Typically <0.05%T at 220nm using NaI, <0.05%T at 340nm using $NaNO_2$
Stability	±0.002A/h at 340nm at 0A after warm up
Noise	±0.001A near 0A and 0.002A near 2A at 600 nm
Abs% T	Yes
Absorbance ratio	Preset 260/280nm mode or user selectable
Absorbance difference	Built in
3 point net	Built in
Multi-wavelength	Built in
Concentration with factor	Built in
Peak check	Scan - Built in
Standard curve generation	Built in
Scanning software	Built in (6000nm/minute)
Enzyme kinetics	Built in
Michaelis Menten equations	SWIFT II software
Substrate concentration	Built in
Time drive	Built in
Fraction analysis	SWIFT software
Analogue output	No
Digital output	9 pin serial and Centronics parallel
Printer	Option
Sample compartment size	140 x 220 x 80mm
Multi-position changer	8-position as standard
Single cell holder	Normal and micro options
Test-tube holder	No
Water-jacketed cell holder	1 and 8-position options
Funnel flowcell holder	No
Sipper system	Option (with or without thermostatting)
Autosampler capability	No
Single position Peltier heating	Option
Multi position Peltier heating	6 position option
Tm measurement	Option
Dimensions	510 * 350 * 220mm
Weight	13kg
Power requirements	90-265V AC, 50/60Hz, 80VA

Ultrospec 2100 pro Technical Specifications

Wavelength range	190-900nm
Monochromator	Concave grating with 1200 lines/mm
Wavelength calibration	Automatic upon switch on
Spectral bandwidth	3nm
Wavelength accuracy	± 1nm
Wavelength reproducibility	±0.5nm
Light sources	Xenon lamp
Detector	Dual solid state silicon photodiode
Photometric range	-3.000 to 3.000A, 0.01 to 99999 concentration units, 0.1 to 200%T
Photometric linearity	±0.5% or ±0.003A to 3.000A, whichever is greater
Photometric reproducibility	0.5% of absorbance value
Stray Light	Typically <0.05%T at 220nm using NaI, <0.05%T at 340nm using $NaNO_2$
Stability	±0.002A/h at OA after warm up
Noise	±0.001A near OA and +/- 0.002A near 2A or 600nm
Abs% T	yes
Absorbance ratio	Preset 260/280nm mode or user selectable
Absorbance difference	User definable method
3 point net	User definable method
Multi-wavelength	User definable method
Concentration with factor	yes
Peak check	no
Standard curve generation	SWIFT II Software
Scanning software	Built in
Enzyme kinetics	Built in
Michaelis Menten equations	SWIFT II Software
Substrate concentration	SWIFT II Software
Time drive	SWIFT II Software
Fraction analysis	SWIFT II Software
Analogue output	No
Digital output	9 pin serial and Centronics parallel
Printer	option
Sample compartment size	140 x 220 x 80nm
Multi-position changer	8-position as standard
Single cell holder	Normal and micro options
Test-tube holder	no
Water-jacketed cell holder	1 and 8 position options
Funnel flowcell holder	no
Sipper system	Option (with without thermostatting)
Autosampler capability	no
Single position Peltier heating	Option
Multi position Peltier heating	6 position option
Tm measurement	option
Dimensions	510 * 350 * 160mm
Weight	13kg
Power requirements	90-265V AC 50/60Hz, 80VA

Ultrospec 1000 Technical Specifications

Wavelength range	200-900nm
Monochromator	Plane grating with 1200 lines/mm
Wavelength calibration	Automatic upon switch on
Spectral bandwidth	5nm
Wavelength accuracy	±2nm
Wavelength reproducibility	±0.5nm
Light sources	Tungsten halogen and deuterium arc
Detector	Single solid state silicon photodiode
Photometric range	-3.000 to 3.000A, 0.01 to 99999 concentration units, 0.1 to 200%T
Photometric linearity	±0.5% or ±0.005A to 2.000A to 546nm, whichever is greater
Photometric reproducibility	0.5% of absorbance value
Stray Light	Typically <0.05%T at 220nm using NaI, <0.05%T at 340nm using $NaNO_2$
Stability	±0.002A/h at OA and 546nm after warm up
Noise	±.0.001A near OA and +/- 0.002A near 2A at 600nm
Abs%T	yes
Absorbance ratio	User definable method
Absorbance difference	User definable method
3 point net	User definable method
Multi-wavelength	User definable method
Concentration with factor	yes
Peak check	no
Standard curve generation	User definable method
Scanning software	Scan to chart recorder
Enzyme kinetics	Output to PC and chart recorder
Michaelis Menten equations	no
Substrate concentration	no
Time drive	no
Fraction analysis	no
Analogue output	100m V per 1.000A via interface lead
Digital output	9 pin serial and Centronics parallel
Printer	option
Sample compartment size	95 x 50 x 65mm
Multi-position changer	2-position manual option
Single cell holder	10mm normal as standard
Test-tube holder	yes
Water-jacketed cell holder	Yes,single 10-40mm option
Funnel flowcell holder	no
Sipper system	no
Autosampler capability	no
Single position Peltier heating	electrical cell holder option
Multi position Peltier heating	no
Tm measurement	no
Dimensions	300 x 400 x 190mm
Weight	6kg
Power requirements	90-265 V50/60 Hz,100VA

Gene Quant Pro Technical Specifications

Wavelength range	Fixed at 230,260,280,320,595,600nm
Monochromator	Czemy-Turner configuration with 1200 Lines/mm holographic grating
Wavelength calibration	Automatic upon switch on
Spectral bandwidth	5nm
Wavelength accuracy	±1nm
Wavelength reproducibility	Better less than ±0.5nm
Light sources	Deuterium arc
Detector	Silicon photodiode
Photometric range	0 to ±3.000A for 230,260,280,320nm
0 to ±2.000A for 595,600nm	
Photometric linearity	±1.0% or ±0.005A to 3.000A, whichever is greater
Photometric reproducibility	0.5% of absorbance value
Stray Light	<0.1%T at 280nm using Acetone
Stability	Not applicable
Noise	Not applicable
Abs%T	Abs
Absorbance ratio	Preset 260/280 and 260/230nm
Absorbance difference	Background correction 230nm
3 point net	Not applicable
Multi-wavelength	Not applicable
Concentration with factor	Nucleic Acid Quantification
Peak check	Not applicable
Standard curve generation	Bradford Protein determination
Scanning software	Not applicable
Enzyme kinetics	Not applicable
Michaelis Menten equations	Not applicable
Substrate concentration	Not applicable
Time drive	Not applicable
Fraction analysis	Not applicable
Analogue output	no
Digital output	Centronics parallel output as standard (9 pin serial via interface cable)
Printer	Option with above
Sample compartment size	Not applicable
Multi-position changer	Not applicable
Single cell holder	Not applicable
Test-tube holder	Not applicable
Water-jacketed cell holder	Not applicable
Funnel flowcell holder	Not applicable
Sipper system	Not applicable
Autosampler capability	Not applicable
Single position Peltier heating	Not applicable
Multi position Peltier heating	Not applicable
Tm measurement	calculated
Dimensions	270 x 320 x 160mm
Weight	4kg
Power requirements	100-240V AC ± 10% 50/60 Hz, 50VA

Novaspec II Technical Specifications

Wavelength range	325-900nm
Monochromator	Czerny-Turner configuration with 1200 lines/mm holographic grating
Wavelength calibration	automatic upon switch on
Spectral bandwidth	6nm
Wavelength accuracy	±2nm
Wavelength reproducibility	±1nm
Light sources	deuterium arc
Detector	single solid state silicon photodiode
Photometric range	-0.300 to 3.000A, 0.001 to 9999
	concentration units, 0.1 to 200% T
Photometric linearity	±1.0% or ±0.005A to 3.000A, whichever is greater
Photometric reproducibility	0.5% of absorbance value
Stray Light	<0.5%T at 320nm using $NaNO_2$
Stability	±0.002A/h at OA after warm up
Noise	±0.001A near OA and ±0.002A
	near 2A at 600nm
Abs%T	yes
Absorbance ratio	yes
Absorbance difference	yes
3 point net	no
Multi-wavelength	no
Concentration with factor	yes
Peak check	yes
Standard curve generation	no
Scanning software	scan to chart recorder or PC software
Enzyme kinetics	timing function
Michaelis Menten equations	no
Substrate concentration	no
Time drive	no
Fraction analysis	no
Analogue output	100m V per 1.000A
Digital output	serial
Printer	Option
Sample compartment size	not applicable
Multi-position changer	no
Single cell holder	Single, multi-size
Test-tube holder	12/24mm
Water-jacketed cell holder	option
Funnel flowcell holder	venturi option
Sipper system	no
Autosampler capability	no
Single position Peltier heating	no
Multi position Peltier heating	no
Tm measurement	no
Dimensions	250 x 400 x 200mm
Weight	7.5kg
Power requirements	100-120 or 200-240V AC ±10% 50/60 Hz, 100 VA

GeneQuant Pro Technical Specification

Wavelength range	fixed at 230, 260, 280, 320nm
Monochromator	Post sample monochromation with 1200 lines/mm concave holographic grating
Wavelength calibration	factory set
Spectral bandwidth	5nm
Wavelength accuracy	±2nm
Wavelength reproducibility	better than ±0.1nm
Light sources	deuterium arc
Detector	discrete diode array
Photometric range	0 to 3.000A
Photometric linearity	±1.0% or ±0.005A to 3.000A, whichever is the greater
Photometric reproducibility	0.5% of absorbance value
Stray Light	<0.1%T at 320nm using $NaNO_2$
Stability	not applicable
Noise	not applicable
Abs%T	Abs
Absorbance ratio	preset 260/280nm
Absorbance difference	background correction at 320nm
3 point net	not applicable
Multi-wavelength	not applicable
Concentration with factor	not applicable
Peak check	not applicable
Standard curve generation	not applicable
Scanning software	not applicable
Enzyme kinetics	not applicable
Michaelis Menten equations	not applicable
Substrate concentration	not applicable
Time drive	not applicable
Fraction analysis	not applicable
Analogue output	no
Digital output	Centronics parallel output as option
Printer	option with above
Sample compartment size	not applicable
Multi-position changer	not applicable
Single cell holder	not applicable
Test-tube holder	not applicable
Water-jacketed cell holder	not applicable
Funnel flowcell holder	not applicable
Sipper system	not applicable
Autosampler capability	not applicable
Single position Peltier heating	not applicable
Multi position Peltier heating	not applicable
Tm measurement	calculated
Dimensions	270 x 320 x 130mm
Weight	3.5kg
Power requirements	100-120 or 200-240V AC ±10%, 50/60Hz, 50VA

EXHIBIT 10.9

LEASE AGREEMENT BETWEEN

SEVEN OCTOBER HILL, LLC,
AS LANDLORD, AND

Harvard BioScience, Inc. as Tenant
Building # 7, 84 October Hill Road
Holliston, Massachusetts

DATED AS OF January 3, 2002

BASIC LEASE INFORMATION

Lease Date:	as of January 3, 2002
Tenant:	**HARVARD BIOSCIENCE, INC.**
Landlord:	**SEVEN OCTOBER HILL LLC**, a Massachusetts limited liability company.
Premises:	Approximately 20,000 square feet of the building (the "**Building**") whose street address is (Building #7) 84 October Hill Road, Holliston, Massachusetts as shown on the plan attached to the Lease as Exhibit A (the "**Premises**"). The term "Building" includes the land on which the Building is located and the driveways, parking facilities and similar improvements located thereon.
Park:	The building whose street address (Building # 7) 84 October Hill Road, Holliston, Massachusetts, and the land on which such buildings are located and all other buildings or improvements now or hereafter located on such land. The Leased Premises and the Building are located upon Land (the "**Park 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 (hereafter the "Industrial Park").
Term:	Three years, commencing on April 1, 2002 (the "**Commencement Date**") and ending at 5:00 p.m. on the last day of the 36th calendar month (March 31, 2005) following the Commencement Date, subject to adjustment and earlier termination as provided in the Lease.
Basic Rent:	Basic Rent shall be the following amounts for the following periods of time:

Lease Month	Monthly Basic Rent	R.S.F.	Yearly Basic Rent
April 1, 2002 - March 31, 2005	$ 11,250.00	6.75 N.N.N.	$ 135,000.00

As used herein, the term "**Lease Month**" shall mean each calendar month during the Term (and if the Commencement Date does not occur on the first day of a calendar month, the period from the Commencement Date to the first day of the next calendar month shall be included in the first Lease Month for purposes of determining the duration of the Term and the monthly Basic Rent rate applicable for such partial month).

Security Deposit:	An additional $4,062.50 shall be paid as an additional security deposit on lease execution and delivery of this Lease. This will be added to the security deposit currently being held ($7,187.50) to bring the total security deposit to $11,250.00.
Rent:	Basic Rent and Operating Expenses, Taxes, Additional Rent (as hereinafter defined), Additional Rents, and all other sums that Tenant may owe to Landlord or otherwise be required to pay under the Lease.
Permitted Use:	Office, warehouse, distribution and light manufacturing use as permitted by the zoning by-laws of the Town of Holliston.
Tenant's Proportionate Share:	17.86%, which is the percentage obtained by dividing the rentable square feet in the Premises (20,000) the rentable square feet in the Building (112,000). Landlord and Tenant stipulate that the number of rentable square feet in the Premises and in the Building set forth above shall be binding upon them.
Initial Liability Insurance Amount:	$2,000,000.00.
Tenant's Address:	<u>For All Notices</u> : Mark Norige Harvard BioScience, Inc. 84 October Hill Road Building # 7 Holliston, MA 01746 508 - 893 - 8999
Landlord's Address:	<u>For all Notices</u> : Seven October Hill LLC c/o Parsons Commercial Group, Inc. 85 Spcen Street, Suite 300 Framingham, MA 01701 Attention: John R. Parsons, Jr. Telephone: 508-820-2700 Telecopy: 508-820-2727

The foregoing Basic Lease Information is incorporated into and made a part of the Lease identified above. If any conflict exists between any Basic Lease Information and the Lease, then the Lease shall control.

LANDLORD: **SEVEN OCTOBER HILL LLC**, a Massachusetts limited liability company.

By: /s/ John R. Parsons Jr.
Name: John R. Parsons Jr.
Title: Manager Member

TENANT: **HARVARD BIOSCIENCE, INC.**

By: /s/ Mark A. Norige
Name: Mark A. Norige
Title: C.O.O.

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LEASE

THIS LEASE AGREEMENT (this "**Lease**") is entered into as of January 3, 2002, between **SEVEN OCTOBER HILL, LLC,** ("**Landlord**"), and **HAVARD BIOSCIENCE, INC.** ("**Tenant**").

1. Definitions and Basic Provisions. The definitions and basic provisions set forth in the Basic Lease Information (the "**Basic Lease Information**") executed by Landlord and Tenant contemporaneously herewith are incorporated herein by reference for all purposes. Additionally, the following terms shall have the following meanings when used in this Lease: "**Laws**" means all federal, state, and local laws, rules and regulations, all court orders, governmental directives, and governmental orders, and all restrictive covenants affecting the Park, and "**Law**" shall mean any of the foregoing; "**Affiliate**" means any person or entity which, directly or indirectly, through one or more intermediaries, controls, is controlled by, or is under common control with the party in question; "**Tenant Party**" means any of the following persons: Tenant; any assignees claiming by, through, or under Tenant; any subtenants claiming by, through, or under Tenant; and any of their respective agents, contractors, employees, and invitees; and "**including**" means including, without limitation.

2. Lease Grant; Common Areas. Subject to the terms of this Lease, Landlord leases to Tenant, and Tenant leases from Landlord, the Premises for the Term.

Tenant shall have the non-exclusive right during the Term to use the Common Areas (as defined below) for itself, its employees, agents, customers, invitees and licensees. The phrase "**Common Areas**" as used herein shall mean the portions of the Building which are from time to time designated and improved for common use by or for the benefit of more than one tenant of the Building, including, but not limited to, any of the following: the land and facilities used as parking areas (Tenant shall be entitled to 3.5 parking spaces per 1,000 square feet of Leased space on an unreserved basis), access and perimeter roads, landscaping areas, exterior walks, stairways, ramps, interior corridors, stairs, but excluding any portion thereof when reasonably designated by Landlord for a non-common use. Landlord agrees to install Tenant's name on all appropriate directories, Tenant may also elect to erect a sign on the building or lawn, subject to Landlord's approval said approval shall not be unreasonably withheld. All Common Areas shall be subject to the exclusive control and management of Landlord. Landlord shall have the right to (i) to close, if necessary, all or any portion of the Common Areas to such extent as may be legally necessary to prevent a dedication thereof or the accrual of any rights of any person or of the public therein; (ii) to close temporarily all or any portion of the Common Areas to discourage non-tenant use; (iii) to use portions of the Common Areas while engaged in making additional improvements or repairs or alterations to the Building; and (iv) to do and perform such other acts in, to and with respect to the Common Areas as Landlord shall determine to be appropriate for the Building. Landlord shall have the right to increase the size of the Common Areas, including the expansion thereof to adjacent property, to reduce the Common Area, to reconfigure the parking spaces and improvements on the Common Areas, and to make such changes therein and thereto from time to time which in Landlord's opinion are desirable and in the best interests of

all persons using the Common Areas. Any portion of the Building not originally included within the Common Areas shall be so included if and when so designated by Landlord for common use. Tenant shall use and shall use reasonable efforts to cause its agents, employees, invitees, vendors, suppliers and independent contractors to use such access roads and operate trucks and trailers delivering merchandise to and from the Premises upon and over such access roads as are designated by Landlord as a means of ingress to and egress from the Premises. Landlord may establish a system or systems of validation or other type of operation to control the parking areas within the Common Areas. Nothing contained in this Lease shall prohibit or otherwise restrict Landlord from changing, from time to time, the location, layout or type of parking areas within the Common Areas.

3. **Term.** 36 months commencing on April 1, 2002 (the "Commencement Date") and ending at 5:00 p.m. on March 31, 2005, subject to adjustments and earlier terminations as provided for in the Lease.

4. **Rent.**

(a) **Payment.** Tenant shall timely pay to Landlord Basic Rent and all additional sums to be paid by Tenant to Landlord due on the first of each month under this Lease (payments received after the first of the month will be considered past due), without deduction or set off except as otherwise provided for herein, at Landlord's address provided for in this Lease or as otherwise specified by Landlord (and shall be accompanied by all applicable state and local sales or use taxes which presently are zero). Basic Rent, adjusted as herein provided, shall be payable monthly in advance. The first monthly installment of Basic Rent shall be payable contemporaneously with the execution and delivery of this Lease by Tenant; thereafter, Basic Rent shall be payable on the first day of each month beginning on the first day of the first full calendar month of the Term. The monthly Basic Rent for any partial month at the beginning of the Term shall equal the product of 1/365 of the annual Basic Rent in effect during the partial month and the number of days in the partial month from and after the Commencement Date, and shall be due on the Commencement Date.

(b) **Operating Costs; Taxes.**

(1) Tenant shall pay, as additional rent ("**Additional Rent**"), an amount equal to Tenant's Proportionate Share of Operating Costs (defined below) for each calendar year or partial calendar year falling within the term. Landlord may make a good faith estimate of the Additional Rent to be paid by Tenant for any calendar year or part thereof during the Term, and Tenant shall pay to Landlord, on the Commencement Date and on the first day of each calendar month thereafter, an amount equal to the estimated Additional Rent for such calendar year or part thereof divided by the number of months therein. From time to time, Landlord may estimate and re-estimate the Additional Rent to be due by Tenant and deliver a copy of the estimate or re-estimate to Tenant. Thereafter, the monthly installments of Additional Rent payable by Tenant shall be appropriately adjusted in accordance with the estimations so that, by the end of the calendar year in question, Tenant shall have paid all of the Additional Rent as estimated by Landlord. Any amounts paid based on such an estimate shall be subject to adjustment as herein provided when actual

Operating Costs are available for each calendar year. The Landlord agrees to cap the Operating Costs at $1.45 per square foot for the base year of 2002, with a 5% per annum increase to the cap limit.

(2) The term "**Operating Costs**" shall mean all expenses and disbursements (subject to the limitations set forth below) that Landlord incurs in connection with the ownership, operation, repair, replacement and maintenance of the Building, determined in accordance with sound accounting principles consistently applied, including, but not limited to, the following costs: (A) wages and salaries (including management fees) of all employees engaged in the operation, maintenance, and security of the Building, including taxes, insurance and benefits relating thereto; (B) all supplies and materials used in the operation, maintenance, repair, replacement, and security of the Building; (C) intentionally deleted; (D) cost of all utilities, except the cost of utilities reimbursable to Landlord by the Building's tenants other than pursuant to a provision similar to this Section 4.(b); (E) insurance expenses; (F) repairs, replacements, and general maintenance of the Building; (G) service or maintenance contracts with independent contractors for the operation, maintenance, repair, replacement, or security of the Building (including, without limitation, alarm service, window cleaning, and elevator maintenance);

Operating Costs shall also include the Building's pro rata share of the costs of operating, managing, maintaining and cleaning (including, without limitation, snow and ice removal) the common areas and facilities of the Park shared by the Building and other buildings in the Park, including, without limitation, the costs of landscaping, insurance, security, snow plowing/sanding; the cost of maintaining and repairing the entrance and side roads and sidewalks within the Park, the drainage system, the Park directory and signage, the irrigation system and the street lights; and the cost of providing electricity to the street lights. The Building's pro rata share (as referred to in the preceding sentence) shall be equal to a fraction, the numerator of which is the total number of rentable square feet of floor area in the Building and the denominator of which is the total number of rentable square feet of floor area in all the buildings in the Park, from time to time.

Operating Costs shall not include costs for (i) any increase in Landlord's insurance rates which may result from the negligent failure of Landlord or its agents, employees or contractors to comply with the provisions of this Lease; (ii) depreciation; (iii) interest and amortization of debt; (iv) the cost of leasehold improvements, including redecorating work, for other tenants of the Building; (v) fees and expenses (including legal and brokerage fees) for procuring new tenants for the Building or settling disputes with tenants of the Building; (vi) costs incurred in financing or refinancing of the Building; (vii) the cost of any work or service performed for any tenant in the Building (other than Tenant) to a materially greater extent or in a materially more favorable manner than that furnished generally to tenants (including Tenant) in the Building; (viii) the cost of any repair or replacement which would be required to be capitalized under generally accepted accounting principles other than as described in Section 4(b)(2)(C), including without limitation the cost of renting any equipment or materials, which cost would be so capitalized if the equipment or materials were purchased, not rented; (ix) the cost of any item included in Operating Costs to the extent that Landlord is actually reimbursed for such cost by an insurance company, a condemning authority, another tenant or any other party; (x) ground rent;

(xi) wages, salaries or other compensation paid for clerks or attendant in concessions or newsstands operated by Landlord or an affiliate of Landlord; (xii) the cost of installing, operating and maintaining any specialty service (e.g. observatory, broadcasting facility, luncheon club, retail stores, newsstands or recreational club); (xiii) any costs representing an amount paid to an entity related to Landlord which is in excess of the amount which would have been paid absent such relationship; (xiv) if the Premises are located on the ground floor of the Building, any costs related to elevators in the Building, including without limitation costs of operating, repairing, maintaining and insuring the same. (xv) Taxes (defined below); (xvi) federal income taxes imposed on or measured by the income of Landlord from the operation of the Building. (xvii) Landlord's maintenance obligations.

(3) Tenant shall pay, as additional rent ("**Taxes Additional Rent**"), an amount equal to Tenant's Proportionate Share of Taxes for each calendar year and partial calendar year falling within the Term. Tenant shall pay Tenant's Taxes Proportionate Share of such Taxes in the same manner as provided above for Additional Rent with regard to Operating Costs. "**Taxes**" shall mean taxes, assessments, and governmental charges whether federal, state, county or municipal, and whether they be by taxing districts or authorities presently taxing or by others, subsequently created or otherwise, and any other taxes and assessments attributable to the Building (or its operation), excluding, however, penalties and interest thereon and federal and state taxes on income (if the present method of taxation changes so that in lieu of the whole or any part of any Taxes, there is levied on Landlord a capital tax directly on the rents received therefrom or a franchise tax, assessment, or charge based, in whole or in part, upon such rents for the Building, then all such taxes, assessments, or charges, or the part thereof so based, shall be deemed to be included within the term "**Taxes**" for purposes hereof). For property tax purposes, Tenant waives all rights to protest or appeal the appraised value of the Premises, as well as the Building, and all rights to receive notices of reappraisement.

(4) By April 1 of each calendar year, or as soon thereafter as practicable, Landlord shall furnish to Tenant a statement of Operating Costs with reasonable backup if requested for the previous calendar year, in each case adjusted as provided in Section 4.(b)(5), and of the Taxes for the previous year (the "**Operating Costs and Tax Statement**"). If the Operating Costs and Tax Statement reveals that Tenant paid more for Operating Costs than the actual amount for the calendar year for which such statement was prepared, or more than its actual share of Taxes for such calendar year, then Landlord shall promptly credit or reimburse Tenant for such excess; likewise, if Tenant paid less than Tenant's actual Additional Rent or Taxes Additional Rent due, then Tenant shall promptly pay Landlord such deficiency; however, Landlord will endeavor to give Tenant relevant tax notices and reasonably cooperate with Tenant to reduce taxes.

Unless Tenant shall have taken written exception to the Operating Costs and Tax Statement, or any item therein, within sixty (60) days after the furnishing of the Operating Costs and Tax Statement to Tenant, such Operating Costs and Tax Statement shall be considered as final and accepted by Landlord and Tenant; provided however, should Tenant take written exception to the Operating Costs and Tax Statement within said sixty (60) day period, then Tenant or its representative shall have the right to examine Landlord's books and records with respect to the calculation of the common expenses during Landlord's normal business hours at any time within thirty (30) days following the date of Tenant's written exception. In the event such Operating Costs and Tax Statement indicates or such examination determines, based on generally accepted accounting principles, that such common expenses were overstated, Landlord shall promptly reimburse Tenant for any over-payment.

5. **Delinquent Payment; Handling Charges.** All past due payments required of Tenant hereunder shall bear interest from the date due until paid at the lesser of 13% per annum or the maximum lawful rate of interest; additionally, Landlord may charge Tenant a fee equal to $ 250.00, to reimburse Landlord for its cost and inconvenience incurred as a consequence of Tenant's delinquency. The Landlord must give written notice to the Tenant of the delinquency prior to charging the Tenant the additional fee of $ 250.00. Tenant has 5 business days from the date notice was received to correct the delinquency. In no event, however, shall the charges permitted under this Section 5 or elsewhere in this Lease, to the extent they are considered to be interest under applicable Law, exceed the maximum lawful rate of interest.

6. **Security Deposit.** Contemporaneously with the execution and delivery of this Lease by Tenant, Tenant shall pay to Landlord an additional $ 4,062.50 which shall be held by Landlord to secure Tenant's performance of its obligations under this Lease. This amount will be added to the amount currently held ($7,187.50) by Seven October Hill, LLC for a total security deposit of $ 11,250.00 The Security Deposit is not an advance payment of Rent or a measure or limit of Landlord's damages upon an Event of Default (defined in Section 17). Landlord may, from time to time following an Event of Default and without prejudice to any other remedy, use all or a part of the Security Deposit to perform any obligation Tenant fails to perform hereunder. Following any such application of the Security Deposit, Tenant shall pay to Landlord on demand the amount so applied in order to restore the Security Deposit to its original amount. Provided that Tenant has performed all of its obligations hereunder, Landlord shall, within 30 days after the Term ends and Tenant has vacated the Premises, return to Tenant the portion of the Security Deposit which was not applied to satisfy Tenant's obligations. The Security Deposit may be commingled with other funds, and no interest shall be paid thereon. If Landlord transfers its interest in the Premises and the transferee assumes Landlord's obligations under this Lease, then Landlord may assign the Security Deposit to the transferee and Landlord thereafter shall have no further liability for the return of the Security Deposit.

7. Landlord's Maintenance Obligations

(a) **Landlord's Obligations**. This Lease is intended to be a net lease; accordingly, Landlord's maintenance obligations are limited to the replacement of the Building's roof and maintenance of the foundation and structural members of exterior walls (the "Building's Structure") plus replacement of HVAC system if warranted and maintenance of the common areas; Landlord shall not be responsible for alterations to the Building's Structure required by applicable law because of Tenant's use of the Premises (which alterations shall be Tenant's responsibility). The Building's Structure does not include doors, locks, special fronts, or office entries, all of which shall be maintained by Tenant.

(b) **Landlord's Right to Perform Tenant's Obligations**. Upon 30 days notice and with an opportunity thereafter for Tenant to perform its obligations, Landlord may perform Tenant's maintenance, repair, and replacement obligations and any other items that are Tenant's obligations pursuant to Section 5. Tenant shall reimburse Landlord for the cost incurred in so doing within 30 days after being invoiced therefore.

8. Utilities

(a) **Utilities**. Tenant shall obtain and pay for all water, gas, electricity, heat, telephone, sprinkler charges and other utilities and services used at the Leased Premises, together with all taxes, penalties, surcharges, and maintenance charges pertaining thereto. Landlord may, at Tenant's expense, separately meter and bill Tenant directly for its use of any such utility services. Landlord shall not be liable for any interruption or failure of utility service to the Premises unless caused by Landlord's affirmative acts or negligence or failure to use reasonable efforts to restore. Any amounts payable by Tenant under this Section shall be due within 30 days after Landlord has invoices Tenant therefore. Landlord will provide adequate service for normal use as an office building.

(b) **Electric Service Provider**. Landlord has advised Tenant that presently NSTAR Electric (the "**Electric Service Provider**") is the electric utility company selected by Landlord to provide electricity service for the Building. Notwithstanding the foregoing, Landlord reserves the right at any time and from time to time before or during the Term to either contract for electric service from a different company or companies providing electricity service (each such company shall hereinafter be referred to as an "**Alternative Service Provider**") or continue to contact for electricity service from the Electric Service Provider. Tenant shall cooperate with Landlord, the Electric Service Provider and any Alternative Service Provider at all times and, as reasonably necessary, shall allow Landlord, the Electric Service Provider and any Alternative Service Provider reasonable access to the Building's electric lines, feeders, risers, wiring and other machinery within the Premises.

(c) **Excess Utility Use**. Tenant shall not install any electrical equipment requiring special wiring or requiring voltage in excess of 220/440 volts or otherwise exceeding Building capacity unless approved in advance by Landlord. The use of electricity in the Premises shall not exceed the capacity of existing feeders and risers to or wiring in the Premises. Any risers or wiring required to meet Tenant's

excess electrical requirements shall, upon Tenant's written request, be installed by Landlord, at Tenant's cost, if, in Landlord's judgment, the same are necessary and shall not cause permanent damage to the Building or the Premises, cause or create a dangerous or hazardous condition, entail excessive or unreasonable alterations, repairs, or expenses, or interfere with or disturb other tenants of the Building. If Tenant uses machines or equipment in the Premises which affect the temperature otherwise maintained by the air conditioning system or otherwise overload any utility, Landlord may install supplemental air conditioning units or other supplemental equipment in the Premises, and the cost thereof, including the cost of installation, operation, use, and maintenance, shall be paid by Tenant to Landlord within 30 days after Landlord has delivered to Tenant an invoice therefore. Landlord agrees to provide electrical for normal use in the expansion of Exhibit C.

9. Improvements; Alterations; Tenant's Maintenance

(a) **Improvements; Alterations**. Improvements to the Premises shall be installed at Tenant's expense only in accordance with plans and specifications, which have been previously submitted to and approved in writing by Landlord. No structural alterations or physical additions in or to the Premises may be made without Landlord's prior written consent, which shall not be unreasonably withheld or delayed; however, Landlord may withhold its consent to any alteration or addition that would affect the Building's structure or its HVAC, plumbing, electrical, or mechanical systems. Tenant shall not paint or install signs, window or door lettering, or advertising media of any type on or about the Premises without the prior written consent of Landlord, which shall not be unreasonably withheld or delayed; however, Landlord may withhold its consent to any such painting or installation which would affect the appearance of the exterior of the Building or of any common areas of the Building. All alterations, additions, and improvements shall be constructed, maintained, and used by Tenant, at its risk and expense, in accordance with all Laws; Landlord's approval of the plans and specifications therefore shall not be a representation by Landlord that such alterations, additions, or improvements comply with any Law.

(b) **Tenant's Maintenance**. Tenant shall maintain all parts of the Premises in a good condition and promptly make all necessary repairs and replacements to the Premises, excepting only that work which Landlord is expressly responsible for pursuant to Section 7.(a). Tenant shall maintain the plumbing, electrical, and mechanical systems in the Premises in good repair and condition in accordance with applicable law and the equipment manufacturer's suggested service programs. If Landlord so directs, Tenant shall enter into a preventive maintenance/service contract with a maintenance contractor approved by Landlord for servicing all air conditioning, heating, ventilating and other equipment located within or serving the Premises. Tenant agrees to coordinate with the Landlord, the repair and maintenance of the HVAC system. The Landlord shall pay for such repair and maintenance of the HVAC as necessary, to the extent not damaged by negligence of the Tenant, its, agents, employees, or invitees.

(c) **Performance of Work**. Tenant shall cause all contractors and subcontractors to procure and maintain insurance coverage naming Landlord as an additional insured against such risks, in such amounts, and with such companies as

Landlord may reasonably require. All such work shall be performed in accordance with all Laws and in a good and workmanlike manner so as not to damage the Building (including the Premises, the structural elements, and the plumbing, electrical lines, or other utility transmission facility). All such work which may affect the Building's HVAC, electrical, plumbing, other mechanical systems, or structural elements must be approved by the Building's engineer of record, at Tenant's expense and, at Landlord's election, must be performed by Landlord's usual contractor for such work. Tenant shall provide sworn statements, including the names, addresses and copies of contracts for all contractors, and upon completion of any work shall promptly furnish Landlord with sworn owner's and contractor's statements and full and final waivers of lien covering all labors and materials included in the work in question.

(d) **Mechanic's Liens**. Tenant shall not permit any mechanic's liens to be filed against the Premises or the Building for any work performed, materials furnished, or obligation incurred by or at the request of Tenant. If such a lien is filed, then Tenant shall, within 10 days after Landlord has delivered notice of the filing thereof to Tenant, either pay the amount of the lien or diligently contest such lien and deliver to Landlord a bond or other security reasonably satisfactory to Landlord. If Tenant fails to timely take either such action, then Landlord may pay the lien claim, and any amounts so paid, including expenses and interest, shall be paid by Tenant to Landlord within 10 days after Landlord has invoiced Tenant therefore.

10. Use. Tenant shall continuously occupy and use the Premises only for the Permitted Use and shall comply with all Laws relating to the use, condition, access to, and occupancy of the Premises. The Premises shall not be used for any use, which is disreputable, creates extraordinary fire hazards, or for the storage of any Hazardous Materials. If, because of a Tenant Party's acts, the rate of insurance on the Building or its contents increases, then such acts shall be an Event of Default, Tenant shall pay to Landlord the amount of such increase on demand, and acceptance of such payment shall not waive any of Landlord's other rights. Tenant shall conduct its business and control each other Tenant Party so as not to create any nuisance or unreasonably interfere with other tenants or Landlord in its management of the Building.

11. Assignment and Subletting

(a) **Transfers**. Except as provided in Section 11. (f), Tenant shall not, without the prior written consent of Landlord, (1) assign, transfer, or encumber this Lease or any estate or interest herein, whether directly or by operation of law, (2) Intentionally Deleted (3) if Tenant is an entity other than a corporation whose stock is publicly traded, permit the transfer of an ownership interest in Tenant so as to result in a change in the current control of Tenant, (4) sublet any portion of the Premises, (5) grant any license, concession, or other right of occupancy of any portion of the Premises, or (6) permit the use of the Premises by any parties other than Tenant (any of the events listed in Section 11.(a)(1) through 11.(a)(6) being a "**Transfer**").

(b) **Consent Standards**. Landlord shall not unreasonably withhold its consent to any proposed Transfer, provided that the proposed transferee is creditworthy, has a good reputation in the business community, will use the Premises for the Permitted Use and will not use the Premises in any manner that would conflict

with any exclusive use agreement or other similar agreement entered into by Landlord with any other tenant of the building, is not a governmental entity, or subdivision or agency thereof, and is not another occupant of the Building or person or entity with whom Landlord is negotiating to lease space in the Building; otherwise, Landlord may withhold its consent in its sole discretion.

(c) **Request for Consent**. If Tenant requests Landlord's consent to a proposed Transfer, then Tenant shall provide Landlord with a written description of all terms and conditions of the proposed Transfer, copies of the proposed documentation, and the following information about the proposed transferee: name and address; reasonably satisfactory information about its business and business history; its proposed use of the Premises; banking, financial, and other credit information; and general references sufficient to enable Landlord to determine the proposed transferee's creditworthiness and character. Tenant shall also reimburse Landlord immediately upon request for its reasonable attorneys' fees incurred in connection with considering any request for consent to a proposed Transfer. Tenant shall pay for reasonable attorneys fees.

(d) **Conditions to Consent**. If Landlord consents to a proposed Transfer, then the proposed transferee shall deliver to Landlord a written agreement whereby it expressly assumes Tenant's obligations hereunder; however, any transferee of less than all of the space in the Premises shall be liable only for obligations under this Lease that are properly allocable to the space subject to the Transfer for the period of the Transfer. No Transfer shall release Tenant from its obligations under this Lease, but rather Tenant and its transferee shall be jointly and severally liable therefore. Landlord's consent to any Transfer shall not waive Landlord's rights as to any subsequent Transfers. If an Event of Default occurs while the Premises or any part thereof are subject to a Transfer, then Landlord, in addition to its other remedies, may collect directly from such transferee all rents becoming due to Tenant and apply such rents against Rent. Tenant authorizes its transferees to make payments of rent directly to Landlord upon receipt of notice from Landlord to do so. Tenant shall pay for the cost of any demising walls or other improvements necessitated by a proposed subletting or assignment.

(e) **Additional Compensation**. Tenant shall pay to Landlord, immediately upon receipt thereof, the excess of (1) all compensation received by Tenant for a Transfer less the costs reasonably incurred by Tenant with unaffiliated third parties in connection with such Transfer (i.e., brokerage commissions, tenant finish work, and the like) over (2) the Rent allocable to the portion of the Premises covered thereby. (3) If for any assignment, transfer or sublease so approved by the Landlord, Tenant receives rent or other consideration, either initially or over the term of the assignment or sublease, in excess of the rent called for hereunder, or in case of sublease of part, in excess of such rent allocable to the part, after appropriate adjustments to assure that all other payments called for hereunder are appropriately taken into account, Tenant shall pay to Landlord as Additional Rent 100% of such excess of such payment of rent or other consideration received by the Tenant promptly after its receipt. Tenant shall reimburse Landlord for any costs or expenses incurred pursuant to any request by Tenant for consent to any such assignment, transfer or subletting.

12. Insurance; Waivers; Subrogation; Indemnity

(a) **Insurance**. Tenant shall maintain throughout the Term the following insurance policies: (1) commercial general liability insurance in amounts of $2,000,000.00 per occurrence or such other amounts as Landlord may from time to time reasonably require, insuring Tenant, Landlord, Landlord's agents and their respective Affiliates against all liability for injury to or death of a person or persons or damage to property arising from the use and occupancy of the Premises, Landlord (Seven October Hill LLC) and Management Company (Parsons Commercial Group, Inc.) shall be named as additional insured. (2) insurance covering the full value of Tenant's property and improvements, and other property (including property of others) in the Premises, (3) contractual liability insurance sufficient to cover Tenant's indemnity obligations hereunder (but only if such contractual liability insurance is not already included in Tenant's commercial general liability insurance policy), (4) worker's compensation insurance, containing a waiver of subrogation endorsement acceptable to Landlord, and (5) business interruption insurance. Tenant's insurance shall provide primary coverage to Landlord when any policy issued to Landlord provides duplicate or similar coverage, and in such circumstance Landlord's policy will be excess over Tenant's policy. The Tenant 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 a equipment and trade fixtures. Tenant shall furnish to Landlord certificates of such insurance and such other evidence satisfactory to Landlord (Seven October Hill LLC) and Management Company (Parsons Commercial Group, Inc.) of the maintenance of all insurance coverages required hereunder, and Tenant shall obtain a written obligation on the part of each insurance company to notify Landlord at least 10 days before cancellation or a material change of any such insurance policies. All such insurance policies shall be in form, and issued by companies, reasonably satisfactory to Landlord.

(b) **Waiver of Negligence; No Subrogation**. Landlord and Tenant each waives any claim it might have against the other for any injury to or death of any person or persons or damage to or theft, destruction, loss, or loss of use of any property (a "**Loss**"), to the extent the same is insured against under any insurance policy that covers the Building, the Premises, Landlord's or Tenant's fixtures, personal property, leasehold improvements, or business, or, in the case of Tenant's waiver, is required to be insured against under the terms hereof, regardless of whether the negligence of the other party caused such Loss; however, Landlord's waiver shall not include any deductible amounts on insurance policies carried by Landlord. Each party shall cause its insurance carrier to endorse all applicable policies waiving the carrier's rights of recovery under subrogation or otherwise against the other party.

(c) **Indemnity**. Subject to Section 12.(b), Tenant shall defend, indemnify, and hold harmless Landlord and its representatives and agents from and against all claims, demands, liabilities, causes of action, suits, judgments, damages, and expenses (including reasonable attorneys' fees) arising from (1) any Loss arising from any occurrence on the Premises, or (2) Tenant's failure to perform its obligations under this Lease, (other than a Loss arising from the willful negligence of Landlord or its agents), This indemnity provision shall survive termination or expiration of this Lease. If any proceeding is filed for which indemnity is required hereunder, Tenant

agrees, upon request therefore, to defend the indemnified party in such proceeding at its sole cost utilizing counsel satisfactory to the indemnified party.

13. Subordination; Attornment; Notice to Landlord's Mortgagee

(a) **Subordination**. Provided each mortgagee executes a document which provides that Tenant's tenancy under this Lease will not be disturbed in he event of foreclosure. This Lease shall be subordinate to any deed of trust, mortgage, or other security instrument, or any ground lease, master lease, or primary lease, that now or hereafter covers all or any part of the Premises (the mortgagee under any such mortgage or the lessor under any such lease is referred to herein as a "**Landlord's Mortgagee"**). Any Landlord's Mortgagee may elect, at any time, unilaterally, to make this Lease superior to its mortgage, ground lease, or other interest in the Premises by so notifying Tenant in writing. Landlord shall obtain non-disturbance agreements from existing and future mortgages.

(b) **Attornment**. Tenant shall attorn to any party succeeding to Landlord's interest in the Premises, whether by purchase, foreclosure, deed in lieu of foreclosure, power of sale, termination of lease, or otherwise, upon such party's request, and shall execute such agreements confirming such attornment as such party may reasonably request.

(c) **Notice to Landlord's Mortgagee**. Tenant shall not seek to enforce any remedy it may have for any default on the part of Landlord without first giving written notice by certified mail, return receipt requested, specifying the default in reasonable detail, to any Landlord's Mortgagee whose address has been given to Tenant, and affording such Landlord's Mortgagee a reasonable opportunity to perform Landlord's obligations hereunder.

(d) **Landlord's Mortgagee's Protection Provisions**. If Landlord's Mortgagee shall succeed to the interest of Landlord under this Lease, Landlord's Mortgagee shall not be: (1) liable for any act or omission of any prior lessor (including Landlord); (2) bound by any rent or additional rent or advance rent which Tenant might have paid for more than the current month to any prior lessor (including Landlord), and all such rent shall remain due and owing, notwithstanding such advance payment; (3) bound by any security or advance rental deposit made by Tenant which is not delivered or paid over to Landlord's Mortgagee and with respect to which Tenant shall look solely to Landlord for refund or reimbursement; (5) subject to the defenses which Tenant might have against any prior lessor (including Landlord); and (6) subject to the offsets which Tenant might have against any prior lessor (including Landlord) except for those offset rights which (A) are expressly provided in this Lease, (B) relate to periods of time following the acquisition of the Building by Landlord's Mortgagee, and (C) Tenant has provided written notice to Landlord's Mortgagee and provided Landlord's Mortgagee a reasonable opportunity to cure the event giving rise to such offset event. Landlord's Mortgagee shall have no liability or responsibility under or pursuant to the terms of this Lease or otherwise after it ceases to own an interest in the Building. Nothing in this Lease shall be construed to require Landlord's Mortgagee to see to the application of the proceeds of any loan, and Tenant's agreements set forth herein shall not be impaired on account of any modification of the documents evidencing and securing any loan.

14. **Rules and Regulations**. Tenant shall comply with the rules and regulations of the Building, which are attached hereto as Exhibit B. Landlord may, from time to time, change such rules and regulations for the safety, care, or cleanliness of the Building and related facilities, provided that such changes are applicable to all tenants of the Building and will not unreasonably interfere with Tenant's use of the Premises. Tenant shall be responsible for the compliance with such rules and regulations by each Tenant Party.

15. **Condemnation**.

(a) **Total Taking**. If the entire Building or Premises are taken by right of eminent domain or conveyed in lieu thereof (a "**Taking**"), this Lease shall terminate as of the date of the Taking.

(b) **Partial Taking – Tenant's Rights**. If any part of the Building becomes subject to a Taking and such Taking will prevent Tenant from conducting its business in the Premises in a manner reasonably comparable to that conducted immediately before such Taking for a period of more than 180 days, then Tenant may terminate this Lease as of the date of such Taking by giving written notice to Landlord within 30 days after the Taking, and Rent shall be apportioned as of the date of such Taking. If Tenant does not terminate this Lease, then Rent shall be abated on a reasonable basis as to that portion of the Premises rendered untenantable, by the Taking.

(c) **Partial Taking – Landlord's Rights**. If any material portion, but less than all, of the Building becomes subject to a Taking, or if Landlord is required to pay any of the proceeds received for a Taking to a Landlord's Mortgagee, then Landlord may terminate this Lease by delivering written notice thereof to Tenant within 30 days after such Taking, and Rent shall be apportioned as of the date of such Taking. If Landlord does not so terminate this Lease, then this Lease will continue, but if any portion of the Premises has been taken, Rent shall abate as provided in the last sentence of Section 15.(b).

(d) **Award**. If any Taking occurs, then Landlord shall receive the entire award or other compensation for the land on which the Building is situated, the Building, and other improvements taken, and Tenant may separately pursue a claim (to the extent it will not reduce Landlord's award) against the condemnor for the value of Tenant's personal property which Tenant is entitled to remove under this Lease, moving costs, loss of business, and other claims it may have.

16. **Fire or Other Casualty**

(a) **Repair Estimate**. If the Premises or the Building are damaged by fire or other casualty (a "**Casualty**"), Landlord shall, within 60 days after such Casualty, deliver to Tenant a good faith estimate (the "**Damage Notice**") of the time needed to repair the damage caused by such Casualty.

(b) **Landlord's and Tenant's Rights**. If a material portion of the Premises or the Building is damaged by Casualty such that Tenant is prevented from conducting its business in the Premises in a manner reasonably comparable to that

conducted immediately before such Casualty and Landlord estimates that the damage caused thereby cannot be repaired within 60 days after the Casualty, then Tenant may terminate this Lease by delivering written notice to Landlord of its election to terminate within 30 days after the Damage Notice has been delivered to Tenant. If Tenant does not so timely terminate this Lease, then (subject to Section 16.(c)) Landlord shall repair the Building or the Premises, as the case may be, as provided below, and Rent for the portion of the Premises rendered untenantable by the damage shall be abated on a reasonable basis from the date of damage until the completion of the repair, unless a Tenant Party caused such damage, in which case, Tenant shall continue to pay Rent without abatement.

(c) **Landlord's Rights**. If a Casualty damages a material portion of the Building, and Landlord makes a good faith determination that restoring the Premises would be uneconomical, or if Landlord is required to pay any insurance proceeds arising out of the Casualty to a Landlord's Mortgagee, then Landlord may terminate this Lease by giving written notice of its election to terminate within 30 days after the Damage Notice has been delivered to Tenant, and Basic Rent and Additional Rent shall be abated as of the date of the Casualty.

(d) **Repair Obligation**. If neither party elects to terminate this Lease following a Casualty, then Landlord shall, within a reasonable time after such Casualty, begin to repair the Building and the Premises and shall proceed with reasonable diligence to restore the Building and Premises to substantially the same condition as they existed immediately before such Casualty; however, Landlord shall not be required to repair or replace any of the furniture, equipment, fixtures, and other improvements which may have been placed by, or at the request of, Tenant or other occupants in the Building or the Premises, and Landlord's obligation to repair or restore the Building or Premises shall be limited to the extent of the insurance proceeds actually received by Landlord for the Casualty in question. If Premises are not restored within 180 days following casualty Tenant may terminate this lease.

17. Personal Property Taxes. Tenant shall be liable for all taxes levied or assessed against personal property, furniture, or fixtures placed by Tenant in the Premises. If any taxes for which Tenant is liable are levied or assessed against Landlord or Landlord's property and Landlord elects to pay the same, or if the assessed value of Landlord's property is increased by inclusion of such personal property, furniture or fixtures and Landlord elects to pay the taxes based on such increase, then Tenant shall pay to Landlord, upon demand, the part of such taxes for which Tenant is primarily liable hereunder; however, Landlord shall not pay such amount if Tenant notifies Landlord that it will contest the validity or amount of such taxes before Landlord makes such payment, and thereafter diligently proceeds with such contest in accordance with law and if the non-payment thereof does not pose a threat of loss or seizure of the Building or interest of Landlord therein or impose any fee or penalty against Landlord.

18. **Events of Default**. Each of the following occurrences shall be an "**Event of Default**":

(a) Tenant's failure to pay Rent within 3 business days after Landlord has delivered notice to Tenant that the same is due; however, an Event of Default shall occur hereunder without any obligation of Landlord to give any notice if Landlord has given Tenant written notice under this Section 18.(a) on more than two occasions during the twelve (12) month interval preceding such failure by Tenant;

(b) Tenant fails to comply with the Permitted Use set forth herein and the continuance of such failure for a period of 15 days after Landlord has delivered to Tenant written notice thereof;

(c) Tenant fails to provide any estoppel certificate within the time period required under Section 26.(e) and such failure shall continue for 10 business days after written notice thereof from Landlord to Tenant;

(d) Tenant's failure to perform, comply with, or observe any other agreement or obligation of Tenant under this Lease and the continuance of such failure for a period of more than 30 days after Landlord has delivered to Tenant written notice thereof; and

(e) The filing of a petition by or against Tenant (the term "**Tenant**" shall include, for the purpose of this Section 18.(f), any guarantor of Tenant's obligations hereunder) (1) in any bankruptcy or other insolvency proceeding; (2) seeking any relief under any state or federal debtor relief law; (3) for the appointment of a liquidator or receiver for all or substantially all of Tenant's property or for Tenant's interest in this Lease; or (4) for the reorganization or modification of Tenant's capital structure; however, if such a petition is filed against Tenant, then such filing shall not be an Event of Default unless Tenant fails to have the proceedings initiated by such petition dismissed within 90 days after the filing thereof.

19. **Remedies**. Upon an Event of Default, Landlord may, in addition to all other rights and remedies afforded Landlord hereunder, take any of the following actions:

(a) Terminate this Lease by giving Tenant written notice thereof, in which event Tenant shall immediately vacate and surrender the Premises and deliver possession thereof to Landlord and shall pay to Landlord the sum of (1) all Rent accrued hereunder through the date of termination, (2) all amounts due under Section 20.(a), and (3) an amount equal to (A) the total Rent that Tenant would have been required to pay for the remainder of the Term plus Landlord's estimate of aggregate expenses of reletting to the Premises, minus (B) the then present fair rental rate value of the Premises for such period;

(b) Terminate Tenant's right to possess the Premises without terminating this Lease by giving written notice thereof to Tenant, in which event Tenant shall immediately vacate and surrender the Premises and deliver possession thereof to Landlord and shall pay to Landlord (1) all Rent and other amounts accrued hereunder to the date of termination of possession, (2) all amounts due from time to

time under Section 20.(a), and (3) all Rent and other net sums required hereunder to be paid by Tenant during the remainder of the Term, diminished by any net sums thereafter received by Landlord through reletting the Premises during such period, after deducting all reasonable out-of-pocket costs incurred by Landlord in reletting the Premises. Landlord shall use reasonable efforts to relet the Premises on such terms as Landlord in its sole discretion may determine (including a term different from the Term, rental concessions, and alterations to, and improvement of, the Premises); however, Landlord shall not be obligated to relet the Premises before leasing other portions of the Building. Landlord shall not be liable for, nor shall Tenant's obligations hereunder be diminished because of, Landlord's failure to relet the Premises or to collect rent due for such reletting. Tenant shall not be entitled to the excess of any consideration obtained by reletting over the Rent due hereunder. Reentry by Landlord in the Premises shall not affect Tenant's obligations hereunder for the unexpired Term; rather, Landlord may, from time to time, bring an action against Tenant to collect amounts due by Tenant, without the necessity of Landlord's waiting until the expiration of the Term. Unless Landlord delivers written notice to Tenant expressly stating that it has elected to terminate this Lease, all actions taken by Landlord to dispossess or exclude Tenant from the Premises shall be deemed to be taken under this Section 19. (b). If Landlord elects to proceed under this Section 19. (b), it may at any time elect to terminate this Lease under Section 19.(a).

Any and all remedies set forth in this Lease: (i) shall be in addition to any and all other remedies Landlord may have at law or in equity; (ii) shall be cumulative; and (iii) may be pursued successively or concurrently as Landlord may elect. The exercise of any remedy by Landlord shall not be deemed an election of remedies or preclude Landlord from exercising any other remedies in the future. Notwithstanding the foregoing, Landlord shall only recover its damages allowed hereunder once.

20. Payment by Tenant; Non-Waiver

(a) **Payment by Tenant**. Upon any Event of Default, Tenant shall pay to Landlord all costs incurred by Landlord (including court costs and reasonable attorneys' fees and expenses) in (1) obtaining possession of the Premises, (2) removing and storing Tenant's or any other occupant's property, (3) repairing, restoring, altering, remodeling, or otherwise putting the Premises into condition of comparable office space in the building, that had been leased in the Year 2001, (4) if Tenant is dispossessed of the Premises and this Lease is not terminated, reletting all or any part of the Premises (including brokerage commissions, cost of tenant finish work, and other costs incidental to such reletting), (5) performing Tenant's obligations which Tenant failed to perform, and (6) enforcing, or advising Landlord of, its rights, remedies, and recourses arising out of the Event of Default. To the full extent permitted by law, Landlord and Tenant agree the federal and state courts of the Commonwealth of Massachusetts are located shall have exclusive jurisdiction over any matter relating to or arising from this Lease and the parties' rights and obligations under this Lease.

(b) **No Waiver**. Landlord's acceptance of Rent following an Event of Default shall not waive Landlord's rights regarding such Event of Default. No waiver by Landlord of any violation or breach of any of the terms contained herein shall waive Landlord's rights regarding any future violation of such term. Landlord's acceptance

of any partial payment of Rent shall not waive Landlord's rights with regard to the remaining portion of the Rent that is due, regardless of any endorsement or other statement on any instrument delivered in payment of Rent or any writing delivered in connection therewith; accordingly, Landlord's acceptance of a partial payment of Rent shall not constitute an accord and satisfaction of the full amount of the Rent that is due.

21. **Landlord's Lien**. Delete

22. **Surrender of Premises**. No act by Landlord shall be deemed an acceptance of a surrender of the Premises, and no agreement to accept a surrender of the Premises shall be valid unless it is in writing and signed by Landlord. At the expiration or earlier termination of the Term of this Lease, Tenant shall deliver to Landlord the Premises with all improvements located therein in good repair and condition, free of Hazardous Materials placed on the Premises during the Term, by Tenant or its employees or contractors, broom-clean, reasonable wear and tear (and condemnation and Casualty damage not caused by Tenant, as to which Sections 15 and 16 shall control) excepted, and shall deliver to Landlord all keys to the Premises. Provided that Tenant has performed all of its obligations hereunder, Tenant may remove all unattached trade fixtures, furniture, and personal property placed in the Premises or elsewhere in the Building by Tenant (but Tenant may not remove any such item which was paid for, in whole or in part, by Landlord or any wiring or cabling) Additionally, at Landlord's option, Tenant shall remove such alterations, additions, improvements, trade fixtures, personal property, equipment, wiring, cabling, and furniture as Landlord may request; however, Tenant shall not be required to remove any addition or improvement to the Premises if Landlord has specifically agreed in writing that the improvement or addition in question need not be removed. Tenant shall repair all damage caused by such removal. All items not so removed shall, at Landlord's option, be deemed to have been abandoned by Tenant and may be appropriated, sold, stored, destroyed, or otherwise disposed of by Landlord upon 10 days written notice to Tenant and without any obligation to account for such items; any such disposition shall not be considered a strict foreclosure or other exercise of Landlord's rights in respect of the security interest granted under Section 21. The provisions of this Section 22 shall survive the end of the Term.

23. **Holding Over**. If Tenant fails to vacate the Premises at the end of the Term, then Tenant shall be a tenant-at-sufferance and, in addition to all other damages and remedies to which Landlord may be entitled for such holding over, Tenant shall pay, in addition to the other Rent, a daily Basic Rent equal 150% of the daily Basic Rent payable during the last month of the Term. The provisions of this Section 23 shall not be deemed to limit or constitute a waiver of any other rights or remedies of Landlord provided herein or at law. If Tenant fails to surrender the Premises upon the expiration or earlier termination of the Term of this Lease, in addition to any other liabilities to Landlord accruing therefrom, Tenant shall protect, defend, indemnify and hold Landlord harmless from all loss, costs (including reasonable attorneys' fees) and liability resulting from such failure, including, without limiting the generality of the foregoing, any claims made by any succeeding tenant founded upon such failure to surrender, and any lost profits to Landlord resulting therefrom.

24. **Certain Rights Reserved by Landlord.** Provided that the exercise of such rights does not unreasonably interfere with Tenant's occupancy of the Premises, Landlord shall have the following rights:

(a) To decorate and to make inspections, repairs, alterations, additions, changes, or improvements, whether structural or otherwise, in and about the Building, or any part thereof; to enter upon the Premises (after giving Tenant reasonable notice thereof, which may be oral notice, except in cases of real or apparent emergency, in which case no notice shall be required) and, during the continuance of any such work, to temporarily close doors, entryways, public space, and corridors in the Building; to interrupt or temporarily suspend Building services and facilities; to change the name of the Building; and to change the arrangement and location of entrances or passageways, doors, and doorways, corridors, elevators, stairs, restrooms, or other public parts of the Building;

(b) To take such reasonable measures as Landlord deems advisable for the security of the Building and its occupants; evacuating the Building for cause, suspected cause, or for drill purposes; temporarily denying access to the Building; and closing the Building after normal business hours and on Sundays and holidays, subject, however, to Tenant's right to enter when the Building is closed after normal business hours under such reasonable regulations as Landlord may prescribe from time to time; and

(c) To enter the Premises at reasonable hours to show the Premises to prospective purchasers, lenders, or, during the last 6 months of the Term, tenants.

25. **Outside Storage.** No outside storage of any type shall be permitted, this includes but is not limited to pallets, warehouse debris or products of any type.

26. **Miscellaneous**.

(a) **Landlord Transfer**. Landlord may transfer any portion of the Building and any of its rights under this Lease. If Landlord assigns its rights under this Lease, then Landlord shall thereby be released from any further obligations hereunder arising after the date of transfer, provided that the assignee assumes Landlord's obligations hereunder in writing.

(b) **Landlord's Liability**. The liability of Landlord to Tenant for any default by Landlord under the terms of this Lease shall be limited to Tenant's actual direct, but not consequential, damages therefore and shall be recoverable only from the equity of Landlord in the Building, and Landlord shall not be personally liable for any deficiency.

(c) **Force Majeure**. Other than for Tenant's obligations under this Lease that can be performed by the payment of money (e.g., payment of Rent and maintenance of insurance), whenever a period of time is herein prescribed for action to be taken by either party hereto, such party shall not be liable or responsible for, and there shall be excluded from the computation of any such period of time, any delays due to strikes, riots, acts of God, shortages of labor or materials, war, governmental

laws, regulations, or restrictions, or any other causes of any kind whatsoever which are beyond the control of such party.

(d) **Brokerage**. Neither Landlord nor Tenant has dealt with any broker or agent in connection with the negotiation or execution of this Lease, other than Parsons Commercial Group, Inc. (the "**Broker**"), whose commission shall be paid by Landlord pursuant to a separate agreement between Landlord and the Broker. Tenant and Landlord shall each indemnify the other against all costs, expenses, attorneys' fees, and other liability for commissions or other compensation claimed by any broker or agent claiming the same by, through, or under the indemnifying party.

(e) **Estoppel Certificates**. From time to time, Tenant shall furnish to any party designated by Landlord, within 10 business days after Landlord has made a request therefore, a certificate signed by Tenant confirming and containing such factual certifications and representations as to this Lease as Landlord may reasonably request. Unless otherwise required by Landlord's Mortgagee or a prospective purchaser or mortgagee of the Building, the initial form of estoppel certificate to be sign will be provided by the Landlord

(f) **Notices**. All notices and other communications given pursuant to this Lease shall be in writing and shall be (1) mailed by first class, United States Mail, postage prepaid, certified, with return receipt requested, and addressed to the parties hereto at the address specified in the Basic Lease Information, (2) hand delivered to the intended address, (3) sent by a nationally recognized overnight courier service, or (4) sent by facsimile transmission during normal business hours followed by a confirmatory letter sent in another manner permitted hereunder. All notices shall be effective upon delivery to the address of the addressee. The parties hereto may change their addresses by giving notice thereof to the other in conformity with this provision.

(g) **Separability**. If any clause or provision of this Lease is illegal, invalid, or unenforceable under present or future laws, then the remainder of this Lease shall not be affected thereby and in lieu of such clause or provision, there shall be added as a part of this Lease a clause or provision as similar in terms to such illegal, invalid, or unenforceable clause or provision as may be possible and be legal, valid, and enforceable.

(h) **Amendments; and Binding Effect**. This Lease may not be amended except by instrument in writing signed by Landlord and Tenant. No provision of this Lease shall be deemed to have been waived by Landlord unless such waiver is in writing signed by Landlord, and no custom or practice which may evolve between the parties in the administration of the terms hereof shall waive or diminish the right of Landlord to insist upon the performance by Tenant in strict accordance with the terms hereof. The terms and conditions contained in this Lease shall inure to the benefit of and be binding upon the parties hereto, and upon their respective successors in interest and legal representatives, except as otherwise herein expressly provided. This Lease is for the sole benefit of Landlord and Tenant, and, other than Landlord's Mortgagee, no third party shall be deemed a third party beneficiary hereof.

(i) **Quiet Enjoyment**. Provided Tenant has performed all of its obligations hereunder, Tenant shall peaceably and quietly hold and enjoy the Premises for the Term, without hindrance from Landlord or any party claiming by, through, or under Landlord, but not otherwise, subject to the terms and conditions of this Lease.

(j) **No Merger**. There shall be no merger of the leasehold estate hereby created with the fee estate in the Premises or any part thereof if the same person acquires or holds, directly or indirectly, this Lease or any interest in this Lease and the fee estate in the leasehold Premises or any interest in such fee estate.

(k) **No Offer**. The submission of this Lease to Tenant shall not be construed as an offer, and Tenant shall not have any rights under this Lease unless Landlord executes a copy of this Lease and delivers it to Tenant.

(l) **Entire Agreement**. This Lease constitutes the entire agreement between Landlord and Tenant regarding the subject matter hereof and supersedes all oral statements and prior writings relating thereto. Except for those set forth in this Lease, no representations, warranties, or agreements have been made by Landlord or Tenant to the other with respect to this Lease or the obligations of Landlord or Tenant in connection therewith. The normal rule of construction that any ambiguities be resolved against the drafting party shall not apply to the interpretation of this Lease or any exhibits or amendments hereto.

(m) **Waiver of Jury Trial**. - Deleted

(n) **Governing Law**. This Lease shall be governed by and construed in accordance with the laws of the State in which the Premises are located.

(o) **Joint and Several Liability**. If Tenant is comprised of more than one party, each such party shall be jointly and severally liable for Tenant's obligations under this Lease.

(p) **Financial Reports**. Delete

(q) **Landlord's Fees**. Whenever Tenant requests Landlord to take any action not required of it hereunder or give any consent required or permitted under this Lease, Tenant will reimburse Landlord for Landlord's reasonable out-of-pocket costs payable to third parties and incurred by Landlord in reviewing the proposed action or consent, including without limitation reasonable attorneys', engineers' or architects' fees, within 30 days after Landlord's delivery to Tenant of a statement of such costs. Tenant will be obligated to make such reimbursement without regard to whether Landlord consents to any such proposed action. Landlord agrees to give the Tenant a good faith estimate of costs prior to having work done.

(r) **Telecommunications**. Tenant and its telecommunications companies, including but not limited to local exchange telecommunications companies and alternative access vendor services companies shall have no right of access to and within the Building, for the installation and operation of telecommunications systems including but not limited to voice, video, data, and any other telecommunications services provided over wire, fiber optic, microwave, wireless, and any other

transmission systems, for part or all of Tenant's telecommunications within the Building and from the Building to any other location without Landlord's consent which consent shall not be unreasonably withheld or delayed.

(s) **Confidentiality**. Tenant acknowledges that the terms and conditions of this Lease are to remain confidential for Landlord's benefit, and may not be disclosed by Tenant to anyone, by any manner or means, directly or indirectly, without Landlord's prior written consent. The consent by Landlord to any disclosures shall not be deemed to be a waiver on the part of Landlord of any prohibition against any future disclosure.

(t) **List of Exhibits**. All exhibits and attachments attached hereto are incorporated herein by this reference.

Exhibit A - Plan Showing the Premises

Exhibit B - Building Rules and Regulations

Exhibit C - Tenant Finish Work

Exhibit D - Renewal Option

Exhibit E - Right of First Refusal

(u) **Waiver by Landlord; Representations**. Tenant acknowledges that Tenant has not been influenced to enter into this transaction nor has Tenant relied upon any warranties or representations not set forth in this instrument.

27. Hazardous Substances. Neither party hereto shall be permitted to generate, store, manufacture, refine, transport, treat, dispose of, or otherwise allow to be present on or about the Premises, any Hazardous Substances with the sole exception of those Hazardous Substances typically used in operating, cleaning or maintaining the Premises in quantities consistent with the Permitted Use. As used herein, "Hazardous Substances" shall be defined as any "hazardous chemical", "hazardous substance" or similar term as defined in any and all applicable local, state and federal laws, ordinances, rules, regulations and orders, whether now in existence or hereafter promulgated dealing with environmental protection.

Tenant agrees to indemnify and hold harmless Landlord and each mortgage of the Premises from and against any and all liabilities, damages, claims, losses, judgments, causes of action, costs and expenses (including reasonable attorney's fees) which may be incurred by Landlord or any such mortgagee or threatened against the Landlord or such mortgagee, relating or arising out of any breach by Tenant or Tenant's employees, servants, agents, invitees or licensees of this Section 27,

which indemnification shall survive the expiration or sooner termination of this Lease.

Landlord agrees to indemnify and hold harmless Tenant from and against any and all liabilities, damages, claims, losses, judgments, causes of action, costs and expenses (including reasonable attorney's fees) which may be incurred by Tenant relating or arising out of any breach by Landlord or Landlord's employees, servants, agents, invitees or licensees of this Section 27, which indemnification shall survive the expiration or sooner termination of this Lease.

Landlord represents to the best of its knowledge that as of the Commencement Date, the Park Land, Building and Premises are in compliance with all applicable environmental laws which affect the Park Land, Building and Premises.

IN WITNESS WHEREOF, and in consideration of the mutual entry into this Lease and for other good and valuable consideration, and intending to be legally bound, each party hereto has caused this Lease Agreement to be duly executed as a Massachusetts instrument under seal as of the day and year first above written.

TENANT: Harvard BioScience, Inc.

By: /s/ Mark A. Norige
Name: Mark A. Norige
Title: C.O.O.

LANDLORD:

SEVEN OCTOBER HILL LLC, a Massachusetts limited liability company.

By: /s/ John R. Parsons Jr.
Name: John R. Parsons Jr.
Title: Manager Member

EXHIBIT A

PLAN SHOWING THE PREMISES

[GRAPHIC]

EXHIBIT B

BUILDING RULES AND REGULATIONS

The following rules and regulations shall apply to the Premises, the Building, the Park, and the appurtenances thereto:

1. Sidewalks, doorways, vestibules, halls, stairways, and other similar areas shall not be obstructed by tenants or used by any tenant for purposes other than ingress and egress to and from their respective leased premises and for going from one to another part of the Building.

2. Plumbing, fixtures and appliances shall be used only for the purposes for which designed, and no sweepings, rubbish, rags or other unsuitable material shall be thrown or deposited therein. Damage resulting to any such fixtures or appliances from misuse by a tenant or its agents, employees or invitees, shall be paid by such tenant.

3. No signs, advertisements or notices shall be painted or affixed on or to any windows or doors or other part of the Building without the prior written consent of Landlord.

4. Landlord shall provide and maintain an alphabetical directory for all tenants in the main lobby of the Building.

5. Landlord shall provide all door locks in each tenant's leased premises, at the cost of such tenant, and no tenant shall place any additional door locks in its leased premises without Landlord's prior written consent. Landlord shall furnish to each tenant a reasonable number of keys to such tenant's leased premises, at such tenant's cost, and no tenant shall make a duplicate thereof.

6. Movement in or out of the Building through common areas of furniture or office equipment, or dispatch or receipt by tenants of any bulky material, merchandise or materials which require use of elevators or stairways, or movement through the Buildings common area entrances or lobby shall be conducted under Landlord's supervision at such times and in such a manner as Landlord may reasonably require. Each tenant assumes all risks of and shall be liable for all damage to articles moved and injury to persons or public engaged or not engaged in such movement, including equipment, property and personnel of Landlord if damaged or injured as a result of acts in connection with carrying out this service for such tenant.

7. All damages to the Building caused by the installation or removal of any property of a tenant, or done by a tenant's property while in the Building, shall be repaired at the expense of such tenant.

8. Corridor doors, when not in use, shall be kept closed. Nothing shall be swept or thrown into the corridors, halls, elevator shafts or stairways. No birds or animals except seeing-eye dogs shall be brought into or kept in, on or about any

tenant's leased premises. No portion of any tenant's leased premises shall at any time be used or occupied as sleeping or lodging quarters.

9. Tenant shall cooperate with Landlord's employees in keeping its leased premises neat and clean. There is no outside storage of any materials except in the tenants waste container. Landlord may request that Tenant empties the container at the Tenants expense if it is overflowing. The container placement may be designated by the Landlord.

10. Tenant shall not make or permit any vibration or improper, objectionable or unpleasant noises or odors in the Building or otherwise interfere in any way with other tenants or persons having business with them.

11. No machinery of any kind (other than normal office equipment and equipment consistent with Tenant's permitted use) shall be operated by any tenant on its leased area without Landlord's prior written consent, nor shall any tenant use or keep in the Building any flammable or explosive fluid or substance. There is no washing of cars, trucks or other similar equipment allowed on the property.

12. Landlord will not be responsible for lost or stolen personal property, money or jewelry from tenant's leased premises or public or common areas regardless of whether such loss occurs when the area is locked against entry or not.

13. No vending or dispensing machines of any kind outside the leased premises may be maintained without the prior written permission of Landlord.

14. Intentionally Deleted

15. All vehicles are to be currently licensed, parked for business purposes having to do with Tenant's business operated in the Premises, parked within designated parking spaces, one vehicle to each space. No vehicle shall be parked as a "billboard" vehicle in the parking lot. Any vehicle parked improperly may be towed away. Tenant, Tenant's agents, employees, vendors and customers who do not operate or park their vehicles as required shall subject the vehicle to being towed at the expense of the owner or driver. Landlord may place a "boot" on the vehicle to immobilize it and may levy a charge of $50.00 to remove the "boot." Tenant shall indemnify, hold and save harmless Landlord of any liability arising from the towing or booting of any vehicles belonging to a Tenant Party.

16. Intentionally Deleted

17. The toilet rooms, urinals, wash bowls and other apparatus shall not be used for any purpose other than 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.

18. Persons using the parking areas do so at their own risk. Lessor specifically disclaims all liability, except when caused solely by 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.

/s/ Mark A. Norige 1/9/2002
Mark A. Norige
C.O.O.

/s/ John R. Parsons Jr. 1/11/01
John R. Parsons Jr.
Manager Member

EXHIBIT C

TENANT FINISH-WORK

Tenant hereby accepts the Premises in their "**AS-IS**" condition and Landlord shall have no obligation to perform any work on the Premises other than the items listed below:

The following items are the landlord's obligation.

1) Clean the carpets in the office area – warn areas will be selectively replaced

2) Re-paint the office area (same color).

3) If Harvard Bio-Science during the first 18 months of the lease decides to construct 5 offices and create a bullpen area in the existing warehouse area, Seven October Hill, LLC shall over see the construction. The cost will be spilt equally between Harvard Bio-Science, Inc. and Seven October Hill, LLC. Standard electrical service will be supplied to these areas. Landlord will provide standard office HVAC if required.

4) The Landlord will engage the services of a plumber to repair or replace the four (4) toilets in the front office area and review the water pressure issues.

5) Clean exterior windows.

In all other respects, the Tenant accepts the Premises "AS – IS".

/s/ Mark A. Norige	1/9/2002
Name: Mark A. Norige Title: C.O.O.	Date

/s/ John R. Parsons Jr.	1/11/2002
Name: John R. Parsons Jr. Title: Manager Member	

Exhibit D

Renewal Options

Provided no Event of Default exists and Tenant or permitted Transferee is occupying the entire Premises at the time of such election, Tenant may renew this Lease for one (1) additional period of three years by delivering written notice of the exercise thereof to the Landlord not earlier than nine (9) months nor later than six (6) months before the expiration of the Original Lease (Ending 03/31/05) for the renewal option (04/01/05 - 03/31/08).

The Landlord and Tenant 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.

Within 21 days after receipt of Tenant's notice to renew, Landlord shall deliver to Tenant written notice of the Prevailing Rental Rate, (95%) for the Ashland/Holliston area, and shall advise Tenant of the required adjustment to Basic Rent, if any, and the other terms and conditions offered. Tenant shall, within 21 days after receipt of Landlord's notice, notify Landlord in writing whether Tenant accepts or rejects Landlord's determination of the Prevailing Rental Rate (95%). If Tenant timely notifies Landlord that Tenant accepts Landlord's determination of the Prevailing Rental Rate, (95%) for the Ashland/Holliston area, then the Landlord and Tenant shall execute an amendment at least 120 days prior to the Commencement Date of the extended term. The Amendment to this Lease shall be on the same terms provided in this Lease except as follows:

(a) Basic Rent shall be adjusted to the Prevailing Rental Rate: in the Ashland/Holliston area.

(b) Tenant shall have no further renewal option unless expressly granted by Landlord in writing:
and

(c) Landlord shall lease to Tenant the Premises in their then-current condition, and Landlord shall not provide to Tenant any allowances (e.g. moving allowance, construction allowance, and the like) or other tenant inducements.

If Tenant rejects Landlord's determination of the Prevailing Rental Rate, or fails to timely notify Landlord in writing that Tenant accepts or rejects Landlord's determination of the Prevailing Rental Rate, time being of the essence with respect thereto, Tenant's rights under this Exhibit shall terminate and Tenant shall have no right to renew this Lease.

Tenant's rights under this Exhibit shall terminate if (1) this Lease or Tenant's right to possession of the Premises is terminated, (2) Tenant assigns any of its interest in this Lease or sublets any portion of the Premises, or (3) Tenant fails to timely exercise its option under this Exhibit, time being of the essence with respect to Tenant's exercise thereof.

Exhibit E

Right of First Refusal

The Tenant is hereby given the right of first refusal to Lease the following spaces on the lower level,
1) Space currently occupied as of December 12, 2001, by Connors Design (9,200 s.f.) and Rainbow Trading Co.
(8,000 s.f.). These spaces are highlighted in dark gray in Exhibit A. On the upper level, space currently occupied by Conquest, Inc. (4,005 s.f.)

If at anytime during the initial term of this Lease (1) while there is at least twelve (12) months remaining in the initial term, or (2) after Tenant has exercised its option to extend and has at least twenty four months remaining on extension, the Landlord shall notify the Tenant of the space listed above that is coming available. The Tenant shall have the right within 10 days from receipt of notice from Landlord to elect to Lease space in the premises, Tenant may exercise such right only by providing written notice of the election to exercise such right to Landlord within 10 days of receipt of Landlord's notice.

If the Tenant shall not so elect within the said period, the Landlord may then Lease said space or any portion thereof to any potential Tenant upon such terms, conditions, and rental as Landlord in its sole discretion, determines.

If the Tenant elects to exercise said right of first refusal, the space shall be delivered in "As - Is" condition on the later of ten (10) days after receipt of Tenant's notice or the date the space becomes vacant.

If the Tenant 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 the Lease of the space shall be the same as contained in this Lease and that this Lease shall be amended to include the additional space and to the extent that Tenant'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 additional space.

The right of first refusal herein contained shall expire on the first to occur of the following (1) the failure of the Landlord and Tenant to execute an Amendment to this Lease for any reason whatsoever within ten (10) days after the election by Tenant to exercise its Right of First Refusal, or (2) Tenant's failure to notify Landlord of its exercise of its Right to Lease the additional space after notice duly given by Landlord.

Exhibit 21.1

SUBSIDIARIES OF THE REGISTRANT

HBIO Securities Corp. (United States)
Warner Instruments, Inc. (United States)
Union Biometrica, Inc. (United States)
Harvard Apparatus, Ltd. (United Kingdom)
Biochrom Ltd. (United Kingdom)
Scie-Plas Ltd. (United Kingdom)
Hugo Sachs Elektronik Harvard Apparatus GmbH (Germany)
Union Biometrica GmbH (Germany)
Ealing Scientific Ltd. Canada (doing business as Harvard Apparatus, Canada) (Canada)
Harvard Apparatus, S.A.R.L. (France)
Asys Hitech GmbH (Austria)
Union Biometrica NV (Belgium)
Harvard Apparatus FSC, Inc. (U.S. Virgin Islands)

Exhibit 23.1

Independent Auditors' Consent

The Board of Directors
Harvard Bioscience Inc.:
We consent to the incorporation by reference in the registration statement (No. 333-53848) on Form S-8 of Harvard Bioscience Inc., and subsidiaries of our report dated February 15, 2002, with respect to the consolidated balance sheets of Harvard Bioscience Inc., and subsidiaries as of December 31, 2001 and 2000, and the related consolidated statements of operations, stockholders' equity (deficit), cash flows, and comprehensive loss, for each of the years in the three-year period ended December 31, 2001, which report appears in the December 31, 2001, annual report on Form 10-K of Harvard Bioscience Inc., and subsidiaries.

Our report refers to the adoption of the provisions of Statement of Financial Accounting Standards (SFAS) 141, "Business Combinations" and certain provisions of SFAS 142, "Goodwill and Other Intangible Assets" as required for goodwill and intangible assets resulting from business combinations consummated after June 30, 2001.

KPMG LLP
Boston, MA 02110
March 29, 2002