

SECURITIES AND EXCHANGE COMMISSION

WASHINGTON, DC 20549

FORM 10-K

(MARK ONE)

/X/ ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(D) OF THE
SECURITIES EXCHANGE ACT OF 1934

FOR THE FISCAL YEAR ENDED DECEMBER 31, 2000 OR
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
(State or Other
Jurisdiction of
Incorporation or
Organization)

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

04-3306140
(IRS Employer
Identification No.)

84 OCTOBER HILL ROAD, HOLLISTON, MA
(Address of Principal Executive
Offices)

01746
(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 /X/ 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. /X/

The aggregate market value of 10,859,119 shares of voting stock held by
non-affiliates of the registrant as of March 23, 2001 was approximately
\$77,371,000 based on the last sale price of such stock on such date.

Common Stock Outstanding as of March 23, 2001: 25,720,581 shares.

DOCUMENTS INCORPORATED BY REFERENCE.

Portions of the Company's definitive Proxy Statement in connection with the 2001 Annual Meeting of Stockholders to be held on May 24, 2001 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 for drug discovery. We provide a broad array of tools designed to accelerate the speed and to reduce the cost at which our customers can introduce new drugs. Since our 1996 reorganization, we have focused on alleviating the protein purification and ADMET (absorption, distribution, metabolism, elimination and toxicology) screening bottlenecks in drug discovery.

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

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

The names Harvard Bioscience and Harvard Apparatus and our logo are names and trademarks that we believe belong to us. We have the rights to numerous trademarks and trade names including AmiKa, Biochrom, CPK, GeneQuant,

GeneQuantPro, MitoScan, NaviCyte, NovaSpec, PrepTip, PureTip, ScanTox, Stronghold and UltroSpec. 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.

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OUR HISTORY

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

In March 1996, a group of investors led by our current management team acquired a majority of the then existing business of our predecessor, Harvard Apparatus. Following this acquisition, we redirected our strategy to focus on high growth areas within drug discovery by acquiring innovative technologies through strategic acquisitions and licensing while continuing to grow our existing business through internal product development and marketing. Through December 31, 2000, we have completed six business acquisitions, including Biochrom, the licensing of key new technology for in vitro toxicology assays and drug absorption measurement chambers, the internal development of new product lines, including new generation syringe pumps and DNA/RNA/protein calculators and the mailing of expanded new catalogs.

OUR STRATEGY

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

ESTABLISH OUR PROTEOMICS AND ADMET SCREENING PRODUCTS AS INDUSTRY STANDARDS

In order to establish our products as industry standards, we intend to provide a broad selection of products focused on the target validation and ADMET screening stages of the drug discovery process. We have introduced several new innovative products designed to reduce the cost and time associated with protein purification and ADMET screening in drug discovery. Our strategy is to increase the market acceptance of our proteomics and ADMET screening products through the development of new uses for these products, focused, direct marketing campaigns to our extensive customer base and promotions at scientific exhibitions.

LAUNCH A BROAD RANGE OF INNOVATIVE NEW TOOLS FOR DRUG DISCOVERY

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

LEVERAGE OUR EXISTING DISTRIBUTION AND MARKETING CHANNELS

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

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

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

ACQUIRE COMPLEMENTARY TECHNOLOGIES

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

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OUR PRODUCTS

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

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

* We acquired all of these products in March 1999 through our acquisition of Biochrom.

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The "Year of Introduction for Product Areas Introduced by Us or One of Our Predecessors" column set forth in the table above represents the year in which we or one of our predecessor companies introduced the first generation product in this area.

PROTEOMICS PRODUCTS-PROTEIN PURIFICATION

PROTEIN PURIFICATION PIPETTE TIPS

Our proprietary PrepTip pipette tips consist of a standard disposable pipette tip coated on the inside with the same chromatography media used in packed bed columns. This coating selectively binds proteins, but not the salts, detergents, electrophoresis gels, buffers and cellular debris that are often mixed in with the proteins. Our PrepTip pipette tip enables customers to rapidly purify proteins by avoiding the time-consuming usage of a centrifuge required when using spin columns. In addition, it is easy to use because the protein solution is handled entirely within the pipette tip and does not have to be moved through a separate device like a packed bed column or dialyzer. Because our PrepTip pipette tips use the same chromatography media as packed bed columns, they can take advantage of the wide range of existing purification protocols using these media. Our PureTip pipette tip uses a pipette tip that is similar to the PrepTip but is loaded with a gel rather than coated and is well suited for performing DNA purification.

SPIN COLUMNS

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

PROTEIN PURIFICATION DIALYZERS

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

DISPOSABLE EQUILIBRIUM DIALYZERS

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

PROTEOMICS PRODUCTS-PROTEIN ANALYSIS

MOLECULAR BIOLOGY SPECTROPHOTOMETERS

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

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DNA/RNA/PROTEIN CALCULATORS

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

MULTI-WELL PLATE READERS

Multi-well plate readers are widely used for high throughput screening assays in the drug discovery process. The most common format is 96 wells. Plate readers use light to detect chemical interactions. We plan to introduce a range of these products in 2001 beginning with absorbance readers and followed by luminescence and fluorescence readers primarily for distribution through Amersham Pharmacia Biotech.

AMINO ACID ANALYSIS SYSTEMS

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

ADMET SCREENING PRODUCTS

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, 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 an equilibrium is established. Thus, measuring the drug concentration determines the strength of binding. This product is principally used for ADMET screening to determine if a drug binds to blood proteins. A certain level of reversible binding is advantageous in order to promote good distribution of a drug through the human body. However, if the binding is too strong, it may impair normal protein function and cause toxic effects.

ORGAN TESTING SYSTEMS

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

determining metabolism and studies on kidneys are useful in determining elimination.

SCANTOX IN VITRO TOXICOLOGY SCREENING

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

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 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 typically used for long-term toxicology testing of drugs by infusion into animals, typically laboratory rats. We sell 80 types of syringe pumps.

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 anesthetized animal. Ventilators are typically used in surgical procedures common in drug discovery. Our advanced Inspira ventilators have significant safety and ease of use features, such as default safety settings, not found on other ventilators.

CPK ATOMIC MODELS

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

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STRONGHOLD LABORATORY CLAMPS

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

OEM PRODUCTS

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

DISTRIBUTED PRODUCTS

In addition to the proprietary, manufactured products described above, we buy and resell through our catalog products made by other manufacturers. We have negotiated supply agreements with the majority of the companies that provide our distributed products. These supply agreements specify pricing only and contain no minimum purchase commitments. None of these agreements represented more than two percent of our revenues for the year ended December 31, 2000. Distributed products accounted for approximately 18% of our revenues for the year ended December 31, 2000. These distributed products enable us to provide our customers with a single source for their experimental needs. These complementary products consist of a large variety of devices, instruments and consumable items used in experiments involving animals and biological tissue in the fields of proteomics, physiology, pharmacology, neuroscience, cell biology, molecular biology and toxicology. Our manufactured products are often leaders in their fields but researchers often need complementary products in order to conduct their particular experiments. Most of these complementary products come from small companies 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 and the University of California.

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

SALES AND MARKETING

DIRECT SALES

We periodically produce and mail approximately 100,000 copies of our 1,000-page catalog, which contains approximately 10,000 items. We distribute the majority of our products ordered from our catalog through our worldwide subsidiaries. Our manufactured products accounted for approximately 82% of our revenues for the fiscal year ended December 31, 2000. The complete catalog is also available as a CD-ROM and can be accessed on our website, www.harvardbioscience.com. Our

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significant positions in many of our manufactured products create traffic to the catalog and web site that 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 PHARMACIA BIOTECH DISTRIBUTOR

Since the 1970s, our Biochrom subsidiary has used Amersham Pharmacia Biotech, or APBiotech, and its predecessors as its primary marketing and distribution channel. When we acquired Biochrom from Pharmacia and Upjohn in 1999, we signed a distribution, marketing and new product development agreement with APBiotech. Under the terms of this agreement, APBiotech serves as the exclusive distributor, marketer and seller of a majority of the products of our Biochrom subsidiary. During the term of this agreement, APBiotech has agreed to purchase a minimum number of our products for an annual amount of \$12.5 million, subject to adjustment for price increases and product sales volume. We have certain affirmative duties under the agreement to assist APBiotech in the sale of our products. For example, we have agreed to cooperate with APBiotech in its sales and marketing program and to provide sales, demonstration and support training for APBiotech. This agreement may be terminated early under specified circumstances. For example, if we breach the exclusivity, pricing or shipping provisions of the agreement and fail to remedy

the breach within 30 days of receiving written notice of the breach from APBiotech, then the agreement may be terminated. In addition, we may terminate the agreement under specified circumstances. For example, failure by APBiotech to place certain information in escrow, to pay for products or to purchase a minimum number of products each year enables us to terminate the agreement unless APBiotech remedies the breach within 30 days of receiving written notice of the breach from us. This agreement may be terminated by either party upon 18 months' prior written notice. This agreement does not have a finite term, but remains in effect until terminated in accordance with its terms by either us or APBiotech.

RESEARCH AND DEVELOPMENT

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

Our development expenditures were \$1.5 million, \$1.2 million and \$325,000 in 2000, 1999 and 1998, 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 each of our manufacturing facilities to design and develop new products. In-house development is focused on our current technologies. For new technologies, our strategy has been to license or acquire proven technology from universities and biotechnology companies and then develop the technology into commercially viable products.

MANUFACTURING

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

Our manufacturing operations are essentially to assemble and test. Our manufacturing of syringe pumps, ventilators, cell injectors and protein purification products takes place in Holliston, Massachusetts. Our MitoScan toxicology assay is manufactured in Madison, Wisconsin. Our manufacturing of spectrophotometers and amino acid analysis systems takes place in Cambridge,

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England. Our manufacturing of surgery-related products and teaching products takes place in Edenbridge, England. Our manufacturing of complete organ testing systems takes place in March-Hugstetten, Germany. Our Cambridge, England facility is certified to ISO 9001.

COMPETITION

The markets into which we sell our products are highly competitive, and we expect the intensity of competition to increase. We compete with many companies engaged in developing and selling tools for drug discovery. Many of our competitors have greater financial, operational, sales and marketing resources, and more experience in research and development and commercialization than we have. Moreover, competitors may have greater name recognition than we do, and many offer discounts as a competitive tactic. These competitors and other companies may have developed or could in the future develop new technologies that compete with our products or which could render our products obsolete. We cannot assure you that we will be able to make the enhancements to our technologies necessary to compete successfully with newly emerging technologies. We are not aware of any significant products sold by us which are currently obsolete.

We believe that we offer one of the broadest selections of protein purification and ADMET technologies to companies engaged in drug discovery. We are not aware of any competitor that offers a product line of comparable breadth within the protein purification and ADMET product markets. We have numerous competitors on a product line basis. We believe that we compete favorably with our competitors on the basis of product performance, including quality, reliability and speed, technical support, price and delivery time. We compete

with several companies that provide instruments for proteomics and ADMET screening. In the DNA/RNA/protein calculator area, we compete with PerkinElmer Instruments, Inc. and Bio-Rad Laboratories, Inc. In the molecular biology spectrophotometer area, we compete with Beckman Coulter, Inc. and PerkinElmer Instruments, Inc. In the protein sample preparation area, we compete with Millipore Corporation, Pierce Chemical Company and Spectrum Medical. In the ADMET screening area, we compete with KD Scientific, Razel Scientific Instruments, Inc., Experimetria Ltd., Kent Scientific Corporation, Warner Instruments, General Valve Company, Eppendorf-Netheler-Hinz GmbH, Ugo Basile and Becton, Dickinson and Company. In the area of OEM products, we face competition primarily from the in-house engineering teams of our OEM customers.

INTELLECTUAL PROPERTY

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

We have implemented a patent strategy designed to provide us with freedom to operate and facilitate commercialization of our current and future products. We currently own ten issued U.S. patents and have four pending applications. We also hold exclusive licenses for the technologies used in our ScanTox in vitro toxicology products, our 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

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significant degree upon our ability to develop proprietary products and technologies. We intend to continue to file patent applications as we develop new products and technologies.

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

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

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

GOVERNMENT REGULATION

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

EMPLOYEES

As of December 31, 2000, we had 131 full-time employees and 8 part-time employees, 46 of whom resided in the United States, 74 of whom resided in the United Kingdom, 12 of whom resided in Germany, 3 of whom resided in France and 4 of whom resided in Canada. None of our employees is subject to any collective bargaining agreement. We believe that our relationship with our employees is good.

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ITEM 2. PROPERTIES.

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

- a leased 20,000 square foot facility in Holliston, Massachusetts, which is our corporate headquarters,
- a leased 28,000 square foot facility in Cambridge, England,
- an owned 15,500 square foot facility in Edenbridge, England,
- a leased 9,000 square foot facility in March-Hugstetten, Germany, and
- a leased 1,400 square foot facility in Madison, Wisconsin.

We lease additional facilities for sales and administrative support in Les Ulis, 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. 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.

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.

On October 25, 2000, the sole stockholder of Harvard Bioscience, Inc. approved the merger of our predecessor Harvard Apparatus, Inc., a Massachusetts corporation, with and into Harvard Bioscience, Inc., a Delaware corporation.

On November 29, 2000, the sole stockholder of Harvard Bioscience, Inc. consented to the adoption of the following resolutions without meeting:

- to approve and adopt Harvard Bioscience, Inc.'s Amended and Restated Certificate of Incorporation,
- to approve and adopt Harvard Bioscience, Inc.'s Second Amended and Restated Certificate of Incorporation,
- to approve and adopt Harvard Bioscience, Inc.'s 2000 Stock Option and Incentive Plan,
- to approve and adopt Harvard Bioscience, Inc.'s Employee Stock Purchase Plan,
- to approve and adopt the conversion, on a one-for-one basis, of all outstanding warrants to purchase common stock of Harvard Apparatus, Inc. into warrants to purchase common stock of Harvard Bioscience, Inc., and

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- to accept the assignment of the Amended and Restated Securityholders' Agreement, by and among Harvard Apparatus, Inc., certain outside investors and certain management investors from Harvard Apparatus, Inc. to Harvard Bioscience, Inc.

ITEM 4A. EXECUTIVE OFFICERS OF THE REGISTRANT.

The following table shows information about our executive officers as of December 31, 2000.

NAME	AGE	POSITION
Chane Graziano.....	62	Chief Executive Officer and Director
David Green.....	36	President and Director
James Warren.....	55	Chief Financial Officer
Mark Norige.....	46	Chief Operating Officer
John House.....	56	Managing Director, Biochrom Ltd
		Vice President of Finance and
Susan Luscinski.....	44	Administration

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

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

JAMES WARREN has served as our Chief Financial Officer since July 2000. Prior to joining Harvard Bioscience, Mr. Warren served as the Chief Financial Officer of Aquila Biopharmaceuticals, Inc., a life sciences company, from January 1998 until July 2000 and as the Corporate Controller of Genzyme

Corporation, a biotechnology company, from 1991 until January 1998. Mr. Warren holds a M.B.A. degree from Boston University.

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

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

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

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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 high and low sales prices per share of our common stock as reported on the Nasdaq National Market for the periods indicated.

FISCAL YEAR ENDED DECEMBER 31, 2000	HIGH	LOW
-----	-----	-----
Fourth Quarter (from December 7, 2000 through December 31, 2000).....	\$13.50	\$8.00

On March 23, 2001, the closing sale price of our common stock on the Nasdaq National Market was \$7.13 per share. The number of record holders of our common stock as of March 23, 2001 was approximately 23. 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.

During the fiscal year ended December 31, 2000, we issued and sold unregistered securities as set forth below. There was no public offering in any such transaction and we believe that each transaction was exempt from the registration requirements of the Securities Act of 1933 by reason of Section 4(2) thereof based on the private nature of the transactions and the financial sophistication of the purchasers, all of whom had access to complete information concerning us and acquired the securities for investment and not with a view to the distribution thereof. In addition, we believe that the transactions described below with respect to option issuances to, and option exercises by, our employees were exempt from the registration requirements of the Securities Act of 1933 by reason of Section 4(2) thereof or Rule 701 promulgated thereunder.

- (1) In March 2000, we issued an aggregate of 1,091,716 shares of our common stock upon the exercise by certain employees of previously granted stock

options at an aggregate exercise price of \$1,792.14.

- (2) In September 2000, we issued an aggregate of 2,376,236 shares of our common stock upon the exercise by certain employees of previously granted stock options at an aggregate exercise price of \$1,549,155.40.
- (3) In December 2000, we issued an aggregate of 955,935 shares of our common stock to Ascent Venture Partners, L.P. and Citizens Captial Incorporated in connection with the automatic conversion of our outstanding series B convertible preferred stock into common stock upon the closing of our initial public offering. No consideration was received by us in connection with this automatic conversion.
- (4) In December 2000, we issued an aggregate of 8,509,337 shares of our common stock to Chane Graziano, Ascent Venture Partners, L.P., Ascent Venture Partners II, L.P. and First New England Capital, L.P. upon the cashless exercise of previously issued warrants to acquire common stock. In

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connection with this cashless exercise, the number of shares issuable upon exercise of the warrants was reduced by an aggregate of 572 shares.

- (5) As of December 31, 2000, options to purchase 599,096 shares of our common stock were outstanding under our 1996 Stock Option and Grant Plan. All such options were granted between March 1996 and October 2000 to our officers, directors, employees and consultants.
- (6) In December 2000, Messrs. Kennedy, Lewis and Dishman, our newly appointed directors, were each granted an option to purchase 10,000 shares of our common stock under our 2000 Stock Option and Incentive Plan. These options vest in three equal installments on each of the first three anniversaries of the grant date and have an exercise price of \$8.00 per share.

USE OF PROCEEDS FROM REGISTERED SECURITIES.

- (1) 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.
- (2) The offering commenced as of December 7, 2000.
- (3) The offering did not terminate before any securities were sold.
- (4) (i) As of the date of the filing of this report, the offering has terminated, and all securities registered were sold.

(ii) The names of the managing underwriters are Thomas Weisel Partners LLC, Dain Rauscher Incorporated and ING Barings LLC.

(iii) Our common stock, par value \$0.01 per share, was the class of securities registered.

(iv) 7,359,950 shares of our common stock (which includes 937,500 shares solely to cover over-allotments) were registered at an aggregate offering price of \$58,879,600. As of the date of the filing of this report, 7,359,950 of the shares registered have been sold at an aggregate offering price of \$58,879,600, of which 172,450 shares were sold by a selling stockholder at an aggregate offering price of \$1,379,600.

(v) From December 7, 2000 to the date hereof, the amount of expenses incurred by us in connection with the issuance and distribution of the securities totaled \$5.7 million, which consisted of direct payments of:
(i) \$1.4 million in legal, accounting and printing fees;
(ii) \$4.0 million in underwriting discount, fees and commissions; and
(iii) \$300,000 in miscellaneous expenses. No payments for such expenses were made to (i) any of our directors, officers, general partners or their associates, (ii) any person(s) owning 10% or more of any class of our equity securities or (iii) any of our affiliates.

(vi) Our net offering proceeds after deducting our total expenses were \$51.8 million.

(vii) We used the net proceeds as follows: (i) approximately \$665,000 was used to repay subordinated debt; (ii) approximately \$9.6 million was used to repay amounts outstanding under our credit facility; (iii) approximately \$1.5 million was used to redeem our series A redeemable preferred stock; and (iv) approximately \$370,000 was used to fund the acquisition of substantially all of the assets of MitoScan Corporation in December 2000. No payments were made to (i) any of our directors, officers, general partners or their associates, (ii) any person(s) owning 10% or more of any class of our equity securities or (iii) any of our affiliates.

(viii) The uses of proceeds described do not represent a material change in the use of proceeds described in our prospectus.

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ITEM 6. SELECTED FINANCIAL DATA.

	YEARS ENDED DECEMBER 31,				FOR THE PERIOD	PREDECESSOR
	2000	1999	1998	1997	FROM INCEPTION MARCH 15, 1996 TO DECEMBER 31, 1996	COMPANY FOR THE PERIOD FROM JANUARY 1, 1996 TO MARCH 14, 1996
	(IN THOUSANDS, EXCEPT SHARE AND PER SHARE DATA)					
STATEMENT OF OPERATIONS DATA:						
Revenues.....	\$ 30,575	\$ 26,178	\$ 12,154	\$ 11,464	\$ 8,198	\$ 1,989
Cost of goods sold.....	15,833	13,547	5,351	5,128	4,080	1,059
Stock compensation expense.....	264	--	--	--	--	--
Gross profit.....	14,478	12,631	6,803	6,336	4,118	930
General and administrative expense.....	5,181	4,147	2,317	2,338	1,834	487
Sales and marketing expense.....	3,186	2,448	1,722	1,672	1,058	232
Research and development.....	1,533	1,188	325	207	249	91
Stock compensation expense.....	14,412	3,284	--	--	--	--
Amortization of goodwill.....	604	368	27	--	--	--
Operating income (loss).....	(10,438)	1,196	2,412	2,119	977	120
Other (expense) income:						
Foreign currency (loss) gain....	(324)	(48)	21	(96)	108	(4)
Common stock warrant interest expense.....	(36,885)	(29,694)	(1,379)	(117)	--	--
Interest expense, net.....	(756)	(657)	(210)	(223)	(177)	(90)
Amortization of deferred financing costs.....	(153)	(63)	--	--	--	--
Other.....	45	(17)	10	106	(10)	(135)
Other expense, net.....	(38,073)	(30,479)	(1,558)	(330)	(79)	(229)
(Loss) income before income taxes.....	(48,511)	(29,283)	854	1,789	898	(109)
Income taxes.....	1,359	137	783	682	362	--
Net (loss) income.....	(49,870)	(29,420)	71	1,107	536	(109)
Preferred stock dividends.....	(136)	(157)	(122)	(122)	(97)	--
Net (loss) income available to common shareholders....	\$ (50,006)	\$ (29,577)	\$ (51)	\$ 985	\$ 439	\$ (109)
(Loss) income per share:						
Basic.....	\$ (6.25)	\$ (5.28)	\$ (0.01)	\$ 0.13	\$ 0.04	\$ (0.01)
Diluted.....	\$ (6.25)	\$ (5.28)	\$ (0.01)	\$ 0.06	\$ 0.02	\$ (0.01)
Weighted average common shares:						
Basic.....	8,005,386	5,598,626	5,598,626	7,406,486	10,259,410	10,259,410
Diluted.....	8,005,386	5,598,626	5,598,626	17,500,194	20,241,145	10,259,410

AS OF DECEMBER 31,

	2000	1999	1998	1997	1996
	(IN THOUSANDS)				
BALANCE SHEET DATA:					
Cash and cash equivalents.....	\$35,817	\$ 2,396	\$ 957	\$ 707	\$1,088
Working capital.....	40,552	3,783	2,205	1,698	1,677
Total assets.....	58,809	20,610	7,220	6,161	6,397
Long-term obligations, net of current portion.....	1	5,073	638	829	1,112
Preferred stock.....	--	2,500	1,500	1,621	1,504
Common stock warrants.....	--	31,194	1,500	--	--
Stockholders' equity (deficit).....	52,335	(25,711)	678	737	516

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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 two critical bottlenecks in the drug discovery process, proteomics during the target validation stage of the drug discovery process and ADMET screening during the secondary screening stage of the drug discovery process. Our proteomics products consist of tools that allow our customers to purify and analyze proteins. Our ADMET screening products are tools that enable our customers to test drug candidates to determine their absorption, distribution, metabolism, elimination and toxicology properties prior to conducting costly clinical trials.

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

- In June 1998, we acquired products for cell injection systems from Medical Systems Corporation for \$1.0 million in cash,
- In March 1999, we acquired Biochrom, which develops and manufactures DNA/RNA/protein calculators, spectrophotometers, amino acid analyzers and related consumables in the United Kingdom, from Pharmacia Biotech (Biochrom) Ltd for \$7.0 million in cash,
- In March 1999, we entered into an exclusive license for the technology underlying our ScanTox in vitro toxicology testing product for \$25,000 in cash and ongoing royalties and licensing fee payments,
- In September 1999, we acquired products for intracellular research from Clark Electromedical Instruments for \$349,000 in cash,
- In November 1999, we acquired our NaviCyte diffusion chamber systems product for drug absorption testing from a subsidiary of Trega Biosciences for \$390,000 in cash and future royalties,
- In November 1999, we acquired substantially all the assets and certain liabilities of Hugo Sachs Elektronik, consisting primarily of products for organ testing, for \$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,

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- 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, and
- In December 2000, we acquired substantially all the assets and certain liabilities of MitoScan Corporation, a company that produces tools for toxicity testing for \$370,000 in cash and future milestone payments and royalties.

REVENUES. We generate revenues by selling instruments, devices and consumables through our catalog, 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. Distribution will then be made periodically to potential and existing customers through direct mail and trade shows and in response to telephone inquiries over the life of the catalog. 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, 2000, approximately 82% of our revenues were derived from products we manufacture. The remaining 18% of our revenues were derived from complementary products we distribute in order to provide the researcher with a single source for all equipment needed to conduct a particular experiment. For the year ended December 31, 2000, approximately one-half 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, 2000, approximately 69% of our revenues were derived from sales made by our non-U.S. operations. A majority of our international sales during this period consisted of sales to Amersham Pharmacia Biotech, the distributor for our spectrophotometers and amino acid analyzers. Amersham Pharmacia Biotech distributes these products to customers around the world from its distribution center in Upsalla, Sweden, including to many customers located in the United States. As a result, we believe our international sales would have been less as a percentage of our revenues for the year ended December 31, 2000 than if we had shipped our products directly to our end users.

COST OF GOODS SOLD. Cost of goods sold includes material, labor and manufacturing overhead costs, obsolescence charges, packaging costs, warranty costs, shipping charges and royalties. Our costs of goods sold may vary over time based on the mix of products sold. We sell products that we manufacture and products that we purchase from third parties. The products that we purchase from third parties have 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 from such products as compared with our 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, and provision for doubtful accounts.

SALES AND MARKETING EXPENSE. Sales and marketing expense consists primarily of salaries and related expenses for personnel in sales, marketing and customer support functions. We also incur costs for trade shows, demonstration equipment, public relations and marketing materials, consisting primarily of the printing and distribution of our 1,000 page catalog and the maintenance of our web

site. We may from time to time expand our marketing efforts by employing additional technical marketing specialists in an effort to increase sales of selected categories of products in our catalog.

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

STOCK COMPENSATION EXPENSE. Stock compensation resulting from stock option grants to our employees represents the difference between the fair market value

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

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 represents accrual of a liability to 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 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, acquisitions and our substantial European business, which in summer months defers purchases. 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.

RESULTS OF OPERATIONS

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 GOODS SOLD. Cost of goods sold 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 goods sold 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 and the full period effect of the Biochrom subsidiary which was acquired in March 1999. As a percentage of revenues, general and administrative expense increased to 17% in 2000 from 16% in 1999.

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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 also reflects the addition of marketing personnel to promote newly acquired technology. In the future we may add employees to expand selected categories of our catalog as well as to expand the capabilities of our web site and integrate it into our business planning and processes. These activities, if undertaken, could increase sales and marketing expense as a percentage of revenues.

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 the twelve months ended December 31, 2000. In connection with the grant of stock options to employees in 2000, we recorded deferred compensation

of approximately \$4.6 million and will recognize approximately \$5.2 million of additional expense over the remaining vesting life of the options. 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. This amount represents the difference between the fair value of the warrant for financial reporting purposes and its 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. Currency loss increased \$276,000 to \$324,000 due primarily to dollar denominated debt in a foreign subsidiary.

INCOME TAXES. The Company's effective income tax rates were 36% for 2000 and 33% for 1999 notwithstanding the impact for common stock warrant interest expense that 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.

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

REVENUES. Revenues increased \$14.0 million, or 115%, to \$26.2 million in 1999 from \$12.2 million in 1998. Approximately \$12.2 million, or 87%, of the increase was derived from the March 1999 acquisition of Biochrom. Excluding the impact of changes in foreign currency exchange rates, revenues

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based on 1998 rates would have been approximately \$26.3 million in 1999. Revenues from our existing business increased \$1.8 million, or 15%, to \$14.0 million in 1999 from \$12.2 million in 1998. The increase was attributable to full year revenues of \$570,000 from the products acquired from Medical Systems in June 1998, increased sales resulting from our expanded direct marketing efforts on traditional products of \$884,000, which included hiring additional marketing staff, producing a CD-ROM of our catalog, and creating and installing an electronic version of our catalog on our website, with the balance due to revenues from product lines acquired in the second half of 1999.

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

GENERAL AND ADMINISTRATIVE EXPENSE. General and administration expense increased \$1.8 million, or 79%, to \$4.4 million in 1999 from \$2.3 million in 1998. Biochrom accounted for \$1.1 million, or 60%, of the increase. Also in 1999, \$3.3 million was recorded as non-cash compensation expense from options granted in 1996. Excluding the Biochrom acquisition, expenses increased \$800,000, or 35%, to \$3.1 million in 1999 from \$2.3 million in 1998. The increase was due to the need to support expanding operations. As a percentage of revenues, general and administration expense decreased to 16% in 1999 from 19% in 1998.

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

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

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

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

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

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

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, 2000, we had cash of \$35.8 million. Since our reorganization in March 1996, we have raised \$59.0 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 \$44.8 million from issuance of common stock in our initial public offering in December 2000. Upon receipt of the initial public offering proceeds on December 12, 2000, we repaid all debt and redeemed all outstanding preferred stock. In January 2001, we issued additional common stock upon the underwriters' exercise of the over-allotment option from our initial public offering which resulted in an additional \$7.0 million in net proceeds to us.

Our operating activities generated cash of \$2.1 million in 2000, \$2.9 million in 1999 and \$1.8 million in 1998. 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 \$5.3 million in 2000, \$8.5 million in 1999 and \$1.4 million in 1998. Cash has been used in the following technology and business acquisitions:

- \$370,000 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,
- \$7.0 million for Biochrom in March 1999, and
- \$1.0 million for Medical Systems Corporation's cell injection systems business in June 1998.

Our financing activities have consisted of borrowings under a revolving credit facility, long-term debt and the issuance of preferred stock and common stock, including in our initial public offering. Financing activities provided cash of \$36.5 million in 2000 and \$7.0 million in 1999, and used cash of \$105,000 in 1998. 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.

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Based on our operating plans, we expect that proceeds from the initial public offering, available cash and cash generated from operations will be sufficient to finance operations and capital expenditures for at least two years from December 31, 2000, 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 in the next two years. 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.

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 2000 and 1999, the U.S. dollar strengthened against these currencies resulting in reduced consolidated revenue growth, as expressed in U.S. dollars. In addition, the currency fluctuations resulted in foreign currency losses of approximately \$48,000 in 1999 and \$324,000 in 2000.

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

BACKLOG

Our order backlog was approximately \$2.8 million as of December 31, 2000 and \$2.1 million as of December 31, 1999. We include in backlog only those orders for which we have received valid purchase orders. Purchase orders may be cancelled at any time prior to shipment. Our backlog as of any particular date may not be representative of actual sales for any succeeding period. We

typically ship all of our backlog at any given time within 90 days thereafter.

ACCOUNTING PRONOUNCEMENTS

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

IMPACT OF INFLATION

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

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

OUR PRODUCTS COMPETE IN MARKETS THAT ARE SUBJECT TO RAPID TECHNOLOGICAL CHANGE, AND THEREFORE ONE OR MORE OF OUR PRODUCTS COULD BE MADE OBSOLETE BY NEW TECHNOLOGIES. Because the market for drug discovery tools is characterized by rapid technological change and frequent new product introductions, our product lines may be made obsolete unless we are able to continually improve our existing products and develop new products. To meet the evolving needs of our customers, we must continually enhance our current and planned products and develop and introduce new products. However, we may experience difficulties 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 their often significant development costs. Failure to recover the development costs of one or more products or product lines could decrease our profitability or cause us to experience significant losses.

WE HAVE LIMITED EXPERIENCE IN MANUFACTURING SOME OF OUR PRODUCTS THAT COULD CAUSE PROBLEMS OR DELAYS RESULTING IN LOST REVENUE. We have only recently begun to manufacture and therefore currently have limited manufacturing capacity for some of our products, such as our PrepTip protein purification pipette tips. If we fail to manufacture and deliver products in a timely manner, our relationships with our customers could be seriously harmed, and our revenue could decline. To achieve the production levels necessary for successful

commercialization, we will need to scale-up our manufacturing facilities and establish automated manufacturing methods and quality control procedures. We cannot assure you that manufacturing or quality control problems will not arise as we attempt to scale-up our production or that we can scale-up manufacturing and quality control in a timely manner or at commercially reasonable costs. If we are unable to manufacture these products consistently on a timely basis because of these or other factors, we may not achieve the level of sales from these products that we otherwise anticipate.

IF AMERSHAM PHARMACIA BIOTECH TERMINATES ITS DISTRIBUTION AGREEMENT WITH US OR FAILS TO PERFORM ITS OBLIGATIONS UNDER OUR DISTRIBUTION AGREEMENT, IT COULD IMPAIR THE MARKETING AND DISTRIBUTION EFFORTS FOR SOME

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OF OUR PRODUCTS AND RESULT IN LOST REVENUES. For the year ended December 31, 2000, approximately 39% of our revenues were generated through an agreement with Amersham Pharmacia Biotech, or APBiotech, under which APBiotech acts as our primary marketing and distribution channel for the products of our Biochrom subsidiary. Under the terms of this agreement, we are restricted from allowing another person or entity to distribute, market and sell the majority of the products of our Biochrom subsidiary. We are also restricted from making or promoting sales of the majority of the products of our Biochrom subsidiary to any person or entity other than APBiotech or its authorized subdistributors. We have little or no control over APBiotech's marketing and sales activities or the use of its resources. APBiotech may fail to purchase sufficient quantities of products from us or perform appropriate marketing and sales activities. The failure by APBiotech to perform these activities could materially adversely affect our business and growth prospects during the term of this agreement. In addition, our inability to maintain our arrangement with APBiotech for product distribution, could materially impede the growth of our business and our ability to generate sufficient revenue. Our agreement with APBiotech may be terminated under some circumstances, including in the event of a breach of a material term by us. This agreement has a perpetual term; however, it may be terminated in accordance with its terms by either party upon 18 months' prior written notice. While we believe our relationship with APBiotech is good, we cannot guarantee that the contract will be renewed or that APBiotech will aggressively market our products in the future.

WE MAY BE ADVERSELY AFFECTED BY 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. 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.

OUR COMPETITORS AND POTENTIAL COMPETITORS MAY DEVELOP PRODUCTS AND TECHNOLOGIES THAT ARE MORE EFFECTIVE OR COMMERCIALY 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.

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

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

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

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

OUR SUCCESS WILL DEPEND PARTLY ON OUR ABILITY TO OPERATE WITHOUT INFRINGING ON OR MISAPPROPRIATING THE INTELLECTUAL PROPERTY RIGHTS OF OTHERS. We may be sued for infringing on the intellectual property rights of others, including the patent rights, trademarks and trade names of third parties. Intellectual property litigation is costly and the outcome is uncertain. If we do not prevail in any intellectual property litigation, in addition to any damages we might have to pay, we could be required to stop the infringing

activity, or obtain a license to or design around the intellectual property in question. If we are unable to obtain a required license on acceptable terms, or are unable to design around any third party patent, we may be unable to sell some of our products and services, which could result in reduced revenue.

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

CHANGES IN ACCOUNTING FOR GOODWILL AMORTIZATION MAY HAVE A MATERIAL ADVERSE AFFECT ON US. We currently amortize goodwill purchased in our acquisitions on a straight line basis ranging from 5 to 15 years. At December 31, 2000, we had unamortized goodwill of \$9.6 million, or 16.3% of total assets. Any changes in accounting rules under generally accepted accounting principles that reduce the period over which we may amortize goodwill may have an adverse effect on our ability to consummate future acquisitions and our financial results. A shorter goodwill amortization period would increase annual amortization expense and reduce our net income over the amortization period. In addition, we continually evaluate whether any portion of the remaining balance of goodwill may not be recoverable. If it is determined in the future that a portion of our goodwill is impaired, we may be required to write off that portion of our goodwill which would have an adverse effect on our net income for the period in which the write off occurs.

WE ARE DEPENDENT UPON OUR LICENSED TECHNOLOGIES AND MAY NEED TO OBTAIN ADDITIONAL LICENSES IN THE FUTURE TO OFFER OUR PRODUCTS AND REMAIN COMPETITIVE. We have licensed key components of our technologies from third parties. 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 IS SUBJECT TO ECONOMIC POLITICAL AND OTHER RISKS ASSOCIATED WITH INTERNATIONAL REVENUES AND OPERATIONS. Since we manufacture and sell our products worldwide, our business is subject to risks associated with doing business internationally. Our revenues from our non-U.S. operations represented approximately 69% of our total revenues for the year ended December 31, 2000. We anticipate that revenue from international operations will continue to represent a substantial portion of our total revenues. In addition, a number of our manufacturing facilities and suppliers are located outside the United States. Accordingly, our future results could be harmed by a variety of factors, including:

- changes in foreign currency exchange rates, which resulted in a foreign currency loss of \$324,000 for the year ended December 31, 2000,
- 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. 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.

WE MAY LOSE MONEY WHEN WE EXCHANGE FOREIGN CURRENCY RECEIVED FROM INTERNATIONAL REVENUES INTO U.S. DOLLARS. For the year ended December 31, 2000, approximately 69% of our business was conducted in currencies other than the U.S. dollar, which is our reporting currency. As a result, currency fluctuations among the U.S. dollar and the currencies in which we do business have caused and will continue to cause foreign currency transaction gains and losses. Currently, we attempt to manage foreign currency risk through the matching of assets and liabilities. In the future, we may undertake to manage foreign currency risk through additional hedging methods. We recognize foreign currency gains or losses arising from our operations in the period incurred. We cannot guarantee that we will be successful in managing foreign currency risk or in predicting the effects of exchange rate fluctuations upon our future operating results because of the number of currencies involved, the variability of currency exposure and the potential volatility of currency exchange rates.

IF WE ENGAGE IN ANY ACQUISITION, WE WILL INCUR A VARIETY OF COSTS, AND MAY NEVER REALIZE THE ANTICIPATED BENEFITS OF THE ACQUISITION. Our business strategy includes the future acquisition of businesses, technologies, services or products that we believe are a strategic fit with our business. If we do undertake any acquisition, the process of integrating an acquired business, technology, service or product may result in unforeseen operating difficulties and expenditures and may absorb significant management attention that would otherwise be available for ongoing development of our business. Moreover, we may fail to realize the anticipated benefits of any acquisition. Future acquisitions could

reduce our stockholders' ownership and could cause us to incur debt, expose us to future liabilities and result in amortization expenses related to goodwill and other intangible assets.

IF WE FAIL TO RETAIN OUR KEY PERSONNEL AND HIRE, TRAIN AND RETAIN QUALIFIED EMPLOYEES, WE MAY NOT BE ABLE TO COMPETE EFFECTIVELY, WHICH COULD RESULT IN REDUCED REVENUE. Our success is highly dependent on the continued services of

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

WE PLAN SIGNIFICANT GROWTH, AND THERE IS A RISK THAT WE WILL NOT BE ABLE TO MANAGE THIS GROWTH. Our success will depend on the expansion of our operations. Effective growth management will place increased demands on our management, operational and financial resources. To manage our growth, we must expand our facilities, augment our operational, financial and management systems, and hire and train additional qualified personnel. Our failure to manage this growth effectively could impair our ability to generate revenue or could cause our expenses to increase more rapidly than revenue, resulting in operating losses.

CERTAIN OF OUR STOCKHOLDERS HAVE SUBSTANTIAL INFLUENCE OVER MATTERS REQUIRING A STOCKHOLDER VOTE. The holders of our stock prior to our initial public offering, beneficially own or control approximately 71% of the outstanding shares of our common stock. If all of these stockholders were to vote together as a group, they would have the ability to elect our board of directors and control the outcome of stockholder votes, including votes concerning by-law amendments and possible mergers, corporate control contests and other significant corporate transactions. In addition, this concentration of ownership may delay or prevent a change of control of our company at a premium price if these stockholders oppose it. The interests of these stockholders may not always coincide with our interests as a company or the interests of other stockholders.

BECAUSE OUR STOCK PRICE 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,
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- 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 at least the next two years. However, we premise this expectation on our current operating plan, which may change as a result of many factors, including market acceptance of our new products and future opportunities with collaborators. Consequently, we may need additional funding sooner than anticipated. Our inability to raise capital could seriously harm our business and product development efforts.

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

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.

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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 and Germany. We sell our products globally through our direct catalog sales and indirect distributor channel. 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 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.

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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 2001 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 2001 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 2001 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 2001 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, 2000 and 1999.
3. Consolidated Statements of Operations for each of the years ended December 31, 2000, 1999 and 1998.
4. Consolidated Statements of Stockholders' Equity (Deficit) and Comprehensive Income (Loss) for each of the years ended December 31, 2000, 1999 and 1998.
5. Consolidated Statements of Cash Flows for each of the years ended December 31, 2000, 1999 and 1998.
6. Notes to Financial Statements.

(a) (2) Financial Statement Schedules.

None required.

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(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.
- 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 March 2, 1999 by and between Biochrom Limited and Amersham Pharmacia Biotech AB.
- 10.5 Employment Agreement between Harvard Bioscience and Chane Graziano.
- 10.6 Employment Agreement between Harvard Bioscience and David Green.
- 10.7 Employment Agreement between Harvard Bioscience and James L. Warren.
- *10.8 Form of Director Indemnification Agreement.
- *10.9 Lease Agreement dated December 16, 1996 between Seven October Hill LLC and Harvard Apparatus, Inc.
- *10.10 First Amendment to Lease dated November 13, 1998 to Lease Agreement dated December 16, 1996 between Seven October Hill LLC and Harvard Apparatus, Inc.
- *10.11 Lease of Unit 22 Phase I Cambridge Science Park, Milton Road, Cambridge dated March 3, 1999 between The Master Fellows and Scholars of Trinity College Cambridge, Biochrom Limited and Harvard Apparatus, Inc.
- *10.12 Lease Agreement for Commercial Premises dated November 6, 1999 made between Mr. Heinz Dehnert, Grunstrabe 1, 79232 March-Hugstetten, Lessor and the Company of Harvard Appartus 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.

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

+ Confidential treatment granted as to this previously filed exhibit.

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

(b) Reports on Form 8-K.

On January 3, 2001, the Company filed a report on Form 8-K reporting in Item 5 the lawsuit described above in Item 3 of this Annual Report on Form 10-K.

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, 2000 and 1999, and the related consolidated statements of operations, stockholders' equity (deficit) and comprehensive income (loss), and cash flows for each of the years in the three-year period ended December 31, 2000. These consolidated financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these consolidated financial statements based on our audits.

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

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

/s/ KPMG LLP
KPMG LLP

February 23, 2001
Boston, Massachusetts

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HARVARD BIOSCIENCE, INC. AND SUBSIDIARIES

CONSOLIDATED BALANCE SHEETS

	DECEMBER 31,	
	2000	1999
	-----	-----
ASSETS (NOTES 6 AND 7)		
Current assets:		
Cash and cash equivalents.....	\$35,816,994	\$ 2,396,053
Trade accounts receivable, net of reserve for uncollectible accounts of \$88,955 and \$87,642 at December 31, 2000 and 1999, respectively (note 19).....	4,697,663	4,191,850
Other receivables and other assets.....	1,237,414	201,946
Inventories (note 4).....	3,722,180	2,849,670
Catalog costs.....	453,209	66,829
Prepaid expenses.....	478,562	593,348
Income tax receivable (note 13)	513,458	987,853
	-----	-----
Total current assets.....	46,919,480	11,287,549
	-----	-----
Property, plant and equipment, net (notes 5 and 10).....	1,715,726	1,559,922
	-----	-----
Other assets:		
Catalog costs, less current portion.....	105,182	165,419
Deferred tax asset (note 13).....	57,478	432,797
Goodwill, net of accumulated amortization of \$1,000,087 and \$395,896 at December 31, 2000 and 1999, respectively (note 3).....	9,562,385	6,583,354
Other assets (notes 3 and 12)	448,273	580,829
	-----	-----
Total other assets.....	\$10,173,318	\$ 7,762,399
	-----	-----
	\$58,808,524	\$20,609,870
	=====	=====

See accompanying notes to consolidated financial statements.

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HARVARD BIOSCIENCE, INC. AND SUBSIDIARIES

CONSOLIDATED BALANCE SHEETS

	DECEMBER 31,	
	2000	1999
Current liabilities:		
Short-term debt (note 6).....	\$ --	\$ 2,200,000
Current installments of long-term debt (note 7).....	6,644	794,173
Trade accounts payable.....	2,117,446	1,880,246
Accrued income taxes payable.....	669,788	957,834
Accrued expenses (note 17).....	3,305,560	1,399,523
Other liabilities.....	268,075	272,731
Total current liabilities.....	6,367,513	7,504,507
Long-term debt, less current installments (note 7).....	1,142	5,072,941
Deferred income tax liability (note 13).....	104,946	48,649
Total long-term liabilities.....	106,088	5,121,590
Commitments and contingencies (notes 10, 18 and 22)		
Preferred stock, 600,000 shares authorized (note 8);		
Redeemable series "A" 469,300 shares issued and outstanding.....	--	1,500,000
Convertible and redeemable series "B" 48,500 shares issued and outstanding.....	--	1,000,000
Common stock warrants (note 9).....	--	31,194,371
Total redeemable preferred stock and common stock warrants.....	--	33,694,371
Stockholders' equity (deficit) (notes 9 and 14):		
Common stock, par value \$.01 per share, 80,000,000 shares authorized; 29,442,632 and 10,259,410 shares issued and outstanding at December 31, 2000 and 1999, respectively.....	294,426	102,604
Accumulated other comprehensive loss.....	(554,573)	(54,690)
Additional paid-in capital--stock options.....	4,635,949	3,283,164
Additional paid-in capital--common stock.....	128,594,672	--
Retained earnings (accumulated deficit).....	(78,379,867)	(28,373,931)
Notes receivable.....	(1,587,939)	--
Treasury stock, 4,660,784 common shares, at cost.....	(667,745)	(667,745)
Total stockholders' equity (deficit).....	52,334,923	(25,710,598)
	\$ 58,808,524	\$ 20,609,870

See accompanying notes to consolidated financial statements.

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HARVARD BIOSCIENCE, INC. AND SUBSIDIARIES

CONSOLIDATED STATEMENTS OF OPERATIONS

	YEARS ENDED DECEMBER 31,		
	2000	1999	1998
Revenues (notes 15 and 19).....	\$ 30,574,800	\$ 26,177,814	\$12,154,025
Cost of goods sold.....	15,833,338	13,546,933	5,351,271
Stock compensation expense (note 14).....	264,054	--	--
Gross profit.....	14,477,408	12,630,881	6,802,754
General and administrative expense.....	5,181,299	4,146,564	2,317,021
Sales and marketing expense.....	3,185,340	2,448,505	1,721,606
Research and development.....	1,532,896	1,187,584	324,792
Stock compensation expense (note 14).....	14,411,245	3,283,164	--
Amortization of goodwill (note 3).....	604,191	368,235	27,661

Operating (loss) income.....	(10,437,563)	1,196,829	2,411,674
Other (expense) income:			
Foreign currency (loss) gain.....	(324,153)	(47,982)	21,418
Common stock warrant interest expense (note 9)....	(36,884,915)	(29,694,019)	(1,379,460)
Interest expense.....	(916,210)	(679,122)	(221,932)
Interest income.....	159,849	22,767	12,567
Amortization of deferred financing costs.....	(152,683)	(63,442)	--
Other.....	45,291	(17,468)	10,067
Other expense, net.....	(38,072,821)	(30,479,266)	(1,557,340)
(Loss) income before income taxes.....	(48,510,384)	(29,282,437)	854,334
Income taxes (note 13).....	1,359,401	137,480	783,192
Net (loss) income.....	(49,869,785)	(29,419,917)	71,142
Preferred stock dividends.....	(136,151)	(156,586)	(121,666)
Net (loss) available to common shareholders.....	\$ (50,005,936)	\$ (29,576,503)	\$ (50,524)
(Loss) per share (note 16):			
Basic.....	\$ (6.25)	\$ (5.28)	\$ (0.01)
Diluted.....	\$ (6.25)	\$ (5.28)	\$ (0.01)
Weighted average common shares:			
Basic.....	8,005,386	5,598,626	5,598,626
Diluted.....	8,005,386	5,598,626	5,598,626

See accompanying notes to consolidated financial statements.

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HARVARD BIOSCIENCE, INC. AND SUBSIDIARIES

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

	COMMON STOCK	ACCUMULATED OTHER COMPREHENSIVE LOSS	ADDITIONAL PAID-IN CAPITAL-- STOCK OPTIONS	ADDITIONAL PAID-IN CAPITAL-- COMMON STOCK	RETAINED EARNINGS (ACCUMULATED DEFICIT)	NOTES RECEIVABLE	TREASURY STOCK
Balance at December 31, 1997.....	102,604	(26,261)	--	--	1,327,922	--	(667,745)
Preferred stock dividends.....	--	--	--	--	(121,666)	--	--
Comprehensive income (loss):							
Net income.....	--	--	--	--	71,142	--	--
Translation adjustments.....	--	(8,459)	--	--	--	--	--
Total comprehensive income.....							
Balance at December 31, 1998.....	102,604	(34,720)	--	--	1,277,398	--	(667,745)
Preferred stock dividends.....	--	--	--	--	(156,586)	--	--
Preferred stock issuance costs.....	--	--	--	--	(74,826)	--	--
Stock compensation expense.....	--	--	3,283,164	--	--	--	--
Comprehensive income (loss):							
Net loss.....	--	--	--	--	(29,419,917)	--	--
Translation adjustments.....	--	(19,970)	--	--	--	--	--
Total comprehensive (loss).....	(29,439,887)						
Balance at December 31, 1999.....	102,604	(54,690)	3,283,164	--	(28,373,931)	--	(667,745)
Preferred stock dividends.....	--	--	--	--	(136,151)	--	--
Issuance of common stock.....	191,822	--	(13,322,514)	128,594,672	--	(1,587,939)	--
Stock compensation expense.....	--	--	14,675,299	--	--	--	--
Comprehensive income (loss):							
Net loss.....	--	--	--	--	(49,869,785)	--	--
Translation adjustments.....	--	(499,883)	--	--	--	--	--
Total comprehensive (loss).....							

	-----	-----	-----	-----	-----	-----	-----
Balance at December 31, 2000.....	\$ 294,426	\$ (554,573)	\$ 4,635,949	\$128,594,672	\$ (78,379,867)	\$ (1,587,939)	\$ (667,745)
	=====	=====	=====	=====	=====	=====	=====
	TOTAL STOCKHOLDERS' EQUITY (DEFICIT) -----						
Balance at December 31, 1997.....	736,520						
Preferred stock dividends.....	(121,666)						
Comprehensive income (loss):							
Net income.....	71,142						
Translation adjustments.....	(8,459)						
Total comprehensive income.....	62,683						

Balance at December 31, 1998.....	677,537						
Preferred stock dividends.....	(156,586)						
Preferred stock issuance costs.....	(74,826)						
Stock compensation expense.....	3,283,164						
Comprehensive income (loss):							
Net loss.....	(29,419,917)						
Translation adjustments.....	(19,970)						
Total comprehensive (loss).....							

Balance at December 31, 1999.....	(25,710,598)						
Preferred stock dividends.....	(136,151)						
Issuance of common stock.....	113,876,041						
Stock compensation expense.....	14,675,299						
Comprehensive income (loss):							
Net loss.....	(49,869,785)						
Translation adjustments.....	(499,883)						
Total comprehensive (loss).....	(50,369,668)						

Balance at December 31, 2000.....	\$ (52,334,923)						
	=====						

See accompanying notes to consolidated financial statements.

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HARVARD BIOSCIENCE, INC. AND SUBSIDIARIES

CONSOLIDATED STATEMENTS OF CASH FLOWS

	YEARS ENDED DECEMBER 31,		
	----- 2000 -----	----- 1999 -----	----- 1998 -----
Cash flows from operating activities:			
Net (loss) income.....	\$ (49,869,785)	\$ (29,419,917)	\$ 71,142
Adjustments to reconcile net (loss) income to net cash provided by operating activities:			
Common stock warrant interest expense.....	36,884,915	29,694,019	1,379,460
Stock compensation expense.....	14,675,299	3,283,164	--
Depreciation.....	393,357	331,822	154,776
Amortization of catalog costs.....	340,037	493,428	525,600
Loss (gain) on sale of fixed assets.....	(2,207)	7,584	(4,075)
Provision for bad debts.....	2,430	26,877	(41,388)
Amortization of goodwill.....	604,191	368,235	27,661
Amortization and write-off of deferred financing costs.....	152,683	63,442	--
Deferred income taxes.....	927,665	(1,310,325)	(16,277)
Changes in operating assets and liabilities, net of effects of business acquisitions:			
(Increase) decrease in accounts receivable.....	(737,414)	(2,282,344)	46,214
(Increase) decrease in other receivables.....	(1,045,776)	(113,949)	57,711

(Increase) decrease in inventories.....	(737,737)	215,152	80,430
(Increase) decrease in prepaid expenses and other assets.....	85,555	(260,285)	(5,514)
(Increase) decrease in other assets.....	(108,492)	(202,460)	(184,534)
Increase (decrease) in trade accounts payable.....	324,672	541,065	(115,065)
Increase (decrease) in accrued income taxes payable...	(225,672)	797,633	(191,013)
Increase in accrued expense.....	442,794.	666,637	19,874
Increase in other liabilities.....	39,295	26,663	1,388
	-----	-----	-----
Net cash provided by operating activities.....	2,145,810	2,926,441	1,806,390
	-----	-----	-----
Cash flows from investing activities:			
Additions to property, plant and equipment.....	(629,518)	(332,474)	(87,405)
Additions to catalog costs.....	(673,811)	(121,644)	(250,183)
Proceeds from sales of fixed assets.....	2,658	34,566	8,173
Acquisition of businesses, net of cash acquired.....	(4,031,625)	(8,126,656)	(1,090,553)
	-----	-----	-----
Net cash used in investing activities.....	(5,332,296)	(8,546,208)	(1,419,968)
	-----	-----	-----
Cash flows from financing activities:			
Proceeds from short-term debt.....	1,600,000	2,300,000	600,000
Repayments of short-term debt.....	(3,800,000)	(1,150,000)	(300,000)
Proceeds from long-term debt.....	2,000,000	5,500,000	--
Repayments of long-term debt.....	(7,859,328)	(460,663)	(283,433)
Dividends paid.....	(171,072)	(121,666)	(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.....	46,250,994	--	--
	-----	-----	-----
Net cash provided by (used in) financing activities.....	36,520,594	6,992,845	(105,099)
	-----	-----	-----
Effect of exchange rate changes on cash.....	86,833	66,204	(31,505)
	-----	-----	-----
Increase (decrease) in cash and cash equivalents.....	33,420,941	1,439,282	249,818
Cash and cash equivalents at beginning of period.....	2,396,053	956,771	706,953
	-----	-----	-----
Cash and cash equivalents at end of period.....	\$ 35,816,994	\$ 2,396,053	\$ 956,771
	=====	=====	=====
Supplemental disclosures of cash flow information:			
Cash paid for interest.....	\$ 1,008,673	\$ 671,452	\$ 241,002
	=====	=====	=====
Cash paid for income taxes.....	\$ 1,571,192	\$ 686,675	\$ 1,128,929
	=====	=====	=====

See accompanying notes to consolidated financial statements.

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HARVARD BIOSCIENCE, INC. AND SUBSIDIARIES

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

(1) ORGANIZATION

On March 15, 1996, HAI Acquisition Corp. and its subsidiary, Guell Limited, purchased certain assets and assumed certain liabilities of the former Harvard Apparatus, Inc. and its subsidiary in the United Kingdom, Harvard Apparatus, Ltd. (the "Purchase"). For cash consideration of approximately \$3,342,000 (including \$342,000 of acquisition related expenses). The costs of the acquisition were allocated based on the fair market value of the assets acquired. The assets acquired consisted principally of cash of \$441,000, accounts receivable of \$1,397,000, inventories of \$1,661,000, miscellaneous prepaid assets of \$241,000, fixed assets of \$846,000, and catalog costs of \$366,000. The Company assumed liabilities of approximately \$1,605,000. The acquisition was financed principally by issuing preferred stock of \$1,500,000 and debt of \$1,750,000. Assets acquired at the time of the purchase included 79% of the capital stock of Ealing Scientific Ltd. (Canada) and Ealing S.A.R.L., now Harvard Apparatus S.A.R.L. (France). The remainder of the capital stock of Ealing Scientific Ltd. and Ealing S.A.R.L. was also acquired directly from the stockholder at the time of the Purchase. After the date of the Purchase, HAI Acquisition Corp. and Guell Limited legally changed their names to Harvard Apparatus, Inc. and Harvard Apparatus, Ltd., respectively. On November 29, 2000, Harvard Apparatus, Inc. changed its name to Harvard Bioscience, Inc.

We are a global provider of innovative, research enabling tools for drug discovery. We provide a broad array of tools designed to accelerate the speed

and to reduce the cost at which our customers can introduce new drugs. Since our 1996 reorganization, we have focused on alleviating the protein purification and ADMET (absorption, distribution, metabolism, elimination and toxicology) screening bottlenecks in drug discovery. We manufacture and distribute syringe pumps, ventilators, cell injectors, diffusion chambers and other products principally used in the toxicology, metabolism and efficacy testing of new drugs, as well as spectrophotometers and amino acid analyzers primarily used in molecular biology, which are manufactured by Biochrom Ltd., a wholly owned subsidiary acquired during 1999.

(2) SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

(A) PRINCIPLES OF CONSOLIDATION

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

(B) 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.

(C) INVENTORIES

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

(D) 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

HARVARD BIOSCIENCE, INC. AND SUBSIDIARIES

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (CONTINUED)

(2) SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (CONTINUED)

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

(E) 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 six years.

(F) 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.

(G) 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 (deficit) in other comprehensive income/(loss).

(H) STOCK OPTIONS

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

(I) 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,

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HARVARD BIOSCIENCE, INC. AND SUBSIDIARIES

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (CONTINUED)

(2) SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (CONTINUED)

including those for inventory obsolescence, catalog cost amortization and reserves for bad debts. Actual results could differ from those estimates.

(J) REVENUE RECOGNITION

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

(K) GOODWILL

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

(L) 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.

(M) EFFECT OF ACCOUNTING CHANGES

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

(N) 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.

HARVARD BIOSCIENCE, INC. AND SUBSIDIARIES

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (CONTINUED)

(3) ACQUISITION OF BUSINESSES

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

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

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

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

On November 30, 1999, the Company acquired substantially all of the assets and certain liabilities of Hugo Sachs Elektronik a developer and manufacturer of perfusion systems for research. Cash consideration of approximately \$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 and other intangibles.

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 and other intangibles. The assets acquired consisted of approximately \$85,000 of inventory. In addition, the

HARVARD BIOSCIENCE, INC. AND SUBSIDIARIES

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (CONTINUED)

(3) ACQUISITION OF BUSINESSES (CONTINUED)

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 \$370,000 was paid for the assets (including approximately \$70,000 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 and other intangibles.

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

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

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

HARVARD BIOSCIENCE, INC. AND SUBSIDIARIES

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (CONTINUED)

(4) INVENTORIES

Inventories consist of the following:

	DECEMBER 31,	
	2000	1999
Finished goods.....	\$1,414,951	\$ 857,202
Work in process.....	399,064	359,505
Raw materials.....	1,908,165	1,632,963
	-----	-----
	\$3,722,180	\$2,849,670
	=====	=====

(5) PROPERTY, PLANT AND EQUIPMENT

Property, plant and equipment consists of the following:

	DECEMBER 31,	
	2000	1999
Land and buildings.....	\$ 588,187	\$ 636,250
Machinery and equipment.....	1,051,458	726,933
Computer equipment.....	535,596	378,400
Furniture and fixtures.....	356,264	326,978
Automobiles.....	139,399	123,113
	-----	-----
	2,670,904	2,191,674
Less accumulated depreciation.....	955,178	631,752
	-----	-----
	\$1,715,726	\$1,559,922
	=====	=====

(6) SHORT-TERM DEBT

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

(7) LONG-TERM DEBT

Long-term debt consists of the following:

	DECEMBER 31,	
	2000	1999
Subordinated debentures, at 13%, payable in		

quarterly installments through March 15, 2003.....	\$ --	\$ 727,500
Notes payable.....	--	5,125,000
Capital lease obligations (note 10).....	7,786	14,614
	-----	-----
	7,786	5,867,114
Less current installments.....	6,644	794,173
	-----	-----
	\$1,142	\$5,072,941
	=====	=====

On March 2, 1999, the Company entered into two loan agreements with two banks to borrow up to \$5.5 million. The purpose of the loan agreements was to partially finance the acquisition of Biochrom (see note 3). The interest rate as determined by one of the banks base rate plus 1%, was 9.5% at December 31, 1999. In December 2000, the subordinated debt and the bank loans including interest were paid in full.

Financing costs of \$221,074 were incurred in 1999. These costs were capitalized and initially amortized over the term of the loans. As a result of the loans being paid in full in 2000, any remaining deferred financing costs were written off.

(8) CONVERTIBLE AND REDEEMABLE PREFERRED STOCK

During 1999, 48,500 shares of Series B convertible and redeemable preferred stock were issued to partially finance the acquisition of Biochrom (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.

HARVARD BIOSCIENCE, INC. AND SUBSIDIARIES

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (CONTINUED)

(9) COMMON STOCK WARRANTS

At December 31, 1999 and 1998, 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, 1999 and 1998, interest expense of \$36,884,915, \$29,694,019, and \$1,397,460, 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.

(10) LEASES

The Company leases automobiles under various leases that are classified as capital leases. The carrying value of automobiles under capital leases at December 31, 2000, 1999 and 1998 was \$7,265, \$14,532 and \$40,795, respectively, which is net of \$30,735, \$68,602 and \$76,352, respectively, of accumulated depreciation.

The Company has noncancelable operating leases for office and warehouse space expiring at various dates through 2009. Rent expense for the years ended December 31, 2000, 1999 and 1998 was approximately \$541,000, \$484,000 and \$134,000, respectively.

Future minimum lease payments for both capital and operating leases, with initial or remaining terms in excess of one year at December 31, 2000, are as follows:

	CAPITAL LEASES	OPERATING LEASES
	-----	-----
2001.....	\$7,234	\$ 585,192
2002.....	1,157	472,819
2003.....	--	426,253
2004.....	--	401,673
2005 and thereafter.....	--	--
	-----	-----
Net minimum lease payments.....	8,391	\$1,885,937
		=====
Less amount representing interest.....	605	

Present value of net minimum lease payments.....	\$7,786	
	=====	

HARVARD BIOSCIENCE, INC. AND SUBSIDIARIES

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (CONTINUED)

(11) RELATED PARTY TRANSACTIONS

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

(12) EMPLOYEE BENEFIT PLANS

The Company sponsors a profit sharing retirement plan for its U.S. employees, which includes an employee savings plan established under Section 401(k) of the U.S. Internal Revenue Code. The plan covers substantially all full-time employees who meet certain eligibility requirements. Contributions to the profit sharing retirement plan are at the discretion of management. For the years ended December 31, 2000, 1999, and 1998, the Company contributed approximately \$81,000, \$67,000, and \$41,000, respectively, to the plan.

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, 2000 and 1999 follow:

	YEARS ENDED DECEMBER 31,	
	2000	1999
	-----	-----
Components of net periodic benefit cost:		
Service cost.....	\$ 319,053	\$ 288,640
Interest cost.....	347,215	250,437
Expected return on plan assets.....	(527,397)	(364,684)
Net amortization gain.....	(20,769)	6,965
	-----	-----
Net periodic benefit cost.....	\$ 118,102	\$ 181,358
	=====	=====

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HARVARD BIOSCIENCE, INC. AND SUBSIDIARIES

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (CONTINUED)

(12) EMPLOYEE BENEFIT PLANS (CONTINUED)

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

	YEARS ENDED DECEMBER 31,	
	2000	1999
	-----	-----
Change in benefit obligation:		
Balance at beginning of period.....	\$5,829,403	\$1,215,000
Acquisitions.....	--	4,848,552
Service cost.....	319,053	288,640
Interest cost.....	347,215	250,437
Participants' contributions.....	81,369	60,745
Actuarial (gain)/loss.....	1,158,295	(824,672)
Benefits paid.....	(46,058)	(9,299)
Currency translation adjustment.....	(467,336)	--
	-----	-----
Balance at end of period.....	7,221,941	5,829,403
	-----	-----
Change in fair value of plan assets:		
Balance at beginning of period.....	7,062,645	1,158,138
Acquisitions.....	--	5,231,470
Actual return on plan assets.....	(51,692)	440,606
Participants' contributions.....	81,369	60,745
Employer contributions.....	258,756	180,985
Benefits paid.....	(46,058)	(9,299)
Currency translation adjustment.....	(560,352)	--
	-----	-----
Balance at end of period.....	\$6,744,668	\$7,062,645
	=====	=====

	YEARS ENDED DECEMBER 31,	
	2000	1999
	-----	-----
Funded status:		
Plan assets greater than benefit obligation.....	(477,273)	1,233,242
Unrecognized (gain) loss.....	921,611	(881,299)

Prepaid pension expense in consolidated balance sheet.....	\$ 444,338	\$ 351,943
	=====	=====

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

	YEARS ENDED DECEMBER 31,	
	2000	1999
Weighted average assumptions:		
Discount rate.....	6.0%	5.5%
Expected return on assets.....	7.0-8.0%	7.0-8.0%
Rate of compensation increase.....	4.5%	3.8-4.0%

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HARVARD BIOSCIENCE, INC. AND SUBSIDIARIES

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (CONTINUED)

(13) INCOME TAXES

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

	YEARS ENDED DECEMBER 31,	
	2000	1999
Deferred tax assets:		
Accounts receivable.....	\$ 31,755	\$ 31,755
Inventory.....	185,990	129,097
Operating loss carryforward.....	175,998	34,417
Accrued expenses.....	82,698	1,196,338
Goodwill.....	51,368	37,679
Catalog costs.....	--	8,503
Total deferred tax assets.....	527,809	1,437,789
Deferred tax liabilities:		
Catalog costs.....	12,141	--
Pension fund asset.....	22,010	18,461
Property, plant and equipment.....	15,927	42,632
Other.....	11,741	4,695
Total deferred tax liabilities.....	61,819	65,788
Net deferred tax assets.....	\$465,990	\$1,372,001
	=====	=====

The amount recorded as net deferred tax assets as of December 31, 2000 and 1999 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 net deferred tax asset of \$465,990 at December 31, 2000 will more likely than not be realized in the carryforward period. Management reviews the recoverability of deferred tax assets during each reporting period.

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

	YEARS ENDED DECEMBER 31,		
	2000	1999	1998
Domestic.....	\$ (51,098,496)	\$ (32,040,219)	\$115,418
Foreign.....	2,588,112	2,757,782	738,916
	\$ (48,510,384)	\$ (29,282,437)	\$854,334

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HARVARD BIOSCIENCE, INC. AND SUBSIDIARIES

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (CONTINUED)

(13) INCOME TAXES (CONTINUED)

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

	YEARS ENDED DECEMBER 31,		
	2000	1999	1998
Current income tax expense:			
Federal and state.....	\$ (560,364)	\$ 403,149	\$579,152
Foreign.....	992,100	1,043,539	214,112
	431,736	1,446,688	793,264
Deferred income tax (benefit) expense:			
Federal and state.....	903,168	(1,238,399)	(19,380)
Foreign.....	24,497	(70,809)	9,308
	927,665	(1,309,208)	(10,072)
Total income tax expense.....	\$1,359,401	\$ 137,480	\$783,192

Income tax expense for the years ended December 31, 2000, 1999 and 1998 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,		
	2000	1999	1998
Computed "expected" income tax (benefit) expense.....	\$ (16,493,531)	\$ (9,956,029)	\$290,474
Increase (decrease) in income taxes resulting from:			
Foreign tax rate and regulation differential.....	112,097	35,804	(27,811)
State income taxes, net of federal income tax benefit.....	63,600	(154,569)	86,068
Interest expense (common stock warrants).....	12,539,403	10,254,946	469,002
Foreign Sales Corporation tax benefits.....	(32,596)	(28,761)	(27,804)
Other.....	(26,721)	(13,911)	(6,737)
Stock compensation expense in excess			

of allowable tax benefits on exercise of options.....	5,197,149	--	--
	-----	-----	-----
Total.....	\$ 1,359,401	\$ 137,480	\$783,192
	=====	=====	=====

Undistributed earnings of the Company's foreign subsidiaries amounted to approximately \$5,297,594, \$2,992,805 and \$1,565,000 at December 31, 2000, 1999 and 1998, respectively. Those earnings are considered to be indefinitely reinvested and, accordingly, no related provision for U.S federal and state income taxes has been provided. Upon distribution of those earnings in the form of dividends or otherwise, the Company will be subject to both U.S. income taxes (less foreign tax credits) and withholding taxes in the various foreign countries.

HARVARD BIOSCIENCE, INC. AND SUBSIDIARIES

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (CONTINUED)

(14) 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 no shares were issued as of December 31, 2000.

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. The Plans authorize grants of options to purchase up to 4,349,096 shares of authorized but unissued stock.

As of December 31, 2000, 1999 and 1998, 1,582,910, 1,119,725 and 1,119,725 "Incentive Stock Options," and 2,519,576, 1,812,295 and 895,780 "Non-qualified Stock Options," respectively, had been granted to employees. The Incentive Stock Options become fully vested over a four year period, on a pro rata basis. The Non-qualified 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, 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 year ended December 31, 2000, compensation expense of \$4,635,949 was recognized on these stock option grants. Additional compensation expense will be recognized in future periods over the four year vesting period of the options. The Company's 1996 and 1999 Non-qualified Stock Option awards 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 employees exercised 563,942 non-vested options that were granted during 2000 for 563,942 shares of restricted common shares for cash consideration of \$286 and two

HARVARD BIOSCIENCE, INC. AND SUBSIDIARIES

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (CONTINUED)

(14) STOCK COMPENSATION PLANS (CONTINUED)

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 \$3,217,154 has been recognized as stock compensation expense for the year ended December 31, 2000. The remaining unearned compensation is being amortized to expense over the four year vesting period. Also on September 29, 2000, two employees of the Company exercised 916,514 fully vested options for cash of \$465 and two promissory notes amounting to \$958,298 payable to the Company. The notes have a three-year maturity and a fixed interest rate of 10% per annum, compounded annually.

The following is a summary of stock option activity.

	EMPLOYEE STOCK OPTIONS	
	OPTIONS OUTSTANDING	WEIGHTED AVERAGE EXERCISE PRICE
Balance at December 31, 1997.....	2,015,505	0.02
Options granted.....	--	--
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

During 2000, 1999 and 1998, 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 2000 and 1999 was \$9.70, and \$1.05, respectively. No options were granted during 1998.

The following is a summary of information relating to stock options outstanding at December 31, 2000 (no options were exercisable at December 31, 2000):

RANGE OF EXERCISE PRICE	OPTIONS OUTSTANDING		
	NUMBER OUTSTANDING AT DECEMBER 31, 2000	WEIGHTED- AVERAGE REMAINING CONTRACTUAL LIFE	WEIGHTED AVERAGE EXERCISE PRICE
\$0.01	28,008	6.0 years	\$0.01

\$1.05	571,102	9.3 years	\$1.05
\$8.00	30,000	9.9 years	\$8.00
-----	-----	-----	-----
\$0.01-\$8.00	629,110	9.2 years	\$1.33

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HARVARD BIOSCIENCE, INC. AND SUBSIDIARIES

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (CONTINUED)

(14) STOCK COMPENSATION PLANS (CONTINUED)

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

	YEARS ENDED DECEMBER 31,		
	2000	1999	1998
	-----	-----	-----
Net income (loss) as reported.....	\$ (49,869,785)	\$ (29,419,917)	\$ 71,142
Pro forma net income (loss).....	\$ (50,021,589)	\$ (29,420,033)	\$ 70,922
Basic net income (loss) per share.....	\$ (6.25)	\$ (5.28)	\$ (0.01)
Pro forma basic net income (loss) per share.....	\$ (6.26)	\$ (5.28)	\$ (0.01)
Diluted net income (loss) per share.....	\$ (6.25)	\$ (5.28)	\$ (0.01)
Diluted pro forma net income (loss) per share.....	\$ (6.26)	\$ (5.28)	\$ (0.01)

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 2000 and 1999. There were no grants of options in 1998.

	YEARS ENDED DECEMBER 31,	
	2000	1999
	-----	-----
Risk free interest rates.....	5.9%	5.6%
Expected option lives.....	2 years	7 years
Expected dividend yields.....	0%	0%
Expected volatility.....	80.90%	0%

(15) SEGMENT AND RELATED INFORMATION

The Company operates in one significant business segment.

Revenues by geographic area consists of the following:

	YEARS ENDED DECEMBER 31,		
	2000	1999	1998
	-----	-----	-----
United States.....	\$ 9,379,986	\$ 8,169,470	\$ 7,347,907

United Kingdom.....	15,828,225	15,353,761	2,458,772
Canada and Europe.....	5,366,589	2,654,583	2,347,346
	-----	-----	-----
	\$30,574,800	\$26,177,814	\$12,154,025
	=====	=====	=====

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HARVARD BIOSCIENCE, INC. AND SUBSIDIARIES

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (CONTINUED)

(15) SEGMENT AND RELATED INFORMATION (CONTINUED)

Long lived assets by geographic area consists of the following:

	DECEMBER 31,		
	2000	1999	1998
	-----	-----	-----
United States.....	\$ 448,243	\$ 307,286	\$260,977
United Kingdom.....	1,204,981	1,189,269	677,889
Canada and Europe.....	62,502	63,367	31,039
	-----	-----	-----
	\$1,715,726	\$1,559,922	\$969,905
	=====	=====	=====

(16) INCOME (LOSS) PER SHARE

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

	YEARS ENDED DECEMBER 31,		
	2000	1999	1998
	-----	-----	-----
Net income (loss) available to common shareholders.....	\$ (50,005,936)	\$ (29,576,503)	\$ (50,524)
Effect of dilutive securities:			
Common stock warrants.....	--	--	--
	-----	-----	-----
Net income (loss), assuming dilution...	\$ (50,005,936)	\$ (29,576,503)	\$ (50,524)
	=====	=====	=====
Weighted average common shares outstanding during the year.....	8,005,386	5,598,626	5,598,626
Effect of dilutive securities:			
Common stock warrants.....	--	--	--
Common stock options.....	--	--	--
	-----	-----	-----
	8,005,386	5,598,626	5,598,626
	=====	=====	=====

For the years ended December 31, 2000, 1999 and 1998, common equivalent shares of 7,456,010, 11,378,110, and 9,688,766 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.

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HARVARD BIOSCIENCE, INC. AND SUBSIDIARIES

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (CONTINUED)

(17) ACCRUED EXPENSES

Accrued expenses consist of:

	DECEMBER 31,	
	2000	1999
Accrued compensation and payroll.....	\$1,188,553	\$ 736,021
Accrued interest.....	--	158,101
Accrued legal and professional fees.....	1,843,644	251,926
Other.....	273,363	253,475
	-----	-----
	\$3,305,560	\$1,399,523
	=====	=====

(18) CONTINGENCIES

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

(19) CONCENTRATIONS OF CREDIT RISK

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

(20) STOCK SPLIT

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

(21) 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. The net proceeds to the Company were \$44.8 million. 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 6, 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 were approximately \$7.0 million.

HARVARD BIOSCIENCE, INC. AND SUBSIDIARIES

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (CONTINUED)

(22) ASSERTED LEGAL CLAIM

On December 26, 2000 Harvard University filed a lawsuit against the Company in U.S. District Court, District of Massachusetts alleging that the Company's

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. Management denies the allegations contained in the lawsuit and is defending the Company against such claims.

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SIGNATURES

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.

By: /s/ CHANE GRAZIANO

Chane Graziano
CHIEF EXECUTIVE OFFICER

DATE: APRIL 2, 2001

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 2, 2001
/s/ JAMES L. WARREN ----- James L. Warren	Chief Financial Officer (Principal Financial Officer and Principal Accounting Officer)	April 2, 2001
/s/ DAVID GREEN ----- David Green	President and Director	April 2, 2001
/s/ CHRISTOPHER W. DICK ----- Christopher W. Dick	Director	April 2, 2001
/s/ RICHARD C. KLAFFKY, JR. ----- Richard C. Klaffky, Jr.	Director	April 2, 2001
/s/ ROBERT DISHMAN ----- Robert Dishman	Director	April 2, 2001
/s/ JOHN F. KENNEDY ----- John F. Kennedy	Director	April 2, 2001
/s/ EARL R. LEWIS ----- Earl R. Lewis	Director	April 2, 2001

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SECOND AMENDED AND RESTATED
CERTIFICATE OF INCORPORATION
OF
HARVARD BIOSCIENCE, INC.

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

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

2. This Second Amended and Restated Certificate of Incorporation (the "Certificate") amends, restates and integrates the provisions of the Amended and Restated Certificate of Incorporation that was filed with the Secretary of State of the State of Delaware on November 28, 2000 (the "Amended and Restated Certificate"), and was duly adopted in accordance with the provisions of Sections 242 and 245 of the Delaware General Corporation Law (the "DGCL").

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

ARTICLE I

The name of the Corporation is Harvard Bioscience, Inc.

ARTICLE II

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

ARTICLE III

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

ARTICLE IV

CAPITAL STOCK

The total number of shares of capital stock which the Corporation shall have authority to issue is eighty-five million (85,000,000) shares, of which (i) eighty million (80,000,000) shares shall be a class designated as common stock, par value \$.01 per share (the "Common Stock"), and (ii) five million (5,000,000) shares shall be a class designated as undesignated preferred stock, par value \$.01 per share (the "Undesignated Preferred Stock").

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

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

A. COMMON STOCK

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

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

(b) dividends may be declared and paid or set apart for payment upon the Common Stock out of any assets or funds of the Corporation legally available for the payment of dividends, but only when and as declared by the Board of Directors of the Corporation (the "Board of Directors") or any authorized committee thereof; and

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

B. UNDESIGNATED PREFERRED STOCK

The Board of Directors or any authorized committee thereof is expressly authorized, to the fullest extent permitted by law, to provide for the issuance of the shares of Undesignated Preferred Stock in one or more series of such stock, and by filing a certificate pursuant to applicable law of the State of Delaware, to establish or change from time to time the number of shares of each such series, and to fix the designations, powers, including voting powers, full or limited, or no voting powers, preferences and the relative, participating, optional or other special rights of the shares of each series and any qualifications, limitations and restrictions thereof.

ARTICLE V

STOCKHOLDER ACTION

1. ACTION WITHOUT MEETING. Except as otherwise provided herein, any action required or permitted to be taken by the stockholders of the Corporation at any annual or special meeting of stockholders of the Corporation must be effected at a duly called annual or special meeting of stockholders and may not be taken or effected by a written consent of stockholders in lieu thereof.

2. SPECIAL MEETINGS. Except as otherwise required by statute and subject to the rights, if any, of the holders of any series of Undesignated Preferred Stock, special meetings of the stockholders of the Corporation may be called only by the Board of Directors acting pursuant to a resolution approved by the affirmative vote of a majority of the Directors then in office. Only those matters set forth in the notice of the special meeting may be considered or acted upon at a special meeting of stockholders of the Corporation.

ARTICLE VI

DIRECTORS

1. GENERAL. The business and affairs of the Corporation shall be managed by or under the direction of the Board of Directors except as otherwise provided herein or required by law.

2. ELECTION OF DIRECTORS. Election of Directors need not be by written ballot unless the By-laws of the Corporation (the "By-laws") shall so provide.

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3. NUMBER OF DIRECTORS; TERM OF OFFICE. The number of Directors of the Corporation shall be fixed solely and exclusively by resolution duly adopted from time to time by the Board of Directors. The Directors, other than those who may be elected by the holders of any series of Undesignated Preferred Stock, shall be classified, with respect to the term for which they severally hold office, into three classes, as nearly equal in number as reasonably possible. The initial Class I Directors of the Corporation shall be Christopher W. Dick, Robert Dishman and Richard C. Klaffky, Jr.; the initial Class II Directors of the Corporation shall be David Green and John F. Kennedy; and the initial Class III Directors of the Corporation shall be Chane Graziano and Earl R. Lewis. The initial Class I Directors shall serve for a term expiring at the annual meeting of stockholders to be held in 2001, the initial Class II Directors shall serve for a term expiring at the annual meeting of stockholders to be held in 2002, and the initial Class III Directors shall serve for a term expiring at the annual meeting of stockholders to be held in 2003. At each annual meeting of stockholders, Directors elected to succeed those Directors whose terms expire shall be elected for a term of office to expire at the third succeeding annual meeting of stockholders after their election. Notwithstanding the foregoing, the Directors elected to each class shall hold office until their successors are duly elected and qualified or until their earlier resignation or removal.

Notwithstanding the foregoing, whenever, pursuant to the provisions of Article IV of this Certificate, the holders of any one or more series of Undesignated Preferred Stock shall have the right, voting separately as a series or together with holders of other such series, to elect Directors at an annual or special meeting of stockholders, the election, term of office, filling of vacancies and other features of such directorships shall be governed by the terms of this Certificate and any certificate of designations applicable thereto.

4. VACANCIES. Subject to the rights, if any, of the holders of any series of Undesignated Preferred Stock to elect Directors and to fill vacancies in the Board of Directors relating thereto, any and all vacancies in the Board of Directors, however occurring, including, without limitation, by reason of an increase in size of the Board of Directors, or the death, resignation, disqualification or removal of a Director, shall be filled solely and exclusively by the affirmative vote of a majority of the remaining Directors then in office, even if less than a quorum of the Board of Directors, and not by the stockholders. Any Director appointed in accordance with the preceding sentence shall hold office for the remainder of the full term of the class of Directors in which the new directorship was created or the vacancy occurred and until such Director's successor shall have been duly elected and qualified or until his or her earlier resignation or removal. Subject to the rights, if any, of the holders of any series of Undesignated Preferred Stock to elect Directors, when the number of Directors is increased or decreased, the Board of Directors shall, subject to Article VI.3 hereof, determine the class or classes to which the increased or decreased number of Directors shall be apportioned; PROVIDED, HOWEVER, that no decrease in the number of Directors shall shorten the term of any incumbent Director. In the event of a vacancy in the Board of Directors, the remaining Directors, except as otherwise provided by law, shall exercise the powers of the full Board of Directors until the vacancy is filled.

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5. REMOVAL. Subject to the rights, if any, of any series of Undesignated Preferred Stock to elect Directors and to remove any Director whom the holders of any such stock have the right to elect, any Director (including persons elected by Directors to fill vacancies in the Board of Directors) may be removed from office (i) only with cause and (ii) only by the affirmative vote of the holders of 75% or more of the shares then entitled to vote at an election of Directors. At least forty-five (45) days prior to any meeting of stockholders at which it is proposed that any Director be removed from office, written notice of such proposed removal and the alleged grounds thereof shall be sent to the

Director whose removal will be considered at the meeting.

ARTICLE VII

LIMITATION OF LIABILITY

A Director of the Corporation shall not be personally liable to the Corporation or its stockholders for monetary damages for breach of fiduciary duty as a Director, except for liability (a) for any breach of the Director's duty of loyalty to the Corporation or its stockholders, (b) for acts or omissions not in good faith or which involve intentional misconduct or a knowing violation of law, (c) under Section 174 of the DGCL or (d) for any transaction from which the Director derived an improper personal benefit. If the DGCL is amended after the effective date of this Certificate to authorize corporate action further eliminating or limiting the personal liability of Directors, then the liability of a Director of the Corporation shall be eliminated or limited to the fullest extent permitted by the DGCL, as so amended.

Any repeal or modification of this Article VII by either of (i) the stockholders of the Corporation or (ii) an amendment to the DGCL, shall not adversely affect any right or protection existing at the time of such repeal or modification with respect to any acts or omissions occurring before such repeal or modification of a person serving as a Director at the time of such repeal or modification.

ARTICLE VIII

AMENDMENT OF BY-LAWS

1. AMENDMENT BY DIRECTORS. Except as otherwise provided by law, the By-laws of the Corporation may be amended or repealed by the Board of Directors by the affirmative vote of a majority of the Directors then in office.

2. AMENDMENT BY STOCKHOLDERS. The By-laws of the Corporation may be amended or repealed at any annual meeting of stockholders, or special meeting of stockholders called for such purpose as provided in the By-laws, by the affirmative vote of at least 75% of the shares present in person or represented by proxy at such meeting and entitled to vote on such amendment or repeal, voting together as a single class; PROVIDED, HOWEVER, that if the Board of

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Directors recommends that stockholders approve such amendment or repeal at such meeting of stockholders, such amendment or repeal shall only require the affirmative vote of the majority of the shares present in person or represented by proxy at such meeting and entitled to vote on such amendment or repeal, voting together as a single class.

ARTICLE IX

AMENDMENT OF CERTIFICATE OF INCORPORATION

The Corporation reserves the right to amend or repeal this Certificate in the manner now or hereafter prescribed by statute and this Certificate, and all rights conferred upon stockholders herein are granted subject to this reservation. Whenever any vote of the holders of voting stock is required to amend or repeal any provision of this Certificate, and in addition to any other vote of holders of voting stock that is required by this Certificate or by law, such amendment or repeal shall require the affirmative vote of the majority of the outstanding shares entitled to vote on such amendment or repeal, and the affirmative vote of the majority of the outstanding shares of each class entitled to vote thereon as a class, at a duly constituted meeting of stockholders called expressly for such purpose; PROVIDED, HOWEVER, that the affirmative vote of not less than 75% of the outstanding shares entitled to vote on such amendment or repeal, and the affirmative vote of not less than 75% of the outstanding shares of each class entitled to vote thereon as a class, shall be required to amend or repeal any provision of Article V, Article VI, Article VII or Article IX of this Certificate.

[End of Text]

THIS SECOND AMENDED AND RESTATED CERTIFICATE OF INCORPORATION is executed as of this 12th day of December, 2000.

HARVARD BIOSCIENCE, INC.

By: /s/ David Green

Name: David Green

Title: President

AMENDED AND RESTATED

BY-LAWS

OF

HARVARD BIOSCIENCE, INC.
(the "Corporation")

ARTICLE I

STOCKHOLDERS

SECTION 1. ANNUAL MEETING. The annual meeting of stockholders (any such meeting being referred to in these By-laws as an "Annual Meeting") shall be held at the hour, date and place within or without the United States which is fixed by the Board of Directors, which time, date and place may subsequently be changed at any time by vote of the Board of Directors. If no Annual Meeting has been held for a period of thirteen months after the Corporation's last Annual Meeting, a special meeting in lieu thereof may be held, and such special meeting shall have, for the purposes of these By-laws or otherwise, all the force and effect of an Annual Meeting. Any and all references hereafter in these By-laws to an Annual Meeting or Annual Meetings also shall be deemed to refer to any special meeting(s) in lieu thereof.

SECTION 2. NOTICE OF STOCKHOLDER BUSINESS AND NOMINATIONS.

(a) ANNUAL MEETINGS OF STOCKHOLDERS.

(1) Nominations of persons for election to the Board of Directors of the Corporation and the proposal of business to be considered by the stockholders may be made at an Annual Meeting (a) pursuant to the Corporation's notice of meeting, (b) by or at the direction of the Board of Directors or (c) by any stockholder of the Corporation who was a stockholder of record at the time of giving of notice provided for in this By-law, who is entitled to vote at the meeting, who is present (in person or by proxy) at the meeting and who complies with the notice procedures set forth in this By-law. In addition to the other requirements set forth in this By-law, for any proposal of business to be considered at an Annual Meeting, it must be a proper subject for action by stockholders of the Corporation under Delaware law.

(2) For nominations or other business to be properly brought before an Annual Meeting by a stockholder pursuant to clause (c) of paragraph (a)(1) of this By-law, the stockholder must have given timely notice thereof in writing to the Secretary of the Corporation. To be timely, a stockholder's notice shall be delivered to the Secretary at the principal executive offices of the Corporation not later than the close of

business on the 90th day nor earlier than the close of business on the 120th day prior to the first anniversary of the preceding year's Annual Meeting; provided, however, that in the event that the date of the Annual Meeting is advanced by more than 30 days before or delayed by more than 60 days after such anniversary date, notice by the stockholder to be timely must be so delivered not earlier than the close of business on the 120th day prior to such Annual Meeting and not later than the close of business on the later of the 90th day prior to such Annual Meeting or the 10th day following the day on which public announcement of the date of such meeting is first made. Notwithstanding anything to the contrary provided herein, for the first Annual Meeting following the initial public offering of common stock of the Corporation, a stockholder's notice shall be timely if delivered to the Secretary at the principal executive offices of the Corporation not later than the close of business on the later of the

90th day prior to the scheduled date of such Annual Meeting or the 10th day following the day on which public announcement of the date of such Annual Meeting is first made or sent by the Corporation. Such stockholder's notice shall set forth (a) as to each person whom the stockholder proposes to nominate for election or reelection as a director, all information relating to such person that is required to be disclosed in solicitations of proxies for election of directors in an election contest, or is otherwise required, in each case pursuant to Regulation 14A under the Securities Exchange Act of 1934, as amended (the "Exchange Act") and Rule 14a-11 thereunder (including such person's written consent to being named in the proxy statement as a nominee and to serving as a director if elected); (b) as to any other business that the stockholder proposes to bring before the meeting, a brief description of the business desired to be brought before the meeting, the reasons for conducting such business at the meeting, any material interest in such business of such stockholder and the beneficial owner, if any, on whose behalf the proposal is made, and the names and addresses of other stockholders known by the stockholder proposing such business to support such proposal, and the class and number of shares of the Corporation's capital stock beneficially owned by such other stockholders; and (c) as to the stockholder giving the notice and the beneficial owner, if any, on whose behalf the nomination or proposal is made (i) the name and address of such stockholder, as they appear on the Corporation's books, and of such beneficial owner, and (ii) the class and number of shares of the Corporation which are owned beneficially and of record by such stockholder and such beneficial owner.

(3) Notwithstanding anything in the second sentence of paragraph (a)(2) of this By-law to the contrary, in the event that the number of directors to be elected to the Board of Directors of the Corporation is increased and there is no public announcement naming all of the nominees for director or specifying the size of the increased Board of Directors made by the Corporation at least 85 days prior to the first anniversary of the preceding year's Annual Meeting, a stockholder's notice required by this By-law shall also be considered timely, but only with respect to nominees for any new positions created by such increase, if it shall be delivered to the Secretary at the principal

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executive offices of the Corporation not later than the close of business on the 10th day following the day on which such public announcement is first made by the Corporation.

(b) GENERAL.

(1) Only such persons who are nominated in accordance with the provisions of this By-law shall be eligible for election and to serve as directors and only such business shall be conducted at an Annual Meeting as shall have been brought before the meeting in accordance with the provisions of this By-law. The Board of Directors or a designated committee thereof shall have the power to determine whether a nomination or any business proposed to be brought before the meeting was made in accordance with the provisions of this By-law. If neither the Board of Directors nor such designated committee makes a determination as to whether any stockholder proposal or nomination was made in accordance with the provisions of this By-law, the presiding officer of the Annual Meeting shall have the power and duty to determine whether the stockholder proposal or nomination was made in accordance with the provisions of this By-law. If the Board of Directors or a designated committee thereof or the presiding officer, as applicable, determines that any stockholder proposal or nomination was not made in accordance with the provisions of this By-law, such proposal or nomination shall be disregarded and shall not be presented for action at the Annual Meeting.

(2) For purposes of this By-law, "public announcement" shall mean disclosure in a press release reported by the Dow Jones News Service, Associated Press or comparable national news service or in a document publicly filed by the Corporation with the Securities and

Exchange Commission pursuant to Section 13, 14 or 15(d) of the Exchange Act.

(3) Notwithstanding the foregoing provisions of this By-law, a stockholder shall also comply with all applicable requirements of the Exchange Act and the rules and regulations thereunder with respect to the matters set forth in this By-law. Nothing in this By-law shall be deemed to affect any rights of (i) stockholders to request inclusion of proposals in the Corporation's proxy statement pursuant to Rule 14a-8 under the Exchange Act or (ii) the holders of any series of Undesignated Preferred Stock to elect directors under specified circumstances.

SECTION 3. SPECIAL MEETINGS. Except as otherwise required by statute and subject to the rights, if any, of the holders of any series of Undesignated Preferred Stock, special meetings of the stockholders of the Corporation may be called only by the Board of Directors acting pursuant to a resolution approved by the affirmative vote of a majority of the Directors then in office. Only those matters set forth in the notice of the special meeting may be considered or acted upon at a special meeting of stockholders of the Corporation.

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SECTION 4. NOTICE OF MEETINGS; ADJOURNMENTS. A written notice of each Annual Meeting stating the hour, date and place of such Annual Meeting shall be given not less than 10 days nor more than 60 days before the Annual Meeting, to each stockholder entitled to vote thereat by delivering such notice to such stockholder or by mailing it, postage prepaid, addressed to such stockholder at the address of such stockholder as it appears on the Corporation's stock transfer books. Such notice shall be deemed to be given when hand delivered to such address or deposited in the mail so addressed, with postage prepaid.

Notice of all special meetings of stockholders shall be given in the same manner as provided for Annual Meetings, except that the written notice of all special meetings shall state the purpose or purposes for which the meeting has been called.

Notice of an Annual Meeting or special meeting of stockholders need not be given to a stockholder if a written waiver of notice is signed before or after such meeting by such stockholder or if such stockholder attends such meeting, unless such attendance was for the express purpose of objecting at the beginning of the meeting to the transaction of any business because the meeting was not lawfully called or convened. Neither the business to be transacted at, nor the purpose of, any Annual Meeting or special meeting of stockholders need be specified in any written waiver of notice.

The Board of Directors may postpone and reschedule any previously scheduled Annual Meeting or special meeting of stockholders and any record date with respect thereto, regardless of whether any notice or public disclosure with respect to any such meeting has been sent or made pursuant to Section 2 of this Article I of these By-laws or otherwise. In no event shall the public announcement of an adjournment, postponement or rescheduling of any previously scheduled meeting of stockholders commence a new time period for the giving of a stockholder's notice under Section 2 of this Article I of these By-laws.

When any meeting is convened, the presiding officer may adjourn the meeting if (a) no quorum is present for the transaction of business, (b) the Board of Directors determines that adjournment is necessary or appropriate to enable the stockholders to consider fully information which the Board of Directors determines has not been made sufficiently or timely available to stockholders, or (c) the Board of Directors determines that adjournment is otherwise in the best interests of the Corporation. When any Annual Meeting or special meeting of stockholders is adjourned to another hour, date or place, notice need not be given of the adjourned meeting other than an announcement at the meeting at which the adjournment is taken of the hour, date and place to which the meeting is adjourned; provided, however, that if the adjournment is for more than 30 days, or if after the adjournment a new record date is fixed for the adjourned meeting, notice of the adjourned meeting shall be given to each stockholder of record entitled to vote thereat and each stockholder who, by

law or under the Certificate of Incorporation of the Corporation (as the same may hereafter be amended and/or restated, the "Certificate") or these By-laws, is entitled to such notice.

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SECTION 5. QUORUM. A majority of the shares entitled to vote, present in person or represented by proxy, shall constitute a quorum at any meeting of stockholders. If less than a quorum is present at a meeting, the holders of voting stock representing a majority of the voting power present at the meeting or the presiding officer may adjourn the meeting from time to time, and the meeting may be held as adjourned without further notice, except as provided in Section 5 of this Article I. At such adjourned meeting at which a quorum is present, any business may be transacted which might have been transacted at the meeting as originally noticed. The stockholders present at a duly constituted meeting may continue to transact business until adjournment, notwithstanding the withdrawal of enough stockholders to leave less than a quorum.

SECTION 6. VOTING AND PROXIES. Stockholders shall have one vote for each share of stock entitled to vote owned by them of record according to the stock ledger of the Corporation, unless otherwise provided by law or by the Certificate. Stockholders may vote either (i) in person, (ii) by written proxy or (iii) by a transmission permitted by Section 212(c) of the Delaware General Corporation Law ("DGCL"). Any copy, facsimile telecommunication or other reliable reproduction of the writing or transmission permitted by Section 212(c) of the DGCL may be substituted for or used in lieu of the original writing or transmission for any and all purposes for which the original writing or transmission could be used, provided that such copy, facsimile telecommunication or other reproduction shall be a complete reproduction of the entire original writing or transmission. Proxies shall be filed in accordance with the procedures established for the meeting of stockholders. Except as otherwise limited therein or as otherwise provided by law, proxies authorizing a person to vote at a specific meeting shall entitle the persons authorized thereby to vote at any adjournment of such meeting, but they shall not be valid after final adjournment of such meeting. A proxy with respect to stock held in the name of two or more persons shall be valid if executed by or on behalf of any one of them unless at or prior to the exercise of the proxy the Corporation receives a specific written notice to the contrary from any one of them.

SECTION 7. ACTION AT MEETING. When a quorum is present at any meeting of stockholders, any matter before any such meeting (other than an election of a director or directors) shall be decided by a majority of the votes properly cast for and against such matter, except where a larger vote is required by law, by the Certificate or by these By-laws. Any election of directors by stockholders shall be determined by a plurality of the votes properly cast on the election of directors. The Corporation shall not directly or indirectly vote any shares of its own stock; provided, however, that the Corporation may vote shares which it holds in a fiduciary capacity to the extent permitted by law.

SECTION 8. STOCKHOLDER LISTS. The Secretary or an Assistant Secretary (or the Corporation's transfer agent or other person authorized by these By-laws or by law) shall prepare and make, at least 10 days before every Annual Meeting or special meeting of stockholders, a complete list of the stockholders entitled to vote at the meeting, arranged in alphabetical order, and showing the address of each stockholder and the number of shares

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registered in the name of each stockholder. Such list shall be open to the examination of any stockholder, for any purpose germane to the meeting, during ordinary business hours, for a period of at least 10 days prior to the meeting, either at a place within the city where the meeting is to be held, which place shall be specified in the notice of the meeting, or, if not so specified, at the place where the meeting is to be held. The list shall also be produced and kept at the hour, date and place of the meeting during the whole time thereof, and may be inspected by any stockholder who is present.

SECTION 9. PRESIDING OFFICER. The Chairman of the Board, if one is elected, or if not elected or in his or her absence, the President, shall preside at all Annual Meetings or special meetings of stockholders and shall have the power, among other things, to adjourn such meeting at any time and from time to time, subject to Sections 5 and 6 of this Article I. The order of business and all other matters of procedure at any meeting of the stockholders shall be determined by the presiding officer.

SECTION 10. INSPECTORS OF ELECTIONS. The Corporation shall, in advance of any meeting of stockholders, appoint one or more inspectors to act at the meeting and make a written report thereof. The Corporation may designate one or more persons as alternate inspectors to replace any inspector who fails to act. If no inspector or alternate is able to act at a meeting of stockholders, the presiding officer shall appoint one or more inspectors to act at the meeting. Any inspector may, but need not, be an officer, employee or agent of the Corporation. Each inspector, before entering upon the discharge of his or her duties, shall take and sign an oath faithfully to execute the duties of inspector with strict impartiality and according to the best of his or her ability. The inspectors shall perform such duties as are required by the DGCL, including the counting of all votes and ballots. The inspectors may appoint or retain other persons or entities to assist the inspectors in the performance of the duties of the inspectors. The presiding officer may review all determinations made by the inspectors, and in so doing the presiding officer shall be entitled to exercise his or her sole judgment and discretion and he or she shall not be bound by any determinations made by the inspectors. All determinations by the inspectors and, if applicable, the presiding officer, shall be subject to further review by any court of competent jurisdiction.

ARTICLE II

DIRECTORS

SECTION 1. POWERS. The business and affairs of the Corporation shall be managed by or under the direction of the Board of Directors except as otherwise provided by the Certificate or required by law.

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SECTION 2. NUMBER AND TERMS. The number of directors of the Corporation shall be fixed solely and exclusively by resolution duly adopted from time to time by the Board of Directors. The directors shall hold office in the manner provided in the Certificate.

SECTION 3. QUALIFICATION. No director need be a stockholder of the Corporation.

SECTION 4. VACANCIES. Vacancies in the Board of Directors shall be filled in the manner provided in the Certificate.

SECTION 5. REMOVAL. Directors may be removed from office in the manner provided in the Certificate.

SECTION 6. RESIGNATION. A director may resign at any time by giving written notice to the Chairman of the Board, if one is elected, the President or the Secretary. A resignation shall be effective upon receipt, unless the resignation otherwise provides.

SECTION 7. REGULAR MEETINGS. The regular annual meeting of the Board of Directors shall be held, without notice other than this Section 7, on the same date and at the same place as the Annual Meeting following the close of such meeting of stockholders. Other regular meetings of the Board of Directors may be held at such hour, date and place as the Board of Directors may by resolution from time to time determine and publicize by means of reasonable notice given to any director who is not present at the meeting at which such resolution is adopted.

SECTION 8. SPECIAL MEETINGS. Special meetings of the Board of Directors may be called, orally or in writing, by or at the request of a majority of the directors, the Chairman of the Board, if one is elected, or the President. The person calling any such special meeting of the Board of Directors may fix the hour, date and place thereof.

SECTION 9. NOTICE OF MEETINGS. Notice of the hour, date and place of all special meetings of the Board of Directors shall be given to each director by the Secretary or an Assistant Secretary, or in case of the death, absence, incapacity or refusal of such persons, by the Chairman of the Board, if one is elected, or the President or such other officer designated by the Chairman of the Board, if one is elected, or the President. Notice of any special meeting of the Board of Directors shall be given to each director in person, by telephone, or by facsimile, electronic mail or other form of electronic communication, sent to his or her business or home address, at least 24 hours in advance of the meeting, or by written notice mailed to his or her business or home address, at least 48 hours in advance of the meeting. Such notice shall be deemed to be delivered when hand delivered to such address, read to such director by telephone, deposited in the mail so addressed, with postage thereon prepaid if mailed, dispatched or transmitted if faxed, telexed or telecopied, or when delivered to the telegraph company if sent by telegram.

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A written waiver of notice signed before or after a meeting by a director and filed with the records of the meeting shall be deemed to be equivalent to notice of the meeting. The attendance of a director at a meeting shall constitute a waiver of notice of such meeting, except where a director attends a meeting for the express purpose of objecting at the beginning of the meeting to the transaction of any business because such meeting is not lawfully called or convened. Except as otherwise required by law, by the Certificate or by these By-laws, neither the business to be transacted at, nor the purpose of, any meeting of the Board of Directors need be specified in the notice or waiver of notice of such meeting.

SECTION 10. QUORUM. At any meeting of the Board of Directors, a majority of the total number of directors shall constitute a quorum for the transaction of business, but if less than a quorum is present at a meeting, a majority of the directors present may adjourn the meeting from time to time, and the meeting may be held as adjourned without further notice, except as provided in Section 9 of this Article II. Any business which might have been transacted at the meeting as originally noticed may be transacted at such adjourned meeting at which a quorum is present. For purposes of this section, the total number of directors includes any unfilled vacancies on the Board of Directors.

SECTION 11. ACTION AT MEETING. At any meeting of the Board of Directors at which a quorum is present, the vote of a majority of the directors present shall constitute action by the Board of Directors, unless otherwise required by law, by the Certificate or by these By-laws.

SECTION 12. ACTION BY CONSENT. Any action required or permitted to be taken at any meeting of the Board of Directors may be taken without a meeting if all members of the Board of Directors consent thereto in writing. Such written consent shall be filed with the records of the meetings of the Board of Directors and shall be treated for all purposes as a vote at a meeting of the Board of Directors.

SECTION 13. MANNER OF PARTICIPATION. Directors may participate in meetings of the Board of Directors by means of conference telephone or similar communications equipment by means of which all directors participating in the meeting can hear each other, and participation in a meeting in accordance herewith shall constitute presence in person at such meeting for purposes of these By-laws.

SECTION 14. COMMITTEES. The Board of Directors, by vote of a majority of the directors then in office, may elect from its number one or more committees, including, without limitation, an Executive Committee, a Compensation Committee, a Stock Option Committee and an Audit Committee, and may delegate thereto some or all of its powers except those which by law, by the Certificate or by these By-laws may not be delegated. Except as the Board of Directors may otherwise determine, any such committee may make rules for the conduct of its business, but unless otherwise provided by the Board of Directors or in such rules, its business shall be conducted so far as possible in the same manner as is provided by

these By-laws for the Board of Directors. All members of such committees shall hold such offices at the pleasure of the Board of Directors. The Board of Directors may abolish any such committee at any time. Any committee to which the Board of Directors delegates any of its powers or duties shall keep records of its meetings and shall report its action to the Board of Directors.

SECTION 15. COMPENSATION OF DIRECTORS. Directors shall receive such compensation for their services as shall be determined by a majority of the Board of Directors, or a designated committee thereof, provided that directors who are serving the Corporation as employees and who receive compensation for their services as such, shall not receive any salary or other compensation for their services as directors of the Corporation.

ARTICLE III

OFFICERS

SECTION 1. ENUMERATION. The officers of the Corporation shall consist of a President, a Treasurer, a Secretary and such other officers, including, without limitation, a Chairman of the Board of Directors, a Chief Executive Officer and one or more Vice Presidents (including Executive Vice Presidents or Senior Vice Presidents), Assistant Vice Presidents, Assistant Treasurers and Assistant Secretaries, as the Board of Directors may determine.

SECTION 2. ELECTION. At the regular annual meeting of the Board of Directors following the Annual Meeting, the Board of Directors shall elect the President, the Treasurer and the Secretary. Other officers may be elected by the Board of Directors at such regular annual meeting of the Board of Directors or at any other regular or special meeting.

SECTION 3. QUALIFICATION. No officer need be a stockholder or a director. Any person may occupy more than one office of the Corporation at any time. Any officer may be required by the Board of Directors to give bond for the faithful performance of his or her duties in such amount and with such sureties as the Board of Directors may determine.

SECTION 4. TENURE. Except as otherwise provided by the Certificate or by these By-laws, each of the officers of the Corporation shall hold office until the regular annual meeting of the Board of Directors following the next Annual Meeting and until his or her successor is elected and qualified or until his or her earlier resignation or removal.

SECTION 5. RESIGNATION. Any officer may resign by delivering his or her written resignation to the Corporation addressed to the President or the Secretary, and such resignation shall be effective upon receipt unless it is specified to be effective at some other time or upon the happening of some other event.

SECTION 6. REMOVAL. Except as otherwise provided by law, the Board of Directors may remove any officer with or without cause by the affirmative vote of a majority of the directors then in office.

SECTION 7. ABSENCE OR DISABILITY. In the event of the absence or disability of any officer, the Board of Directors may designate another officer to act temporarily in place of such absent or disabled officer.

SECTION 8. VACANCIES. Any vacancy in any office may be filled for the unexpired portion of the term by the Board of Directors.

SECTION 9. PRESIDENT. The President shall, subject to the direction of the Board of Directors, have general supervision and control of the Corporation's business. If there is no Chairman of the Board or if he or she is absent, the President shall preside, when present, at all meetings of

stockholders and of the Board of Directors. The President shall have such other powers and perform such other duties as the Board of Directors may from time to time designate.

SECTION 10. CHAIRMAN OF THE BOARD. The Chairman of the Board, if one is elected, shall preside, when present, at all meetings of the stockholders and of the Board of Directors. The Chairman of the Board shall have such other powers and shall perform such other duties as the Board of Directors may from time to time designate.

SECTION 11. CHIEF EXECUTIVE OFFICER. The Chief Executive Officer, if one is elected, shall have such powers and shall perform such duties as the Board of Directors may from time to time designate.

SECTION 12. VICE PRESIDENTS AND ASSISTANT VICE PRESIDENTS. Any Vice President (including any Executive Vice President or Senior Vice President) and any Assistant Vice President shall have such powers and shall perform such duties as the Board of Directors or the Chief Executive Officer may from time to time designate.

SECTION 13. TREASURER AND ASSISTANT TREASURERS. The Treasurer shall, subject to the direction of the Board of Directors and except as the Board of Directors or the Chief Executive Officer may otherwise provide, have general charge of the financial affairs of the Corporation and shall cause to be kept accurate books of account. The Treasurer shall have custody of all funds, securities, and valuable documents of the Corporation. He or she shall have such other duties and powers as may be designated from time to time by the Board of Directors or the Chief Executive Officer.

Any Assistant Treasurer shall have such powers and perform such duties as the Board of Directors or the Chief Executive Officer may from time to time designate.

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SECTION 14. SECRETARY AND ASSISTANT SECRETARIES. The Secretary shall record all the proceedings of the meetings of the stockholders and the Board of Directors (including committees of the Board) in books kept for that purpose. In his or her absence from any such meeting, a temporary secretary chosen at the meeting shall record the proceedings thereof. The Secretary shall have charge of the stock ledger (which may, however, be kept by any transfer or other agent of the Corporation). The Secretary shall have custody of the seal of the Corporation, and the Secretary, or an Assistant Secretary, shall have authority to affix it to any instrument requiring it, and, when so affixed, the seal may be attested by his or her signature or that of an Assistant Secretary. The Secretary shall have such other duties and powers as may be designated from time to time by the Board of Directors or the Chief Executive Officer. In the absence of the Secretary, any Assistant Secretary may perform his or her duties and responsibilities.

Any Assistant Secretary shall have such powers and perform such duties as the Board of Directors or the Chief Executive Officer may from time to time designate.

SECTION 15. OTHER POWERS AND DUTIES. Subject to these By-laws and to such limitations as the Board of Directors may from time to time prescribe, the officers of the Corporation shall each have such powers and duties as generally pertain to their respective offices, as well as such powers and duties as from time to time may be conferred by the Board of Directors or the Chief Executive Officer.

ARTICLE IV

CAPITAL STOCK

SECTION 1. CERTIFICATES OF STOCK. Each stockholder shall be entitled to a certificate of the capital stock of the Corporation in such form as may from time to time be prescribed by the Board of Directors. Such certificate shall be signed by the Chairman of the Board of Directors, the President or a Vice President and by the Treasurer or an Assistant Treasurer, or the Secretary or an

Assistant Secretary. The Corporation seal and the signatures by the Corporation's officers, the transfer agent or the registrar may be facsimiles. In case any officer, transfer agent or registrar who has signed or whose facsimile signature has been placed on such certificate shall have ceased to be such officer, transfer agent or registrar before such certificate is issued, it may be issued by the Corporation with the same effect as if he or she were such officer, transfer agent or registrar at the time of its issue. Every certificate for shares of stock which are subject to any restriction on transfer and every certificate issued when the Corporation is authorized to issue more than one class or series of stock shall contain such legend with respect thereto as is required by law.

SECTION 2. TRANSFERS. Subject to any restrictions on transfer and unless otherwise provided by the Board of Directors, shares of stock may be transferred only on the books of

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the Corporation by the surrender to the Corporation or its transfer agent of the certificate theretofore properly endorsed or accompanied by a written assignment or power of attorney properly executed, with transfer stamps (if necessary) affixed, and with such proof of the authenticity of signature as the Corporation or its transfer agent may reasonably require.

SECTION 3. RECORD HOLDERS. Except as may otherwise be required by law, by the Certificate or by these By-laws, the Corporation shall be entitled to treat the record holder of stock as shown on its books as the owner of such stock for all purposes, including the payment of dividends and the right to vote with respect thereto, regardless of any transfer, pledge or other disposition of such stock, until the shares have been transferred on the books of the Corporation in accordance with the requirements of these By-laws.

SECTION 4. RECORD DATE. In order that the Corporation may determine the stockholders entitled to notice of or to vote at any meeting of stockholders or any adjournment thereof or entitled to receive payment of any dividend or other distribution or allotment of any rights, or entitled to exercise any rights in respect of any change, conversion or exchange of stock or for the purpose of any other lawful action, the Board of Directors may fix a record date, which record date shall not precede the date upon which the resolution fixing the record date is adopted by the Board of Directors, and which record date: (a) in the case of determination of stockholders entitled to vote at any meeting of stockholders, shall, unless otherwise required by law, not be more than sixty nor less than ten days before the date of such meeting and (b) in the case of any other action, shall not be more than sixty days prior to such other action. If no record date is fixed: (i) the record date for determining stockholders entitled to notice of or to vote at a meeting of stockholders shall be at the close of business on the day next preceding the day on which notice is given, or, if notice is waived, at the close of business on the day next preceding the day on which the meeting is held and (ii) the record date for determining stockholders for any other purpose shall be at the close of business on the day on which the Board of Directors adopts the resolution relating thereto.

SECTION 5. REPLACEMENT OF CERTIFICATES. In case of the alleged loss, destruction or mutilation of a certificate of stock, a duplicate certificate may be issued in place thereof, upon such terms as the Board of Directors may prescribe.

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ARTICLE V

INDEMNIFICATION

SECTION 1. DEFINITIONS. For purposes of this Article:

(a) "Corporate Status" describes the status of a person who is serving or has served (i) as a Director of the Corporation, (ii) as an Officer of the Corporation, or (iii) as a director, partner, trustee, officer, employee or agent of any other corporation, partnership, joint venture, trust, employee benefit plan or other enterprise which such person is or was serving at the request of the Corporation. For purposes of this Section 1(a), an Officer or Director of the Corporation who is serving or has served as a director, partner, trustee, officer, employee or agent of a Subsidiary shall be deemed to be serving at the request of the Corporation;

(b) "Director" means any person who serves or has served the Corporation as a director on the Board of Directors of the Corporation;

(c) "Disinterested Director" means, with respect to each Proceeding in respect of which indemnification is sought hereunder, a Director of the Corporation who is not and was not a party to such Proceeding;

(d) "Expenses" means all reasonable attorneys' fees, retainers, court costs, transcript costs, fees of expert witnesses, private investigators and professional advisors (including, without limitation, accountants and investment bankers), travel expenses, duplicating costs, printing and binding costs, costs of preparation of demonstrative evidence and other courtroom presentation aids and devices, costs incurred in connection with document review, organization, imaging and computerization, telephone charges, postage, delivery service fees, and all other disbursements, costs or expenses of the type customarily incurred in connection with prosecuting, defending, preparing to prosecute or defend, investigating, being or preparing to be a witness in, settling or otherwise participating in, a Proceeding;

(e) "Non-Officer Employee" means any person who serves or has served as an employee or agent of the Corporation, but who is not or was not a Director or Officer;

(f) "Officer" means any person who serves or has served the Corporation as an officer appointed by the Board of Directors of the Corporation;

(g) "Proceeding" means any threatened, pending or completed action, suit, arbitration, alternate dispute resolution mechanism, inquiry, investigation, administrative hearing or other proceeding, whether civil, criminal, administrative, arbitratve or investigative; and

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(h) "Subsidiary" shall mean any corporation, partnership, limited liability company, joint venture, trust or other entity of which the Corporation owns (either directly or through or together with another Subsidiary of the Corporation) either (i) a general partner, managing member or other similar interest or (ii) (A) 50% or more of the voting power of the voting capital equity interests of such corporation, partnership, limited liability company, joint venture or other entity, or (B) 50% or more of the outstanding voting capital stock or other voting equity interests of such corporation, partnership, limited liability company, joint venture or other entity.

SECTION 2. INDEMNIFICATION OF DIRECTORS AND OFFICERS. Subject to the operation of Section 4 of this Article V of these By-laws, each Director and Officer shall be indemnified and held harmless by the Corporation to the fullest extent authorized by the DGCL, as the same exists or may hereafter be amended (but, in the case of any such amendment, only to the extent that such amendment permits the Corporation to provide broader indemnification rights than such law permitted the Corporation to provide prior to such amendment) against any and all Expenses, judgments, penalties, fines and amounts reasonably paid in settlement that are incurred by such Director or Officer or on such Director's or Officer's behalf in connection with any threatened, pending or completed Proceeding or any claim, issue or matter therein, which such Director or Officer is, or is threatened to be made, a party to or participant in by reason of such Director's or Officer's Corporate Status, if such Director or Officer acted in good faith and in a manner such Director or Officer reasonably believed to be in or not opposed to the best interests of the Corporation and, with respect to any criminal proceeding, had no reasonable cause to believe his or her conduct was unlawful. The rights of indemnification provided by this Section 2 shall continue as to a Director or Officer after he or she has ceased to be a Director

or Officer and shall inure to the benefit of his or her heirs, executors, administrators and personal representatives. Notwithstanding the foregoing, the Corporation shall indemnify any Director or Officer seeking indemnification in connection with a Proceeding initiated by such Director or Officer only if such Proceeding was authorized by the Board of Directors of the Corporation, unless such Proceeding was brought to enforce an Officer or Director's rights to Indemnification or, in the case of Directors, advancement of Expenses under these By-laws in accordance with the provisions set forth herein.

SECTION 3. INDEMNIFICATION OF NON-OFFICER EMPLOYEES. Subject to the operation of Section 4 of this Article V of these By-laws, each Non-Officer Employee may, in the discretion of the Board of Directors of the Corporation, be indemnified by the Corporation to the fullest extent authorized by the DGCL, as the same exists or may hereafter be amended, against any or all Expenses, judgments, penalties, fines and amounts reasonably paid in settlement that are incurred by such Non-Officer Employee or on such Non-Officer Employee's behalf in connection with any threatened, pending or completed Proceeding, or any claim, issue or matter therein, which such Non-Officer Employee is, or is threatened to be made, a party to or participant in by reason of such Non-Officer Employee's Corporate Status, if such Non-Officer Employee acted in good faith and in a manner such Non-Officer Employee reasonably believed to be in or not opposed to the best interests of the Corporation and, with

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respect to any criminal proceeding, had no reasonable cause to believe his or her conduct was unlawful. The rights of indemnification provided by this Section 3 shall exist as to a Non-Officer Employee after he or she has ceased to be a Non-Officer Employee and shall inure to the benefit of his or her heirs, personal representatives, executors and administrators. Notwithstanding the foregoing, the Corporation may indemnify any Non-Officer Employee seeking indemnification in connection with a Proceeding initiated by such Non-Officer Employee only if such Proceeding was authorized by the Board of Directors of the Corporation.

SECTION 4. GOOD FAITH. Unless ordered by a court, no indemnification shall be provided pursuant to this Article V to a Director, to an Officer or to a Non-Officer Employee unless a determination shall have been made that such person acted in good faith and in a manner such person reasonably believed to be in or not opposed to the best interests of the Corporation and, with respect to any criminal Proceeding, such person had no reasonable cause to believe his or her conduct was unlawful. Such determination shall be made by (a) a majority vote of the Disinterested Directors, even though less than a quorum of the Board of Directors, (b) a committee comprised of Disinterested Directors, such committee having been designated by a majority vote of the Disinterested Directors (even though less than a quorum), (c) if there are no such Disinterested Directors, or if a majority of Disinterested Directors so directs, by independent legal counsel in a written opinion, or (d) by the stockholders of the Corporation.

SECTION 5. ADVANCEMENT OF EXPENSES TO DIRECTORS PRIOR TO FINAL DISPOSITION.

(a) The Corporation shall advance all Expenses incurred by or on behalf of any Director in connection with any Proceeding in which such Director is involved by reason of such Director's Corporate Status within ten (10) days after the receipt by the Corporation of a written statement from such Director requesting such advance or advances from time to time, whether prior to or after final disposition of such Proceeding. Such statement or statements shall reasonably evidence the Expenses incurred by such Director and shall be preceded or accompanied by an undertaking by or on behalf of such Director to repay any Expenses so advanced if it shall ultimately be determined that such Director is not entitled to be indemnified against such Expenses.

(b) If a claim for advancement of Expenses hereunder by a Director is not paid in full by the Corporation within 10 days after receipt by the Corporation of documentation of Expenses and the required undertaking, such Director may at any time thereafter bring suit against the Corporation to recover the unpaid amount of the claim and if successful in whole or in part, such Director shall also be entitled to be paid the expenses of prosecuting such claim. The failure of the Corporation (including its Board of Directors or any committee thereof, independent legal counsel, or stockholders) to make a

determination concerning the permissibility of such advancement of Expenses under this Article V shall not be a defense to the action and shall not create a presumption that such advancement is not permissible. The

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burden of proving that a Director is not entitled to an advancement of expenses shall be on the Corporation.

(c) In any suit brought by the Corporation to recover an advancement of expenses pursuant to the terms of an undertaking, the Corporation shall be entitled to recover such expenses upon a final adjudication that the Director has not met any applicable standard for indemnification set forth in the DGCL.

SECTION 6. ADVANCEMENT OF EXPENSES TO OFFICERS AND NON-OFFICER EMPLOYEES PRIOR TO FINAL DISPOSITION.

(a) The Corporation may, at the discretion of the Board of Directors of the Corporation, advance any or all Expenses incurred by or on behalf of any Officer and Non-Officer Employee in connection with any Proceeding in which such is involved by reason of the Corporate Status of such Officer or Non-Officer Employee upon the receipt by the Corporation of a statement or statements from such Officer or Non-Officer Employee requesting such advance or advances from time to time, whether prior to or after final disposition of such Proceeding. Such statement or statements shall reasonably evidence the Expenses incurred by such Officer and Non-Officer Employee and shall be preceded or accompanied by an undertaking by or on behalf of such to repay any Expenses so advanced if it shall ultimately be determined that such Officer or Non-Officer Employee is not entitled to be indemnified against such Expenses.

(b) In any suit brought by the Corporation to recover an advancement of expenses pursuant to the terms of an undertaking, the Corporation shall be entitled to recover such expenses upon a final adjudication that the Officer or Non-Officer Employee has not met any applicable standard for indemnification set forth in the DGCL.

SECTION 7. CONTRACTUAL NATURE OF RIGHTS.

(a) The foregoing provisions of this Article V shall be deemed to be a contract between the Corporation and each Director and Officer entitled to the benefits hereof at any time while this Article V is in effect, and any repeal or modification thereof shall not affect any rights or obligations then existing with respect to any state of facts then or theretofore existing or any Proceeding theretofore or thereafter brought based in whole or in part upon any such state of facts.

(b) If a claim for indemnification of Expenses hereunder by a Director or Officer is not paid in full by the Corporation within 60 days after receipt by the Corporation of a written claim for indemnification, such Director or Officer may at any time thereafter bring suit against the Corporation to recover the unpaid amount of the claim, and if successful in whole or in part, such Director or Officer shall also be entitled to be paid the expenses of prosecuting

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such claim. The failure of the Corporation (including its Board of Directors or any committee thereof, independent legal counsel, or stockholders) to make a determination concerning the permissibility of such indemnification under this Article V shall not be a defense to the action and shall not create a presumption that such indemnification is not permissible. The burden of proving that a Director or Officer is not entitled to indemnification shall be on the Corporation.

(c) In any suit brought by a Director or Officer to enforce a right to indemnification hereunder, it shall be a defense that such Director or Officer has not met any applicable standard for indemnification set forth in the DGCL.

SECTION 8. NON-EXCLUSIVITY OF RIGHTS. The rights to indemnification and

advancement of Expenses set forth in this Article V shall not be exclusive of any other right which any Director, Officer, or Non-Officer Employee may have or hereafter acquire under any statute, provision of the Certificate or these By-laws, agreement, vote of stockholders or Disinterested Directors or otherwise.

SECTION 9. INSURANCE. The Corporation may maintain insurance, at its expense, to protect itself and any Director, Officer or Non-Officer Employee against any liability of any character asserted against or incurred by the Corporation or any such Director, Officer or Non-Officer Employee, or arising out of any such person's Corporate Status, whether or not the Corporation would have the power to indemnify such person against such liability under the DGCL or the provisions of this Article V.

ARTICLE VI

MISCELLANEOUS PROVISIONS

SECTION 1. FISCAL YEAR. The fiscal year of the Corporation shall be determined by the Board of Directors.

SECTION 2. SEAL. The Board of Directors shall have power to adopt and alter the seal of the Corporation.

SECTION 3. EXECUTION OF INSTRUMENTS. All deeds, leases, transfers, contracts, bonds, notes and other obligations to be entered into by the Corporation in the ordinary course of its business without director action may be executed on behalf of the Corporation by the Chairman of the Board, if one is elected, the President or the Treasurer or any other officer, employee or agent of the Corporation as the Board of Directors or Executive Committee may authorize.

SECTION 4. VOTING OF SECURITIES. Unless the Board of Directors otherwise provides, the Chairman of the Board, if one is elected, the President or the Treasurer may waive notice of and act on behalf of this Corporation, or appoint another person or persons to act as proxy

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or attorney in fact for this Corporation with or without discretionary power and/or power of substitution, at any meeting of stockholders or shareholders of any other corporation or organization, any of whose securities are held by this Corporation.

SECTION 5. RESIDENT AGENT. The Board of Directors may appoint a resident agent upon whom legal process may be served in any action or proceeding against the Corporation.

SECTION 6. CORPORATE RECORDS. The original or attested copies of the Certificate, By-laws and records of all meetings of the incorporators, stockholders and the Board of Directors and the stock transfer books, which shall contain the names of all stockholders, their record addresses and the amount of stock held by each, may be kept outside the State of Delaware and shall be kept at the principal office of the Corporation, at the office of its counsel or at an office of its transfer agent or at such other place or places as may be designated from time to time by the Board of Directors.

SECTION 7. CERTIFICATE. All references in these By-laws to the Certificate shall be deemed to refer to the Amended and Restated Certificate of Incorporation of the Corporation, as amended and in effect from time to time.

SECTION 8. AMENDMENT OF BY-LAWS.

(a) AMENDMENT BY DIRECTORS. Except as provided otherwise by law, these By-laws may be amended or repealed by the Board of Directors by the affirmative vote of a majority of the directors then in office.

(b) AMENDMENT BY STOCKHOLDERS. These By-laws may be amended or repealed at any Annual Meeting, or special meeting of stockholders called for such purpose, by the affirmative vote of at least 75% of the shares present in person or represented by proxy at such meeting and entitled to vote on such amendment or repeal, voting together as a single class; provided, however, that if the

Board of Directors recommends that stockholders approve such amendment or repeal at such meeting of stockholders, such amendment or repeal shall only require the affirmative vote of the majority of the shares present in person or represented by proxy at such meeting and entitled to vote on such amendment or repeal, voting together as a single class. Notwithstanding the foregoing, stockholder approval shall not be required unless mandated by the Certificate, these By-laws, or other applicable law.

Adopted October 26, 2000 and effective as of December 6, 2000.

HARVARD BIOSCIENCE, INC.
EMPLOYMENT AGREEMENT

This EXECUTIVE EMPLOYMENT AGREEMENT ("Agreement") is made as of the 6th day of December, 2000, between Harvard Bioscience, Inc., a Delaware corporation (the "Company"), and Chane Graziano ("Executive"). For purposes of this Agreement the "Company" shall refer to the Company and any of its predecessors.

WHEREAS, the Company desires to employ Executive and Executive desires to be employed by the Company on the terms contained herein.

NOW, THEREFORE, in consideration of the mutual covenants and agreements herein contained and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the parties agree as follows:

1. EMPLOYMENT. The term of this Agreement shall extend from December 6, 2000 (the "Commencement Date") until the second anniversary of the Commencement Date; provided, however, that the term of this Agreement shall automatically be extended for two additional years on each second anniversary of the Commencement Date unless, not less than 90 days prior to each such date, either party shall have given notice to the other that it does not wish to extend this Agreement; provided, further, that if a Change in Control occurs during the original or extended term of this Agreement, the term of this Agreement shall, notwithstanding anything in this sentence to the contrary, continue in effect for a period of not less than eighteen (18) months beyond the month in which the Change in Control occurred. The term of this Agreement shall be subject to termination as provided in Paragraph 6 and may be referred to herein as the "Period of Employment."

2. POSITION AND DUTIES. During the Period of Employment, Executive shall serve as the Chief Executive Officer and member of the Board of Directors of the Company, and shall have supervision and control over and responsibility for the day-to-day business and affairs of those functions and operations of the Company and shall have such other powers and duties as may from time to time be prescribed by the Board of Directors of the Company (the "Board"), provided that such duties are consistent with Executive's position or other positions that he may hold from time to time. Executive shall devote his full working time and efforts to the business and affairs of the Company. Notwithstanding the foregoing, Executive may serve on other boards of directors, with the approval of the Board, or engage in religious, charitable or other community activities as long as such services and activities are disclosed to the Board and do not materially interfere with Executive's performance of his duties to the Company as provided in this Agreement.

3. COMPENSATION AND RELATED MATTERS.

(a) BASE SALARY AND INCENTIVE COMPENSATION. Executive's initial annual base salary shall be Two Hundred Seventy-Five Thousand (\$275,000) Dollars. Executive's base salary shall be redetermined annually by the Board or a Committee thereof. The base salary in effect at any given time is referred to herein as "Base Salary." The Base Salary shall be payable in substantially equal bi-weekly installments. In addition to Base Salary, Executive shall be eligible to receive cash incentive compensation as determined by the Board or a Committee thereof from time to time, and shall also be eligible to participate in such incentive compensation plans as the Board or a Committee thereof shall determine from time to time for employees of the same status within the hierarchy of the Company.

(b) EXPENSES. Executive shall be entitled to receive prompt reimbursement for all reasonable expenses incurred by him in performing services hereunder during the Period of Employment, in accordance with the policies and procedures then in effect and established by the Company for its senior executive officers.

(c) OTHER BENEFITS. During the Period of Employment, Executive shall be

entitled to continue to participate in or receive benefits under all of the Company's Employee Benefit Plans in effect on the date hereof, or under plans or arrangements that provide no less favorable treatment to the Executive than the Employee Benefit Plans provided to other members of the Company's senior management. As used herein, the term "Employee Benefit Plans" includes, without limitation, each pension and retirement plan; supplemental pension, retirement and deferred compensation plan; savings and profit-sharing plan; stock ownership plan; stock purchase plan; stock option plan; life insurance plan; medical insurance plan; disability plan; and health and accident plan or arrangement established and maintained by the Company on the date hereof for employees of the same status within the hierarchy of the Company. During the Period of Employment, Executive shall be entitled to an automobile or to a lease for an automobile (the "Company Car") for up to \$1,500.00 per month and the cost of automobile insurance for such Company Car. To the extent that the scope or nature of benefits described in this section is determined under the policies of the Company based in whole or in part on the seniority or tenure of an employee's service, Executive shall be deemed to have a tenure with the Company equal to the actual time of Executive's service with the Company. During the Period of Employment, Executive shall be entitled to participate in or receive benefits under any employee benefit plan or arrangement which may, in the future, be made available by the Company to its executives and key management employees, subject to and on a basis consistent with the terms, conditions and overall administration of such plan or arrangement. Any payments or benefits payable to Executive under a plan or arrangement referred to in this Subparagraph 3(c) in respect of any calendar year during which Executive is employed by the Company for less than the whole of such year shall, unless otherwise provided in the applicable plan or arrangement, be prorated in accordance with the number of days in such calendar year during which he is so employed. Should any such payments or benefits accrue on a fiscal (rather than calendar) year, then the proration in the preceding sentence shall be on the basis of a fiscal year rather than calendar year.

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(d) VACATIONS. Executive shall be entitled to twenty (20) paid vacation days in each calendar year, which shall be accrued ratably during the calendar year. Executive shall also be entitled to all paid holidays given by the Company to its executives. To the extent that the scope or nature of benefits described in this section are determined under the policies of the Company based in whole or in part on the seniority or tenure of an employee's service, Executive shall be deemed to have a tenure with the Company equal to the actual time of Executive's service with Company.

4. UNAUTHORIZED DISCLOSURE.

(a) CONFIDENTIAL INFORMATION. Executive acknowledges that in the course of his employment with the Company (and, if applicable, its predecessors), he has been allowed to become, and will continue to be allowed to become, acquainted with the Company's business affairs, information, trade secrets, and other matters which are of a proprietary or confidential nature, including but not limited to the Company's and its affiliates' and predecessors' operations, business opportunities, price and cost information, finance, customer information, business plans, various sales techniques, manuals, letters, notebooks, procedures, reports, products, processes, services, and other confidential information and knowledge (collectively the "Confidential Information") concerning the Company's and its affiliates' and predecessors' business. The Company agrees to provide on an ongoing basis such Confidential Information as the Company deems necessary or desirable to aid Executive in the performance of his duties. Executive understands and acknowledges that such Confidential Information is confidential, and he agrees not to disclose such Confidential Information to anyone outside the Company except to the extent that (i) Executive deems such disclosure or use reasonably necessary or appropriate in connection with performing his duties on behalf of the Company; (ii) Executive is required by order of a court of competent jurisdiction (by subpoena or similar process) to disclose or discuss any Confidential Information, provided that in such case, Executive shall promptly inform the Company of such event, shall cooperate with the Company in attempting to obtain a protective order or to otherwise restrict such disclosure, and shall only disclose Confidential Information to the minimum extent necessary to comply with any such court order; (iii) such Confidential Information becomes generally known to and available for use in the Company's industry (the "laboratory analytical

instruments industry"), other than as a result of any action or inaction by Executive; or (iv) such information has been rightfully received by a member of the laboratory analytical instruments industry or has been published in a form generally available to the laboratory analytical instruments industry prior to the date Executive proposes to disclose or use such information. Executive further agrees that he will not during employment and/or at any time thereafter use such Confidential Information in competing, directly or indirectly, with the Company. At such time as Executive shall cease to be employed by the Company, he will immediately turn over to the Company all Confidential Information, including papers, documents, writings, electronically stored information, other property, and all copies of them provided to or created by him during the course of his employment with the Company.

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(b) HEIRS, SUCCESSORS, AND LEGAL REPRESENTATIVES. The foregoing provisions of this Paragraph 4 shall be binding upon Executive's heirs, successors, and legal representatives. The provisions of this Paragraph 4 shall survive the termination of this Agreement for any reason.

5. COVENANT NOT TO COMPETE. In consideration for Executive's employment by the Company under the terms provided in this Agreement and as a means to aid in the performance and enforcement of the terms of the provisions of Paragraph 4, Executive agrees that

(a) during the term of Executive's employment with the Company and for a period of twelve (12) months thereafter, regardless of the reason for termination of employment, Executive will not, directly or indirectly, as an owner, director, principal, agent, officer, employee, partner, consultant, servant, or otherwise, carry on, operate, manage, control, or become involved in any manner with any business, operation, corporation, partnership, association, agency, or other person or entity which is engaged in a business that produces products that compete directly with any of the Company's products which are produced by the Company or any affiliate of the Company or which the Company or any affiliate of the Company has active plans to produce as of the date of Executive's termination of employment with the Company, in any area or territory in which the Company or any affiliate of the Company conducts or has active plans to conduct operations as of the date of the Executive's termination of employment with the Company; provided, however, that the foregoing shall not prohibit Executive from owning up to one percent (1%) of the outstanding stock of a publicly held company engaged in the laboratory analytical instruments industry; and

(b) during the term of Executive's employment with the Company and for a period of twelve (12) months thereafter, regardless of the reason for termination of employment, Executive will not directly or indirectly solicit or induce any present or future employee of the Company or any affiliate of the Company to accept employment with Executive or with any business, operation, corporation, partnership, association, agency, or other person or entity with which Executive may be associated, and Executive will not hire or employ or cause any business, operation, corporation, partnership, association, agency, or other person or entity with which Executive may be associated to hire or employ any present or future employee of the Company.

Should Executive violate any of the provisions of this Paragraph, then in addition to all other rights and remedies available to the Company at law or in equity, the duration of this covenant shall automatically be extended for the period of time from which Executive began such violation until he permanently ceases such violation.

6. TERMINATION. Executive's employment hereunder may be terminated without any breach of this Agreement under the following circumstances:

(a) DEATH. Executive's employment hereunder shall terminate upon his death.

(b) DISABILITY. If, as a result of Executive's incapacity due to physical or mental illness, Executive shall have been absent from his duties hereunder on a full-time basis for one

hundred eighty (180) calendar days in the aggregate in any twelve (12) month period, the Company may terminate Executive's employment hereunder.

(c) TERMINATION BY COMPANY FOR CAUSE. At any time during the Period of Employment, the Company may terminate Executive's employment hereunder for Cause if such termination is approved by not less than a majority of the Board at a meeting of the Board called and held for such purpose. For purposes of this Agreement, "Cause" shall mean: (A) conduct by Executive constituting a material act of willful misconduct in connection with the performance of his duties, including, without limitation, misappropriation of funds or property of the Company or any of its affiliates other than the occasional, customary and de minimis use of Company property for personal purposes; (B) criminal or civil conviction of Executive, a plea of nolo contendere by Executive or conduct by Executive that would reasonably be expected to result in material injury to the reputation of the Company if he were retained in his position with the Company, including, without limitation, conviction of a felony involving moral turpitude; (C) continued, willful and deliberate non-performance by Executive of his duties hereunder (other than by reason of Executive's physical or mental illness, incapacity or disability) which has continued for more than thirty (30) days following written notice of such non-performance from the Board; (D) a breach by Executive of any of the provisions contained in Paragraphs 4 and 5 of this Agreement; or (E) a violation by Executive of the Company's employment policies which has continued following written notice of such violation from the Board.

(d) TERMINATION WITHOUT CAUSE. At any time during the Period of Employment, the Company may terminate Executive's employment hereunder without Cause if such termination is approved by a majority of the Board at a meeting of the Board called and held for such purpose. Any termination by the Company of Executive's employment under this Agreement which does not constitute a termination for Cause under Subparagraph 6(c) or result from the death or disability of the Executive under Subparagraph 6(a) or (b) shall be deemed a termination without Cause. If the Company provides notice to Executive under Paragraph 1 that it does not wish to extend the Period of Employment, such action shall be deemed a termination without Cause.

(e) TERMINATION BY EXECUTIVE. At any time during the Period of Employment, Executive may terminate his employment hereunder for any reason, including but not limited to Good Reason. If Executive provides notice to the Company under Paragraph 1 that he does not wish to extend the Period of Employment, such action shall be deemed a voluntary termination by Executive and one without Good Reason. For purposes of this Agreement, "Good Reason" shall mean that Executive has complied with the "Good Reason Process" (hereinafter defined) following the occurrence of any of the following events: (A) a substantial diminution or other substantive adverse change, not consented to by Executive, in the nature or scope of Executive's responsibilities, authorities, powers, functions or duties; (B) any removal, during the Period of Employment, from Executive of his title of Chief Executive Officer; (C) an involuntary reduction in Executive's Base Salary except for across-the-board reductions similarly affecting all or substantially all management employees; (D) a breach by the Company of any of its other material obligations under this Agreement and the failure of the Company to cure such breach

within thirty (30) days after written notice thereof by Executive; (E) the involuntary relocation of the Company's offices at which Executive is principally employed or the involuntary relocation of the offices of Executive's primary workgroup to a location more than 30 miles from such offices, or the requirement by the Company that Executive be based anywhere other than the Company's offices at such location on an extended basis, except for required travel on the Company's business to an extent substantially consistent with Executive's business travel obligations; or (F) the failure of the Company to obtain the agreement from any successor to the Company to assume and agree to perform this Agreement as required by Paragraph 10. "Good Reason Process" shall mean that (i) Executive reasonably determines in good faith that a "Good Reason" event has occurred; (ii) Executive notifies the Company in writing of the

occurrence of the Good Reason event; (iii) Executive cooperates in good faith with the Company's efforts, for a period not less than ninety (90) days following such notice, to modify Executive's employment situation in a manner acceptable to Executive and Company; and (iv) notwithstanding such efforts, one or more of the Good Reason events continues to exist and has not been modified in a manner acceptable to Executive. If the Company cures the Good Reason event in a manner acceptable to Executive during the ninety (90) day period, Good Reason shall be deemed not to have occurred.

(f) NOTICE OF TERMINATION. Except for termination as specified in Subparagraph 6(a), any termination of Executive's employment by the Company or any such termination by Executive shall be communicated by written Notice of Termination to the other party hereto. For purposes of this Agreement, a "Notice of Termination" shall mean a notice which shall indicate the specific termination provision in this Agreement relied upon.

(g) DATE OF TERMINATION. "Date of Termination" shall mean: (A) if Executive's employment is terminated by his death, the date of his death; (B) if Executive's employment is terminated on account of disability under Subparagraph 6(b) or by the Company for Cause under Subparagraph 6(c), the date on which Notice of Termination is given; (C) if Executive's employment is terminated by the Company under Subparagraph 6(d), sixty (60) days after the date on which a Notice of Termination is given; and (D) if Executive's employment is terminated by Executive under Subparagraph 6(e), thirty (30) days after the date on which a Notice of Termination is given.

7. COMPENSATION UPON TERMINATION OR DURING DISABILITY.

(a) DEATH. If Executive's employment terminates by reason of his death, the Company shall, within ninety (90) days of death, pay in a lump sum amount to such person as Executive shall designate in a notice filed with the Company or, if no such person is designated, to Executive's estate, Executive's accrued and unpaid Base Salary to the date of his death, plus his accrued and unpaid incentive compensation, if any, under Subparagraph 3(a). Upon the death of Executive, all unvested stock options shall immediately vest in Executive's estate or other legal representatives and become exercisable. All other stock-based grants and awards held by Executive shall vest or be canceled upon the death of Executive in accordance with their terms. For a period of one (1) year following the Date of Termination, the Company shall pay such

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health insurance premiums as may be necessary to allow Executive's spouse and dependents to receive health insurance coverage substantially similar to coverage they received prior to the Date of Termination. In addition to the foregoing, any payments to which Executive's spouse, beneficiaries, or estate may be entitled under any employee benefit plan shall also be paid in accordance with the terms of such plan or arrangement. Such payments, in the aggregate, shall fully discharge the Company's obligations hereunder.

(b) DISABILITY. During any period that Executive fails to perform his duties hereunder as a result of incapacity due to physical or mental illness, Executive shall continue to receive his accrued and unpaid Base Salary and accrued and unpaid incentive compensation, if any, under Subparagraph 3(a), until Executive's employment is terminated due to disability in accordance with Subparagraph 6(b) or until Executive terminates his employment in accordance with Subparagraph 6(e), whichever first occurs. Upon the Date of Termination, all unvested stock options shall immediately vest and become exercisable. All other stock-based grants and awards held by Executive shall vest or be canceled upon the Date of Termination in accordance with their terms. For a period of one (1) year following the Date of Termination, the Company shall pay such health insurance premiums as may be necessary to allow Executive and Executive's spouse and dependents to receive health insurance coverage substantially similar to coverage they received prior to the Date of Termination. Upon termination due to death prior to the termination first to occur as specified in the preceding sentence, Subparagraph 7(a) shall apply.

(c) TERMINATION OTHER THAN FOR GOOD REASON. If Executive's employment is terminated by Executive other than for Good Reason as provided in Subparagraph 6(e), then the Company shall, through the Date of Termination, pay Executive his accrued and unpaid Base Salary at the rate in effect at the time Notice of Termination is given. Thereafter, the Company shall have no further

obligations to Executive except as otherwise expressly provided under this Agreement, provided any such termination shall not adversely affect or alter Executive's rights under any employee benefit plan of the Company in which Executive, at the Date of Termination, has a vested interest, unless otherwise provided in such employee benefit plan or any agreement or other instrument attendant thereto. In addition, all vested but unexercised stock options held by Executive as of the Date of Termination must be exercised by Executive within three (3) months following the Date of Termination or by the end of the option term, if earlier. All other stock-based grants and awards held by Executive shall vest or be canceled upon the Date of Termination in accordance with their terms.

(d) TERMINATION FOR GOOD REASON. If Executive terminates his employment for Good Reason as provided in Subparagraph 6(e) or if Executive's employment is terminated by the Company without Cause as provided in Subparagraph 6(d), then the Company shall, through the Date of Termination, pay Executive his accrued and unpaid Base Salary at the rate in effect at the time Notice of Termination is given and his accrued and unpaid incentive compensation, if any, under Subparagraph 3(a). In addition, subject to signing by Executive of a general release of claims in a form and manner satisfactory to the Company,

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(i) the Company shall pay Executive an amount equal to two (2) times the sum of Executive's Average Base Salary and his Average Incentive Compensation (the "Severance Amount"). The Severance Amount shall be paid out in substantially equal bi-weekly installments over twelve (12) months, in arrears or in a lump sum. For purposes of this Agreement, "Average Base Salary" shall mean the average of the annual Base Salary received by Executive for each of the three (3) immediately preceding fiscal years or such fewer number of complete fiscal years as Executive may have been employed by the Company or the amount of Base Salary for the prior fiscal year, whichever is higher. For purposes of this Agreement, "Average Incentive Compensation" shall mean the average of the annual incentive compensation under Subparagraph 3(a) received by Executive for the three (3) immediately preceding fiscal years or such fewer number of complete fiscal years as Executive may have been employed by the Company or the amount of incentive compensation for the prior fiscal year, whichever is higher. In no event shall "Average Incentive Compensation" include any sign-on bonus, retention bonus or any other special bonus. Notwithstanding the foregoing, if the Executive breaches any of the provisions contained in Paragraphs 4 and 5 of this Agreement, all payments of the Severance Amount shall immediately cease. Furthermore, in the event Executive terminates his employment for Good Reason as provided in Subparagraph 6(e), he shall be entitled to the Severance Amount only if he provides the Notice of Termination provided for in Subparagraph 6(f) within thirty (30) days after the occurrence of the event or events which constitute such Good Reason as specified in clauses (A), (B), (C), (D) and (E) of Subparagraph 6(e); and

(ii) upon the Date of Termination, each unvested stock option that would otherwise vest during the next twenty-four (24) months shall accelerate and immediately vest. All other stock-based grants and awards held by Executive that would otherwise vest during the next twenty-four (24) months shall accelerate and immediately vest upon the Date of Termination; and

(iii) in addition to any other benefits to which Executive may be entitled in accordance with the Company's then existing severance policies, the Company shall, for a period of one (1) year commencing on the Date of Termination, pay such health insurance premiums as may be necessary to allow Executive and Executive's spouse and dependents to continue to receive health insurance coverage.

(e) TERMINATION FOR CAUSE. If Executive's employment is terminated by the Company for Cause as provided in Subparagraph 6(c), then the Company shall, through the Date of Termination, pay Executive his accrued and unpaid Base Salary at the rate in effect at the time Notice of Termination is given. Thereafter, the Company shall have no further obligations to Executive except as otherwise expressly provided under this Agreement, provided any such termination

shall not adversely affect or alter Executive's rights under any employee benefit plan of the Company in which Executive, at the Date of Termination, has a vested interest, unless otherwise provided in such employee benefit plan or any agreement or other instrument attendant thereto. In addition, all stock options held by Executive as of the Date of Termination shall

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immediately terminate and be of no further force and effect, and all other stock-based grants and awards shall be canceled or terminated in accordance with their terms.

(f) Nothing contained in the foregoing Subparagraphs 7(a) through 7(e) shall be construed so as to affect Executive's rights or the Company's obligations relating to agreements or benefits which are unrelated to termination of employment.

8. CHANGE IN CONTROL PAYMENT. The provisions of this Paragraph 8 set forth certain terms of an agreement reached between Executive and the Company regarding Executive's rights and obligations upon the occurrence of a Change in Control of the Company. These provisions are intended to assure and encourage in advance Executive's continued attention and dedication to his assigned duties and his objectivity during the pendency and after the occurrence of any such event. These provisions shall apply in lieu of, and expressly supersede, the provisions of Subparagraph 7(d)(i) regarding severance pay upon a termination of employment, if such termination of employment occurs within eighteen (18) months after the occurrence of the first event constituting a Change of Control, provided that such first event occurs during the Period of Employment. These provisions shall terminate and be of no further force or effect beginning eighteen (18) months after the occurrence of a Change of Control.

(a) CHANGE IN CONTROL.

(i) If within eighteen (18) months after the occurrence of the first event constituting a Change in Control, Executive's employment is terminated by the Company without Cause as provided in Subparagraph 6(d) or Executive terminates his employment for Good Reason as provided in Subparagraph 6(e), then the Company shall pay Executive a lump sum in cash in an amount equal to three (3) times the sum of (A) Executive's current or most recent Base Salary plus (B) Executive's most recent annual incentive compensation under Subparagraph 3(a) for the most recent fiscal year, excluding any sign-on bonus, retention bonus or any other special bonus; and

(ii) Notwithstanding anything to the contrary in any applicable option agreement or stock-based award agreement, upon a Change in Control, all stock options and other stock-based awards granted to Executive by the Company shall immediately accelerate and become exercisable or non-forfeitable as of the effective date of such Change in Control. Executive shall also be entitled to any other rights and benefits with respect to stock-related awards, to the extent and upon the terms provided in the employee stock option or incentive plan or any agreement or other instrument attendant thereto pursuant to which such options or awards were granted; and

(iii) The Company shall, for a period of one (1) year commencing on the Date of Termination, pay such health insurance premiums as may be necessary to allow Executive, Executive's spouse and dependents to continue to receive health insurance coverage substantially similar to the coverage they received prior to the Date of Termination.

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(b) GROSS UP PAYMENT.

(i) Anything in this Agreement to the contrary notwithstanding, in the event it shall be determined that any

compensation, payment or distribution by the Company to or for the benefit of Executive, whether paid or payable or distributed or distributable pursuant to the terms of this Agreement or otherwise (the "Severance Payments"), would be subject to the excise tax imposed by Section 4999 of the Internal Revenue Code of 1986, as amended (the "Code"), or any interest or penalties are incurred by Executive with respect to such excise tax (such excise tax, together with any such interest and penalties, are hereinafter collectively referred to as the "Excise Tax"), then Executive shall be entitled to receive an additional payment (a "Gross-Up Payment") such that the net amount retained by Executive, after deduction of any Excise Tax on the Severance Payments, any Federal, state, and local income tax, employment tax and Excise Tax upon the payment provided by this subsection, and any interest and/or penalties assessed with respect to such Excise Tax, shall be equal to the Severance Payments.

(ii) Subject to the provisions of Subparagraph 8(b)(iii), all determinations required to be made under this Subparagraph 8(b)(ii), including whether a Gross-Up Payment is required and the amount of such Gross-Up Payment, shall be made by KPMG LLP or any other nationally recognized accounting firm selected by the Company (the "Accounting Firm"), which shall provide detailed supporting calculations both to the Company and Executive within fifteen (15) business days of the Date of Termination, if applicable, or at such earlier time as is reasonably requested by the Company or Executive. For purposes of determining the amount of the Gross-Up Payment, Executive shall be deemed to pay federal income taxes at the highest marginal rate of federal income taxation applicable to individuals for the calendar year in which the Gross-Up Payment is to be made, and state and local income taxes at the highest marginal rates of individual taxation in the state and locality of Executive's residence on the Date of Termination, net of the maximum reduction in federal income taxes which could be obtained from deduction of such state and local taxes. The initial Gross-Up Payment, if any, as determined pursuant to this Subparagraph 8(b)(iii), shall be paid to Executive within five (5) days of the receipt of the Accounting Firm's determination. Any determination by the Accounting Firm shall be binding upon the Company and Executive. As a result of the uncertainty in the application of Section 4999 of the Code at the time of the initial determination by the Accounting Firm hereunder, it is possible that Gross-Up Payments which will not have been made by the Company should have been made (an "Underpayment"). In the event that the Company exhausts its remedies pursuant to Subparagraph 8(b)(iii) and Executive thereafter is required to make a payment of any Excise Tax, the Accounting Firm shall determine the amount of the Underpayment that has occurred, consistent with the calculations required to be made hereunder, and any such Underpayment, and any interest and penalties imposed on the Underpayment and required to be paid by

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Executive in connection with the proceedings described in Subparagraph 8(b)(iii), shall be promptly paid by the Company to or for the benefit of Executive.

(iii) Executive shall notify the Company in writing of any claim by the Internal Revenue Service that, if successful, would require the payment by the Company of the Gross-up Payment. Such notification shall be given as soon as practicable but no later than ten (10) business days after Executive knows of such claim and shall apprise the Company of the nature of such claim and the date on which such claim is requested to be paid. Executive shall not pay such claim prior to the expiration of the 30-day period following the date on which he gives such notice to the Company (or such shorter period ending on the date that any payment of taxes with respect to such claim is due). If the Company notifies Executive in writing prior to the expiration of such period that it desires to contest such claim, provided that the Company has set aside adequate reserves to cover the Underpayment and any interest and penalties thereon that may accrue, Executive shall:

(A) give the Company any information reasonably requested by the Company relating to such claim,

(B) take such action in connection with contesting such claim as the Company shall reasonably request in writing from time to time, including, without limitation, accepting legal representation with respect to such claim by an attorney selected by the Company,

(C) cooperate with the Company in good faith in order to effectively contest such claim, and

(D) permit the Company to participate in any proceedings relating to such claim; provided, however, that the Company shall bear and pay directly all costs and expenses (including additional interest and penalties) incurred in connection with such contest and shall indemnify and hold Executive harmless, on an after-tax basis, for any Excise Tax or income tax, including interest and penalties with respect thereto, imposed as a result of such representation and payment of costs and expenses. Without limitation on the foregoing provisions of this Subparagraph 8(b)(iii), the Company shall control all proceedings taken in connection with such contest and, at its sole option, may pursue or forego any and all administrative appeals, proceedings, hearings and conferences with the taxing authority in respect of such claim and may, at its sole option, either direct Executive to pay the tax claimed and sue for a refund or contest the claim in any permissible manner, and Executive agrees to prosecute such contest to a determination before any administrative tribunal, in a court of initial jurisdiction and in one or more appellate courts, as the Company shall determine; provided, however, that if the Company directs Executive to pay such claim and sue for a refund, the Company shall advance the amount of such payment to Executive on

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an interest-free basis and shall indemnify and hold Executive harmless, on an after-tax basis, from any Excise Tax or income tax, including interest or penalties with respect thereto, imposed with respect to such advance or with respect to any imputed income with respect to such advance; and further provided that any extension of the statute of limitations relating to payment of taxes for the taxable year of Executive with respect to which such contested amount is claimed to be due is limited solely to such contested amount. Furthermore, the Company's control of the contest shall be limited to issues with respect to which a Gross-Up Payment would be payable hereunder and Executive shall be entitled to settle or contest, as the case may be, any other issues raised by the Internal Revenue Service or any other taxing authority.

(iv) If, after the receipt by Executive of an amount advanced by the Company pursuant to Subparagraph 8(b)(iii), Executive becomes entitled to receive any refund with respect to such claim, Executive shall (subject to the Company's complying with the requirements of Subparagraph 8(b)(iii)) promptly pay to the Company the amount of such refund (together with any interest paid or credited thereon after taxes applicable thereto). If, after the receipt by Executive of an amount advanced by the Company pursuant to Subparagraph 8(b)(iii), a determination is made that Executive shall not be entitled to any refund with respect to such claim and the Company does not notify Executive in writing of its intent to contest such denial of refund prior to the expiration of 30 days after such determination, then such advance shall be forgiven and shall not be required to be repaid and the amount of such advance shall offset, to the extent thereof, the amount of Gross-Up Payment required to be paid.

(c) DEFINITIONS. For purposes of this Paragraph 8, the following terms shall have the following meanings:

"CHANGE IN CONTROL" shall mean any of the following:

(a) any "person," as such term is used in Sections 13(d) and 14(d) of the Securities Exchange Act of 1934, as amended (the "Act") (other than the Company, any of its subsidiaries, or any trustee, fiduciary or other person or entity holding securities under any employee benefit plan or trust of the Company or any of its subsidiaries), together with all "affiliates" and "associates" (as such terms are defined in Rule 12b-2 under the Act) of such person, shall become the "beneficial owner" (as such term is defined in Rule 13d-3 under the Act), directly or indirectly, of securities of the Company representing twenty-five percent (25%) or more of either (A) the combined voting power of the Company's then outstanding securities having the right to vote in an election of the Company's Board ("Voting Securities") or (B) the then outstanding shares of Company's common stock, par value \$0.01 per share ("Common Stock") (other than as a result of an acquisition of securities directly from the Company); or

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(b) persons who, as of the Commencement Date, constitute the Company's Board (the "Incumbent Directors") cease for any reason, including, without limitation, as a result of a tender offer, proxy contest, merger or similar transaction, to constitute at least a majority of the Board, provided that any person becoming a director of the Company subsequent to the Commencement Date shall be considered an Incumbent Director if such person's election was approved by or such person was nominated for election by a vote of at least a majority of the Incumbent Directors; but provided further, that any such person whose initial assumption of office is in connection with an actual or threatened election contest relating to the election of members of the Board or other actual or threatened solicitation of proxies or consents by or on behalf of a person other than the Board, including by reason of agreement intended to avoid or settle any such actual or threatened contest or solicitation, shall not be considered an Incumbent Director; or

(c) the stockholders of the Company shall approve (A) any consolidation or merger of the Company where the stockholders of the Company, immediately prior to the consolidation or merger, would not, immediately after the consolidation or merger, beneficially own (as such term is defined in Rule 13d-3 under the Act), directly or indirectly, shares representing in the aggregate more than fifty percent (50%) of the voting shares of the Company issuing cash or securities in the consolidation or merger (or of its ultimate parent corporation, if any), (B) any sale, lease, exchange or other transfer (in one transaction or a series of transactions contemplated or arranged by any party as a single plan) of all or substantially all of the assets of the Company or (C) any plan or proposal for the liquidation or dissolution of the Company.

Notwithstanding the foregoing, a "Change of Control" shall not be deemed to have occurred for purposes of the foregoing clause (a) solely as the result of an acquisition of securities by the Company which, by reducing the number of shares of Common Stock or other Voting Securities outstanding, increases the proportionate number of shares beneficially owned by any person to twenty-five percent (25%) or more of either (A) the combined voting power of all of the then outstanding Voting Securities or (B) Common Stock; PROVIDED, HOWEVER, that if any person referred to in this sentence shall thereafter become the beneficial owner of any additional shares of Voting Securities or Common Stock (other than pursuant to a stock split, stock dividend, or similar transaction or as a result of an acquisition of securities directly from the Company) and immediately thereafter beneficially owns twenty-five percent (25%) or more of either (A) the combined voting power of all of the then outstanding Voting Securities or (B) Common Stock, then a "Change of Control" shall be deemed to have occurred for purposes of the foregoing clause (a).

9. NOTICE. For purposes of this Agreement, notices and all other communications provided for in the Agreement shall be in writing and shall be deemed to have been duly given when delivered or mailed by United States certified mail, return receipt requested, postage prepaid, addressed as follows:

if to the Executive:

At his home address as shown
in the Company's personnel records;

if to the Company:

Harvard Bioscience, Inc.
84 October Hill Road
Holliston, MA 01746-1371
Attention: Board of Directors of Harvard Bioscience, Inc.

with a copy to:

H. David Henken, P.C.
Goodwin, Procter & Hoar LLP
Exchange Place
Boston, MA 02109

or to such other address as either party may have furnished to the other in writing in accordance herewith, except that notices of change of address shall be effective only upon receipt.

10. SUCCESSOR TO COMPANY. The Company shall require any successor (whether direct or indirect, by purchase, merger, consolidation or otherwise) to all or substantially all of the business or assets of the Company expressly to assume and agree to perform this Agreement to the same extent that the Company would be required to perform it if no succession had taken place. Failure of the Company to obtain an assumption of this Agreement at or prior to the effectiveness of any succession shall be a breach of this Agreement and shall constitute Good Reason if the Executive elects to terminate employment.

11. MISCELLANEOUS. No provisions of this Agreement may be modified, waived, or discharged unless such waiver, modification, or discharge is agreed to in writing and signed by Executive and such officer of the Company as may be specifically designated by the Board. No waiver by either party hereto of, or compliance with, any condition or provision of this Agreement to be performed by such other party shall be deemed a waiver of similar or dissimilar provisions or conditions at the same or at any prior or subsequent time. No agreements or representations, oral or otherwise, express or implied, unless specifically referred to herein, with respect to the subject matter hereof have been made by either party which are not set forth expressly in this Agreement. The validity, interpretation, construction, and performance of this Agreement shall be governed by the laws of the Commonwealth of Massachusetts (without regard to principles of conflicts of laws).

12. VALIDITY. The invalidity or unenforceability of any provision or provisions of this Agreement shall not affect the validity or enforceability of any other provision of this

Agreement, which shall remain in full force and effect. The invalid portion of this Agreement, if any, shall be modified by any court having jurisdiction to the extent necessary to render such portion enforceable.

13. COUNTERPARTS. This Agreement may be executed in several counterparts, each of which shall be deemed to be an original but all of which together will constitute one and the same instrument.

14. ARBITRATION; OTHER DISPUTES. In the event of any dispute or controversy arising under or in connection with this Agreement, the parties shall first promptly try in good faith to settle such dispute or controversy by mediation under the applicable rules of the American Arbitration Association before resorting to arbitration. In the event such dispute or controversy remains

unresolved in whole or in part for a period of thirty (30) days after it arises, the parties will settle any remaining dispute or controversy exclusively by arbitration in Boston, Massachusetts, in accordance with the rules of the American Arbitration Association then in effect. Judgment may be entered on the arbitrator's award in any court having jurisdiction. Notwithstanding the above, the Company shall be entitled to seek a restraining order or injunction in any court of competent jurisdiction to prevent any continuation of any violation of Paragraph 4 or 5 hereof. Furthermore, should a dispute occur concerning Executive's mental or physical capacity as described in Subparagraph 6(b), 6(c) or 7(b), a doctor selected by Executive and a doctor selected by the Company shall be entitled to examine Executive. If the opinion of the Company's doctor and Executive's doctor conflict, the Company's doctor and Executive's doctor shall together agree upon a third doctor, whose opinion shall be binding.

15. THIRD-PARTY AGREEMENTS AND RIGHTS. Executive represents to the Company that Executive's execution of this Agreement, Executive's employment with the Company and the performance of Executive's proposed duties for the Company will not violate any obligations Executive may have to any employer or other party, and Executive will not bring to the premises of the Company any copies or other tangible embodiments of non-public information belonging to or obtained from any such previous employment or other party.

16. LITIGATION AND REGULATORY COOPERATION. During and after Executive's employment, Executive shall reasonably cooperate with the Company in the defense or prosecution of any claims or actions now in existence or which may be brought in the future against or on behalf of the Company which relate to events or occurrences that transpired while Executive was employed by the Company; provided, however, that such cooperation shall not materially and adversely affect Executive or expose Executive to an increased probability of civil or criminal litigation. Executive's cooperation in connection with such claims or actions shall include, but not be limited to, being available to meet with counsel to prepare for discovery or trial and to act as a witness on behalf of the Company at mutually convenient times. During and after Executive's employment, Executive also shall cooperate fully with the Company in connection with any investigation or review of any federal, state or local regulatory authority as any such investigation or review relates to events or occurrences that transpired while Executive was employed by the Company. The Company shall also provide Executive with compensation on

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an hourly basis at a rate of \$147.53 for requested litigation and regulatory cooperation that occurs after his termination of employment, and reimburse Executive for all costs and expenses incurred in connection with his performance under this Paragraph 16, including, but not limited to, reasonable attorneys' fees and costs.

17. GENDER NEUTRAL. Wherever used herein, a pronoun in the masculine gender shall be considered as including the feminine gender unless the context clearly indicates otherwise.

IN WITNESS WHEREOF, the parties have executed this Agreement effective on the date and year first above written.

HARVARD BIOSCIENCE, INC.

By: /s/ David Green

Name : David Green

Title: President

EXECUTIVE

/s/ Chane Graziano

Chane Graziano

HARVARD BIOSCIENCE, INC.
EMPLOYMENT AGREEMENT

This EXECUTIVE EMPLOYMENT AGREEMENT ("Agreement") is made as of the 6th day of December, 2000, between Harvard Bioscience, Inc., a Delaware corporation (the "Company"), and David Green ("Executive"). For purposes of this Agreement the "Company" shall refer to the Company and any of its predecessors.

WHEREAS, the Company desires to employ Executive and Executive desires to be employed by the Company on the terms contained herein.

NOW, THEREFORE, in consideration of the mutual covenants and agreements herein contained and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the parties agree as follows:

1. EMPLOYMENT. The term of this Agreement shall extend from December 6, 2000 (the "Commencement Date") until the second anniversary of the Commencement Date; provided, however, that the term of this Agreement shall automatically be extended for two additional years on each second anniversary of the Commencement Date unless, not less than 90 days prior to each such date, either party shall have given notice to the other that it does not wish to extend this Agreement; provided, further, that if a Change in Control occurs during the original or extended term of this Agreement, the term of this Agreement shall, notwithstanding anything in this sentence to the contrary, continue in effect for a period of not less than eighteen (18) months beyond the month in which the Change in Control occurred. The term of this Agreement shall be subject to termination as provided in Paragraph 6 and may be referred to herein as the "Period of Employment."

2. POSITION AND DUTIES. During the Period of Employment, Executive shall serve as the President and member of the Board of Directors of the Company and shall have such powers and duties as may from time to time be prescribed by the Board of Directors (the "Board") or the Chief Executive Officer of the Company, provided that such duties are consistent with Executive's position or other positions that he may hold from time to time. Executive shall devote his full working time and efforts to the business and affairs of the Company. Notwithstanding the foregoing, Executive may serve on other boards of directors, with the approval of the Board, or engage in religious, charitable or other community activities as long as such services and activities are disclosed to the Board and do not materially interfere with Executive's performance of his duties to the Company as provided in this Agreement.

3. COMPENSATION AND RELATED MATTERS.

(a) BASE SALARY AND INCENTIVE COMPENSATION. Executive's initial annual base salary shall be Two Hundred Twenty-Five Thousand (\$225,000) Dollars. Executive's base salary shall be redetermined annually by the Board or a Committee thereof. The base salary in effect at any

given time is referred to herein as "Base Salary." The Base Salary shall be payable in substantially equal bi-weekly installments. In addition to Base Salary, Executive shall be eligible to receive cash incentive compensation as determined by the Board or a Committee thereof from time to time, and shall also be eligible to participate in such incentive compensation plans as the Board or a Committee thereof shall determine from time to time for employees of the same status within the hierarchy of the Company.

(b) EXPENSES. Executive shall be entitled to receive prompt reimbursement for all reasonable expenses incurred by him in performing services hereunder during the Period of Employment, in accordance with the policies and procedures then in effect and established by the Company for its senior executive officers.

(c) OTHER BENEFITS. During the Period of Employment, Executive shall be entitled to continue to participate in or receive benefits under all of the Company's Employee Benefit Plans in effect on the date hereof, or under plans or

arrangements that provide no less favorable treatment to the Executive than the Employee Benefit Plans provided to other members of the Company's senior management. As used herein, the term "Employee Benefit Plans" includes, without limitation, each pension and retirement plan; supplemental pension, retirement and deferred compensation plan; savings and profit-sharing plan; stock ownership plan; stock purchase plan; stock option plan; life insurance plan; medical insurance plan; disability plan; and health and accident plan or arrangement established and maintained by the Company on the date hereof for employees of the same status within the hierarchy of the Company. During the Period of Employment, Executive shall be entitled to an automobile or to a lease for an automobile (the "Company Car") for up to \$1,500.00 per month and the cost of automobile insurance for such Company Car. To the extent that the scope or nature of benefits described in this section is determined under the policies of the Company based in whole or in part on the seniority or tenure of an employee's service, Executive shall be deemed to have a tenure with the Company equal to the actual time of Executive's service with the Company. During the Period of Employment, Executive shall be entitled to participate in or receive benefits under any employee benefit plan or arrangement which may, in the future, be made available by the Company to its executives and key management employees, subject to and on a basis consistent with the terms, conditions and overall administration of such plan or arrangement. Any payments or benefits payable to Executive under a plan or arrangement referred to in this Subparagraph 3(c) in respect of any calendar year during which Executive is employed by the Company for less than the whole of such year shall, unless otherwise provided in the applicable plan or arrangement, be prorated in accordance with the number of days in such calendar year during which he is so employed. Should any such payments or benefits accrue on a fiscal (rather than calendar) year, then the proration in the preceding sentence shall be on the basis of a fiscal year rather than calendar year.

(d) VACATIONS. Executive shall be entitled to twenty (20) paid vacation days in each calendar year, which shall be accrued ratably during the calendar year. Executive shall also be entitled to all paid holidays given by the Company to its executives. To the extent that the scope or nature of benefits described in this section are determined under the policies of the Company based in whole or in part on the seniority or tenure of an employee's service, Executive

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shall be deemed to have a tenure with the Company equal to the actual time of Executive's service with Company.

4. UNAUTHORIZED DISCLOSURE.

(a) CONFIDENTIAL INFORMATION. Executive acknowledges that in the course of his employment with the Company (and, if applicable, its predecessors), he has been allowed to become, and will continue to be allowed to become, acquainted with the Company's business affairs, information, trade secrets, and other matters which are of a proprietary or confidential nature, including but not limited to the Company's and its affiliates' and predecessors' operations, business opportunities, price and cost information, finance, customer information, business plans, various sales techniques, manuals, letters, notebooks, procedures, reports, products, processes, services, and other confidential information and knowledge (collectively the "Confidential Information") concerning the Company's and its affiliates' and predecessors' business. The Company agrees to provide on an ongoing basis such Confidential Information as the Company deems necessary or desirable to aid Executive in the performance of his duties. Executive understands and acknowledges that such Confidential Information is confidential, and he agrees not to disclose such Confidential Information to anyone outside the Company except to the extent that (i) Executive deems such disclosure or use reasonably necessary or appropriate in connection with performing his duties on behalf of the Company; (ii) Executive is required by order of a court of competent jurisdiction (by subpoena or similar process) to disclose or discuss any Confidential Information, provided that in such case, Executive shall promptly inform the Company of such event, shall cooperate with the Company in attempting to obtain a protective order or to otherwise restrict such disclosure, and shall only disclose Confidential Information to the minimum extent necessary to comply with any such court order; (iii) such Confidential Information becomes generally known to and available for use in the Company's industry (the "laboratory analytical instruments industry"), other than as a result of any action or inaction by

Executive; or (iv) such information has been rightfully received by a member of the laboratory analytical instruments industry or has been published in a form generally available to the laboratory analytical instruments industry prior to the date Executive proposes to disclose or use such information. Executive further agrees that he will not during employment and/or at any time thereafter use such Confidential Information in competing, directly or indirectly, with the Company. At such time as Executive shall cease to be employed by the Company, he will immediately turn over to the Company all Confidential Information, including papers, documents, writings, electronically stored information, other property, and all copies of them provided to or created by him during the course of his employment with the Company.

(b) HEIRS, SUCCESSORS, AND LEGAL REPRESENTATIVES. The foregoing provisions of this Paragraph 4 shall be binding upon Executive's heirs, successors, and legal representatives. The provisions of this Paragraph 4 shall survive the termination of this Agreement for any reason.

5. COVENANT NOT TO COMPETE. In consideration for Executive's employment by the Company under the terms provided in this Agreement and as a means to aid in the performance and enforcement of the terms of the provisions of Paragraph 4, Executive agrees that

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(a) during the term of Executive's employment with the Company and for a period of twelve (12) months thereafter, regardless of the reason for termination of employment, Executive will not, directly or indirectly, as an owner, director, principal, agent, officer, employee, partner, consultant, servant, or otherwise, carry on, operate, manage, control, or become involved in any manner with any business, operation, corporation, partnership, association, agency, or other person or entity which is engaged in a business that produces products that compete directly with any of the Company's products which are produced by the Company or any affiliate of the Company or which the Company or any affiliate of the Company has active plans to produce as of the date of Executive's termination of employment with the Company, in any area or territory in which the Company or any affiliate of the Company conducts or has active plans to conduct operations as of the date of the Executive's termination of employment with the Company; provided, however, that the foregoing shall not prohibit Executive from owning up to one percent (1%) of the outstanding stock of a publicly held company engaged in the laboratory analytical instruments industry; and

(b) during the term of Executive's employment with the Company and for a period of twelve (12) months thereafter, regardless of the reason for termination of employment, Executive will not directly or indirectly solicit or induce any present or future employee of the Company or any affiliate of the Company to accept employment with Executive or with any business, operation, corporation, partnership, association, agency, or other person or entity with which Executive may be associated, and Executive will not hire or employ or cause any business, operation, corporation, partnership, association, agency, or other person or entity with which Executive may be associated to hire or employ any present or future employee of the Company.

Should Executive violate any of the provisions of this Paragraph, then in addition to all other rights and remedies available to the Company at law or in equity, the duration of this covenant shall automatically be extended for the period of time from which Executive began such violation until he permanently ceases such violation.

6. TERMINATION. Executive's employment hereunder may be terminated without any breach of this Agreement under the following circumstances:

(a) DEATH. Executive's employment hereunder shall terminate upon his death.

(b) DISABILITY. If, as a result of Executive's incapacity due to physical or mental illness, Executive shall have been absent from his duties hereunder on a full-time basis for one hundred eighty (180) calendar days in the aggregate in any twelve (12) month period, the Company may terminate Executive's employment hereunder.

(c) TERMINATION BY COMPANY FOR CAUSE. At any time during the Period of Employment, the Company may terminate Executive's employment hereunder for Cause if such termination is approved by not less than a majority of the Board at a meeting of the Board called and held for such purpose. For purposes of this Agreement, "Cause" shall mean: (A) conduct by Executive constituting a material act of willful misconduct in connection with the performance of

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his duties, including, without limitation, misappropriation of funds or property of the Company or any of its affiliates other than the occasional, customary and de minimis use of Company property for personal purposes; (B) criminal or civil conviction of Executive, a plea of nolo contendere by Executive or conduct by Executive that would reasonably be expected to result in material injury to the reputation of the Company if he were retained in his position with the Company, including, without limitation, conviction of a felony involving moral turpitude; (C) continued, willful and deliberate non-performance by Executive of his duties hereunder (other than by reason of Executive's physical or mental illness, incapacity or disability) which has continued for more than thirty (30) days following written notice of such non-performance from the Board; (D) a breach by Executive of any of the provisions contained in Paragraphs 4 and 5 of this Agreement; or (E) a violation by Executive of the Company's employment policies which has continued following written notice of such violation from the Board.

(d) TERMINATION WITHOUT CAUSE. At any time during the Period of Employment, the Company may terminate Executive's employment hereunder without Cause if such termination is approved by a majority of the Board at a meeting of the Board called and held for such purpose. Any termination by the Company of Executive's employment under this Agreement which does not constitute a termination for Cause under Subparagraph 6(c) or result from the death or disability of the Executive under Subparagraph 6(a) or (b) shall be deemed a termination without Cause. If the Company provides notice to Executive under Paragraph 1 that it does not wish to extend the Period of Employment, such action shall be deemed a termination without Cause.

(e) TERMINATION BY EXECUTIVE. At any time during the Period of Employment, Executive may terminate his employment hereunder for any reason, including but not limited to Good Reason. If Executive provides notice to the Company under Paragraph 1 that he does not wish to extend the Period of Employment, such action shall be deemed a voluntary termination by Executive and one without Good Reason. For purposes of this Agreement, "Good Reason" shall mean that Executive has complied with the "Good Reason Process" (hereinafter defined) following the occurrence of any of the following events: (A) a substantial diminution or other substantive adverse change, not consented to by Executive, in the nature or scope of Executive's responsibilities, authorities, powers, functions or duties; (B) any removal, during the Period of Employment, from Executive of his title of President; (C) an involuntary reduction in Executive's Base Salary except for across-the-board reductions similarly affecting all or substantially all management employees; (D) a breach by the Company of any of its other material obligations under this Agreement and the failure of the Company to cure such breach within thirty (30) days after written notice thereof by Executive; (E) the involuntary relocation of the Company's offices at which Executive is principally employed or the involuntary relocation of the offices of Executive's primary workgroup to a location more than 30 miles from such offices, or the requirement by the Company that Executive be based anywhere other than the Company's offices at such location on an extended basis, except for required travel on the Company's business to an extent substantially consistent with Executive's business travel obligations; or (F) the failure of the Company to obtain the agreement from any successor to the Company to assume and agree to perform this Agreement as required by Paragraph 10. "Good Reason Process" shall mean that (i) Executive reasonably determines in good faith that a "Good Reason" event has occurred; (ii)

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Executive notifies the Company in writing of the occurrence of the Good Reason event; (iii) Executive cooperates in good faith with the Company's efforts, for a period not less than ninety (90) days following such notice, to modify Executive's employment situation in a manner acceptable to Executive and

Company; and (iv) notwithstanding such efforts, one or more of the Good Reason events continues to exist and has not been modified in a manner acceptable to Executive. If the Company cures the Good Reason event in a manner acceptable to Executive during the ninety (90) day period, Good Reason shall be deemed not to have occurred.

(f) NOTICE OF TERMINATION. Except for termination as specified in Subparagraph 6(a), any termination of Executive's employment by the Company or any such termination by Executive shall be communicated by written Notice of Termination to the other party hereto. For purposes of this Agreement, a "Notice of Termination" shall mean a notice which shall indicate the specific termination provision in this Agreement relied upon.

(g) DATE OF TERMINATION. "Date of Termination" shall mean: (A) if Executive's employment is terminated by his death, the date of his death; (B) if Executive's employment is terminated on account of disability under Subparagraph 6(b) or by the Company for Cause under Subparagraph 6(c), the date on which Notice of Termination is given; (C) if Executive's employment is terminated by the Company under Subparagraph 6(d), sixty (60) days after the date on which a Notice of Termination is given; and (D) if Executive's employment is terminated by Executive under Subparagraph 6(e), thirty (30) days after the date on which a Notice of Termination is given.

7. COMPENSATION UPON TERMINATION OR DURING DISABILITY.

(a) DEATH. If Executive's employment terminates by reason of his death, the Company shall, within ninety (90) days of death, pay in a lump sum amount to such person as Executive shall designate in a notice filed with the Company or, if no such person is designated, to Executive's estate, Executive's accrued and unpaid Base Salary to the date of his death, plus his accrued and unpaid incentive compensation, if any, under Subparagraph 3(a). Upon the death of Executive, all unvested stock options shall immediately vest in Executive's estate or other legal representatives and become exercisable. All other stock-based grants and awards held by Executive shall vest or be canceled upon the death of Executive in accordance with their terms. For a period of one (1) year following the Date of Termination, the Company shall pay such health insurance premiums as may be necessary to allow Executive's spouse and dependents to receive health insurance coverage substantially similar to coverage they received prior to the Date of Termination. In addition to the foregoing, any payments to which Executive's spouse, beneficiaries, or estate may be entitled under any employee benefit plan shall also be paid in accordance with the terms of such plan or arrangement. Such payments, in the aggregate, shall fully discharge the Company's obligations hereunder.

(b) DISABILITY. During any period that Executive fails to perform his duties hereunder as a result of incapacity due to physical or mental illness, Executive shall continue to receive his accrued and unpaid Base Salary and accrued and unpaid incentive compensation, if

any, under Subparagraph 3(a), until Executive's employment is terminated due to disability in accordance with Subparagraph 6(b) or until Executive terminates his employment in accordance with Subparagraph 6(e), whichever first occurs. Upon the Date of Termination, all unvested stock options shall immediately vest and become exercisable. All other stock-based grants and awards held by Executive shall vest or be canceled upon the Date of Termination in accordance with their terms. For a period of one (1) year following the Date of Termination, the Company shall pay such health insurance premiums as may be necessary to allow Executive and Executive's spouse and dependents to receive health insurance coverage substantially similar to coverage they received prior to the Date of Termination. Upon termination due to death prior to the termination first to occur as specified in the preceding sentence, Subparagraph 7(a) shall apply.

(c) TERMINATION OTHER THAN FOR GOOD REASON. If Executive's employment is terminated by Executive other than for Good Reason as provided in Subparagraph 6(e), then the Company shall, through the Date of Termination, pay Executive his accrued and unpaid Base Salary at the rate in effect at the time Notice of Termination is given. Thereafter, the Company shall have no further obligations to Executive except as otherwise expressly provided under this Agreement, provided any such termination shall not adversely affect or alter

Executive's rights under any employee benefit plan of the Company in which Executive, at the Date of Termination, has a vested interest, unless otherwise provided in such employee benefit plan or any agreement or other instrument attendant thereto. In addition, all vested but unexercised stock options held by Executive as of the Date of Termination must be exercised by Executive within three (3) months following the Date of Termination or by the end of the option term, if earlier. All other stock-based grants and awards held by Executive shall vest or be canceled upon the Date of Termination in accordance with their terms.

(d) TERMINATION FOR GOOD REASON. If Executive terminates his employment for Good Reason as provided in Subparagraph 6(e) or if Executive's employment is terminated by the Company without Cause as provided in Subparagraph 6(d), then the Company shall, through the Date of Termination, pay Executive his accrued and unpaid Base Salary at the rate in effect at the time Notice of Termination is given and his accrued and unpaid incentive compensation, if any, under Subparagraph 3(a). In addition, subject to signing by Executive of a general release of claims in a form and manner satisfactory to the Company,

(i) the Company shall pay Executive an amount equal to two (2) times the sum of Executive's Average Base Salary and his Average Incentive Compensation (the "Severance Amount"). The Severance Amount shall be paid out in substantially equal bi-weekly installments over twelve (12) months, in arrears or in a lump sum. For purposes of this Agreement, "Average Base Salary" shall mean the average of the annual Base Salary received by Executive for each of the three (3) immediately preceding fiscal years or such fewer number of complete fiscal years as Executive may have been employed by the Company or the amount of Base Salary for the prior fiscal year, whichever is higher. For purposes of this Agreement, "Average Incentive Compensation" shall mean the average of the annual incentive compensation under Subparagraph 3(a) received by

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Executive for the three (3) immediately preceding fiscal years or such fewer number of complete fiscal years as Executive may have been employed by the Company or the amount of incentive compensation for the prior fiscal year, whichever is higher. In no event shall "Average Incentive Compensation" include any sign-on bonus, retention bonus or any other special bonus. Notwithstanding the foregoing, if the Executive breaches any of the provisions contained in Paragraphs 4 and 5 of this Agreement, all payments of the Severance Amount shall immediately cease. Furthermore, in the event Executive terminates his employment for Good Reason as provided in Subparagraph 6(e), he shall be entitled to the Severance Amount only if he provides the Notice of Termination provided for in Subparagraph 6(f) within thirty (30) days after the occurrence of the event or events which constitute such Good Reason as specified in clauses (A), (B), (C), (D) and (E) of Subparagraph 6(e); and

(ii) upon the Date of Termination, each unvested stock option that would otherwise vest during the next twenty-four (24) months shall accelerate and immediately vest. All other stock-based grants and awards held by Executive that would otherwise vest during the next twenty-four (24) months shall accelerate and immediately vest upon the Date of Termination; and

(iii) in addition to any other benefits to which Executive may be entitled in accordance with the Company's then existing severance policies, the Company shall, for a period of one (1) year commencing on the Date of Termination, pay such health insurance premiums as may be necessary to allow Executive and Executive's spouse and dependents to continue to receive health insurance coverage.

(e) TERMINATION FOR CAUSE. If Executive's employment is terminated by the Company for Cause as provided in Subparagraph 6(c), then the Company shall, through the Date of Termination, pay Executive his accrued and unpaid Base Salary at the rate in effect at the time Notice of Termination is given. Thereafter, the Company shall have no further obligations to Executive except as otherwise expressly provided under this Agreement, provided any such termination shall not adversely affect or alter Executive's rights under any employee

benefit plan of the Company in which Executive, at the Date of Termination, has a vested interest, unless otherwise provided in such employee benefit plan or any agreement or other instrument attendant thereto. In addition, all stock options held by Executive as of the Date of Termination shall immediately terminate and be of no further force and effect, and all other stock-based grants and awards shall be canceled or terminated in accordance with their terms.

(f) Nothing contained in the foregoing Subparagraphs 7(a) through 7(e) shall be construed so as to affect Executive's rights or the Company's obligations relating to agreements or benefits which are unrelated to termination of employment.

8. CHANGE IN CONTROL PAYMENT. The provisions of this Paragraph 8 set forth certain terms of an agreement reached between Executive and the Company regarding Executive's rights and obligations upon the occurrence of a Change in Control of the Company. These provisions are

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intended to assure and encourage in advance Executive's continued attention and dedication to his assigned duties and his objectivity during the pendency and after the occurrence of any such event. These provisions shall apply in lieu of, and expressly supersede, the provisions of Subparagraph 7(d)(i) regarding severance pay upon a termination of employment, if such termination of employment occurs within eighteen (18) months after the occurrence of the first event constituting a Change of Control, provided that such first event occurs during the Period of Employment. These provisions shall terminate and be of no further force or effect beginning eighteen (18) months after the occurrence of a Change of Control.

(a) CHANGE IN CONTROL.

(i) If within eighteen (18) months after the occurrence of the first event constituting a Change in Control, Executive's employment is terminated by the Company without Cause as provided in Subparagraph 6(d) or Executive terminates his employment for Good Reason as provided in Subparagraph 6(e), then the Company shall pay Executive a lump sum in cash in an amount equal to three (3) times the sum of (A) Executive's current or most recent Base Salary plus (B) Executive's most recent annual incentive compensation under Subparagraph 3(a) for the most recent fiscal year, excluding any sign-on bonus, retention bonus or any other special bonus; and

(ii) Notwithstanding anything to the contrary in any applicable option agreement or stock-based award agreement, upon a Change in Control, all stock options and other stock-based awards granted to Executive by the Company shall immediately accelerate and become exercisable or non-forfeitable as of the effective date of such Change in Control. Executive shall also be entitled to any other rights and benefits with respect to stock-related awards, to the extent and upon the terms provided in the employee stock option or incentive plan or any agreement or other instrument attendant thereto pursuant to which such options or awards were granted; and

(iii) The Company shall, for a period of one (1) year commencing on the Date of Termination, pay such health insurance premiums as may be necessary to allow Executive, Executive's spouse and dependents to continue to receive health insurance coverage substantially similar to the coverage they received prior to the Date of Termination.

(b) GROSS UP PAYMENT.

(i) Anything in this Agreement to the contrary notwithstanding, in the event it shall be determined that any compensation, payment or distribution by the Company to or for the benefit of Executive, whether paid or payable or distributed or distributable pursuant to the terms of this Agreement or otherwise (the "Severance Payments"), would be subject to the excise tax imposed by Section 4999 of the Internal Revenue Code of 1986, as amended (the "Code"), or any interest or penalties are incurred by Executive with

respect to such excise tax (such excise tax, together with

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any such interest and penalties, are hereinafter collectively referred to as the "Excise Tax"), then Executive shall be entitled to receive an additional payment (a "Gross-Up Payment") such that the net amount retained by Executive, after deduction of any Excise Tax on the Severance Payments, any Federal, state, and local income tax, employment tax and Excise Tax upon the payment provided by this subsection, and any interest and/or penalties assessed with respect to such Excise Tax, shall be equal to the Severance Payments.

(ii) Subject to the provisions of Subparagraph 8(b)(iii), all determinations required to be made under this Subparagraph 8(b)(ii), including whether a Gross-Up Payment is required and the amount of such Gross-Up Payment, shall be made by KPMG LLP or any other nationally recognized accounting firm selected by the Company (the "Accounting Firm"), which shall provide detailed supporting calculations both to the Company and Executive within fifteen (15) business days of the Date of Termination, if applicable, or at such earlier time as is reasonably requested by the Company or Executive. For purposes of determining the amount of the Gross-Up Payment, Executive shall be deemed to pay federal income taxes at the highest marginal rate of federal income taxation applicable to individuals for the calendar year in which the Gross-Up Payment is to be made, and state and local income taxes at the highest marginal rates of individual taxation in the state and locality of Executive's residence on the Date of Termination, net of the maximum reduction in federal income taxes which could be obtained from deduction of such state and local taxes. The initial Gross-Up Payment, if any, as determined pursuant to this Subparagraph 8(b)(iii), shall be paid to Executive within five (5) days of the receipt of the Accounting Firm's determination. Any determination by the Accounting Firm shall be binding upon the Company and Executive. As a result of the uncertainty in the application of Section 4999 of the Code at the time of the initial determination by the Accounting Firm hereunder, it is possible that Gross-Up Payments which will not have been made by the Company should have been made (an "Underpayment"). In the event that the Company exhausts its remedies pursuant to Subparagraph 8(b)(iii) and Executive thereafter is required to make a payment of any Excise Tax, the Accounting Firm shall determine the amount of the Underpayment that has occurred, consistent with the calculations required to be made hereunder, and any such Underpayment, and any interest and penalties imposed on the Underpayment and required to be paid by Executive in connection with the proceedings described in Subparagraph 8(b)(iii), shall be promptly paid by the Company to or for the benefit of Executive.

(iii) Executive shall notify the Company in writing of any claim by the Internal Revenue Service that, if successful, would require the payment by the Company of the Gross-up Payment. Such notification shall be given as soon as practicable but no later than ten (10) business days after Executive knows of such claim and shall apprise the Company of the nature of such claim and the date on which such claim is requested to be paid. Executive shall not pay such claim prior to the expiration of the 30-day period following the date on which he gives such notice to the Company

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(or such shorter period ending on the date that any payment of taxes with respect to such claim is due). If the Company notifies Executive in writing prior to the expiration of such period that it desires to contest such claim, provided that the Company has set aside adequate reserves to cover the Underpayment and any interest and penalties thereon that may accrue, Executive shall:

(A) give the Company any information reasonably requested by the Company relating to such claim,

(B) take such action in connection with contesting such claim as the Company shall reasonably request in writing from time to time, including, without limitation, accepting legal representation with respect to such claim by an attorney selected by the Company,

(C) cooperate with the Company in good faith in order to effectively contest such claim, and

(D) permit the Company to participate in any proceedings relating to such claim; provided, however, that the Company shall bear and pay directly all costs and expenses (including additional interest and penalties) incurred in connection with such contest and shall indemnify and hold Executive harmless, on an after-tax basis, for any Excise Tax or income tax, including interest and penalties with respect thereto, imposed as a result of such representation and payment of costs and expenses. Without limitation on the foregoing provisions of this Subparagraph 8(b)(iii), the Company shall control all proceedings taken in connection with such contest and, at its sole option, may pursue or forego any and all administrative appeals, proceedings, hearings and conferences with the taxing authority in respect of such claim and may, at its sole option, either direct Executive to pay the tax claimed and sue for a refund or contest the claim in any permissible manner, and Executive agrees to prosecute such contest to a determination before any administrative tribunal, in a court of initial jurisdiction and in one or more appellate courts, as the Company shall determine; provided, however, that if the Company directs Executive to pay such claim and sue for a refund, the Company shall advance the amount of such payment to Executive on an interest-free basis and shall indemnify and hold Executive harmless, on an after-tax basis, from any Excise Tax or income tax, including interest or penalties with respect thereto, imposed with respect to such advance or with respect to any imputed income with respect to such advance; and further provided that any extension of the statute of limitations relating to payment of taxes for the taxable year of Executive with respect to which such contested amount is claimed to be due is limited solely to such contested amount. Furthermore, the Company's control of the contest shall be limited to issues with respect to which a Gross-Up Payment would be payable hereunder and

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Executive shall be entitled to settle or contest, as the case may be, any other issues raised by the Internal Revenue Service or any other taxing authority.

(iv) If, after the receipt by Executive of an amount advanced by the Company pursuant to Subparagraph 8(b)(iii), Executive becomes entitled to receive any refund with respect to such claim, Executive shall (subject to the Company's complying with the requirements of Subparagraph 8(b)(iii)) promptly pay to the Company the amount of such refund (together with any interest paid or credited thereon after taxes applicable thereto). If, after the receipt by Executive of an amount advanced by the Company pursuant to Subparagraph 8(b)(iii), a determination is made that Executive shall not be entitled to any refund with respect to such claim and the Company does not notify Executive in writing of its intent to contest such denial of refund prior to the expiration of 30 days after such determination, then such advance shall be forgiven and shall not be required to be repaid and the amount of such advance shall offset, to the extent thereof, the amount of Gross-Up Payment required to be paid.

(c) DEFINITIONS. For purposes of this Paragraph 8, the following terms shall have the following meanings:

"CHANGE IN CONTROL" shall mean any of the following:

(a) any "person," as such term is used in Sections 13(d) and 14(d) of the Securities Exchange Act of 1934, as amended (the "Act") (other than the Company, any of its subsidiaries, or any trustee, fiduciary or other person or entity holding securities under any employee benefit plan or trust of the Company or any of its subsidiaries), together with all "affiliates" and "associates" (as such terms are defined in Rule 12b-2 under the Act) of such person, shall become the "beneficial owner" (as such term is defined in Rule 13d-3 under the Act), directly or indirectly, of securities of the Company representing twenty-five percent (25%) or more of either (A) the combined voting power of the Company's then outstanding securities having the right to vote in an election of the Company's Board ("Voting Securities") or (B) the then outstanding shares of Company's common stock, par value \$0.01 per share ("Common Stock") (other than as a result of an acquisition of securities directly from the Company); or

(b) persons who, as of the Commencement Date, constitute the Company's Board (the "Incumbent Directors") cease for any reason, including, without limitation, as a result of a tender offer, proxy contest, merger or similar transaction, to constitute at least a majority of the Board, provided that any person becoming a director of the Company subsequent to the Commencement Date shall be considered an Incumbent Director if such person's election was approved by or such person was nominated for election by a vote of at least a majority of the Incumbent Directors; but provided further, that any such person whose initial assumption of office is in connection with an actual or threatened election contest relating to the election of members of the Board or other actual or threatened solicitation of proxies or consents by or on behalf of a person other

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than the Board, including by reason of agreement intended to avoid or settle any such actual or threatened contest or solicitation, shall not be considered an Incumbent Director; or

(c) the stockholders of the Company shall approve (A) any consolidation or merger of the Company where the stockholders of the Company, immediately prior to the consolidation or merger, would not, immediately after the consolidation or merger, beneficially own (as such term is defined in Rule 13d-3 under the Act), directly or indirectly, shares representing in the aggregate more than fifty percent (50%) of the voting shares of the Company issuing cash or securities in the consolidation or merger (or of its ultimate parent corporation, if any), (B) any sale, lease, exchange or other transfer (in one transaction or a series of transactions contemplated or arranged by any party as a single plan) of all or substantially all of the assets of the Company or (C) any plan or proposal for the liquidation or dissolution of the Company.

Notwithstanding the foregoing, a "Change of Control" shall not be deemed to have occurred for purposes of the foregoing clause (a) solely as the result of an acquisition of securities by the Company which, by reducing the number of shares of Common Stock or other Voting Securities outstanding, increases the proportionate number of shares beneficially owned by any person to twenty-five percent (25%) or more of either (A) the combined voting power of all of the then outstanding Voting Securities or (B) Common Stock; PROVIDED, HOWEVER, that if any person referred to in this sentence shall thereafter become the beneficial owner of any additional shares of Voting Securities or Common Stock (other than pursuant to a stock split, stock dividend, or similar transaction or as a result of an acquisition of securities directly from the Company) and immediately thereafter beneficially owns twenty-five percent (25%) or more of either (A) the combined voting power of all of the then outstanding Voting Securities or (B) Common Stock, then a "Change of Control" shall be deemed to have occurred for purposes of the foregoing clause (a).

9. NOTICE. For purposes of this Agreement, notices and all other communications provided for in the Agreement shall be in writing and shall be deemed to have been duly given when delivered or mailed by United States certified mail, return receipt requested, postage prepaid, addressed as follows:

if to the Executive:

At his home address as shown
in the Company's personnel records;

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if to the Company:

Harvard Bioscience, Inc.
84 October Hill Road
Holliston, MA 01746-1371
Attention: Board of Directors of Harvard Bioscience, Inc.

with a copy to:

H. David Henken, P.C.
Goodwin, Procter & Hoar LLP
Exchange Place
Boston, MA 02109

or to such other address as either party may have furnished to the other in writing in accordance herewith, except that notices of change of address shall be effective only upon receipt.

10. SUCCESSOR TO COMPANY. The Company shall require any successor (whether direct or indirect, by purchase, merger, consolidation or otherwise) to all or substantially all of the business or assets of the Company expressly to assume and agree to perform this Agreement to the same extent that the Company would be required to perform it if no succession had taken place. Failure of the Company to obtain an assumption of this Agreement at or prior to the effectiveness of any succession shall be a breach of this Agreement and shall constitute Good Reason if the Executive elects to terminate employment.

11. MISCELLANEOUS. No provisions of this Agreement may be modified, waived, or discharged unless such waiver, modification, or discharge is agreed to in writing and signed by Executive and such officer of the Company as may be specifically designated by the Board. No waiver by either party hereto of, or compliance with, any condition or provision of this Agreement to be performed by such other party shall be deemed a waiver of similar or dissimilar provisions or conditions at the same or at any prior or subsequent time. No agreements or representations, oral or otherwise, express or implied, unless specifically referred to herein, with respect to the subject matter hereof have been made by either party which are not set forth expressly in this Agreement. The validity, interpretation, construction, and performance of this Agreement shall be governed by the laws of the Commonwealth of Massachusetts (without regard to principles of conflicts of laws).

12. VALIDITY. The invalidity or unenforceability of any provision or provisions of this Agreement shall not affect the validity or enforceability of any other provision of this Agreement, which shall remain in full force and effect. The invalid portion of this Agreement, if any, shall be modified by any court having jurisdiction to the extent necessary to render such portion enforceable.

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13. COUNTERPARTS. This Agreement may be executed in several counterparts, each of which shall be deemed to be an original but all of which together will constitute one and the same instrument.

14. ARBITRATION; OTHER DISPUTES. In the event of any dispute or controversy arising under or in connection with this Agreement, the parties shall first promptly try in good faith to settle such dispute or controversy by mediation under the applicable rules of the American Arbitration Association before resorting to arbitration. In the event such dispute or controversy remains unresolved in whole or in part for a period of thirty (30) days after it arises, the parties will settle any remaining dispute or controversy exclusively by

arbitration in Boston, Massachusetts, in accordance with the rules of the American Arbitration Association then in effect. Judgment may be entered on the arbitrator's award in any court having jurisdiction. Notwithstanding the above, the Company shall be entitled to seek a restraining order or injunction in any court of competent jurisdiction to prevent any continuation of any violation of Paragraph 4 or 5 hereof. Furthermore, should a dispute occur concerning Executive's mental or physical capacity as described in Subparagraph 6(b), 6(c) or 7(b), a doctor selected by Executive and a doctor selected by the Company shall be entitled to examine Executive. If the opinion of the Company's doctor and Executive's doctor conflict, the Company's doctor and Executive's doctor shall together agree upon a third doctor, whose opinion shall be binding.

15. THIRD-PARTY AGREEMENTS AND RIGHTS. Executive represents to the Company that Executive's execution of this Agreement, Executive's employment with the Company and the performance of Executive's proposed duties for the Company will not violate any obligations Executive may have to any employer or other party, and Executive will not bring to the premises of the Company any copies or other tangible embodiments of non-public information belonging to or obtained from any such previous employment or other party.

16. LITIGATION AND REGULATORY COOPERATION. During and after Executive's employment, Executive shall reasonably cooperate with the Company in the defense or prosecution of any claims or actions now in existence or which may be brought in the future against or on behalf of the Company which relate to events or occurrences that transpired while Executive was employed by the Company; provided, however, that such cooperation shall not materially and adversely affect Executive or expose Executive to an increased probability of civil or criminal litigation. Executive's cooperation in connection with such claims or actions shall include, but not be limited to, being available to meet with counsel to prepare for discovery or trial and to act as a witness on behalf of the Company at mutually convenient times. During and after Executive's employment, Executive also shall cooperate fully with the Company in connection with any investigation or review of any federal, state or local regulatory authority as any such investigation or review relates to events or occurrences that transpired while Executive was employed by the Company. The Company shall also provide Executive with compensation on an hourly basis at a rate of \$120.71 for requested litigation and regulatory cooperation that occurs after his termination of employment, and reimburse Executive for all costs and expenses incurred in connection with his performance under this Paragraph 16, including, but not limited to, reasonable attorneys' fees and costs.

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17. GENDER NEUTRAL. Wherever used herein, a pronoun in the masculine gender shall be considered as including the feminine gender unless the context clearly indicates otherwise.

IN WITNESS WHEREOF, the parties have executed this Agreement effective on the date and year first above written.

HARVARD BIOSCIENCE, INC.

By: /s/ James L. Warren

Name: James L. Warren
Title: Chief Financial Officer

EXECUTIVE

/s/ David Green

David Green

HARVARD BIOSCIENCE, INC.
EMPLOYMENT AGREEMENT

This EXECUTIVE EMPLOYMENT AGREEMENT ("Agreement") is made as of the 6th day of December, 2000, between Harvard Bioscience, Inc., a Delaware corporation (the "Company"), and James Warren ("Executive"). For purposes of this Agreement the "Company" shall refer to the Company and any of its predecessors.

WHEREAS, the Company desires to employ Executive and Executive desires to be employed by the Company on the terms contained herein.

NOW, THEREFORE, in consideration of the mutual covenants and agreements herein contained and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the parties agree as follows:

1. EMPLOYMENT. The term of this Agreement shall extend from December 6, 2000 (the "Commencement Date") until the first anniversary of the Commencement Date; provided, however, that the term of this Agreement shall automatically be extended for one additional year on each anniversary of the Commencement Date unless, not less than 90 days prior to each such date, either party shall have given notice to the other that it does not wish to extend this Agreement; provided, further, that if a Change in Control occurs during the original or extended term of this Agreement, the term of this Agreement shall, notwithstanding anything in this sentence to the contrary, continue in effect for a period of not less than eighteen (18) months beyond the month in which the Change in Control occurred. The term of this Agreement shall be subject to termination as provided in Paragraph 6 and may be referred to herein as the "Period of Employment."

2. POSITION AND DUTIES. During the Period of Employment, Executive shall serve as the Chief Financial Officer and shall have such powers and duties as may from time to time be prescribed by the Board of Directors (the "Board") or the Chief Executive Officer of the Company, provided that such duties are consistent with Executive's position or other positions that he may hold from time to time. Executive shall devote his full working time and efforts to the business and affairs of the Company. Notwithstanding the foregoing, Executive may serve on other boards of directors, with the approval of the Board, or engage in religious, charitable or other community activities as long as such services and activities are disclosed to the Board and do not materially interfere with Executive's performance of his duties to the Company as provided in this Agreement.

3. COMPENSATION AND RELATED MATTERS.

(a) BASE SALARY AND INCENTIVE COMPENSATION. Executive's initial annual base salary shall be One Hundred Eighty-Five Thousand (\$185,000) Dollars. Executive's base salary shall be redetermined annually by the Board or a Committee thereof. The base salary in effect at any

given time is referred to herein as "Base Salary." The Base Salary shall be payable in substantially equal bi-weekly installments. In addition to Base Salary, Executive shall be eligible to receive cash incentive compensation as determined by the Board or a Committee thereof from time to time, and shall also be eligible to participate in such incentive compensation plans as the Board or a Committee thereof shall determine from time to time for employees of the same status within the hierarchy of the Company.

(b) EXPENSES. Executive shall be entitled to receive prompt reimbursement for all reasonable expenses incurred by him in performing services hereunder during the Period of Employment, in accordance with the policies and procedures then in effect and established by the Company for its senior executive officers.

(c) OTHER BENEFITS. During the Period of Employment, Executive shall be entitled to continue to participate in or receive benefits under all of the Company's Employee Benefit Plans in effect on the date hereof, or under plans or

arrangements that provide no less favorable treatment to the Executive than the Employee Benefit Plans provided to other members of the Company's senior management. As used herein, the term "Employee Benefit Plans" includes, without limitation, each pension and retirement plan; supplemental pension, retirement and deferred compensation plan; savings and profit-sharing plan; stock ownership plan; stock purchase plan; stock option plan; life insurance plan; medical insurance plan; disability plan; and health and accident plan or arrangement established and maintained by the Company on the date hereof for employees of the same status within the hierarchy of the Company. To the extent that the scope or nature of benefits described in this section is determined under the policies of the Company based in whole or in part on the seniority or tenure of an employee's service, Executive shall be deemed to have a tenure with the Company equal to the actual time of Executive's service with the Company. During the Period of Employment, Executive shall be entitled to participate in or receive benefits under any employee benefit plan or arrangement which may, in the future, be made available by the Company to its executives and key management employees, subject to and on a basis consistent with the terms, conditions and overall administration of such plan or arrangement. Any payments or benefits payable to Executive under a plan or arrangement referred to in this Subparagraph 3(c) in respect of any calendar year during which Executive is employed by the Company for less than the whole of such year shall, unless otherwise provided in the applicable plan or arrangement, be prorated in accordance with the number of days in such calendar year during which he is so employed. Should any such payments or benefits accrue on a fiscal (rather than calendar) year, then the proration in the preceding sentence shall be on the basis of a fiscal year rather than calendar year.

(d) VACATIONS. Executive shall be entitled to twenty (20) paid vacation days in each calendar year, which shall be accrued ratably during the calendar year. Executive shall also be entitled to all paid holidays given by the Company to its executives. To the extent that the scope or nature of benefits described in this section are determined under the policies of the Company based in whole or in part on the seniority or tenure of an employee's service, Executive shall be deemed to have a tenure with the Company equal to the actual time of Executive's service with Company.

4. UNAUTHORIZED DISCLOSURE.

(a) CONFIDENTIAL INFORMATION. Executive acknowledges that in the course of his employment with the Company (and, if applicable, its predecessors), he has been allowed to become, and will continue to be allowed to become, acquainted with the Company's business affairs, information, trade secrets, and other matters which are of a proprietary or confidential nature, including but not limited to the Company's and its affiliates' and predecessors' operations, business opportunities, price and cost information, finance, customer information, business plans, various sales techniques, manuals, letters, notebooks, procedures, reports, products, processes, services, and other confidential information and knowledge (collectively the "Confidential Information") concerning the Company's and its affiliates' and predecessors' business. The Company agrees to provide on an ongoing basis such Confidential Information as the Company deems necessary or desirable to aid Executive in the performance of his duties. Executive understands and acknowledges that such Confidential Information is confidential, and he agrees not to disclose such Confidential Information to anyone outside the Company except to the extent that (i) Executive deems such disclosure or use reasonably necessary or appropriate in connection with performing his duties on behalf of the Company; (ii) Executive is required by order of a court of competent jurisdiction (by subpoena or similar process) to disclose or discuss any Confidential Information, provided that in such case, Executive shall promptly inform the Company of such event, shall cooperate with the Company in attempting to obtain a protective order or to otherwise restrict such disclosure, and shall only disclose Confidential Information to the minimum extent necessary to comply with any such court order; (iii) such Confidential Information becomes generally known to and available for use in the Company's industry (the "laboratory analytical instruments industry"), other than as a result of any action or inaction by Executive; or (iv) such information has been rightfully received by a member of the laboratory analytical instruments industry or has been published in a form generally available to the laboratory analytical instruments industry prior to

the date Executive proposes to disclose or use such information. Executive further agrees that he will not during employment and/or at any time thereafter use such Confidential Information in competing, directly or indirectly, with the Company. At such time as Executive shall cease to be employed by the Company, he will immediately turn over to the Company all Confidential Information, including papers, documents, writings, electronically stored information, other property, and all copies of them provided to or created by him during the course of his employment with the Company.

(b) HEIRS, SUCCESSORS, AND LEGAL REPRESENTATIVES. The foregoing provisions of this Paragraph 4 shall be binding upon Executive's heirs, successors, and legal representatives. The provisions of this Paragraph 4 shall survive the termination of this Agreement for any reason.

5. COVENANT NOT TO COMPETE. In consideration for Executive's employment by the Company under the terms provided in this Agreement and as a means to aid in the performance and enforcement of the terms of the provisions of Paragraph 4, Executive agrees that

(a) during the term of Executive's employment with the Company and for a period of twelve (12) months thereafter, regardless of the reason for termination of employment, Executive

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will not, directly or indirectly, as an owner, director, principal, agent, officer, employee, partner, consultant, servant, or otherwise, carry on, operate, manage, control, or become involved in any manner with any business, operation, corporation, partnership, association, agency, or other person or entity which is engaged in a business that produces products that compete directly with any of the Company's products which are produced by the Company or any affiliate of the Company or which the Company or any affiliate of the Company has active plans to produce as of the date of Executive's termination of employment with the Company, in any area or territory in which the Company or any affiliate of the Company conducts or has active plans to conduct operations as of the date of the Executive's termination of employment with the Company; provided, however, that the foregoing shall not prohibit Executive from owning up to one percent (1%) of the outstanding stock of a publicly held company engaged in the laboratory analytical instruments industry; and

(b) during the term of Executive's employment with the Company and for a period of twelve (12) months thereafter, regardless of the reason for termination of employment, Executive will not directly or indirectly solicit or induce any present or future employee of the Company or any affiliate of the Company to accept employment with Executive or with any business, operation, corporation, partnership, association, agency, or other person or entity with which Executive may be associated, and Executive will not hire or employ or cause any business, operation, corporation, partnership, association, agency, or other person or entity with which Executive may be associated to hire or employ any present or future employee of the Company.

Should Executive violate any of the provisions of this Paragraph, then in addition to all other rights and remedies available to the Company at law or in equity, the duration of this covenant shall automatically be extended for the period of time from which Executive began such violation until he permanently ceases such violation.

6. TERMINATION. Executive's employment hereunder may be terminated without any breach of this Agreement under the following circumstances:

(a) DEATH. Executive's employment hereunder shall terminate upon his death.

(b) DISABILITY. If, as a result of Executive's incapacity due to physical or mental illness, Executive shall have been absent from his duties hereunder on a full-time basis for one hundred eighty (180) calendar days in the aggregate in any twelve (12) month period, the Company may terminate Executive's employment hereunder.

(c) TERMINATION BY COMPANY FOR CAUSE. At any time during the Period of Employment, the Company may terminate Executive's employment hereunder for Cause if such termination is approved by not less than a majority of the Board at a

meeting of the Board called and held for such purpose. For purposes of this Agreement, "Cause" shall mean: (A) conduct by Executive constituting a material act of willful misconduct in connection with the performance of his duties, including, without limitation, misappropriation of funds or property of the Company or any of its affiliates other than the occasional, customary and de minimis use of Company

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property for personal purposes; (B) criminal or civil conviction of Executive, a plea of nolo contendere by Executive or conduct by Executive that would reasonably be expected to result in material injury to the reputation of the Company if he were retained in his position with the Company, including, without limitation, conviction of a felony involving moral turpitude; (C) continued, willful and deliberate non-performance by Executive of his duties hereunder (other than by reason of Executive's physical or mental illness, incapacity or disability) which has continued for more than thirty (30) days following written notice of such non-performance from the Board; (D) a breach by Executive of any of the provisions contained in Paragraphs 4 and 5 of this Agreement; or (E) a violation by Executive of the Company's employment policies which has continued following written notice of such violation from the Board.

(d) TERMINATION WITHOUT CAUSE. At any time during the Period of Employment, the Company may terminate Executive's employment hereunder without Cause if such termination is approved by a majority of the Board at a meeting of the Board called and held for such purpose. Any termination by the Company of Executive's employment under this Agreement which does not constitute a termination for Cause under Subparagraph 6(c) or result from the death or disability of the Executive under Subparagraph 6(a) or (b) shall be deemed a termination without Cause. If the Company provides notice to Executive under Paragraph 1 that it does not wish to extend the Period of Employment, such action shall be deemed a termination without Cause.

(e) TERMINATION BY EXECUTIVE. At any time during the Period of Employment, Executive may terminate his employment hereunder for any reason, including but not limited to Good Reason. If Executive provides notice to the Company under Paragraph 1 that he does not wish to extend the Period of Employment, such action shall be deemed a voluntary termination by Executive and one without Good Reason. For purposes of this Agreement, "Good Reason" shall mean that Executive has complied with the "Good Reason Process" (hereinafter defined) following the occurrence of any of the following events: (A) a substantial diminution or other substantive adverse change, not consented to by Executive, in the nature or scope of Executive's responsibilities, authorities, powers, functions or duties; (B) any removal, during the Period of Employment, from Executive of his title of Chief Financial Officer; (C) an involuntary reduction in Executive's Base Salary except for across-the-board reductions similarly affecting all or substantially all management employees; (D) a breach by the Company of any of its other material obligations under this Agreement and the failure of the Company to cure such breach within thirty (30) days after written notice thereof by Executive; (E) the involuntary relocation of the Company's offices at which Executive is principally employed or the involuntary relocation of the offices of Executive's primary workgroup to a location more than 30 miles from such offices, or the requirement by the Company that Executive be based anywhere other than the Company's offices at such location on an extended basis, except for required travel on the Company's business to an extent substantially consistent with Executive's business travel obligations; or (F) the failure of the Company to obtain the agreement from any successor to the Company to assume and agree to perform this Agreement as required by Paragraph 10. "Good Reason Process" shall mean that (i) Executive reasonably determines in good faith that a "Good Reason" event has occurred; (ii) Executive notifies the Company in writing of the occurrence of

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the Good Reason event; (iii) Executive cooperates in good faith with the Company's efforts, for a period not less than ninety (90) days following such notice, to modify Executive's employment situation in a manner acceptable to Executive and Company; and (iv) notwithstanding such efforts, one or more of the Good Reason events continues to exist and has not been modified in a manner

acceptable to Executive. If the Company cures the Good Reason event in a manner acceptable to Executive during the ninety (90) day period, Good Reason shall be deemed not to have occurred.

(f) NOTICE OF TERMINATION. Except for termination as specified in Subparagraph 6(a), any termination of Executive's employment by the Company or any such termination by Executive shall be communicated by written Notice of Termination to the other party hereto. For purposes of this Agreement, a "Notice of Termination" shall mean a notice which shall indicate the specific termination provision in this Agreement relied upon.

(g) DATE OF TERMINATION. "Date of Termination" shall mean: (A) if Executive's employment is terminated by his death, the date of his death; (B) if Executive's employment is terminated on account of disability under Subparagraph 6(b) or by the Company for Cause under Subparagraph 6(c), the date on which Notice of Termination is given; (C) if Executive's employment is terminated by the Company under Subparagraph 6(d), sixty (60) days after the date on which a Notice of Termination is given; and (D) if Executive's employment is terminated by Executive under Subparagraph 6(e), thirty (30) days after the date on which a Notice of Termination is given.

7. COMPENSATION UPON TERMINATION OR DURING DISABILITY.

(a) DEATH. If Executive's employment terminates by reason of his death, the Company shall, within ninety (90) days of death, pay in a lump sum amount to such person as Executive shall designate in a notice filed with the Company or, if no such person is designated, to Executive's estate, Executive's accrued and unpaid Base Salary to the date of his death, plus his accrued and unpaid incentive compensation, if any, under Subparagraph 3(a). Upon the death of Executive, all unvested stock options shall immediately vest in Executive's estate or other legal representatives and become exercisable. All other stock-based grants and awards held by Executive shall vest or be canceled upon the death of Executive in accordance with their terms. For a period of one (1) year following the Date of Termination, the Company shall pay such health insurance premiums as may be necessary to allow Executive's spouse and dependents to receive health insurance coverage substantially similar to coverage they received prior to the Date of Termination. In addition to the foregoing, any payments to which Executive's spouse, beneficiaries, or estate may be entitled under any employee benefit plan shall also be paid in accordance with the terms of such plan or arrangement. Such payments, in the aggregate, shall fully discharge the Company's obligations hereunder.

(b) DISABILITY. During any period that Executive fails to perform his duties hereunder as a result of incapacity due to physical or mental illness, Executive shall continue to receive his accrued and unpaid Base Salary and accrued and unpaid incentive compensation, if

any, under Subparagraph 3(a), until Executive's employment is terminated due to disability in accordance with Subparagraph 6(b) or until Executive terminates his employment in accordance with Subparagraph 6(e), whichever first occurs. Upon the Date of Termination, all unvested stock options shall immediately vest and become exercisable. All other stock-based grants and awards held by Executive shall vest or be canceled upon the Date of Termination in accordance with their terms. For a period of one (1) year following the Date of Termination, the Company shall pay such health insurance premiums as may be necessary to allow Executive and Executive's spouse and dependents to receive health insurance coverage substantially similar to coverage they received prior to the Date of Termination. Upon termination due to death prior to the termination first to occur as specified in the preceding sentence, Subparagraph 7(a) shall apply.

(c) TERMINATION OTHER THAN FOR GOOD REASON. If Executive's employment is terminated by Executive other than for Good Reason as provided in Subparagraph 6(e), then the Company shall, through the Date of Termination, pay Executive his accrued and unpaid Base Salary at the rate in effect at the time Notice of Termination is given. Thereafter, the Company shall have no further obligations to Executive except as otherwise expressly provided under this Agreement, provided any such termination shall not adversely affect or alter Executive's rights under any employee benefit plan of the Company in which Executive, at the Date of Termination, has a vested interest, unless otherwise

provided in such employee benefit plan or any agreement or other instrument attendant thereto. In addition, all vested but unexercised stock options held by Executive as of the Date of Termination must be exercised by Executive within three (3) months following the Date of Termination or by the end of the option term, if earlier. All other stock-based grants and awards held by Executive shall vest or be canceled upon the Date of Termination in accordance with their terms.

(d) TERMINATION FOR GOOD REASON. If Executive terminates his employment for Good Reason as provided in Subparagraph 6(e) or if Executive's employment is terminated by the Company without Cause as provided in Subparagraph 6(d), then the Company shall, through the Date of Termination, pay Executive his accrued and unpaid Base Salary at the rate in effect at the time Notice of Termination is given and his accrued and unpaid incentive compensation, if any, under Subparagraph 3(a). In addition, subject to signing by Executive of a general release of claims in a form and manner satisfactory to the Company,

(i) the Company shall pay Executive an amount equal to the sum of Executive's Average Base Salary and his Average Incentive Compensation (the "Severance Amount"). The Severance Amount shall be paid out in substantially equal bi-weekly installments over twelve (12) months, in arrears or in a lump sum. For purposes of this Agreement, "Average Base Salary" shall mean the average of the annual Base Salary received by Executive for each of the three (3) immediately preceding fiscal years or such fewer number of complete fiscal years as Executive may have been employed by the Company or the amount of Base Salary for the prior fiscal year, whichever is higher. For purposes of this Agreement, "Average Incentive Compensation" shall mean the average of the annual incentive compensation under Subparagraph 3(a) received by

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Executive for the three (3) immediately preceding fiscal years or such fewer number of complete fiscal years as Executive may have been employed by the Company or the amount of incentive compensation for the prior fiscal year, whichever is higher. In no event shall "Average Incentive Compensation" include any sign-on bonus, retention bonus or any other special bonus. Notwithstanding the foregoing, if the Executive breaches any of the provisions contained in Paragraphs 4 and 5 of this Agreement, all payments of the Severance Amount shall immediately cease. Furthermore, in the event Executive terminates his employment for Good Reason as provided in Subparagraph 6(e), he shall be entitled to the Severance Amount only if he provides the Notice of Termination provided for in Subparagraph 6(f) within thirty (30) days after the occurrence of the event or events which constitute such Good Reason as specified in clauses (A), (B), (C), (D) and (E) of Subparagraph 6(e); and

(ii) upon the Date of Termination, each unvested stock option that would otherwise vest during the next twenty-four (24) months shall accelerate and immediately vest. All other stock-based grants and awards held by Executive that would otherwise vest during the next twenty-four (24) months shall accelerate and immediately vest upon the Date of Termination; and

(iii) in addition to any other benefits to which Executive may be entitled in accordance with the Company's then existing severance policies, the Company shall, for a period of one (1) year commencing on the Date of Termination, pay such health insurance premiums as may be necessary to allow Executive and Executive's spouse and dependents to continue to receive health insurance coverage.

(e) TERMINATION FOR CAUSE. If Executive's employment is terminated by the Company for Cause as provided in Subparagraph 6(c), then the Company shall, through the Date of Termination, pay Executive his accrued and unpaid Base Salary at the rate in effect at the time Notice of Termination is given. Thereafter, the Company shall have no further obligations to Executive except as otherwise expressly provided under this Agreement, provided any such termination shall not adversely affect or alter Executive's rights under any employee benefit plan of the Company in which Executive, at the Date of Termination, has a vested interest, unless otherwise provided in such employee benefit plan or any agreement or other instrument attendant thereto. In addition, all stock

options held by Executive as of the Date of Termination shall immediately terminate and be of no further force and effect, and all other stock-based grants and awards shall be canceled or terminated in accordance with their terms.

(f) Nothing contained in the foregoing Subparagraphs 7(a) through 7(e) shall be construed so as to affect Executive's rights or the Company's obligations relating to agreements or benefits which are unrelated to termination of employment.

8. CHANGE IN CONTROL PAYMENT. The provisions of this Paragraph 8 set forth certain terms of an agreement reached between Executive and the Company regarding Executive's rights and obligations upon the occurrence of a Change in Control of the Company. These provisions are

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intended to assure and encourage in advance Executive's continued attention and dedication to his assigned duties and his objectivity during the pendency and after the occurrence of any such event. These provisions shall apply in lieu of, and expressly supersede, the provisions of Subparagraph 7(d)(i) regarding severance pay upon a termination of employment, if such termination of employment occurs within eighteen (18) months after the occurrence of the first event constituting a Change of Control, provided that such first event occurs during the Period of Employment. These provisions shall terminate and be of no further force or effect beginning eighteen (18) months after the occurrence of a Change of Control.

(a) CHANGE IN CONTROL.

(i) If within eighteen (18) months after the occurrence of the first event constituting a Change in Control, Executive's employment is terminated by the Company without Cause as provided in Subparagraph 6(d) or Executive terminates his employment for Good Reason as provided in Subparagraph 6(e), then the Company shall pay Executive a lump sum in cash in an amount equal to one and a half (1.5) times the sum of (A) Executive's current or most recent Base Salary plus (B) Executive's most recent annual incentive compensation under Subparagraph 3(a) for the most recent fiscal year, excluding any sign-on bonus, retention bonus or any other special bonus; and

(ii) Notwithstanding anything to the contrary in any applicable option agreement or stock-based award agreement, upon a Change in Control, all stock options and other stock-based awards granted to Executive by the Company shall immediately accelerate and become exercisable or non-forfeitable as of the effective date of such Change in Control. Executive shall also be entitled to any other rights and benefits with respect to stock-related awards, to the extent and upon the terms provided in the employee stock option or incentive plan or any agreement or other instrument attendant thereto pursuant to which such options or awards were granted; and

(iii) The Company shall, for a period of one (1) year commencing on the Date of Termination, pay such health insurance premiums as may be necessary to allow Executive, Executive's spouse and dependents to continue to receive health insurance coverage substantially similar to the coverage they received prior to the Date of Termination.

(b) GROSS UP PAYMENT.

(i) Anything in this Agreement to the contrary notwithstanding, in the event it shall be determined that any compensation, payment or distribution by the Company to or for the benefit of Executive, whether paid or payable or distributed or distributable pursuant to the terms of this Agreement or otherwise (the "Severance Payments"), would be subject to the excise tax imposed by Section 4999 of the Internal Revenue Code of 1986, as amended (the "Code"), or any interest or penalties are incurred by Executive with respect to such excise tax (such excise tax, together with

any such interest and penalties, are hereinafter collectively referred to as the "Excise Tax"), then Executive shall be entitled to receive an additional payment (a "Gross-Up Payment") such that the net amount retained by Executive, after deduction of any Excise Tax on the Severance Payments, any Federal, state, and local income tax, employment tax and Excise Tax upon the payment provided by this subsection, and any interest and/or penalties assessed with respect to such Excise Tax, shall be equal to the Severance Payments.

(ii) Subject to the provisions of Subparagraph 8(b)(iii), all determinations required to be made under this Subparagraph 8(b)(ii), including whether a Gross-Up Payment is required and the amount of such Gross-Up Payment, shall be made by KPMG LLP or any other nationally recognized accounting firm selected by the Company (the "Accounting Firm"), which shall provide detailed supporting calculations both to the Company and Executive within fifteen (15) business days of the Date of Termination, if applicable, or at such earlier time as is reasonably requested by the Company or Executive. For purposes of determining the amount of the Gross-Up Payment, Executive shall be deemed to pay federal income taxes at the highest marginal rate of federal income taxation applicable to individuals for the calendar year in which the Gross-Up Payment is to be made, and state and local income taxes at the highest marginal rates of individual taxation in the state and locality of Executive's residence on the Date of Termination, net of the maximum reduction in federal income taxes which could be obtained from deduction of such state and local taxes. The initial Gross-Up Payment, if any, as determined pursuant to this Subparagraph 8(b)(iii), shall be paid to Executive within five (5) days of the receipt of the Accounting Firm's determination. Any determination by the Accounting Firm shall be binding upon the Company and Executive. As a result of the uncertainty in the application of Section 4999 of the Code at the time of the initial determination by the Accounting Firm hereunder, it is possible that Gross-Up Payments which will not have been made by the Company should have been made (an "Underpayment"). In the event that the Company exhausts its remedies pursuant to Subparagraph 8(b)(iii) and Executive thereafter is required to make a payment of any Excise Tax, the Accounting Firm shall determine the amount of the Underpayment that has occurred, consistent with the calculations required to be made hereunder, and any such Underpayment, and any interest and penalties imposed on the Underpayment and required to be paid by Executive in connection with the proceedings described in Subparagraph 8(b)(iii), shall be promptly paid by the Company to or for the benefit of Executive.

(iii) Executive shall notify the Company in writing of any claim by the Internal Revenue Service that, if successful, would require the payment by the Company of the Gross-up Payment. Such notification shall be given as soon as practicable but no later than ten (10) business days after Executive knows of such claim and shall apprise the Company of the nature of such claim and the date on which such claim is requested to be paid. Executive shall not pay such claim prior to the expiration of the 30-day period following the date on which he gives such notice to the Company

(or such shorter period ending on the date that any payment of taxes with respect to such claim is due). If the Company notifies Executive in writing prior to the expiration of such period that it desires to contest such claim, provided that the Company has set aside adequate reserves to cover the Underpayment and any interest and penalties thereon that may accrue, Executive shall:

(A) give the Company any information reasonably requested by the Company relating to such claim,

(B) take such action in connection with contesting such claim as the Company shall reasonably request in writing from time to time, including, without limitation, accepting legal representation with respect to such claim by an attorney selected by the Company,

(C) cooperate with the Company in good faith in order to effectively contest such claim, and

(D) permit the Company to participate in any proceedings relating to such claim; provided, however, that the Company shall bear and pay directly all costs and expenses (including additional interest and penalties) incurred in connection with such contest and shall indemnify and hold Executive harmless, on an after-tax basis, for any Excise Tax or income tax, including interest and penalties with respect thereto, imposed as a result of such representation and payment of costs and expenses. Without limitation on the foregoing provisions of this Subparagraph 8(b)(iii), the Company shall control all proceedings taken in connection with such contest and, at its sole option, may pursue or forego any and all administrative appeals, proceedings, hearings and conferences with the taxing authority in respect of such claim and may, at its sole option, either direct Executive to pay the tax claimed and sue for a refund or contest the claim in any permissible manner, and Executive agrees to prosecute such contest to a determination before any administrative tribunal, in a court of initial jurisdiction and in one or more appellate courts, as the Company shall determine; provided, however, that if the Company directs Executive to pay such claim and sue for a refund, the Company shall advance the amount of such payment to Executive on an interest-free basis and shall indemnify and hold Executive harmless, on an after-tax basis, from any Excise Tax or income tax, including interest or penalties with respect thereto, imposed with respect to such advance or with respect to any imputed income with respect to such advance; and further provided that any extension of the statute of limitations relating to payment of taxes for the taxable year of Executive with respect to which such contested amount is claimed to be due is limited solely to such contested amount. Furthermore, the Company's control of the contest shall be limited to issues with respect to which a Gross-Up Payment would be payable hereunder and

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Executive shall be entitled to settle or contest, as the case may be, any other issues raised by the Internal Revenue Service or any other taxing authority.

(iv) If, after the receipt by Executive of an amount advanced by the Company pursuant to Subparagraph 8(b)(iii), Executive becomes entitled to receive any refund with respect to such claim, Executive shall (subject to the Company's complying with the requirements of Subparagraph 8(b)(iii)) promptly pay to the Company the amount of such refund (together with any interest paid or credited thereon after taxes applicable thereto). If, after the receipt by Executive of an amount advanced by the Company pursuant to Subparagraph 8(b)(iii), a determination is made that Executive shall not be entitled to any refund with respect to such claim and the Company does not notify Executive in writing of its intent to contest such denial of refund prior to the expiration of 30 days after such determination, then such advance shall be forgiven and shall not be required to be repaid and the amount of such advance shall offset, to the extent thereof, the amount of Gross-Up Payment required to be paid.

(c) DEFINITIONS. For purposes of this Paragraph 8, the following terms shall have the following meanings:

"CHANGE IN CONTROL" shall mean any of the following:

(a) any "person," as such term is used in Sections 13(d) and

14(d) of the Securities Exchange Act of 1934, as amended (the "Act") (other than the Company, any of its subsidiaries, or any trustee, fiduciary or other person or entity holding securities under any employee benefit plan or trust of the Company or any of its subsidiaries), together with all "affiliates" and "associates" (as such terms are defined in Rule 12b-2 under the Act) of such person, shall become the "beneficial owner" (as such term is defined in Rule 13d-3 under the Act), directly or indirectly, of securities of the Company representing twenty-five percent (25%) or more of either (A) the combined voting power of the Company's then outstanding securities having the right to vote in an election of the Company's Board ("Voting Securities") or (B) the then outstanding shares of Company's common stock, par value \$0.01 per share ("Common Stock") (other than as a result of an acquisition of securities directly from the Company); or

(b) persons who, as of the Commencement Date, constitute the Company's Board (the "Incumbent Directors") cease for any reason, including, without limitation, as a result of a tender offer, proxy contest, merger or similar transaction, to constitute at least a majority of the Board, provided that any person becoming a director of the Company subsequent to the Commencement Date shall be considered an Incumbent Director if such person's election was approved by or such person was nominated for election by a vote of at least a majority of the Incumbent Directors; but provided further, that any such person whose initial assumption of office is in connection with an actual or threatened election contest relating to the election of members of the Board or other actual or threatened solicitation of proxies or consents by or on behalf of a person other

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than the Board, including by reason of agreement intended to avoid or settle any such actual or threatened contest or solicitation, shall not be considered an Incumbent Director; or

(c) the stockholders of the Company shall approve (A) any consolidation or merger of the Company where the stockholders of the Company, immediately prior to the consolidation or merger, would not, immediately after the consolidation or merger, beneficially own (as such term is defined in Rule 13d-3 under the Act), directly or indirectly, shares representing in the aggregate more than fifty percent (50%) of the voting shares of the Company issuing cash or securities in the consolidation or merger (or of its ultimate parent corporation, if any), (B) any sale, lease, exchange or other transfer (in one transaction or a series of transactions contemplated or arranged by any party as a single plan) of all or substantially all of the assets of the Company or (C) any plan or proposal for the liquidation or dissolution of the Company.

Notwithstanding the foregoing, a "Change of Control" shall not be deemed to have occurred for purposes of the foregoing clause (a) solely as the result of an acquisition of securities by the Company which, by reducing the number of shares of Common Stock or other Voting Securities outstanding, increases the proportionate number of shares beneficially owned by any person to twenty-five percent (25%) or more of either (A) the combined voting power of all of the then outstanding Voting Securities or (B) Common Stock; PROVIDED, HOWEVER, that if any person referred to in this sentence shall thereafter become the beneficial owner of any additional shares of Voting Securities or Common Stock (other than pursuant to a stock split, stock dividend, or similar transaction or as a result of an acquisition of securities directly from the Company) and immediately thereafter beneficially owns twenty-five percent (25%) or more of either (A) the combined voting power of all of the then outstanding Voting Securities or (B) Common Stock, then a "Change of Control" shall be deemed to have occurred for purposes of the foregoing clause (a).

9. NOTICE. For purposes of this Agreement, notices and all other communications provided for in the Agreement shall be in writing and shall be deemed to have been duly given when delivered or mailed by United States certified mail, return receipt requested, postage prepaid, addressed as follows:

if to the Executive:

At his home address as shown
in the Company's personnel records;

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if to the Company:

Harvard Bioscience, Inc.
84 October Hill Road
Holliston, MA 01746-1371
Attention: Board of Directors of Harvard Bioscience, Inc.

with a copy to:

H. David Henken, P.C.
Goodwin, Procter & Hoar LLP
Exchange Place
Boston, MA 02109

or to such other address as either party may have furnished to the other in writing in accordance herewith, except that notices of change of address shall be effective only upon receipt.

10. SUCCESSOR TO COMPANY. The Company shall require any successor (whether direct or indirect, by purchase, merger, consolidation or otherwise) to all or substantially all of the business or assets of the Company expressly to assume and agree to perform this Agreement to the same extent that the Company would be required to perform it if no succession had taken place. Failure of the Company to obtain an assumption of this Agreement at or prior to the effectiveness of any succession shall be a breach of this Agreement and shall constitute Good Reason if the Executive elects to terminate employment.

11. MISCELLANEOUS. No provisions of this Agreement may be modified, waived, or discharged unless such waiver, modification, or discharge is agreed to in writing and signed by Executive and such officer of the Company as may be specifically designated by the Board. No waiver by either party hereto of, or compliance with, any condition or provision of this Agreement to be performed by such other party shall be deemed a waiver of similar or dissimilar provisions or conditions at the same or at any prior or subsequent time. No agreements or representations, oral or otherwise, express or implied, unless specifically referred to herein, with respect to the subject matter hereof have been made by either party which are not set forth expressly in this Agreement. The validity, interpretation, construction, and performance of this Agreement shall be governed by the laws of the Commonwealth of Massachusetts (without regard to principles of conflicts of laws).

12. VALIDITY. The invalidity or unenforceability of any provision or provisions of this Agreement shall not affect the validity or enforceability of any other provision of this Agreement, which shall remain in full force and effect. The invalid portion of this Agreement, if any, shall be modified by any court having jurisdiction to the extent necessary to render such portion enforceable.

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13. COUNTERPARTS. This Agreement may be executed in several counterparts, each of which shall be deemed to be an original but all of which together will constitute one and the same instrument.

14. ARBITRATION; OTHER DISPUTES. In the event of any dispute or controversy arising under or in connection with this Agreement, the parties shall first promptly try in good faith to settle such dispute or controversy by mediation under the applicable rules of the American Arbitration Association before resorting to arbitration. In the event such dispute or controversy remains unresolved in whole or in part for a period of thirty (30) days after it arises,

the parties will settle any remaining dispute or controversy exclusively by arbitration in Boston, Massachusetts, in accordance with the rules of the American Arbitration Association then in effect. Judgment may be entered on the arbitrator's award in any court having jurisdiction. Notwithstanding the above, the Company shall be entitled to seek a restraining order or injunction in any court of competent jurisdiction to prevent any continuation of any violation of Paragraph 4 or 5 hereof. Furthermore, should a dispute occur concerning Executive's mental or physical capacity as described in Subparagraph 6(b), 6(c) or 7(b), a doctor selected by Executive and a doctor selected by the Company shall be entitled to examine Executive. If the opinion of the Company's doctor and Executive's doctor conflict, the Company's doctor and Executive's doctor shall together agree upon a third doctor, whose opinion shall be binding.

15. THIRD-PARTY AGREEMENTS AND RIGHTS. Executive represents to the Company that Executive's execution of this Agreement, Executive's employment with the Company and the performance of Executive's proposed duties for the Company will not violate any obligations Executive may have to any employer or other party, and Executive will not bring to the premises of the Company any copies or other tangible embodiments of non-public information belonging to or obtained from any such previous employment or other party.

16. LITIGATION AND REGULATORY COOPERATION. During and after Executive's employment, Executive shall reasonably cooperate with the Company in the defense or prosecution of any claims or actions now in existence or which may be brought in the future against or on behalf of the Company which relate to events or occurrences that transpired while Executive was employed by the Company; provided, however, that such cooperation shall not materially and adversely affect Executive or expose Executive to an increased probability of civil or criminal litigation. Executive's cooperation in connection with such claims or actions shall include, but not be limited to, being available to meet with counsel to prepare for discovery or trial and to act as a witness on behalf of the Company at mutually convenient times. During and after Executive's employment, Executive also shall cooperate fully with the Company in connection with any investigation or review of any federal, state or local regulatory authority as any such investigation or review relates to events or occurrences that transpired while Executive was employed by the Company. The Company shall also provide Executive with compensation on an hourly basis at a rate of \$99.25 for requested litigation and regulatory cooperation that occurs after his termination of employment, and reimburse Executive for all costs and expenses incurred in connection with his performance under this Paragraph 16, including, but not limited to, reasonable attorneys' fees and costs.

17. GENDER NEUTRAL. Wherever used herein, a pronoun in the masculine gender shall be considered as including the feminine gender unless the context clearly indicates otherwise.

IN WITNESS WHEREOF, the parties have executed this Agreement effective on the date and year first above written.

HARVARD BIOSCIENCE, INC.

By: /s/ David Green

Name : David Green

Title: President

EXECUTIVE

/s/ James Warren

James Warren

SUBSIDIARIES OF THE REGISTRANT

Harvard Apparatus, Limited (United Kingdom)
Biochrom, Ltd. (United Kingdom)
Ealing Scientific Ltd. Canada (doing business as Harvard Apparatus, Canada)
(Canada)
Harvard Apparatus S.A.R.L. (France)
Hugo Sachs Elektronik - Harvard Apparatus GmbH (Germany)
Harvard Apparatus FSC, Inc. (U.S. Virgin Islands)
HBIO Securities Corp. (Massachusetts)

Consent of Independent Auditors

We consent to the incorporation by reference in the Registration Statement No. 333-53848 of Harvard Bioscience, Inc. on Form S-8 of our report dated February 23, 2001, relating to the consolidated balance sheets of Harvard Bioscience, Inc. and subsidiaries as of December 31, 2000 and 1999, and the related consolidated statements of operations, stockholders' equity (deficit) and comprehensive income (loss), and cash flows for each of years in the three-year period ended December 31, 2000, which report appears in the December 31, 2000 Annual Report on Form 10-K of Harvard Bioscience, Inc.

/s/ KPMG LLP

Boston, Massachusetts
April 2, 2001