As filed with the Securities and Exchange Commission on October 20, 1999

REGISTRATION STATEMENT NO. 333-

SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

FORM S-3
REGISTRATION STATEMENT UNDER THE SECURITIES ACT OF 1933

AVANT IMMUNOTHERAPEUTICS, INC.
(Exact name of Registrant as specified in its charter)

DELAWARE	13-3191702
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)

119 FOURTH AVENUE
NEEDHAM, MASSACHUSETTS 02494
(781) 433-0771
(Address, including zip code, and telephone number, including area code of Registrant's principal executive offices)

UNA S. RYAN, PH.D., PRESIDENT AND CHIEF EXECUTIVE OFFICER
AVANT IMMUNOTHERAPEUTICS, INC.
119 FOURTH AVENUE
NEEDHAM, MASSACHUSETTS 02494
(781) 433-0771
(Name, address, including zip code, and telephone number, including area code, of agent for service)

Copy to:

STUART M. CABLE, P.C.
ETTORE A. SANTUCCI, P.C.
GOODWIN, PROCTER & HOAR LLP
EXCHANGE PLACE
BOSTON, MASSACHUSETTS 02109-2881
(617) 570-1000

APPROXIMATE DATE OF COMMENCEMENT OF PROPOSED SALE TO THE PUBLIC: From time to time after the effective date of this Registration Statement.

If the only securities being registered on this form are being offered pursuant to dividend or interest reinvestment plans, please check the following box. / /

If any of the securities being registered on this form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933, other than securities offered only in connection with dividend or interest reinvestment plans, check the following box. /X/

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

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

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

CALCULATION OF REGISTRATION FEE

Title of Shares Being Registered	Amount to be Registered	Proposed Maximum Offering Price Per Share(1)	Proposed Maximum Aggregate Offering Price	Amount of Registration Fee
Common Stock, par value $.001	5,459,375	$1.94	$10,591,187.50	$2,944.35

(1) This estimate is made pursuant to Rule 457(c) under the Securities Act of 1933, as amended (the "Securities Act"), solely for the purposes of determining the registration fee and is based upon the market value of outstanding shares of common stock, $.001 par value per share, of Avant Immunotherapeutics, Inc. on October 14, 1999, utilizing the average of the high and low sale prices reported on the Nasdaq National Market for that date.

THE REGISTRANT HEREBY AMENDS THIS REGISTRATION STATEMENT ON SUCH DATE OR DATES AS MAY BE NECESSARY TO DELAY ITS EFFECTIVE DATE UNTIL THE REGISTRANT SHALL FILE A FURTHER AMENDMENT WHICH SPECIFICALLY STATES THAT THIS REGISTRATION STATEMENT SHALL THEREAFTER BECOME EFFECTIVE IN ACCORDANCE WITH SECTION 8(A) OF THE SECURITIES ACT OF 1933 OR UNTIL THE REGISTRATION STATEMENT SHALL BECOME EFFECTIVE ON SUCH DATE AS THE COMMISSION, ACTING PURSUANT TO SAID SECTION 8(A), MAY DETERMINE.

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The information in this prospectus is not complete and may be changed. These securities may not be sold until the registration statement filed with the Securities and Exchange Commission is effective. This prospectus is not an offer to sell these securities and it is not soliciting an offer to buy these securities in any state where the offer or sale is not permitted.

SUBJECT TO COMPLETION. DATED OCTOBER 20, 1999.

PROSPECTUS

5,459,375 SHARES OF COMMON STOCK

AVANT IMMUNOTHERAPEUTICS, INC.

The selling stockholders identified in this prospectus, and any of their pledgees, donees, transferees or other successors in interest, may offer to sell up to an aggregate of 5,459,375 shares of common stock of Avant Immunotherapeutics, Inc. We are filing the registration statement of which this prospectus is a part at this time to fulfill a contractual obligation to do so, which we undertook at the time of the original issuance of these shares. We will not receive any of the proceeds from the sale of the common stock by the selling stockholders but, in fulfillment of our contractual obligations, we are bearing the expenses of registration.

Our common stock is listed on the Nasdaq Stock Market, Inc.'s National Market under the symbol "AVAN."

See "Risk Factors" beginning on page 3 for certain factors you should consider before you invest in our common stock.

NEITHER THE SECURITIES AND EXCHANGE COMMISSION NOR ANY STATE SECURITIES COMMISSION HAS APPROVED OR DISAPPROVED OF THESE SECURITIES, OR DETERMINED IF THIS PROSPECTUS IS TRUTHFUL OR COMPLETE. IT IS ILLEGAL FOR ANY PERSON TO TELL YOU OTHERWISE.

The date of this prospectus is October , 1999.

PROSPECTUS SUMMARY

THIS SUMMARY ONLY HIGHLIGHTS THE MORE DETAILED INFORMATION APPEARING ELSEWHERE IN THIS PROSPECTUS OR INCORPORATED HEREIN BY REFERENCE. AS THIS IS A SUMMARY, IT MAY NOT CONTAIN ALL INFORMATION THAT IS IMPORTANT TO YOU. YOU SHOULD READ THIS ENTIRE PROSPECTUS CAREFULLY BEFORE DECIDING WHETHER TO INVEST IN OUR COMMON STOCK.

UNLESS THE CONTEXT OTHERWISE REQUIRES, ALL REFERENCES TO "AVANT," "WE," "US" OR "OUR COMPANY" IN THIS PROSPECTUS REFER TO AVANT IMMUNOTHERAPEUTICS, INC., A DELAWARE CORPORATION.

ABOUT AVANT IMMUNOTHERAPEUTICS, INC.

We are engaged in the discovery, development and commercialization of products that harness the human immune response to prevent and treat disease. Our lead therapeutic program is focused on compounds that inhibit the inappropriate activity of the complement cascade, which is a vital part of the body's immune defense system. We are also engaged in the development of Therapore,-TM- a novel system for the delivery of immunotherapeutics for chronic viral infections and certain cancers. Avant and our collaborators are developing vaccines using our proprietary adjuvants, Adjumer-Registered Trademark- and Micromer.-TM- In a further collaboration, we are developing an oral human rotavirus vaccine, and are developing our own proprietary vaccine for the management of atherosclerosis.

Additional information regarding us, including our audited financial statements and descriptions of our business, is contained in the documents incorporated by reference in this prospectus. See "Where You Can Find More Information" on page 11.

THE OFFERING

This prospectus relates to up to 5,459,375 shares of our common stock that may be offered for sale by the selling stockholders. We originally issued these shares to the selling stockholders in a private placement on September 22, 1999. In connection with this private placement, we entered into a securities purchase agreement with the selling stockholders. We are registering the common stock covered by this prospectus in order to fulfill our contractual obligations under the securities purchase agreement. Registration of the common stock does not necessarily mean that all or any portion of the common stock will be offered for sale by the selling stockholders.

We have agreed to bear the expenses of the registration of the common stock under federal and state securities laws, but we will not receive any proceeds from the sale of any common stock offered under this prospectus.

RISK FACTORS

BEFORE YOU PURCHASE SHARES OF OUR COMMON STOCK FROM THE SELLING STOCKHOLDERS YOU SHOULD BE AWARE THAT THERE ARE VARIOUS RISKS IN MAKING SUCH AN INVESTMENT, INCLUDING THOSE DESCRIBED BELOW. YOU SHOULD CONSIDER CAREFULLY THESE RISK FACTORS TOGETHER WITH ALL OF THE INFORMATION INCLUDED OR INCORPORATED BY REFERENCE IN THIS PROSPECTUS BEFORE YOU DECIDE TO PURCHASE SHARES OF OUR COMMON STOCK. THIS SECTION INCLUDES OR REFERS TO CERTAIN FORWARD-LOOKING STATEMENTS. YOU SHOULD REFER TO THE EXPLANATION OF THE QUALIFICATIONS AND LIMITATIONS ON SUCH FORWARD-LOOKING STATEMENTS DISCUSSED ON PAGE 11.

RISK FACTORS

OUR THERAPEUTIC PRODUCTS ARE IN VARIOUS STAGES OF PRODUCT DEVELOPMENT AND THERE ARE MANY UNCERTAINTIES RELATING TO CLINICAL TRIALS AND REGULATORY APPROVALS THAT MAY HINDER EACH PRODUCT'S EVENTUAL DEVELOPMENT

WE HAVE NOT HAD COMMERCIAL REVENUES TO DATE AND CANNOT PREDICT WHEN WE WILL

All of our therapeutic product candidates are in various stages of research and development and to date we have had no revenues from the commercialization of these products. We cannot be certain that any of the therapeutic products we are developing:

- will prove safe and effective in clinical trials
- will be approved by the United States Food and Drug Administration or the competent regulatory authorities of other countries
- can be manufactured at acceptable cost with the appropriate quality
- can be successfully marketed

Before we can be in a position to commercialize any of our therapeutic product candidates, we must complete substantial additional development work in the key areas of preclinical and clinical testing, regulatory approvals and manufacturing processes, among others.

PRECLINICAL AND CLINICAL TESTING DO NOT ENSURE THAT PRODUCTS WILL BE SAFE AND EFFECTIVE

For some of our product candidates and technologies we have only performed preclinical testing to date. Preclinical studies of product candidates may not predict and do not ensure safety or efficacy in humans and therefore are not necessarily indicative of the results that may be achieved in clinical trials with humans. We cannot be sure that clinical testing will discover all side effects of potential products in humans. Even if cleared by regulators after clinical testing, a product may later be shown to be unsafe or to not have its expected effect, which may prevent its widespread use, require its withdrawal from the market or expose us to liability.

CLINICAL TRIALS TAKE TIME AND MAY NOT BE COMPLETED AS PLANNED OR AT ALL

How quickly we can complete clinical testing depends on several factors, including how quickly we can enroll patients for the tests. Many factors affect patient enrollment, including:

- the size of the patient population
- the nature of the clinical protocol
- the proximity of patients to clinical sites
- the eligibility criteria for the trial

If patients cannot be enrolled as planned, we face increased costs, delays or termination of clinical trials, which may have a material adverse effect on our business, financial condition and results of operations. We often rely on third parties to assist in planning, conducting and monitoring clinical trials, which may result in delays or failure to complete necessary clinical testing of our

product candidates if those third parties fail to perform as we expect or fail to meet regulatory standards in their work.

OUR PRODUCT DEVELOPMENT PROGRAMS RELY ON NEW TECHNOLOGIES

The product development programs we and our collaborators conduct face the risk of failure inherent in efforts to develop product candidates based on new technologies. These risks include:

- the possibility that the underlying technologies will prove ineffective
- the possibility that product candidates will prove unsafe or toxic or otherwise fail to receive necessary regulatory approvals
- the possibility that the product candidates, though safe and effective, will be difficult to manufacture on a large scale as actual commercial products or be uneconomical to market
- the possibility that others will claim proprietary rights to technologies used in the products and preclude us or our collaborators from marketing them
- the possibility that others will develop and market superior or equivalent products before or after our products reach the market

OUR HISTORY OF LOSSES AND UNCERTAINTY OF OUR FUTURE PROFITABILITY MAKES THE COMMON STOCK A HIGHLY SPECULATIVE INVESTMENT

We have incurred operating losses since inception and, as of June 30, 1999, had accumulated net losses of approximately $127.1 million. Our continued product development activities require the commitment of substantial resources to do research, conduct preclinical and clinical testing, create manufacturing capacity and establish sales and marketing, quality control, regulatory and administrative capabilities. We may incur substantial operating losses over the next several years as our pipeline of product candidates and active clinical trials expand. Our losses may fluctuate significantly.

We cannot predict how much our future losses will be or how long they will last. Before we can achieve profitability, we must successfully complete the development of at least some of our product candidates, obtain the necessary regulatory approvals and successfully manufacture and market the actual products. It is unlikely that we will achieve profitability in the near future and we cannot be sure that we will be able to achieve profitability at all or on a sustained basis.

WE WILL CONTINUE TO NEED SUBSTANTIAL ADDITIONAL FUNDS WHICH WILL LIKELY BE RAISED THROUGH EQUITY FINANCINGS WHICH MAY BE DILUTIVE TO OUR CURRENT STOCKHOLDERS

We have funded our operations and capital expenditures to date primarily through equity financing, strategic alliances with commercial partners, and sales of reagent and diagnostic products. Through September 30, 1999, we had raised net proceeds of approximately $86.7 million through equity financings. Before we are able to commercialize any of our product candidates, we anticipate the need to raise substantial additional funds through a combination of additional equity or debt financings, research and development arrangements, collaborative relationships or otherwise.

We cannot predict whether additional funding will be available to us or, if available, that it will be on reasonable terms. Any additional funding may result in significant dilution to existing stockholders. If adequate funds are not available, we may be required to significantly curtail our research and development programs or to obtain funds through arrangements with collaborative partners that may require us to relinquish material rights to any resulting products.

WE ARE DEPENDENT ON THIRD PARTIES FOR CLINICAL SUPPLIES

We depend on third party manufacturers for suitable quantities of materials necessary for clinical trials of our product candidates. If these materials are not available in suitable quantities of appropriate quality in a timely manner, we will face significant delays in the development and commercialization of products, which could adversely affect our business, financial condition and results of operations.

THE LICENSING DEVELOPMENT AND COMMERCIALIZATION OF SOME OF OUR PRODUCTS IS HIGHLY DEPENDENT ON THIRD-PARTY COLLABORATORS.

We have entered into collaborative agreements with a variety of pharmaceutical and biotechnology companies relating to the licensing, development and commercialization of products based on our technologies and proprietary information. In some cases, our collaborator has assumed substantial responsibility to commercialize the products, which may allow the collaborator substantial discretion in determining the amount and timing of resources to be devoted to the development and commercialization efforts. We may continue to enter into this kind of agreement in the future. We cannot predict whether our collaborators will continue their development efforts using our technologies or that their efforts will be successful. In general, many of our collaborators face the same kinds of risks and uncertainties in their business as we face. Should a collaborator fail to successfully develop a product for which it has undertaken responsibility, we will need to find another collaborator, assuming we have the right to do so and the product is still commercially viable. If a collaborator experiences delays, setbacks or failure, the successful commercialization of affected products may be delayed or prevented, which may have an adverse effect on our business, financial condition and results of operations.

Certain of our collaborative agreements, particularly in the vaccine delivery systems area, involve product candidates in the early stages of research and development or are subject to determination of the feasibility of developing products using our technologies. Once specific products are targeted, these agreements may require that further licenses and other agreements are negotiated and executed by us and the collaborator on presently uncertain terms. We cannot predict our ability to develop any products or negotiate and execute any licenses, or whether the collaborator will pursue alternative technologies or product candidates, either on its own or in collaboration with others, that may compete with the technologies or product candidates being developed in collaboration with us. Collaborative agreements may also require us to meet agreed upon milestones and expend funds, and we cannot predict whether we will achieve these milestones or have these funds available. Our failure to meet our obligations could result in termination of collaborative agreements and could have a material adverse effect on our business, financial condition and results of operations.

OUR ACTIVITIES ARE SUBJECT TO COMPREHENSIVE GOVERNMENT REGULATION

REGULATORY DELAYS AND UNCERTAINTIES ARE POSSIBLE

Our research, development and clinical programs, and ultimately the commercialization of our product candidates, are subject to extensive regulation by numerous governmental authorities in the United States and other countries. Most of our products will require governmental approvals for commercialization which we have not yet obtained and do not expect to obtain for several years. We cannot be sure that we will obtain the necessary clearances for clinical trials, manufacturing or marketing of our product candidates.

The regulatory process, which includes preclinical, clinical and post-clinical testing to establish the safety and efficacy of products, can take many years and requires the expenditure of substantial resources. Data obtained from preclinical and clinical activities are susceptible to varying interpretations which could delay, limit or prevent regulatory approval. In addition, we may experience delays

or rejection based upon new or changed regulatory policies for drug approval during the long period of product development and regulatory review. This may result in restrictions on our ability to utilize our technologies or commercialize our products, and consequently impact our ability to generate commercial product revenues. There can be no assurance that we will obtain necessary regulatory approvals within a reasonable period of time, if at all, or that we will not encounter problems in clinical trials that delay or suspend the trials. Moreover, when regulatory approval of a product is granted, it may impose limitations on the indicated uses for marketing the product which restrict the size of the potential patient population.

Even after regulatory approval is obtained, a product and its manufacturer are subject to continuing review and periodic inspections of manufacturing facilities. Subsequent discovery of previously unknown problems with a product or its manufacturing may result in restrictions on the product or the manufacturer, including withdrawal of the product from the market. Failure to comply with the applicable regulatory requirements can result in fines, suspensions of regulatory approvals, product recalls, operating restrictions and criminal prosecution.

THE FOOD AND DRUG ADMINISTRATION PRODUCT APPROVAL PROCESS IS DIFFICULT AND TIME CONSUMING

Food and Drug Administration (FDA) approval of a new product is required after completion of clinical trials, but before commencing marketing and manufacturing. To commercialize any product and prior to submitting the application for marketing approval in the United States, we must sponsor and file an investigational new drug application for each proposed product and must initiate and oversee the clinical studies to demonstrate the safety and efficacy that are necessary to obtain FDA approval. We expect that our products will be regulated as biologics. Traditionally, biologics require both a product license application and an establishment license application prior to commercial marketing. The processing of license applications submitted to the FDA has historically taken several years. If the FDA determines that an application is incomplete, or that the data submitted fails to answer important issues, approval times can be lengthened significantly. Notwithstanding the submission of relevant data, the FDA may ultimately decide that the license application does not satisfy its criteria for approval.

WE LACK MANUFACTURING, SALES, DISTRIBUTION AND MARKETING CAPABILITIES

We plan to rely on contract manufacturers to manufacture commercial quantities of approved products in the future. For successful commercialization, we must manufacture products in adequate quantities, in compliance with regulatory requirements, and at a competitive cost. Our ability to obtain access to suitable manufacturing facilities is uncertain. Except for research reagents and certain diagnostic products, we have limited experience in the marketing and distribution of commercial products. To market any of our products directly, we must develop a substantial marketing and sales force with technical expertise and a supporting distribution capability. When our products are ready for commercialization, we may face delays, difficulties or unanticipated costs in establishing the sales and distribution capabilities necessary to gain market acceptance for those products. We may choose or find it necessary to enter into strategic partnerships on terms we cannot presently anticipate for the manufacture, sale, marketing and distribution of our products.

WE HAVE MANY COMPETITORS IN OUR FIELD AND WE ARE AT RISK OF TECHNOLOGICAL OBSOLESCENCE

Biotechnology, pharmaceuticals and therapeutics are rapidly evolving fields in which scientific and technological developments are expected to continue at a rapid pace. We have many competitors in the United States and abroad, including pharmaceutical, biotechnology and therapeutics companies, universities and other private and public research institutions. Our success depends upon our ability to develop and maintain a competitive position within the product categories and technologies on which we focus. Many of our competitors have greater capabilities, experience and/or financial resources than we do. Competition is intense and is expected to increase as new

products enter the market and new technologies become available. Our competitors may succeed in:

- developing technologies and products that are more effective than ours
- developing technologies that render ours obsolete or otherwise noncompetitive
- obtaining regulatory approval for products more rapidly or effectively than we can
- obtaining patent protection or other intellectual property rights that would block our ability to develop competitive products

WE ARE DEPENDENT ON PATENTS AND PROPRIETARY TECHNOLOGY

Our success depends in part on our ability, or, for technologies we license from others, our licensor's ability, to obtain and maintain patent protection for our technologies, to protect the confidentiality of our trade secrets and to operate without infringing on the proprietary rights of others, both in the United States and in other countries. A failure by us or our licensors to obtain and maintain patent protection for our technologies or to protect our trade secrets could have a material adverse effect on our business, financial condition and results of operations.

UNCERTAIN SCOPE OF PATENT PROTECTION IN BIOTECHNOLOGY

Patent positions in the biotechnology field are highly uncertain and involve complex legal, scientific and factual questions. To date, there has emerged no consistent policy regarding the breadth of claims allowed in biotechnology patents, particularly in regard to human therapeutic uses. We cannot predict whether the patents we seek will be issued, if issued will not later be challenged or limited in scope, or will afford effective protection against competitors with similar technology. Even if a patent is issued to us, a successful challenge to the validity of the patent could result in a third party's ability to use the technology covered by the patent, in some cases without payment to us. We face the risk that others will infringe, avoid or circumvent our patents.

UNCERTAINTY AS TO THE STATUS OF OUR INVENTIONS RELATIVE TO OTHERS

Patent applications in the United States are maintained in secrecy until patents issue and patent applications in some other countries generally are not published until more than 18 months after they are filed. In addition, publication of discoveries in scientific or patent literature often lags behind actual discoveries. Consequently, we cannot be certain that we or our licensors were the first creator of inventions covered by pending patent applications or the first to file patent applications for those inventions. In cases where third parties are first to invent a particular product or technology, it is possible that those parties will obtain patents that are sufficiently broad so as to prevent us from using technologies we rely upon or from further developing or commercializing our product candidates. If licenses from third parties are necessary, but are unattainable, commercialization of the related products would be delayed or prevented.

RISK AND COSTS OF INTELLECTUAL PROPERTY LITIGATION

Defending against suits brought against us or in prosecuting suits against others involving patent or other intellectual property rights may force us to incur substantial costs. An adverse litigation result could hurt our business, financial condition and results of operations. In addition to any potential liability for significant damages, an adverse outcome may require us to obtain licenses to patents or other proprietary intellectual property rights of others. In the event we must obtain licenses from others, we cannot predict whether licenses would be made available to us on acceptable terms, if at all. Also, ongoing royalties and other costs associated with licenses may be substantial. If we do not obtain licenses to the technology of others that we need, we could face delays introducing products to the market while we attempt to design around third-party patent or other rights, or be prevented from manufacturing and marketing products at all.

DIFFICULTY OF PROTECTING THE CONFIDENTIALITY OF TRADE SECRETS

We seek to protect our proprietary technology, including technology which may not be patented or patentable, in part by confidentiality agreements and, if applicable, inventors' rights agreements with our collaborators, advisors, employees and consultants. We cannot predict whether these agreements will be breached, if they are breached we will have adequate remedies, or that our trade secrets will not otherwise be disclosed to or discovered by competitors. Moreover, we conduct a significant amount of research through academic advisors and collaborators who are prohibited from entering into confidentiality or inventors' rights agreements by their academic institutions.

DEPENDENCE OF OUR PRODUCT DEVELOPMENT ON LICENSES FROM THIRD PARTIES

We license some intellectual property we need from others. The terms of these licenses may obligate us to exercise diligence, achieve milestones or devote minimum amounts of resources in bringing potential products to market. They may also obligate us to make royalty and milestone payments, including a percentage of any sublicensing income, as well as patent cost reimbursement payments. If we fail to perform our obligations fully, the licensor can terminate the licenses or, in certain cases, make them non-exclusive, and we may lose our right to market and sell any products based on the licensed technology. We cannot predict whether we will always meet our obligations under these licenses. Furthermore, we may need to obtain licenses for additional technologies for use in some of our products under development and, if we cannot obtain any required licenses, we may lose our ability to market the products.

CHANGES IN HEALTH CARE DELIVERY SYSTEMS IN THE UNITED STATES AND ABROAD MAY ADVERSELY AFFECT OUR PROFITABILITY

THE SUCCESS OF OUR PRODUCTS WILL DEPEND ON ADEQUATE REIMBURSEMENT BY THIRD-PARTY PAYORS

In both the United States and other countries, in most cases, the volume of sales of products like those we develop depends in large part on the availability of reimbursement from third-party payors, such as national health care agencies, private health insurance plans and health maintenance organizations. Third-party payors are increasingly challenging the prices charged for medical products and services. Accordingly, our success in generating revenues from sales of products may partially depend on whether and to what extent reimbursement from third-party payors for the products is available. In the United States, the containment of health care costs has become a top priority. The expansion of managed health care, the growth of health maintenance organizations, both of which control or significantly influence the purchase of health care services and products, and legislation reducing the cost of government insurance programs may all result in lower prices for pharmaceutical products. These developments could affect the market for our products and have a material adverse effect on our business, financial condition and results of operations. If we succeed in bringing products to market, there is no means to assure that they are considered cost-effective, that reimbursement is available or, if available, that the level of reimbursement is sufficient to allow us to sell the products on a profitable basis. If reimbursement is not available, the level of market acceptance of our products is likely to suffer significantly.

HEALTH CARE REFORM MAY HAVE AN ADVERSE IMPACT ON OUR INDUSTRY

The health care industry in the United States and in Europe is undergoing fundamental changes as the result of political, economic and regulatory influences. Reforms proposed from time to time include:

- mandated basic health care benefits

- controls on health care spending through limitations on the growth of private health insurance premiums and Medicare and Medicaid spending

- creation of large medical services and products purchasing groups

- fundamental changes to the health care delivery system

We anticipate that alternative health care delivery systems and methods of payment will continue to be reviewed and assessed both in the United States and other countries. We cannot predict whether any particular reform initiatives will result or, if adopted, what impact they might have on us. We cannot predict whether the adoption of reform proposals will have a material adverse effect on our business, financial condition and results of operations. In addition, announcements of reform proposals, the investment community's reaction to reform proposals and announcements by competitors and third-party payors of their strategy in response to reform proposals are likely to result in volatility in the trading and market price of our common stock.

OUR BUSINESS EXPOSES US TO SUBSTANTIAL PRODUCT LIABILITY CLAIMS

The risk of product liability claims, product recalls and associated adverse publicity is inherent in the testing, manufacturing, marketing and sale of human therapeutic products. We currently carry liability insurance with only limited coverage, but may choose or find it necessary under our collaborative agreements to increase it in the future. We cannot predict whether we will be able to maintain our current insurance coverage or to secure greater or broader product liability insurance coverage on acceptable terms or at reasonable costs when we need it. Even if we maintain insurance coverage, our liability could exceed the amount of coverage. A product liability claim or product recall could inhibit or prevent commercialization of products developed by us and could generally have a material adverse effect on our business, financial condition, results of operations or prospects.

OUR BUSINESS REQUIRES THE USE AND HANDLING OF HAZARDOUS MATERIALS

Our research and development activities involve the controlled use of hazardous chemicals, biological materials and radioactive compounds. We are subject to federal, state and local laws and regulations governing the use, manufacture, storage, handling and disposal of hazardous materials and hazardous waste products. Although we believe that our safety procedures for handling and disposing of hazardous materials comply with the standards prescribed by applicable laws and regulations, we cannot completely eliminate the risk of accidental contamination or injury from these materials. In the event of an accident, we could be held liable for any resulting damages and the liability could be material. The ongoing cost of complying with environmental laws and regulations is significant and may increase in the future. In addition, in connection with our merger with Virus Research Institute, Inc. in 1998, we assumed the real property lease at Virus Research Institute, Inc.'s former site. We understand that this property has a low level of oil-based and other hazardous material contamination. We believe that the risks posed by this contamination are low, but we cannot predict whether additional hazardous contamination exists at that site, or that changes in applicable law will not require us to clean up the current contamination of the property.

MANY OF OUR PRODUCT CANDIDATES ARE TESTED IN LABORATORY ANIMALS WHICH MAY BE CURTAILED BY SOCIAL FACTORS AND REGULATORY CHANGES

The research and development efforts that we sponsor often involve the controlled use of laboratory animals. Opposition to this practice by United States or foreign activist groups such as People for the Ethical Treatment of Animals may interfere with the use of animal testing. Negative publicity generated by activist groups may have an adverse impact on companies using this practice, including us. In addition, physical force and demonstrations may occur against us or our collaborative partners which could delay the testing of our products. Lobbying efforts by activist groups and other groups and individuals against the use of animals in testing is ongoing, and may result in changes in laws, regulations or accepted clinical procedures that would restrict the use of animals in testing. In the event of a change in laws, regulations or accepted clinical procedures, our

product development may be delayed as new methods for testing are developed. Even if new methods are developed, there is no assurance that these will be as efficacious as animal testing.

LOSS OF KEY EXECUTIVES AND SCIENTISTS COULD AFFECT OUR ABILITY TO DEVELOP OUR PRODUCT CANDIDATES

We are dependent on the members of our management and scientific staff, including Una S. Ryan, Ph.D., our president and chief executive officer. The loss of Dr. Ryan or other key members of our staff could have a material adverse effect on us. We also depend on our scientific collaborators and advisors, all of whom have other commitments that may limit their availability to us. In addition, we believe that our future success will depend in large part upon our ability to attract and retain highly skilled scientific, managerial and marketing personnel, particularly as we expand our activities in clinical trials, the regulatory approval process and sales and manufacturing. We face significant competition for this type of personnel from other companies, research and academic institutions, government entities and other organizations. We cannot predict whether we will be successful in hiring or retaining the personnel we require for continued growth. The failure to hire and retain this type of personnel could materially and adversely affect our business, financial condition, results of operations and prospects.

THE NUMBER OF SHARES AVAILABLE FOR FUTURE SALE COULD ADVERSELY AFFECT THE MARKET PRICE OF OUR COMMON STOCK

In the past several years we have entered into several private placement transactions. Common stock issued in these transactions may be sold in the public securities markets over time pursuant to registration rights granted to the investors under the Securities Act of 1933. Additional common stock reserved under our employee benefit and other incentive plans, including stock options, may also be sold in the public securities markets from time to time. Future sales of our common stock in the public securities markets could adversely affect the trading price of our common stock. We cannot predict the effect that perception in the market that such sales may occur in the future will have on the market price of our common stock.

OUR STOCK PRICE IS HIGHLY VOLATILE

The market price of the shares of our common stock, like that of the common stock of many other biotechnology companies, may be highly volatile. Factors such as announcements of technological innovations or new commercial products by us or our competitors, disclosure of results of clinical testing or regulatory proceedings, governmental regulation and approvals, developments in patent or other proprietary rights, public concern as to the safety of products developed by us, and general economic and market conditions may have a significant effect on the market price of our common stock. In addition, the stock market has from time to time experienced and may experience in the future extreme price and volume fluctuations, which have affected the market price of many biotechnology companies and which have often been unrelated to the operating performance of these companies. These broad market fluctuations, as well as general economic and political conditions, may adversely affect the market price of our common stock.

WE COULD BE ADVERSELY AFFECTED IF WE HAVE UNDERESTIMATED OUR YEAR 2000 COMPUTER PROBLEMS

The Year 2000 issue relates to how computer systems and programs will recognize and process dates after December 31, 1999. Most computer systems and programs that use two digits to specify a year, if not modified prior to the year 2000, will be unable to properly recognize dates. This could result in system failures or miscalculations that could result in disruptions of normal business operations. The Year 2000 issue can also affect embedded technology systems and programs on which our business relies.

WHERE YOU CAN FIND MORE INFORMATION

We are subject to the informational requirements of the Securities Exchange Act of 1934 and we are required to file reports and proxy statements and other information with the Securities and Exchange Commission. You may read and copy these reports, proxy statements and information at the public reference facilities maintained by the Securities and Exchange Commission at Judiciary Plaza, 450 Fifth Street, N.W., Room 1024, Washington, D.C. 20549, and at the Securities and Exchange Commission's Regional Offices at 7 World Trade Center, 13th Floor, New York, New York 10048, and Citicorp Center, 500 W. Madison Street, Suite 1400, Chicago, Illinois 60661-2511. You may also obtain copies at the prescribed rates from the Public Reference Section of the Securities and Exchange Commission at its principal office in Washington, D.C. You may call the Securities and Exchange Commission at 1-800-SEC-0330 for further information about the public reference rooms. The Securities and Exchange Commission maintains a web site that contains reports, proxy and information statements and other information regarding registrants, including, Avant, that file electronically with the Securities and Exchange Commission. You may access the Securities and Exchange Commission's web site at http://www.sec.gov.

INCORPORATION OF CERTAIN DOCUMENTS BY REFERENCE

The Securities and Exchange Commission allows us to incorporate by reference in this prospectus the information that we file with them. Incorporation by reference means that we can disclose important information to you by referring you to other documents that are legally considered to be part of this prospectus, and later information that we file with the Securities and Exchange Commission will automatically update and supersede the information in this prospectus, any supplement and the documents listed below. We incorporate by reference the specific documents listed below and any future filings made with the Securities and Exchange Commission under Section 13(a), 13(c), 14, or 15(d) of the Securities Exchange Act of 1934 until all of the shares are sold:

- our Annual Report on Form 10-K for the fiscal year ended December 31, 1998
- our Quarterly Reports on Form 10-Q for the quarters ended March 31, 1999 and June 30, 1999
- our Current Report on Form 8-K filed on September 23, 1999
- the definitive Proxy Statement for our annual meeting of stockholders held May 6, 1999
- the description of our common stock contained in our registration statement on Form 8-A, filed on September 22, 1986, including all amendments and reports updating that description

We will furnish without charge to each person to whom this prospectus is delivered, upon request, a copy of any documents incorporated by reference other than exhibits to those documents. Requests should be addressed to: 119 Fourth Avenue, Needham, Massachusetts 02494, Attention: Corporate Secretary (telephone number (781) 433-0771).

You should rely only on the information incorporated by reference or provided in this prospectus. We have not authorized anyone to provide you with different information. You should not assume that the information in this prospectus or the documents incorporated by reference is accurate as of any date other than the date on the front of this prospectus or those documents.

FORWARD-LOOKING STATEMENTS

Some statements incorporated by reference or made under the captions "Risk Factors" and "Our Company" and elsewhere in this prospectus 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. When we use the words "anticipate," "assume," "believe," "estimate," "expect,"

"intend" and other similar expressions, they generally identify forward-looking statements. Forward-looking statements include, for example, statements relating to development activities, business strategy and prospects, future capital expenditures, sources and availability of capital, governmental regulations and their effect on us and competition.

You should exercise caution in interpreting and relying on forward-looking statements since they involve known and unknown risks, uncertainties and other factors which are, in some cases, beyond our control and could materially affect our actual results, performance or achievements. Some of the factors that could cause our actual results, performance or achievements to differ materially from those expressed or implied by forward-looking statements include, but are not limited to, the matters discussed under the caption "Risk Factors."

We caution you that, while forward looking statements reflect our good faith beliefs, they are not guarantees of future performance. In addition, we disclaim any obligation to publicly update or revise any forward-looking statement, whether as a result of new information, future events or otherwise.

OUR COMPANY

Avant is a biopharmaceutical company that uses novel applications of immunology to attempt to harness the human body's immune system to develop vaccines and immunotherapeutics that prevent or treat disease caused by infectious organisms, and drugs and treatment vaccines that modify undesirable activity by the body's own protein or cells. Our technology platforms are derived from a broad set of complementary technologies with the ability to inhibit the complement system, regulate T and B cell activity, and enable the creation and delivery of preventative and therapeutic vaccines. Our lead therapeutic program is focused on developing compounds that inhibit the inappropriate activation of the complement cascade, a vital part of the body's immune defense system. We have also established a program for the discovery and development of small-molecule immunoregulatory therapeutic compounds, for the prevention of immune rejection of transplanted organs and the treatment of autoimmune disorders. Our third program targets the development of a therapeutic vaccine for the prevention and treatment of atherosclerosis.

USE OF PROCEEDS

Avant will not receive any proceeds from the sale of the shares by the selling stockholders.

REGISTRATION RIGHTS OF THE SELLING STOCKHOLDERS

The following is a summary of the material terms and provisions of the securities purchase agreement relating to the registration of the common stock covered by this prospectus. It may not contain all the information that is important to you. You can access complete information by referring to the securities purchase agreement.

Under the securities purchase agreement, we must file a registration statement covering the sale by the selling stockholders of the common stock that they purchased on September 22, 1999. We must use our best efforts to cause the registration statement to be declared effective by the Securities and Exchange Commission no later than January 10, 2000 and to keep the registration statement continuously effective until the earlier of:

- the date on which the selling stockholders no longer hold any of the purchased common stock or

- September 21, 2001.

Any common stock sold by the selling stockholders pursuant to this prospectus will no longer be entitled to the benefits of the registration rights provisions of the securities purchase agreement.

The securities purchase agreement requires that we bear all expenses of registering the common stock with the exception of brokerage and underwriting commissions and taxes of any kind and any legal, accounting and other expenses incurred by the selling stockholders. We also agreed to indemnify the selling stockholders and its officers, directors and other affiliated persons and any person who controls the selling stockholders against all losses, claims, damages, actions, liabilities, costs and expenses arising under the securities laws in connection with the registration statement or this prospectus, subject to limitations specified in the securities purchase agreement. In addition, the selling stockholders agreed to indemnify us and our directors, officers and any person who controls our company against all losses, claims, damages, actions, liabilities, costs and expenses arising under the securities laws if they result from:

- written information furnished to us by the selling stockholders for use in the registration statement or this prospectus or any amendments to the registration statement or any prospectus supplements or

- breaches or alleged breaches by selling stockholders of any of their representations, warranties, covenants, agreements or obligations under the terms of the securities purchase agreement.

SELLING STOCKHOLDERS

The following table provides the name and number of shares of common stock owned by each selling stockholder as of September 30, 1999, the number of shares of common stock covered by this prospectus and the total number of shares of common stock which the selling stockholders will beneficially own upon completion of this offering. The shares offered by this prospectus may be offered from time to time by the selling stockholders named below, or by any of their pledgees, donees, transferees or other successors in interest.

Because the selling stockholders may sell all, some or none of the shares, we have assumed that the selling stockholders will sell all of the shares in determining the number and percentage of shares of common stock that each selling stockholder will own upon completion of the offering to which this prospectus relates. The amounts set forth below are based upon information provided by the selling stockholders and are accurate to the best of our knowledge. It is possible, however, that the selling stockholders may acquire or dispose of additional shares of common stock or units from time to time after the date of this prospectus.

Selling Stockholder	Shares of Common Stock Beneficially Owned as of September 30, 1999	Shares of Common Stock Offered Hereby	Shares of Common Stock Owned After the Offering(1)	
			Number	Percent(%)
Nomura International plc(2)	2,604,167	2,604,167	0	0
Kleinwort Benson Holdings, Inc(3)	520,833	520,833	0	0
Pictet & Cie(4)	520,833	520,833	0	0
Lombard Odier & Cie(5)	2,151,506	546,875	1,604,631	3.2
International BM Biomedicine Holdings AG(6)	975,625	390,625	585,000	1.2
Apollo Medical Partners, L.P.(7)	260,417	260,417	0	0
Brandon Fradd(7)	15,625	15,625	0	0
Bank of New Nominees Limited(8)	150,000	150,000	0	0
Curran Capital Partners, L.P.(9)	768,700	150,000	618,700	1.3
Clarion Capital Corporation(10)	100,000	100,000	0	0
Clarion Partners, L.P.(10)	39,000	39,000	0	0
Clarion Offshore Fund LTD(10)	11,000	11,000	0	0
Catalyst Partners, L.P.(11)	1,175,000	100,000	1,075,000	2.2
Peter Sears(12)	50,000	50,000	0	0

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(1) Assumes that all shares hereby offered by the selling stockholders are sold.

(2) The selling stockholder's address is Nomura House, 1 St. Martin's-le-Grand, London ECIA 4NP UK.

(3) The selling stockholder's address is 75 Wall Street, New York, NY 10005, USA.

(4) The selling stockholder's address is 29, Blvd. Georges-Favon, Geneva CH-1211, Switzerland.

(5) The selling stockholder's address is 11 Rue de la Corrateria, Geneva CH-1204, Switzerland. Includes warrants to purchase 40,000 shares of common stock.

(6) The selling stockholder's address is Aeschen Platz 7, PO Box 136, Basel CH-4010 Switzerland.

(7) The selling stockholders' address is 68 Jane Street, Suite 2E New York, New York 10014, USA. Mr. Fradd is a managing director of Apollo Medical Partners, L.P. and he may be deemed to beneficially own the 260,417 shares of common stock held by Apollo Medical Partners, L.P.

(8) The selling stockholder's address is 30 Cannon Street London EC4M 6XH, UK.

(9) The selling stockholder's address is 237 Park Avenue, 9th Floor, New York, New York 10017, USA.

(10) The selling stockholders' address is 1801 East 9th Street, Suite 1120, Cleveland, OH 44104, USA.

(11) The selling stockholder's address is 350 Park Avenue, New York, New York 10022, USA.

(12) The selling stockholder's address is 8 Paul Road, St. David, PA 19087, USA. Mr. Sears has been a director of Avant since May, 1999.

PLAN OF DISTRIBUTION

This prospectus relates to the possible sale from time to time of up to an aggregate of 5,459,375 shares of common stock by the selling stockholders, or any of their pledgees, donees, transferees or other successors in interest. We are registering the shares pursuant to our obligations under the registration provisions of the securities purchase agreement, but the registration of the shares does not necessarily mean that any of the shares will be offered or sold by the selling stockholders.

The distribution of the shares may be effected from time to time in one or more underwritten transactions at a fixed price or prices, which may be changed, or at market prices prevailing at the time of sale, at prices related to prevailing market prices or at negotiated prices. Any underwritten offering may be on a "best efforts" or a "firm commitment" basis. In connection with any underwritten offering, underwriters or agents may receive compensation in the form of discounts, concessions or commissions from the selling stockholders. Underwriters may sell the shares to or through dealers, and such dealers may receive compensation in the form of discounts, concessions or commissions from the underwriters and/or commissions from the purchasers for whom they may act as agents.

The selling stockholders and any underwriters, dealers or agents that participate in the distribution of the shares may be deemed to be underwriters under the Securities Act of 1933, and any profit on the sale of the shares by them and any discounts, commissions or concessions received by any underwriters, dealers or agents might be deemed to be underwriting discounts and commissions under the Securities Act. At any time a particular offer of shares is made by the selling stockholders, a prospectus supplement, if required, will be distributed that will, where applicable:

- identify any underwriter, dealer or agent
- describe any compensation in the form of discounts, concessions, commissions or otherwise received by each underwriter, dealer or agent and in the aggregate to all underwriters, dealers and agents
- identify the amounts underwritten
- identify the nature of the underwriter's obligation to take the shares
- provide any other required information

The sale of shares by the selling stockholders may also be effected by selling the shares directly to purchasers or to or through broker-dealers. In connection with any such sale, any broker-dealer may act as agent for the selling stockholders or may purchase from the selling stockholders all or a portion of the shares as principal, and may be made pursuant to any of the methods described below. Sales may be made on the Nasdaq National Market or other exchanges on which our common stock is then traded, in the over-the-counter market, in negotiated transactions or otherwise at prices and at terms then prevailing or at prices related to the then-current market prices or at prices otherwise negotiated.

The shares may also be sold in one or more of the following transactions:

- block transactions in which a broker-dealer may sell all or a portion of such shares as agent but may position and resell all or a portion of the block as principal to facilitate the transaction
- purchases by any such broker-dealer as principal and resale by such broker-dealer for its own account pursuant to any supplement to this prospectus
- a special offering, an exchange distribution or a secondary distribution in accordance with applicable Nasdaq National Market or other stock exchange rules

- ordinary brokerage transactions and transactions in which any such broker-dealer solicits purchasers

- sales "at the market" to or through a market maker or into an existing trading market, on an exchange or otherwise, for such shares

- sales in other ways not involving market makers or established trading markets, including direct sales to purchasers

In effecting sales, broker-dealers engaged by the selling stockholders may arrange for other broker-dealers to participate. Broker-dealers will receive commissions or other compensation from the selling stockholders in amounts to be negotiated immediately prior to the sale that will not exceed those customary in the types of transactions involved. Broker-dealers may also receive compensation from purchasers of the shares which is not expected to exceed that customary in the types of transactions involved.

To comply with applicable state securities laws, the shares will be sold, if necessary, in such jurisdictions only through registered or licensed brokers or dealers. In addition, the shares may not be sold in some states unless they have been registered or qualified for sale in the state or an exemption from the registration or qualification requirement is available and is complied with.

All expenses relating to the offering and sale of the shares, other than commissions, discounts and fees of underwriters, broker-dealers or agents, will be paid by us.

EXPERTS

The consolidated financial statements incorporated in this prospectus by reference to the Annual Report on Form 10-K for the year ended December 31, 1998, have been so incorporated in reliance upon the report of PricewaterhouseCoopers LLP, independent accountants, given on the authority of said firm as experts in auditing and accounting.

LEGAL MATTERS

The validity of the common stock we are offering will be passed upon for us by Goodwin, Procter & Hoar LLP, Boston Massachusetts.

YOU SHOULD RELY ONLY ON THE INFORMATION CONTAINED IN THIS PROSPECTUS, INCORPORATED HEREIN BY REFERENCE OR CONTAINED IN A PROSPECTUS SUPPLEMENT. NEITHER WE NOR THE SELLING STOCKHOLDERS HAVE AUTHORIZED ANYONE ELSE TO PROVIDE YOU WITH DIFFERENT OR ADDITIONAL INFORMATION. THE SELLING STOCKHOLDERS ARE NOT MAKING AN OFFER OF THESE SECURITIES IN ANY STATE WHERE THE OFFER IS NOT PERMITTED. YOU SHOULD NOT ASSUME THAT THE INFORMATION IN THIS PROSPECTUS, OR INCORPORATED HEREIN BY REFERENCE, OR IN ANY PROSPECTUS SUPPLEMENT IS ACCURATE AS OF ANY DATE OTHER THAN THE DATE ON THE FRONT OF THOSE DOCUMENTS.

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5,459,375 SHARES

AVANT
IMMUNOTHERAPEUTICS,
INC.

COMMON STOCK

PROSPECTUS

OCTOBER , 1999

PART II
INFORMATION NOT REQUIRED IN PROSPECTUS

ITEM 14. OTHER EXPENSES OF ISSUANCE AND DISTRIBUTION. (1)

The following are the estimated expenses of the distribution of the shares registered hereunder on Form S-3:

Registration Fee--Securities and Exchange Commission.....	$ 2,944.35
Accountants Fees and Expenses.....	2,500
Blue Sky Fees and Expenses.....	1,500
Legal Fees and Expenses.....	15,000
Printing Expenses.....	5,000
Miscellaneous.....	1,500
Total.....	$ 28,444.35

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(1) The amounts set forth above, except for the SEC Registration Fee, are estimated.

ITEM 15. INDEMNIFICATION OF DIRECTORS AND OFFICERS.

The Company is a Delaware corporation. Reference is made to Section 145 of the Delaware General Corporation Law (the "DGCL"), which enables a corporation to eliminate or limit the personal liability of a director for monetary damages for violations of the director's fiduciary duty, except for liability (i) for any breach of the director's duty of loyalty to the company, (ii) for acts or omissions not in good faith or which involve intentional misconduct or a knowing violation of law, (iii) under to Section 145 or (iv) for any transaction from which a director derived an improper personal benefit. The Company has adopted such provisions in the company's Amended and Restated Bylaws (the "Bylaws").

The DGCL permits, but does not require, a corporation to indemnify its directors, officers, employees or agents and expressly provides that the indemnification provided for under the DGCL shall not be deemed exclusive of any indemnification right under any bylaw, vote of stockholders or disinterested directors, or otherwise. The DGCL permits indemnification against expenses and certain other liabilities arising out of legal actions brought or threatened against such persons for their conduct on behalf of the corporation, provided that each such person acted in good faith and in a manner that he or she reasonably believed was in or not opposed to the corporation's best interests and in the case of a criminal proceeding, had no reasonable cause to believe his or her conduct was unlawful. The DGCL does not allow indemnification of directors in the case of an action by or in the right of the corporation (including stockholder derivative suits) unless the directors successfully defend the action or indemnification is ordered by the court. The Bylaws of the company provide for indemnification to the fullest extent authorized by the DGCL and, therefore, these statutory indemnification rights are available to the directors, officers, employees and agents of the Companies. Insofar as indemnification for liabilities arising under the Securities Act of 1933, as amended (the "Securities Act") may be permitted to directors and officers of the company pursuant to the foregoing provision or otherwise, the company has been advised that, in the opinion of the Commission, such indemnification is against public policy as expressed in the Securities Exchange Act of 1934, as amended (the "Exchange Act"), and is therefore, unenforceable.

The Company currently carries a directors' and officers' liability insurance policy which provides for payment of expenses of the company's directors and officers in connection with threatened, pending or completed actions, suits or proceedings against them in their capacities as directors and officers, in accordance with the Bylaws and the DGCL.

ITEM 16. EXHIBITS.

EXHIBIT NO.	DESCRIPTION
5.1	Opinion of Goodwin, Procter & Hoar LLP
23.1	Consent of PricewaterhouseCoopers LLP
23.2	Consent of Goodwin, Procter & Hoar LLP (included in Exhibit 5.1)
24.1	Power of Attorney (included on signature pages)
99.1	Securities Purchase Agreement dated as of September 17, 1999, between the Company and the Selling Stockholders

ITEM 17. UNDERTAKINGS.

(a) The undersigned Registrant hereby undertakes:

(1) To file, during any period in which offers or sales are being made, a post-effective amendment to this Registration Statement:

(i) To include any prospectus required by Section 10(a)(3) of the Securities Act;

(ii) To reflect in the prospectus any facts or events arising after the effective date of the Registration Statement (or the most recent post-effective amendment thereof) which, individually or in the aggregate, represent a fundamental change in the information set forth in the Registration Statement. Notwithstanding the foregoing, any increase or decrease in volume of securities offered (if the total dollar value of securities offered would not exceed that which was registered) and any deviation from the low or high and of the estimated maximum offering range may be reflected in the form of prospectus filed with the Commission pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than a 20 percent change in the maximum aggregate offering price set forth in the "Calculation of Registration Fee" table in the effective registration statement.

(iii) To include any material information with respect to the plan of distribution not previously disclosed in the Registration Statement or any material change to such information in the registration statement.

PROVIDED, HOWEVER, that paragraphs (a)(1)(i) and (a)(1)(ii) do not apply if the Registration Statement is on Form S-3, Form S-8 or Form F-3, and the information required to be included in a post-effective amendment by those paragraphs is contained in periodic reports filed with or furnished to the Commission by the Registrant pursuant to Section 13 or 15(d) of the Exchange Act that are incorporated by reference in the Registration Statement.

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

(3) To remove from registration by means of a post-effective amendment any of the securities being registered which remain unsold at the termination of the offering.

(b) The undersigned Registrant hereby undertakes that, for purposes of determining any liability under the Securities Act, each filing of the Registrant's annual report pursuant to Section 13(a) or 15(d) of the Exchange Act (and, where applicable, each filing of an employee benefit plan's annual report pursuant to Section 15(d) of the Exchange Act) that is incorporated by reference in the Registration Statement shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial BONA FIDE offering thereof.

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

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, the Registrant certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Form S-3 and has duly caused this registration statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Needham, Commonwealth of Massachusetts, on October 19, 1999.

AVANT IMMUNOTHERAPEUTICS, INC.

By: /s/ UNA S. RYAN

Una S. Ryan, Ph.D.
President, Chief Executive Officer and Director

POWER OF ATTORNEY

KNOW ALL MEN BY THESE PRESENTS, each of the undersigned officers and directors of Avant Immunotherapeutics, Inc. hereby severally constitutes Una S. Ryan, Ph.D. his or her true and lawful attorney with full power to her, to sign for the undersigned and in his or her name in the capacity indicated below, the Registration Statement filed herewith and any and all amendments to said Registration Statement, and generally to do all such things in his or her name and in his or her capacity as an officer or director to enable Avant Immunotherapeutics, Inc. to comply with the provisions of the Securities Act of 1933, and all requirements of the Securities and Exchange Commission, hereby ratifying and confirming his or her signature as it may be signed by his or her said attorney, or any of them, to said Registration Statement and any and all amendments thereto.

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

SIGNATURE	TITLE	DATE
/s/ UNA S. RYAN Una S. Ryan, Ph.D.	President, Chief Executive Officer and Director (Principal Executive Officer)	October 19, 1999
/s/ J. BARRIE WARD J. Barrie Ward, Ph.D.	Chairman	October 19, 1999
/s/ LISA MCGILLIS Lisa McGillis	Chief Financial Officer (Principal Financial Officer and Principal Accounting Officer)	October 19, 1999
/s/ HARRY H. PENNER, JR. Harry H. Penner, Jr.	Director	October 19, 1999

SIGNATURE	TITLE	DATE
/s/ PETER SEARS Peter Sears, Esq.	Director	October 19, 1999
/s/ THOMAS R. OSTERMUELLER Thomas R. Ostermueller	Director	October 19, 1999
/s/ JOHN L. LITTLECHILD John L. Littlechild	Director	October 19, 1999
/s/ FREDERICK W. KYLE Frederick W. Kyle	Director	October 19, 1999

EXHIBIT INDEX

Exhibit Number	Description
5.1	Opinion of Goodwin, Procter & Hoar LLP
23.1	Consent of PricewaterhouseCoopers LLP
99.1	Form of Securities Purchase Agreement dated as of September 17, 1999, between the Company and the Selling Stockholders

EXHIBIT 5.1

[Letterhead of Goodwin, Procter & Hoar LLP]
October 19, 1999

Avant Immunotherapeutics, Inc.
119 Fourth Avenue
Needham, Massachusetts 02494

Ladies and Gentlemen:

This opinion is furnished in our capacity as counsel to Avant Immunotherapeutics, Inc., a Delaware corporation (the "Company"), in connection with the registration, pursuant to the Securities Act of 1933 (the "Securities Act"), of 5,459,375 shares (the "Shares") of common stock, par value $.001 per share, of the Company.

In connection with rendering this opinion, we have examined the Certificate of Incorporation and the Bylaws of the Company, each as amended to date; such records of the corporate proceedings of the Company as we have deemed material; a registration statement on Form S-3 under the Securities Act relating to the Shares and the prospectus contained therein; and such other certificates, receipts, records and documents as we considered necessary for the purposes of this opinion.

We are attorneys admitted to practice in The Commonwealth of Massachusetts. We express no opinion concerning the laws of any jurisdiction other than the laws of the United States of America and The Commonwealth of Massachusetts and the Delaware General Corporation Law.

Based upon the foregoing, we are of the opinion that the shares are duly authorized, legally issued, fully paid and nonassessable by the Company under the Delaware General Corporation Law.

The foregoing assumes that all requisite steps will be taken to comply with the requirements of the Securities Act and applicable requirements of state laws regulating the offer and sale of securities.

We hereby consent to the filing of this opinion as an exhibit to the Registration Statement and to the reference to our firm under the captions "Legal Matters" and "Validity of Common Stock" in the prospectus.

Very truly yours,

/s/ GOODWIN, PROCTER & HOAR LLP

EXHIBIT 23.1

CONSENT OF INDEPENDENT ACCOUNTANTS

We hereby consent to the incorporation by reference in this Registration Statement on Form S-3 of our report dated March 1, 1999 relating to the financial statements which appears in Avant Immunotherapeutics, Inc.'s Annual Report on Form 10-K for the year ended December 31, 1998. We also consent to the reference to us under the heading "Experts" in such registration statement.

/s/ PricewaterhouseCoopers LLP

PricewaterhouseCoopers LLP
Boston, Massachusetts
October 19, 1999

Exhibit 99.1

SECURITIES PURCHASE AGREEMENT

DATED AS OF SEPTEMBER 17,1999

BY AND BETWEEN

AVANT IMMUNOTHERAPEUTICS, INC.

AND

THE PURCHASERS NAMED ON THE SIGNATURE PAGES ATTACHED HERETO

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THIS SECURITIES PURCHASE AGREEMENT, dated as of September 17, 1999 (this "Agreement"), by and between AVANT IMMUNOTHERAPEUTICS, INC., a Delaware corporation, with headquarters located at 119 Fourth Avenue, Needham, MA 02494 (the "Company"), and each of the purchasers set forth on the signature pages attached hereto (each a "Purchaser," and collectively, the "Purchasers").

W I T N E S S E T H:

WHEREAS,

(A) The Purchasers desire to purchase and the Company desires to sell, upon the terms and conditions set forth in this Agreement, shares (the "Shares") of common stock, $.001 par value per share, of the Company (the "Common Stock"), that will result in the receipt by the Company of aggregate gross proceeds of approximately US$10,000,000 or more; and

(B) Each Purchaser wishes to purchase, upon the terms and conditions stated in this Agreement, the number of Shares set forth opposite its name on the signature pages attached hereto.

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

1 DEFINITIONS

1.1 The following terms used in this Agreement shall have the following meanings (such meanings to be equally applicable to both the singular and plural forms of the terms defined):

"Aggregate Purchase Price" means the aggregate price paid to the Company for the Shares by the Purchasers.

"Blackout Period" means any period that the Company notifies the Investors that they are required, pursuant to Section 8.4(d) hereof, to suspend offers and sales of Registrable Securities as a result of an event or circumstance described in Section 8.2(e)(ii) hereof during which period, by reason of Section 8.2(e)(ii) hereof, the Company is not required to amend the Registration Statement or to supplement the Prospectus; provided, however, that the total number of days of all Blackout Periods in the aggregate may not exceed 60 Trading Days in any 12-month period.

"Business Day" means any day other than a Saturday, Sunday or a day on which commercial banks in The City of New York or London, England are authorized or required by law or executive order to remain closed.

"Claims" means any losses, claims, damages, liabilities or expenses (joint or several) incurred by a Person.

"Closing Date" means 4:00 p.m., New York City time, on September 21, 1999, or such other time and date as the parties hereto may agree on.

"Code" means the Internal Revenue Code of 1986, as amended, and the regulations promulgated thereunder and published interpretations thereof.

"Disclosure Schedule" means the Disclosure Schedule prepared by the Company and furnished to the Purchasers prior to the date of execution and delivery of this Agreement by the Purchasers.

Items disclosed in response to a particular Section of this Agreement in the Disclosure Schedule will be deemed disclosed for purposes of other Sections as applicable without cross-references.

"ERISA" means the Employee Retirement Income Security Act of 1974, as amended, and the regulations promulgated thereunder and published interpretations thereof.

"Indemnified Party" means the Company, each of its directors, each of its officers who signs the Registration Statement, each Person, if any, who controls the Company within the meaning of the 1933 Act or the 1934 Act, any underwriter (as defined in the 1933 Act) and any other stockholder selling securities pursuant to the Registration Statement or any of its directors or officers; or any Person who controls such stockholder or underwriter within the meaning of the 1933 Act or the 1934 Act.

"Indemnified Person" means each Investor who holds Registrable Securities and each Investor who sells such Registrable Securities in the manner permitted under this Agreement; the directors, if any, of such Investor; the officers, if any, of such Investor; each Person, if any, who controls any Investor within the meaning of the 1933 Act or the 1934 Act; any underwriter acting on behalf of an Investor who participates in the offering of Registrable Securities of such Investor in accordance with the plan of distribution contained in the Prospectus included in the Registration Statement; the directors, if any, of such underwriter and the officers, if any, of such underwriter; and each Person, if any, who controls any such underwriter within the meaning of the 1933 Act or the 1934 Act.

"Inspector" means any attorney, accountant or other agent reasonably acceptable to the Company retained by an Investor for the purposes provided in Section 8.2(i) hereof.

"Investors" means the Purchasers and any Permitted Transferee or assignee who agrees to become bound by the provisions of Section 8 of this Agreement.

"Material Adverse Effect" means any material adverse effect on the business, operations, assets, condition (financial or other) or prospects of the Company and its Subsidiaries taken as a whole.

"Nasdaq" means the Nasdaq Stock Market.

"NASD" means the National Association of Securities Dealers, Inc.

"Nomura" means, individually and collectively, Nomura International plc and Nomura Securities International, Inc.

"Nomura Affiliates" includes The Nomura Securities Co., Ltd., or any company in relationship to which The Nomura Securities Co., Ltd. is entitled to exercise, or control the exercise, of 15% or more of the voting rights (including Nomura International plc and Nomura Securities International, Inc.), and their respective officers, directors and agents.

"1933 Act" means the Securities Act of 1933, as amended.

"1934 Act" means the Securities Exchange Act of 1934, as amended.

"Person" means any natural person, corporation, partnership, limited liability company, trust, incorporated government, governmental agency or political subdivision.

"Prospectus" means the prospectus forming part of the Registration Statement at the time the Registration Statement is declared effective and any amendment or supplement thereto.

"Questionnaire" means the Purchaser Questionnaire in the form of Annex A hereto completed by each Purchaser.

"Permitted Transferee" means any Person who is (a) an "accredited investor" as defined in Regulation D, or (b) a purchaser who is not a U.S. person within the meaning of Regulation S, or (c) any other transferee of the Shares as permitted under the securities law of the United States.

"Record" means all pertinent financial and other records, pertinent corporate documents and properties of the Company subject to inspection for the purposes provided in Section 8.2(i) of this Agreement.

"register," "registered" and "registration" refer to a registration effected by preparing and filing a Registration Statement or Statements in compliance with the 1933 Act and pursuant to Rule 415 thereunder, and the declaration or ordering of effectiveness of such Registration Statement by the SEC.

"Registration Period" means the period from the SEC Effective Date to the earlier of (i) the date which is two years after the Closing Date and (ii) the date on which the Investors no longer own any Registrable Securities.

"Registrable Securities" means the Shares and any other securities issued to holders of such Shares upon any reclassification, share combination, share subdivision, share dividend, merger, consolidation or similar transaction or event.

"Registration Statement" means a registration statement on Form S-3 of the Company under the 1933 Act which names the Investors as selling stockholders.

"Rule 144" means Rule 144 promulgated under the 1933 Act or any other similar rule or regulation of the SEC that may at any time permit a holder of any securities to sell securities of the Company to the public without registration under the 1933 Act.

"Rule 415" means Rule 415 under the 1933 Act or any successor rule providing for offering securities on a delayed or continuous basis.

"Regulation D" means Regulation D under the 1933 Act.

"Regulation S" means Regulation S under the 1933 Act.

"SEC" means the United States Securities and Exchange Commission.

"SEC Effective Date" means the date the Registration Statement is declared effective by the SEC.

"SEC Filing Date" means the date the Registration Statement is first filed with the SEC pursuant to Section 8 of this Agreement.

"SEC Reports" means all periodic and other reports filed by the Company with the SEC pursuant to the 1933 Act and 1934 Act subsequent to January 1, 1998 and prior to the date hereof, in each case as filed with the SEC and including the information and documents (other than exhibits) incorporated therein by reference.

"Subsidiary" means T Cell Diagnostics, Inc., a Delaware corporation which is the only other entity of which a majority of the capital stock or other ownership interests having ordinary voting

power to elect a majority of the board of directors or other persons performing similar functions are at this time directly or indirectly owned by the Company.

"Trading Day" means at any time a day on which any of a national securities exchange, Nasdaq or such other securities market as at such time constitutes the principal securities market for the Common Stock is open for general trading of securities.

"Violation" means:

(a) any untrue statement or alleged untrue statement of a material fact contained in the Registration Statement or any post-effective amendment thereof or the omission or alleged omission to state therein a material fact required to be stated therein or necessary to make the statements therein not misleading;

(b) any untrue statement or alleged untrue statement of a material fact contained in any Prospectus (as amended or supplemented, if the Company files any amendment thereof or supplement thereto with the SEC) or the omission or alleged omission to state therein any material fact necessary to make the statements made therein, in light of the circumstances under which the statements therein were made, not misleading;

(c) any violation or alleged violation by the Company of the 1933 Act, the 1934 Act, any state securities law or any rule or regulation under the 1933 Act, the 1934 Act or any state securities law;

(d) any breach or alleged breach by any Person other than the Purchasers of any representation, warranty, covenant, agreement or obligation under the terms of this Agreement; or

(e) any breach or alleged breach by any Investor of any representation, warranty, covenant, agreement or obligation under the terms of this Agreement.

2 PURCHASE AND SALE; PURCHASE PRICE

2.1 Sale and Purchase of the Shares Subject to all of the terms and conditions hereof and in reliance on the representations and warranties set forth or referred to herein, at the Closing the Company agrees to sell to each Purchaser and each Purchaser hereby agrees to purchase, that number of Shares of Common Stock set forth opposite the name of such Purchaser on the signature pages attached hereto, at the respective purchase price (the "Purchase Price") set forth opposite the name of such Purchaser on the signature pages attached hereto. The price per share to be sold under this Agreement will be US$1.92.

2.2 Closing The closing of the purchase and sale of the Shares (the "Closing") will take place at the offices of Weil, Gotshal & Manges LLP, New York, New York on the Closing Date or at such other place as the parties hereto may agree upon. The Closing shall occur when (a) the Company shall have delivered to Weil, Gotshal & Manges LLP on behalf of the Purchasers share certificates representing the Shares to be issued to the Purchasers; and (b) each of the Purchasers has placed an amount equal to the Purchase Price set forth opposite the name of such Purchaser on the signature pages attached hereto, in an escrow account established by Weil, Gotshal & Manges LLP at Morgan Guaranty Trust Company, 500 Stanton Christiana, Newark, Delaware 19713-2107 ; ABA Number: 031-100-238; Account Name: Weil, Gotshal & Manges LLP Special Account; Account Number: 158-37-474; Reference: 65579/0041 (the "Escrow Account"). On the Closing Date, there shall be released to each Purchaser one or more certificates registered in the name of that Purchaser representing the number of shares of Common Stock purchased by it

as set forth on the signature pages attached hereto, and all funds in the Escrow Account shall be released to the Company pursuant to the Company's instructions; provided that the amounts payable to Nomura in connection with the transactions contemplated hereby and the fees and expenses of counsel of the Purchasers as contemplated by Section 10.11 shall be deducted from such amount.

3 REPRESENTATIONS, WARRANTIES, COVENANTS, ETC. OF THE PURCHASERS

Each of the Purchasers severally, and not jointly, represents and warrants to, and covenants and agrees with, the Company as follows:

3.1 Purchaser Status The Purchaser is either (a) an "accredited investor," as that term is defined in Rule 501(a) of Regulation D or (b) a purchaser who is not a U.S. person within the meaning of Regulation S.

3.2 Investor Suitability The Purchaser is purchasing the Shares for its own account, or for one or more investor accounts for which it is acting as a fiduciary or agent, in each case for investment, and not with a view to, or for offer or sale in connection with, any distribution thereof Each Purchaser that is a U.S. person within the meaning of Regulation S further acknowledges that (i) its commitment to purchase the Shares is reasonable in relation to its net worth; (ii) it has the requisite knowledge or has relied upon the advice of its own counsel, accountants or others, each of whom qualifies as an investor representative with regard to all of the considerations involved in purchasing the Shares; (iii) it is aware that the right to transfer the Shares is restricted as set forth herein; (iv) it has the financial ability to bear the economic risk of the investment in the Company (including the complete loss of the entire investment), adequate means of providing for its current and anticipated needs and personal contingencies, if any, and no need for liquidity with respect to its investment in the Company; and (v) its overall commitment to investments that are not readily marketable is not disproportionate to its net worth and its purchasing of the Shares will not cause such overall commitment to become excessive.

3.3 Resale Restrictions

(a) Each of the Purchasers understands and acknowledges that (i) the sale or resale of the Shares has not been and, except as otherwise provided herein, is not being, registered under the 1933 Act or any applicable state securities laws, and the Shares may not be transferred unless (a) the Shares are sold pursuant to an effective registration statement under the 1933 Act, (b) the Purchaser shall have delivered to the Company an opinion of counsel (which opinion shall be in form, substance and scope customary for opinions of counsel in comparable transactions) to the effect that the Shares to be sold or transferred may be sold or transferred pursuant to an exemption from such registration, (c) the Shares are sold or transferred to an "affiliate" (as defined in Rule 144 (or a successor rule)) of the Purchaser who agrees to sell or otherwise transfer the Shares only in accordance with this Section 3.3 and who is an accredited investor or (d) the Shares are sold pursuant to Rule 144 or in reliance on Regulation S; (ii) any sale of such Shares made in reliance on Rule 144 or Regulation S may be made only in accordance with the terms of said Rule or Regulation and, further, if said Rule or Regulation is not applicable, any resale of such Shares under circumstances in which the seller (or the person through whom the sale is made) may be deemed to be an underwriter (as that term is defined in the 1933 Act) may require compliance with some other exemption under the 1933 Act or the rules and regulations of the SEC thereunder; and (iii) neither the Company nor any other person is under any obligation to register such Shares under the 1933 Act or any state securities laws or to comply with the terms and conditions of any exemption thereunder (in each

case, other than as provided herein). Notwithstanding the foregoing or anything else contained herein to the contrary, the Shares may be pledged as collateral in connection with a bona fide margin account or other lending arrangement.

(b) Each of the Purchasers understands and acknowledges that (i) the Shares are deemed to be "restricted securities" as defined in Rule 144 and will continue to be deemed to be "restricted securities" notwithstanding any resale of the Shares pursuant to Regulation S and (ii) it will not engage in hedging transactions involving the Common Stock otherwise than in compliance with the 1933 Act.

(c) Each of the Purchasers understands and acknowledges that until such time as the Shares have been sold pursuant to an effective registration statement under the 1933 Act or may otherwise be sold pursuant to Rule 144 without any restriction as to the number of securities as of a particular date that can then be immediately sold, the Shares may bear a restrictive legend in substantially the following form (and a stop-transfer order may be placed against transfer of the certificates for such Shares):

> "The Shares represented by this certificate have not been registered under the Securities Act of 1933, as amended (the "1933 Act"). The Shares may not be resold, transferred or assigned except in accordance with the provisions of Regulation S under the 1933 Act, pursuant to the registration requirements of the 1933 Act or pursuant to an available exemption from registration. Hedging transactions involving the common stock of the issuer of the Shares may not be conducted except in compliance with the 1933 Act."

The legend set forth above shall be removed and the Company shall issue a certificate without such legend to the holder of any Shares upon which it is stamped, if, unless otherwise required by applicable state securities laws, (a) such Shares are sold under an effective registration statement filed under the 1933 Act or otherwise may be sold pursuant to Rule 144 without any restriction as to the number of securities as of a particular date that can then be immediately sold or (b) such holder provides the Company with an opinion of counsel, in form, substance and scope customary for opinions of counsel in comparable transactions, to the effect that a public sale or transfer of such Shares may be made without registration under the 1933 Act and such sale or transfer is effected. The Purchaser agrees to sell all Shares, including those represented by a certificate from which the legend has been removed, in compliance with applicable prospectus delivery requirements, if any.

3.4 Absence of Approvals The Purchaser understands that no U.S. federal or state agency or any other government or governmental agency has passed on or made any recommendation or endorsement of the Shares.

3.5 Information Provided The Purchaser and its advisors, if any, have requested, received and considered all information relating to the business, properties, operations, condition (financial or other), results of operations or prospects of the Company and information relating to the sale of the Shares deemed relevant by them; the Purchaser and its advisors have been afforded the opportunity to ask questions of the Company concerning the terms of the offering of the Shares and the business, properties, operations, condition (financial or other), results of operations or prospects of the Company and have received satisfactory answers to any such inquiries. Without limiting the generality of the foregoing, the Purchaser has had the opportunity to obtain and to review the SEC Reports and the Disclosure Schedule. In connection with its decision to purchase the Shares, the Purchaser has relied solely upon the SEC Reports, the

Disclosure Schedule, the representations, warranties, covenants and agreements of the Company set forth in this Agreement, as well as any investigation of the Company completed by the Purchaser or its advisors. The Purchaser understands that its investment in the Securities involves a high degree of risk.

3.6 Due Authorization The Purchaser has all requisite power and authority, corporate or otherwise, to execute, deliver and perform its obligations under this Agreement and the other agreements executed by the Purchaser in connection herewith and to consummate the transactions contemplated hereby and thereby. This Agreement has been duly and validly authorized, duly executed and delivered by the Purchaser and, assuming due execution and delivery by the Company, is a valid and binding agreement of the Purchaser enforceable in accordance with its terms, except as the enforceability hereof may be limited by bankruptcy, insolvency, reorganization, moratorium, fraudulent conveyance or other similar laws now or hereafter in effect relating to or affecting creditors' rights generally and general principles of equity, regardless of whether enforcement is considered in a proceeding in equity or at law.

4 REPRESENTATIONS, WARRANTIES, COVENANTS, ETC. OF THE COMPANY

The Company represents and warrants to the Purchasers that, except as set forth in the Disclosure Schedule, the following matters are true and correct on the date of execution and delivery of this Agreement and will be true and correct on the Closing Date, and the Company covenants and agrees with the Purchasers as follows:

4.1 Organization and Authority The Company and each of its Subsidiaries is a corporation duly organized, validly existing and in good standing under the laws of the jurisdiction of its incorporation, and has all requisite corporate power and authority to (i) own, lease and operate its properties and to carry on its business as described in the SEC Reports and as currently conducted and (ii) to execute, deliver and perform its obligations under this Agreement and to consummate the transactions contemplated hereby. The Company is duly qualified to do business as a foreign corporation and is in good standing in all jurisdictions where such qualification is necessary and where failure so to qualify could have a Material Adverse Effect.

4.2 Capitalization The authorized capital of the Company consists of 75,000,000 shares of Common Stock, of which 42,533,535 shares were outstanding on June 30, 1999; (ii) 1,163,102 shares of Class B Preferred Stock, $2.00 par value, none of which are outstanding; and (iii) 3,000,000 shares of Class C Preferred Stock, $.01 par value, of which 350,000 have been designated Class C-1 Junior Participating Cumulative Preferred Stock, none of which are outstanding. The Company is, directly or indirectly, the registered and beneficial owner of all of the outstanding shares of capital stock of each of its Subsidiaries. Except as set forth on the Disclosure Schedule, there are no outstanding options or warrants for the purchase of, or other rights to purchase or subscribe for, or securities convertible into or exchangeable for, Common Stock or other capital stock of the Company or its Subsidiaries, or any contracts or commitments to issue or sell Common Stock or other capital stock of the Company or its Subsidiaries or any such options, warrants, rights or other securities. All of such outstanding shares of capital stock of the Company and each Subsidiary have been duly authorized and validly issued and are fully paid and nonassessable and all of such options, warrants and other rights have been duly authorized by the Company and such Subsidiary. None of the outstanding shares of capital stock and options, warrants and other rights to acquire Common Stock has been issued in violation of the preemptive rights of any security holder of the Company or any Subsidiary. The offers and sales of the outstanding shares of capital stock of the Company and options, warrants and other rights to acquire Common Stock or other capital stock of the Company were at all relevant times

either registered under the 1933 Act and applicable state securities laws or exempt from such requirements. No holder of any of the securities of the Company or any of its Subsidiaries has any rights ("demand," "piggy-back" or otherwise), to have such securities registered by reason of the intention to file, filing or effectiveness of a Registration Statement.

4.3 The Shares and the Common Stock The Shares have been duly authorized, and when validly issued and delivered to the Purchasers by the Company against payment of the consideration set forth herein, will be fully paid and nonassessable and will not subject the holders thereof to personal liability by reason of being such holders. The holders of outstanding shares of capital stock of the Company are not entitled to preemptive or other rights to subscribe for the Shares. The Common Stock is listed for trading on Nasdaq and (i) the Company and the Common Stock meet the criteria for continued listing and trading on Nasdaq; (ii) the Company has not been notified by the NASD of any failure or potential failure to meet the criteria for continued listing and trading on Nasdaq and (iii) no suspension of trading in the Common Stock is in effect. The Company knows of no reason why the Shares will not be eligible for listing on Nasdaq.

4.4 Corporate Authorization The Company's execution, delivery and performance of this Agreement has been duly and validly authorized by all requisite corporate action by the Company and, assuming due execution and delivery by the Purchasers, will be a valid and binding obligation of the Company enforceable in accordance with its terms, except as the enforceability thereof may be limited by bankruptcy, insolvency, reorganization, moratorium, fraudulent conveyance or other similar laws now or hereafter in effect relating to or affecting creditors' rights generally and general principles of equity, regardless of whether enforcement is considered in a proceeding in equity or at law.

4.5 Non-contravention The execution and delivery of this Agreement by the Company and the consummation by the Company of the sale of the Shares and the other transactions contemplated by this Agreement do not and will not, with or without the giving of notice or the lapse of time, or both (i) result in any violation of any provision of the certificate of incorporation or by-laws of the Company or any of its Subsidiaries; (ii) conflict with or result in a breach by the Company or any of its Subsidiaries of any of the terms or provisions of, or constitute a default under, or result in the modification of, or result in the creation or imposition of any lien, security interest, charge or encumbrance upon any of the properties or assets of the Company or any of its Subsidiaries pursuant to, any indenture, mortgage, deed of trust or other agreement or instrument to which the Company or any of its Subsidiaries is a party or by which the Company or any of its Subsidiaries or any of their respective properties or assets are bound or affected; (iii) violate or contravene any applicable law, rule or regulation or any applicable decree, judgment or order of any court, United States federal or state regulatory body, administrative agency or other governmental body having jurisdiction over the Company or any of its properties or assets; or (iv) violate or contravene any permit, certification, registration, approval, consent, license or franchise necessary for the Company to own or lease and operate any of its properties and to conduct any of its business or the ability of the Company to make use thereof.

4.6 Approvals No authorization, approval or consent of, or filing with, any court, governmental body, regulatory agency, self-regulatory organization, stock exchange or market or the stockholders of the Company is required to be obtained or made by the Company in connection with the execution, delivery and performance of this Agreement and sale of the Shares as contemplated by this Agreement, other than (i) registration of the resale of the Shares under the 1933 Act as contemplated by Section 8 hereof, (ii) as may be required under applicable state securities or "blue sky" laws and (iii) filing one or more Forms D with respect to the Securities as required under Regulation D.

4.7 Information Provided The documents listed on the Disclosure Schedule provided by or on behalf of the Company to the Purchasers do not contain any untrue statement of a material fact or omit to state any material fact necessary in order to make the statements therein, in the light of the circumstances under which they are made, not misleading, it being understood that for purposes of this Section 4.7, any statement contained in such information shall be deemed to be modified or superseded for purposes of this Section 4.7 to the extent that a statement in any document included in such documents which was prepared or filed with the SEC on a later date modifies or replaces such statement, whether or not such later prepared or filed statement so states.

4.8 SEC Filings The Company has timely filed all reports required to be filed under the 1933 Act and the 1934 Act with the SEC since January 1, 1998. All of such reports and documents complied, when filed, in all material respects, with all applicable requirements of the 1933 Act and the 1934 Act. The Company meets the requirements for the use of Form S-3 for the registration of the resale of the Shares by the Purchasers and any other Investors and will use its best efforts to maintain S-3 status with the SEC during the Registration Period.

4.9 Liabilities Except as and to the extent disclosed, reflected or reserved against in the SEC Reports or in the financial statements of the Company and the notes thereto included in the SEC Reports, the Company has no material (individually or in the aggregate) liability, debt or obligation whether accrued, absolute, contingent or otherwise, and whether due or to become due that are required to be reflected on a balance sheet in accordance with generally accepted accounting principles in the United States. Subsequent to December 31, 1998, the Company has not incurred any liabilities, debts or obligations of any nature whatsoever that are, individually or in the aggregate, material to the Company that are required to be reflected on a balance sheet in accordance with generally accepted accounting principles in the United States.

4.10 Conduct of Business Except as set forth in the SEC Reports, since December 31, 1998 there has been no Material Adverse Effect and neither the Company nor any of its Subsidiaries has (i) incurred any material obligation or liability (absolute or contingent) other than in the ordinary course of business; (ii) canceled, without payment in full, any material notes, loans or other obligations receivable or other debts or claims held by it other than in the ordinary course of business; (iii) sold, assigned, transferred, abandoned, mortgaged, pledged or subjected to lien any of its material properties, tangible or intangible, or rights under any material contract, permit, license, franchise or other agreement; (iv) conducted its business in a manner materially different from its business as conducted on such date; or (v) declared, made or paid or set aside for payment any cash or non-cash distribution on any shares of its capital stock. Except as disclosed in the SEC Reports, the Company and its Subsidiaries own, possess or have obtained all governmental, administrative and third-party licenses, permits, certificates, registrations, approvals, consents and other authorizations necessary to own or lease (as the case may be) and operate their properties, whether tangible or intangible, and to conduct their business or operations as currently conducted, except such licenses, permits, certificates, registrations, approvals, consents and authorizations the failure of which to obtain would not have a Material Adverse Effect.

4.11 Absence of Certain Proceedings Except as described in the SEC Reports or as set forth on the Disclosure Schedule, there is no action, suit, proceeding, inquiry or investigation before or by any court, public board or body pending or, to the knowledge of the Company, threatened against or affecting the Company or any of its Subsidiaries wherein an unfavorable decision, ruling or finding would have a Material Adverse Effect or which could adversely affect the validity or enforceability of, or the authority or ability of the Company to perform its obligations under, this Agreement. The Company does not have pending before the SEC any request for confidential treatment of information and to the best of the Company's knowledge no

such request will be made by the Company prior to the SEC Effective Date except as set forth in the Disclosure Schedule; and to the best of the Company's knowledge there is not pending or contemplated, and there has been no, investigation by the SEC involving the Company or any current director or officer of the Company.

4.12 Intellectual Property Except as set forth on the Disclosure Schedule, the Company (i) owns or has the valid and legal right to use all patent rights, trademarks, trade names, service marks, logos, copyrights, formulas, methods and processes (hereinafter referred to as "Intangible Property") currently used in connection with the conducts of its businesses; (ii) does not knowingly or wilfully infringe upon the proprietary rights of others; (iii) has listed on the Disclosure Schedule, to the best of its knowledge and ability, all patents, patent applications, registered trademarks, trademark applications, trade names, in which it has an ownership or licensed interest. Except as otherwise set forth on the Disclosure Schedule, no royalties or fees payable by the Company to any Person by reason of the ownership or use of any Intangible Property has not been paid. To the best of its knowledge and belief, all items of Intangible Property are valid and in good standing, and are adequate and sufficient to permit the Company to conduct its business as presently conducted, and no other rights of any kind in respect of the Intangible Property are required by the Company for its operations as currently conducted. Except as set forth in the Disclosure Schedule, the Company has the sole and exclusive right to use the Intangible Property; all rights granted to other Persons to use the Intangible Property owned or controlled by the Company are listed on the Disclosure Schedule. Except as set forth in the Disclosure Schedule, the Company is unaware of any present infringement upon the Intangible Property. Except as set forth in the Disclosure Schedule, the Company, to the best of its knowledge, is unaware of any claim or charge by any other Person that the Company infringes upon the intellectual property rights of such Person or is in conflict with any rights or properties owned by another Person.

4.13 Internal Accounting Controls The Company and its Subsidiaries maintain a system of internal accounting controls sufficient, in the judgment of the Company's board of directors, to provide reasonable assurance that (i) transactions are executed in accordance with management's general or specific authorizations, (ii) transactions are recorded as necessary to permit preparation of financial statements in conformity with generally accepted accounting principles and to maintain asset accountability, (iii) access to assets is permitted only in accordance with management's general or specific authorization and (iv) the recorded accountability for assets is compared with the existing assets at reasonable intervals and appropriate action is taken with respect to any differences.

4.14 Compliance with Law The Company and its Subsidiaries are in possession of all franchises, grants, authorizations, licenses, permits, easements, variances, exemptions, consents, certificates, approvals and orders necessary to own, lease and operate their properties and to carry on their businesses as they are now being conducted, except those the absence of which would not have a Material Adverse Effect (collectively, the "Permits"), and there is no action pending or, to the knowledge of the Company, threatened regarding suspension or cancellation of any of the Permits. To the best of the Company's knowledge, neither the Company nor any of its Subsidiaries is in violation of any statute, law, rule, regulation, ordinance, decision or order of any governmental agency or body or any court, domestic or foreign, except where such violation would not individually or in the aggregate have a Material Adverse Effect; and the Company is not aware of any pending investigation that would reasonably be expected to lead to such a claim.

4.15 Properties The Company and its Subsidiaries have good and marketable title to all property, real and personal (tangible and intangible), and other assets owned by it and them which are individually or in the aggregate material to the Company, free and clear of all security interests, charges, mortgages, liens or other encumbrances, except such as are described in the

SEC Reports or such as do not materially interfere with the use of such property made, or proposed to be made, by the Company. To the best of the Company's knowledge, the leases, licenses or other contracts or instruments under which the Company leases, holds or is entitled to use any property, real or personal (which, individually or in the aggregate, are material to the Company) are valid, subsisting and enforceable with only such exceptions as do not materially interfere with the use of such property made, or proposed to be made, by the Company. The Company has not received notice of any material violation of any applicable law, ordinance, regulation, order or requirement relating to its owned or leased properties.

4.16 Insurance The Company maintains insurance against loss or damage by fire or other casualty and such other insurance, including, but not limited to, product liability insurance, in such amounts and covering such risks as is reasonably adequate consistent with industry practice for the conduct of its business and the value of its properties.

4.17 Tax Matters The Company has filed all federal, state and local income and franchise tax returns required to be filed and has paid all taxes shown by such returns to be due, and no tax deficiency has been determined adversely to the Company which has had (nor does the Company have any knowledge of any tax deficiency which, if determined adversely to the Company, might have) a Material Adverse Effect.

4.18 Investment Company The Company is not an "investment company" within the meaning of such term under the Investment Company Act of 1940 and the rules and regulations of the SEC thereunder.

4.19 Absence of Brokers, Finders, etc. No broker, finder or similar Person is entitled to any commission, fee or other compensation by reason of the transactions contemplated by this Agreement other than Nomura International plc/Nomura Securities Inc.; and the Company shall pay, and indemnify and hold harmless the Purchasers from, any claim made against the Purchasers by such entity or any other Person for any such commission, fee or other compensation.

4.20 No General Solicitation No form of general solicitation or general advertising was used by the Company or, to the best of its knowledge, any other Person acting on behalf of the Company, in respect of the Shares or in connection with the offer and sale of the Shares. Neither the Company nor, to its knowledge, any Person acting on behalf of the Company has, either directly or indirectly, sold or offered for sale to any Person any of the Shares or, within the six months prior to the date hereof, any other similar security of the Company except as contemplated by this Agreement, and the Company represents that neither the Company nor any Person authorized to act on its behalf will sell or offer for sale any such security to, or solicit any offers to buy any such security from, or otherwise approach or negotiate in respect thereof with, any Person so as thereby to cause the issuance or sale of any of the Shares to be in violation of any of the provisions of Section 5 of the 1933 Act.

4.21 No Directed Selling Efforts The Company has not engaged in any directed selling efforts (within the meaning of Regulation S) with respect to the sale of the Shares under this Agreement.

4.22 No Integration The Company has not sold, offered to sell, solicited offers to buy or otherwise negotiated in respect of any "security" (as defined in the 1933 Act) that is or could be integrated with the sale of the Shares in a manner that would require the registration of the Shares under the 1933 Act.

4.23 Stop Transfers The Company will not register any transfer of the Shares not made pursuant to the provisions of Regulation S, pursuant to the registration requirements of the 1933 Act or pursuant to an available exemption from registration under the 1933 Act.

4.24 No Registration Assuming the accuracy of the representations, warranties made by, and compliance with the covenants of, the Purchasers in Section 3 hereof, no registration of the Shares under the 1933 Act is required in connection with the sale of the Shares to the Purchasers as contemplated by this Agreement.

5 CERTAIN COVENANTS

5.1 Nasdaq; Reporting Status The Company shall use its best efforts to take such actions as may be necessary and as soon as practicable and in no event later than 30 days after the Closing Date to file with Nasdaq an application or other document required by Nasdaq for the listing of the Shares with Nasdaq and shall provide evidence of such filing to the Purchasers. So long as any of the Purchasers beneficially own any portion of the Shares, the Company will use its best efforts to maintain the inclusion of the Common Stock on Nasdaq or the listing of the Common Stock on a national securities exchange; provided, however, that this will not restrict the Company from engaging in any transaction which results in all of the capital stock of the Company being acquired in a business combination or other acquisition transaction. During the Registration Period, the Company shall timely file all reports required to be filed with the SEC pursuant to Section 13 or 15(d) of the 1934 Act, and the Company shall not terminate its status as an issuer required to file reports under the 1934 Act even if the 1934 Act or the rules and regulations thereunder would permit such termination; provided, however, that this will not restrict the Company from engaging in any transaction which results in all of the outstanding capital stock of the Company being acquired in a business combination or other acquisition transaction. During the Registration Period, the Company shall furnish to the Purchasers copies of all reports and other information filed by the Company with the SEC pursuant to Sections 13, 14(a), 14(c) and 15(d) of the 1934 Act promptly.

5.2 Form D The Company agrees to file one or more Forms D with respect to the Shares on a timely basis as required under Regulation D to claim the exemption provided by Rule 506 of Regulation D and to provide a copy thereof to the Purchasers promptly after such filing.

5.3 State Securities Laws On or before the Closing Date, the Company shall take such action as shall be necessary to qualify, or to obtain, an exemption for the Shares under such of the securities laws of United States jurisdictions as shall be necessary to qualify, or to obtain an exemption from, the sale of the Shares. The Company shall furnish the Purchasers with copies of all filings, applications, orders and grants or confirmations of exemptions relating to such securities laws on or before the Closing Date.

5.4 Certain Future Financings and Related Actions

(a) The Company will not sell, offer to sell, solicit offers to buy or otherwise negotiate in respect of any "security" (as defined in the 1933 Act) that is or could be integrated with the sale of the Shares in a manner that would require the registration of the Shares under the 1933 Act.

(b) The Company shall not offer, sell, contract to sell or issue (or engage any Person to assist the Company in taking any such action) any equity securities or securities convertible into, exchangeable for or otherwise entitling the holder to acquire, any Common Stock at a price below the market price of the Common Stock during the period from the date of this Agreement to the SEC Effective Date; provided, however, that nothing in this Section

5.4(b) shall prohibit the Company from issuing securities (v) pursuant to compensation plans for employees, directors, officers, advisors or consultants of the Company and in accordance with the terms of such plans as in effect as of the date of this Agreement; (w) upon exercise of conversion, exchange, purchase or similar rights issued, granted or given by the Company and outstanding as of the date of this Agreement; (x) pursuant to a public offering underwritten on a firm commitment basis registered under the 1933 Act; (y) for the purpose of funding the acquisition of securities or assets of any entity in a single transaction or a series of related transactions; or (z) pursuant to a strategic partnership or alliance or similar commercial agreement (including licensing and similar arrangements) between the Company and industry participants.

5.5 Use of Proceeds When commercially feasible and so long as it is in the best interests of the Company in its management's judgement, the Company will use the majority of the net proceeds hereof (after deducting legal, marketing and other miscellaneous expenses in connection with the sale of the Shares) to fund TP10 clinical trials for pediatric patients. The remaining net proceeds will be used to fund working capital needs and operating expenses.

6 CONDITIONS TO THE COMPANY'S OBLIGATION TO SELL

The Purchasers understand that the Company's obligation to sell the Shares to the Purchasers pursuant to this Agreement is conditioned upon satisfaction of the following conditions precedent on or before the Closing Date (any or all of which may be waived by the Company in its sole discretion):

(a) the delivery by each of the Purchasers to the Escrow Account of an amount equal to the Purchase Price as set forth opposite its name on the signature pages attached hereto;

(b) on the Closing Date, no legal action, suit or proceeding shall be pending or threatened which seeks to restrain or prohibit the transactions contemplated by this Agreement; and

(c) the representations and warranties of the Purchasers contained in this Agreement and in the Questionnaire shall have been true and correct on the date of this Agreement and on the Closing Date as if made on the Closing Date and on or before the Closing Date the Purchasers shall have performed all covenants and agreements of the Purchasers required to be performed by the Purchasers on or before the Closing Date.

7 CONDITIONS TO THE PURCHASERS' OBLIGATION TO PURCHASE

The Company understands that the Purchasers' obligation to purchase the Shares is conditioned upon satisfaction of the following conditions precedent on or before the Closing Date (any or all of which may be waived by the Purchasers in their sole discretion):

(a) delivery by the Company to the Escrow Account of the share certificates representing the Shares in accordance with this Agreement;

(b) on the Closing Date, no legal action, suit or proceeding shall be pending or threatened which seeks to restrain or prohibit the transactions contemplated by this Agreement;

(c) the representations and warranties of the Company contained in this Agreement shall have been true and correct on the date of this Agreement and shall be true and correct on the Closing Date as if given on and as of the Closing Date (except for representations given as of a specific date, which representations shall be true and correct as of such date), and on or before the Closing Date the Company shall have performed all covenants

and agreements of the Company contained herein required to be performed by the Company on or before the Closing Date;

(d) the Company shall have delivered to the Purchasers its certificate, dated the Closing Date, duly executed by its Chief Executive Officer to the effect set forth in subparagraphs (b) and (c) of this Section 7;

(e) the receipt by the Purchasers of a certificate, dated the Closing Date, of the Secretary or Assistant Secretary of the Company certifying (i) the Certificate of Incorporation and ByLaws of the Company as in effect on the Closing Date, (ii) all resolutions of the board of directors (and committees thereof) of the Company relating to this Agreement and the transactions contemplated hereby and (iii) such other matters as are reasonably requested by the Purchasers;

(f) on the Closing Date, the Purchasers shall have received an opinion of Goodwin, Procter & Hoar LLP, counsel for the Company, dated the Closing Date, addressed to the Purchasers, in form, scope and substance reasonably satisfactory to the Purchasers, substantially in the form of Annex B hereto; and

(g) on the Closing Date, (i) trading in securities on the New York Stock Exchange, Inc., the American Stock Exchange, Inc. or Nasdaq shall not have been suspended or materially limited and (ii) a general moratorium on commercial banking activities in the Commonwealth of Massachusetts or the State of New York shall not have been declared by either federal or state authorities.

8 REGISTRATION RIGHTS

8.1 Mandatory Registration

(a) The Company shall prepare and, on or prior to the date which is 30 days after the Closing Date, file with the SEC a Registration Statement on Form S-3 which on the SEC Filing Date covers the resale by the Purchasers of the Registrable Securities by the Purchasers from time to time.

(b) Prior to the SEC Effective Date and during any time subsequent to the SEC Effective Date when the Registration Statement for any reason is not available for use by any Investor for the resale of any Registrable Securities, the Company shall not file any other registration statement or any amendment thereto with the SEC under the 1933 Act or request the acceleration of the effectiveness of any other registration statement previously filed with the SEC, other than (i) any registration statement on Form S-8 and (ii) any registration statement or amendment that the Company is required to file or as to which the Company is required to request acceleration pursuant to any obligation in effect on the date of execution and delivery of this Agreement.

8.2 Obligations of the Company In connection with the registration of the Registrable Securities, the Company shall:

(a) use its best efforts to cause the Registration Statement referred to in Section 8.1(a) to become effective as promptly as possible after the Closing Date, and keep the Registration Statement effective pursuant to Rule 415 at all times during the Registration Period. The Company shall submit to the SEC, within three Business Days after the Company learns that no review of the Registration Statement will be made by the staff of the SEC or that the staff of the SEC has no further comments on the Registration

Statement, as the case may be, a request for acceleration of effectiveness of the Registration Statement to a time and date not later than 48 hours after the submission of such request; provided, however, that if the Company determines that a development which has not been publicly disclosed and which occurred subsequent to the date of execution and delivery of this Agreement and prior to the SEC Effective Date would require public disclosure prior to the Registration Statement being declared effective and that such public disclosure at such time would not be in the best interests of the Company, the Company may refrain from making such public disclosure for up to 40 consecutive Trading Days and by so refraining from making such public disclosure the Company shall not be deemed to have failed to use its best efforts and in connection therewith the Company shall not be obligated to submit an acceleration request for the Registration Statement during the period the Company refrains from making such public disclosure in accordance with this provision. The Company represents and warrants to the Investors that (i) the Registration Statement (including any amendments or supplements thereto and prospectuses contained therein), at the time it is first filed with the SEC, at the time it is ordered effective by the SEC and at all times during which it is required to be effective hereunder (and each such amendment and supplement at the time it is filed with the SEC and at all times during which it is available for use in connection with the offer and sale of the Registrable Securities) shall not contain any untrue statement of a material fact or omit to state a material fact required to be stated therein or necessary to make the statements therein not misleading and (ii) the Prospectus, at the time the Registration Statement is declared effective by the SEC and at all times that the Prospectus is required by this Agreement to be available for use by any Investor and, in accordance with Section 8.2(c) hereof, any Investor is entitled to sell Registrable Securities pursuant to the Prospectus, shall not contain any untrue statement of a material fact or omit to state a material fact required to be stated therein, or necessary to make the statements therein, in light of the circumstances in which they were made, not misleading;

(b) subject to Sections 8.2(a) and (e) hereof, prepare and file with the SEC such amendments (including post-effective amendments) and supplements to the Registration Statement and the Prospectus as may be necessary to keep the Registration Statement effective, and the Prospectus current, at all times during the Registration Period and, during the Registration Period, comply with the provisions of the 1933 Act applicable to the Company in order to permit the disposition by the Investors of all Registrable Securities covered by the Registration Statement;

(c) furnish to each Investor whose Registrable Securities are included in the Registration Statement and its legal counsel, (i) promptly after the same is prepared and publicly distributed, filed with the SEC or received by the Company, one copy of the Registration Statement and any amendment thereto, each Prospectus and each amendment or supplement thereto, (ii) each letter written by or on behalf of the Company to the SEC or the staff of the SEC and each item of correspondence from the SEC or the staff of the SEC relating to such Registration Statement (other than any portion thereof that contains information for which the Company has sought confidential treatment), each of which the Company hereby determines to be confidential information and which the Purchasers hereby agree to keep as a confidential Record in accordance with Section 8.2(i) hereof such number of copies of a Prospectus and all amendments and supplements thereto and such other documents as such Investor may reasonably request in order to facilitate the disposition of the Registrable Securities owned by such Investor;

(d) subject to Section 8.2(e) hereof, use its best efforts to (i) register and qualify the Registrable Securities covered by the Registration Statement under the securities or blue sky laws of such United States jurisdictions as the Investors who hold a majority in

interest of the Registrable Securities reasonably request, (ii) prepare and file in those jurisdictions such amendments (including post-effective amendments) and supplements to such registrations and qualifications as may be necessary to maintain the effectiveness thereof at all times during the Registration Period and (iii) take all other actions reasonably necessary or advisable to qualify the Registrable Securities for sale by the Investors in such jurisdictions;

(e) (i) subject to Section 8.2(e)(ii) hereof, as promptly as practicable after becoming aware of such event or circumstance, notify each Investor of the occurrence of an event or circumstance of which the Company has knowledge (x) as a result of which the Prospectus included in the Registration Statement, as then in effect, includes an untrue statement of a material fact or omits to state a material fact required to be stated therein or necessary to make the statements therein, in light of the circumstances under which they were made, not misleading or (y) which requires the Company to amend or supplement the Registration Statement due to the receipt from an Investor of new or additional information about an Investor or its intended plan of distribution of its Shares, and use its best efforts promptly to prepare a supplement or amendment to the Registration Statement and Prospectus to correct such untrue statement or omission or to add any new or additional information, and deliver a number of copies of such supplement or amendment to each Investor as such Investor may reasonably request;

(ii) notwithstanding Section 8.2(e)(i) above, if at any time the Company notifies the Investors as contemplated by Section 8.2(e)(i) that the event giving rise to such notice relates to a development involving the Company which occurred subsequent to the later of (x) the SEC Effective Date and (y) the latest date prior to such notice on which the Company has amended or supplemented the Registration Statement, then the Company shall not be required to use best efforts to make such amendment during a Blackout Period;

(f) as promptly as practicable after becoming aware of such event, notify each Investor who holds Registrable Securities being sold of the issuance by the SEC of any stop order or other suspension of effectiveness of the Registration Statement at the earliest possible time;

(g) permit the Investors who hold Registrable Securities being included in the Registration Statement, at such Investors' sole cost and expense (except as otherwise specifically provided in Section 10.11 hereof to review and have a reasonable opportunity to comment on the Registration Statement and all amendments and supplements thereto at least three Business Days prior to their filing with the SEC; provided, however, that all comments by such Investors shall be given to Weil, Gotshal & Manges (or such other counsel as designated by Investors who hold a majority in interest of the Registrable Securities proposed to be offered) to convey to the Company;

(h) make generally available to its security holders as soon as practical, but not later than 90 days after the close of the period covered thereby, an earnings statement (in form complying with the provisions of Rule 158 under the 1933 Act) covering a 12-month period beginning not later than the first day of the Company's fiscal quarter next following the SEC Effective Date;

(i) make available for inspection by any Investor and any Inspectors retained by any such Investor at such Investor's sole expense, all Records as shall be reasonably necessary to enable each Investor to exercise its due diligence responsibility with respect to Section 11

of the 1933 Act as it relates to the Registration Statement or any amendment thereof, and cause the Company's officers to supply all information which any Inspector may reasonably request for purposes of such due diligence; provided, however, that each Inspector shall hold in confidence and shall not make any disclosure (except to an Investor) of any Record or other information which the Company determines in good faith to be confidential, and of which determination the Inspectors are so notified, unless (1) the disclosure of such Records is necessary to avoid or correct a misstatement or omission in any Registration Statement unless and for so long as the Company has the right to decide not to make such disclosure under the terms of this Agreement, (2) the release of such Records is ordered pursuant to a subpoena or other order from a court or government body of competent jurisdiction or (3) the information in such Records has been made generally available to the public other than by disclosure in violation of this or any other agreement; provided further, however, that each Investor understands that in the course of exercising the rights provided in this Section 8(2)(i) such Investor may come into possession of material non-public information about the Company and that by reason of the requirements of the 1934 Act any such Investor who possesses such material nonpublic information may be restricted in making purchases and sales of the Common Stock unless such information has been publicly disclosed. The Company shall not be required to disclose any confidential information in such Records to any Inspector until and unless such Inspector shall have entered into confidentiality agreements (in form and substance satisfactory to the Company) with the Company with respect thereto, substantially in the form of this Section 8(2)(i). Each Investor agrees that it shall, upon learning that disclosure of such Records is sought in or by a court or governmental body of competent jurisdiction or through other means, give prompt notice to the Company and allow the Company, at the Company's expense, to undertake appropriate action to prevent disclosure of, or to obtain a protective order for, the Records deemed confidential. The Company shall hold in confidence and shall not make any disclosure of information concerning an Investor provided to the Company pursuant to this Agreement unless (A) disclosure of such information is necessary to comply with federal or state securities laws, (B) the disclosure of such information is necessary to avoid or correct a misstatement or omission in any Registration Statement, (C) the release of such information is ordered pursuant to a subpoena or other order from a court or governmental body of competent jurisdiction or (D) such information has been made generally available to the public other than by disclosure in violation of this Agreement or any other agreement. The Company agrees that it shall, upon learning that disclosure of such information concerning an Investor is sought in or by a court or governmental body of competent jurisdiction or through other means, give prompt notice to such Investor and allow such Investor, at such Investor's expense, to undertake appropriate action to prevent disclosure of, or to obtain a protective order for, such information;

(j) use its best efforts to cause all the Registrable Securities covered by the Registration Statement as of the SEC Effective Date to be listed on Nasdaq or such other principal securities market on which securities of the same class or series issued by the Company are then listed or traded;

(k) cooperate with the Investors who hold Registrable Securities being offered to facilitate the timely preparation and delivery of certificates (not bearing any restrictive legends) representing Registrable Securities to be offered pursuant to the Registration Statement and enable such certificates to be in such denominations or amounts as the Investors may reasonably request and registered in such names as the Investors may request.

8.3 Penalty for Delay of Registration Statement's Effective Date In the event the Registration Statement has not (i) been filed with the SEC within 30 days after the Closing Date

or (ii) become effective within 120 days after the initial filing thereof, for all or part of each thirty (30) day period (a "Penalty Period") during which the Shares remain unregistered, the Company shall issue or pay, as applicable, to the Purchasers within three (3) Trading Days of the end of each such Penalty Period, at the Purchaser's election, either: (i) a number of additional shares of Common Stock equal to (A) 0.5% for the first Penalty Period, (B) 1.0% for the second Penalty Period and (C) 1.5% for the third Penalty Period and any subsequent Penalty Period until the SEC Effective Date (the "Payment Amount") of the Aggregate Purchase Price paid for all Shares purchased by such Purchasers hereunder, divided by the Market Value (as defined hereinafter), as of the last trading day of the Penalty Period, of a share of Common Stock (the "Penalty Shares") or (ii) a cash payment equal to the Payment Amount; provided, however, that in no event will the number of Shares issued pursuant to this Agreement in the aggregate exceed 19.9% of the total number of shares of Common Stock outstanding on the Closing Date (the "Maximum Percentage"), and if such number of Shares to be issued pursuant to this Agreement in the aggregate exceeds the Maximum Percentage, the Company shall pay the Purchasers a cash payment equal to the Market Value, as of the last trading day of the Penalty Period, of a share of Common Stock multiplied by the number of Penalty Shares which would have resulted in exceeding the Maximum Percentage; and provided further, however, that in no event shall the total amount of all payments under this Section (whether consisting of Penalty Shares or cash) exceed 7.5% of the aggregate Purchase Price paid for all Shares purchased by such Purchasers hereunder, with Penalty Shares valued as of the date of issuance as provided herein. For purposes of this Agreement, the "Market Value" of a share of Common Stock shall be the average high and low sales prices of the Common Stock on the Nasdaq National Market on the last trading day in the relevant Penalty Period.

8.4 Obligations of the Purchasers and Other Investors In connection with the registration of the Registrable Securities, the Investors shall have the following obligations:

(a) It shall be a condition precedent to the obligations of the Company to complete the registration pursuant to this Agreement with respect to the Registrable Securities of a particular Investor that such Investor shall furnish to the Company such information regarding itself, the Registrable Securities held by it and the intended method of disposition of the Registrable Securities held by it as shall be reasonably required to effect the registration of such Registrable Securities and shall execute such documents in connection with such registration as the Company may reasonably request.

(b) Each Investor by such Investor's acceptance of the Registrable Securities agrees to cooperate with the Company as reasonably requested by the Company in connection with the preparation and filing of the Registration Statement hereunder, unless such Investor has notified the Company of such Investor's election to exclude all of such Investor's Registrable Securities from the Registration Statement.

(c) Each Investor agrees that it will not effect any disposition of the Registrable Securities except as contemplated in the Registration Statement or as otherwise in compliance with applicable securities laws and that it will promptly notify the Company of any material changes in the information set forth in the Registration Statement regarding such Investor or its plan of distribution. Each Investor agrees (i) to notify the Company in the event that such Investor enters into any material agreement with a broker or dealer for the sale of the Registrable Securities through a block trade, special offering, exchange distribution or a purchase by a broker or dealer and (ii) in connection with such agreement, to provide to the Company in writing the information necessary to prepare any supplemental prospectus pursuant to Rule 424(c) under the 1933 Act which is required with respect to such transaction.

(d) Each Investor acknowledges that during the times specified in Section 8.2(e) or 8.2(f) the Company must suspend the use of the Prospectus until such time as an amendment to the Registration Statement has been filed by the Company and declared effective by the SEC, the Company has prepared a supplement to the Prospectus or the Company has filed an appropriate report with the SEC pursuant to the 1934 Act. Each Investor hereby covenants that it will not sell any Registrable Securities pursuant to the Prospectus in accordance with Section 8.2(e) or 8.2(f) hereof during the period commencing at the time at which the Company gives such Investor notice of the suspension of the use of the Prospectus and ending at the time the Company gives such Investor notice that such Investor may thereafter effect sales pursuant to the Prospectus, or until the Company delivers to such Investor an amended or supplemented Prospectus.

(e) In connection with any sale of Registrable Securities that is made by an Investor pursuant to the Registration Statement (i) if such sale is made through a broker or brokers, such Investor shall instruct its broker or brokers to deliver the Prospectus to the purchaser or purchasers in connection with such sale, and shall supply copies of such Prospectus to such broker or brokers; (ii) if such sale is made in a transaction directly with a purchaser and not through the facilities of any securities exchange or market, such Investor shall deliver, or cause to be delivered, the Prospectus to such purchaser; and (iii) if such sale is made by any means other than those described in the immediately preceding clauses (i) and (ii), such Investor shall otherwise use its reasonable best efforts to comply with the prospectus delivery requirements of the 1933 Act applicable to such sale.

(f) Each Investor agrees to notify the Company promptly after the event of the completion of the sale by such Investor of all Registrable Securities to be sold by such Investor pursuant to the Registration Statement.

8.5. Rule 144 With a view to making available to the Investors the benefits of Rule 144, during the Registration Period the Company agrees to:

(a) promptly furnish to each Investor so long as such Investor owns Registrable Securities, such information as may be necessary to permit the Investors to sell Registrable Securities pursuant to Rule 144 without registration; and

(b) if at any time the Company is not required to file reports with the SEC under Sections 13 or 15(d) of the 1934 Act, use its best efforts to, upon the request of an Investor, make publicly available other information so long as is necessary to permit publication by brokers and dealers of quotations for the Common Stock and sales of the Registrable Securities in accordance with Rule 15c2-11 under the 1934 Act.

9 INDEMNIFICATION AND CONTRIBUTION

9.1 Indemnification

(a) To the extent not prohibited by applicable law, the Company will indemnify and hold harmless each Indemnified Person against any Claims to which any of them may become subject under the 1933 Act, the 1934 Act or otherwise, insofar as such Claims (or actions or proceedings, whether commenced or threatened, in respect thereof) arise out of or are based upon any Violation (other than an event described in clause (e) of the definition of "Violation"). The Company shall reimburse the Investors and each such controlling Person, promptly as such expenses are incurred and are due and payable, for any documented reasonable legal fees or other documented and reasonable expenses incurred by them in connection with investigating or defending any such Claim. Notwithstanding

anything to the contrary contained herein, the indemnification agreement contained in this Section 9.1(a) shall not apply to: (i) a Claim arising out of or based upon a Violation that occurs in reliance upon and in conformity with information relating to an Indemnified Person furnished in writing to the Company by such Indemnified Person or underwriter for such Indemnified Person expressly for use in connection with the preparation of the Registration Statement or any such amendment thereof or supplement thereto, if such Prospectus was timely made available by the Company pursuant to Section 8.2(c) hereof and (ii) an Indemnified Person with respect to a Claim that arises solely from the failure of such Indemnified Person to comply in any material respect with Section 8.4(d) or 8.4(e) hereof. Such indemnity shall remain in full force and effect regardless of any investigation made by or on behalf of the Indemnified Person and shall survive the transfer of the Registrable Securities by the Investors.

(b) In connection with the Registration Statement, each Investor agrees to indemnify and hold harmless, to the same extent and in the same manner set forth in Section 9.1(a) hereof, each Indemnified Party against any Claim to which any of them may become subject, under the 1933 Act, the 1934 Act or otherwise, insofar as such Claim arises out of or is based upon any Violation, in each case to the extent (and only to the extent) that such Violation occurs (i) in reliance upon and in conformity with written information furnished to the Company by such Investor expressly for use in connection with such Registration Statement or (ii) by reason of any event described in clause (e) of the definition of "Violation"; and such Investor will reimburse any legal or other expenses reasonably incurred by them in connection with investigating or defending any such Claim; provided, however, that the indemnity agreement contained in this Section 9.1(b) shall not apply to amounts paid in settlement of any Claim if such settlement is effected without the prior written consent of such Investor, which consent shall not be unreasonably withheld. Such indemnity shall remain in full force and effect regardless of any investigation made by or on behalf of such Indemnified Party and shall survive the transfer of the Registrable Securities by the Investors. Notwithstanding anything to the contrary contained herein, the indemnification agreement contained in this Section 9.1(b) with respect to any preliminary prospectus shall not inure to the benefit of any Indemnified Party if the untrue statement or omission of material fact contained in the preliminary prospectus was corrected on a timely basis in the Prospectus, as then amended or supplemented.

(c) Promptly after receipt by an Indemnified Person or Indemnified Party under this Section 9.1 of notice of the commencement of any action (including any governmental action), such Indemnified Person or Indemnified Party shall, if a Claim in respect thereof is to be made against any indemnifying party under this Section 9.1, deliver to the indemnifying party a notice of the commencement thereof and the indemnifying party shall have the right to participate in, and, to the extent the indemnifying party so desires, jointly with any other indemnifying party similarly noticed, to assume control of the defense thereof with counsel reasonably satisfactory to the Indemnified Person or the Indemnified Party, as the case may be; provided, however, that an Indemnified Person or Indemnified Party shall have the right to retain its own counsel with the fees and expenses to be paid by the indemnifying party, if, in the reasonable opinion of counsel retained by the indemnifying party, the representation by such counsel of the Indemnified Person or Indemnified Party and the indemnifying party would be inappropriate due to actual or potential differing interests between such Indemnified Person or Indemnified Party and any other party represented by such counsel in such proceeding; provided further, however, that no indemnifying person shall be responsible for the fees and expenses of more than one separate counsel for all Indemnified Persons hereunder and one separate counsel in each

jurisdiction in which a claim is pending or threatened. The failure to deliver notice to the indemnifying party within a reasonable time of the commencement of any such action shall not relieve such indemnifying party of any liability to the Indemnified Person or Indemnified Party under this Section 9.1, except to the extent that the indemnifying party is prejudiced in its ability to defend such action. The indemnification required by this Section 9.1 shall be made by periodic payments of the amount thereof during the course of the investigation or defense, as such expense, loss, damage or liability is incurred and is due and payable.

9.2 Contribution To the extent any indemnification by an indemnifying party as set forth in Section 9.1 above is applicable by its terms but is prohibited or limited by law, the indemnifying party agrees to make the maximum contribution with respect to any amounts for which it would otherwise be liable under Section 9.1 above to the fullest extent permitted by law. In determining the amount of contribution to which the respective parties are entitled, there shall be considered the relative fault of each party, the parties' relative knowledge of and access to information concerning the matter with respect to which the claim was asserted, the opportunity to correct and prevent any statement or omission and any other equitable considerations appropriate under the circumstances; provided, however, that (i) no contribution shall be made under circumstances where the maker would not have been liable for indemnification under the fault standards set forth in Section 9.1 above, (ii) no Person guilty of fraudulent misrepresentation (within the meaning of Section 11(f) of the 1933 Act) shall be entitled to contribution from any other Person who was not guilty of such fraudulent misrepresentation and (iii) contribution by any seller of Registrable Securities shall be limited to the amount by which the proceeds received by such seller from the sale of such Registrable Securities exceeds the amount paid by such Investor for such Registrable Securities.

9.3 Other Rights The indemnification and contribution provided in this Section shall be in addition to any other rights and remedies available at law or in equity.

10 MISCELLANEOUS

10.1 Governing Law THIS AGREEMENT SHALL BE GOVERNED BY AND INTERPRETED IN ACCORDANCE WITH THE LAWS OF THE STATE OF NEW YORK OF THE UNITED STATES.

10.2 Headings The headings and captions used in this Agreement are for convenience of reference and shall not form part of, or affect the interpretation of, this Agreement.

10.3 Severability If any provision of this Agreement shall be invalid or unenforceable in any jurisdiction, such invalidity or unenforceability shall not affect the validity or enforceability of the remainder of this Agreement or the validity or enforceability of this Agreement in any other jurisdiction.

10.4 Notices Any notices required or permitted to be given under the terms of this Agreement shall be in writing and shall be sent by mail, personal delivery, by telephone line facsimile transmission or courier and shall be effective five (5) days after being placed in the mail, if mailed, or upon receipt, if delivered personally, by telephone line facsimile transmission or by courier, in each case addressed to a party at such party's address (or telephone line facsimile transmission number) shown in the introductory paragraph or on the signature page of this Agreement or such other address (or telephone and facsimile transmission numbers) as a party shall have provided by notice to the other parties in accordance with this provision. In the case of any notice to the Company, such notice should be addressed to the Company at its address shown in the introductory paragraph of this Agreement, Attention: Dr. Una S. Ryan, Ph.D.

(telephone and facsimile transmission numbers: 001-781-433-3101, 001-781-433-3191), and a copy shall also be given to: Goodwin, Proctor & Hoar LLP, Attention: Stuart Cable, P.C., (telephone and facsimile transmission numbers: 001-617-570-1322, 001-617-523-1231), and in the case of any notice to the Purchasers, a copy shall be given to: Nomura International plc, Attention: Legal Department (telephone and facsimile transmission numbers: 44-207-521-2000, 44-207-521-3655 Attention: Denise Pollard-Knight/Mark Horncastle), in each case with a copy to: Weil, Gotshal & Manges at One South Place, London EC2M 2WG, Attention: Douglas Warner Esq. (telephone and facsimile transmission numbers: 44-207-903-1000, 44-207-9030990).

10.5 Counterparts This Agreement may be executed in counterparts and by the parties hereto on separate counterparts, each of which shall be deemed to be an original but all of which together shall constitute one and the same instrument. A telephone line facsimile transmission of this Agreement bearing a signature on behalf of a party hereto shall be legal and binding on such party.

10.6 Entire Agreement; Benefit This Agreement together with the Annexes and Disclosure Schedule constitute the entire agreement among the parties hereto with respect to the subject matter hereof. There are no restrictions, promises, warranties or undertakings other than those set forth or referred to herein and therein. This Agreement, including the Annexes hereto and Disclosure Schedule supersede all prior agreements and understandings, whether written or oral, between the parties hereto with respect to the subject matter hereof. This Agreement and the terms and provisions hereof are for the sole benefit of only the Company, the Purchasers and their respective successors and permitted assigns.

10.7 Waiver Failure of any party to exercise any right or remedy under this Agreement or otherwise, or delay by a party in exercising such right or remedy, or course of dealing between the parties shall not operate as a waiver thereof or an amendment hereof, nor shall any single or partial exercise of any such right or power, or any abandonment or discontinuance of steps to enforce such a right or power, preclude any other or further exercise thereof or exercise of any other right or power.

10.8 Amendment No amendment, modification, waiver, discharge or termination of any provision of this Agreement or consent to any departure by the Purchasers or the Company therefrom shall in any event be effective unless the same shall be in writing and signed by the party to be charged with enforcement, and then shall be effective only in the specific instance and for the purpose for which given. No course of dealing between the parties hereto shall operate as an amendment of this Agreement.

10.9 Further Assurances Each party to this Agreement will perform any and all acts and execute any and all documents as may be necessary and proper under the circumstances in order to accomplish the intents and purposes of this Agreement and to carry out its provisions.

10.10 Assignment of Certain Rights and Obligations The rights and obligations of an Investor under this Agreement shall be automatically assigned by such Investor to any transferee of all or any portion of such Investor's Registrable Securities who is a Permitted Transferee only if: (i) such Investor agrees in writing with such transferee to assign such rights and obligations and such transferee agrees to assume them, and a copy of such agreement is furnished to the Company within a reasonable time after such assignment; (ii) the Company is, within a reasonable time after such transfer, furnished with notice of (1) the name and address of such transferee and (2) the securities with respect to which such rights and obligations are being transferred; (iii) immediately following such transfer or assignment the further disposition of Registrable Securities by the transferee or assignee is restricted under the 1933 Act and

applicable state securities laws; (iv) at or before the time the Company received the notice contemplated by clause (ii) of this sentence the transferee agrees in writing with the Company to be bound by all of the provisions hereof, and (v) immediately after such transfer such transferee holds at least 50,000 shares of Common Stock. Upon any such transfer, the Company shall be obligated to such transferee to perform all of its covenants under this Agreement as if such transferee were the Purchasers. In connection with any such transfer the Company shall, at its sole cost and expense, promptly after such transfer take such actions as shall be reasonably acceptable to the transferring Investor and such transferee to assure that the Registration Statement and related Prospectus are available for use by such transferee for sales of the Registrable Securities in respect of which such rights and obligations have been so transferred.

10.11 Expenses Each of the Company and the Purchasers shall bear its own expenses in connection with the preparation and negotiation of this Agreement and the consummation of the transactions contemplated hereby; provided that the Company shall reimburse the Purchasers for legal fees and expenses plus any applicable value added tax as previously agreed between the Company and Nomura International plc. All reasonable expenses incurred in connection with registrations, filings or qualifications pursuant to this Agreement shall be paid by the Company, including, without limitation, all registration, listing and qualifications fees, printers' and accountants' fees and the fees and disbursements of counsel for the Company and the fees and disbursements of one counsel for the Purchasers in an amount not to exceed $15,000, plus any applicable value added tax, but excluding (i) fees and expenses of investment bankers retained by any Investor, (ii) brokerage commissions incurred by any Investor and (iii) fees and disbursements of other counsel for the Investors. The Company shall pay on demand all reasonable expenses incurred by the Purchasers, including reasonable attorneys' fees and expenses, as a consequence of or in connection with, (1) any default or breach of any of the Company's obligations set forth in this Agreement and (2) the enforcement or restructuring of any right of, including the collection of any payments due the Purchasers under, this Agreement, including any action or proceeding relating to such enforcement or any order, injunction or other process seeking to restrain the Company from paying any amount due the Purchasers.

10.12 Termination The Purchasers shall have the right to terminate this Agreement by giving notice to the Company at any time at or prior to the Closing Date if:

(a) any condition to the Purchasers' obligations hereunder is not fulfilled; or

(b) the closing shall not have occurred on a Closing Date on or before September 21, 1999, other than solely by reason of a breach of this Agreement by the Purchasers.

Any such termination shall be effective upon the giving of notice thereof by the Purchasers. Upon such termination, the Purchasers shall have no further obligation to the Company hereunder and the Company shall remain liable for any breach of this Agreement or the other documents contemplated hereby which occurred on or prior to the date of such termination.

10.13 Survival The respective representations, warranties, covenants and agreements of the Company and the Purchasers contained in this Agreement and the documents delivered in connection with this Agreement shall survive the execution and delivery of this Agreement and the closing hereunder and delivery of and payment for the Shares, and shall remain operative and in full force and effect regardless of any investigation made by or on behalf of the Purchasers or any Person controlling or acting on behalf of the Purchasers or by the Company or any Person controlling or acting on behalf of the Company.

10.14 Public Statements, Press Releases, etc. The Company and the Purchasers shall have the right to approve before issuance any press releases or any other public statements with respect to

the transactions contemplated hereby; provided, however, that the Company shall be entitled, without the prior approval of the Purchasers, to make any press release or other public disclosure with respect to such transactions as is required by applicable law and regulations, including the 1933 Act and the rules and regulations promulgated thereunder (although the Purchasers shall be consulted by the Company in connection with any such press release or other public disclosure prior to its release and shall be provided with a copy thereof).

10.15 Construction The language used in this Agreement will be deemed to be the language chosen by the parties to express their mutual intent, and no rules of strict construction will be applied against any party.

10.16 No Culpability Each of the Purchasers (other than Nomura International plc) (the "Other Purchasers") represent and warrant to Nomura and the Nomura Affiliates on their own behalf and on behalf of any beneficial owner which they may represent as follows:

(a) that they have sufficient knowledge and experience and have taken such professional advice as they think necessary to make their own evaluation of the merits and risks involved in making the investment envisaged by this Agreement;

(b) that they have been, and will at all times continue to be, solely responsible for making their own independent appraisal of and investigation into the business, financial condition, prospects, creditworthiness, status and affairs of the Company;

(c) that they are sophisticated investors capable of bearing the economic risk of losing their entire investment in the Company;

(d) that they understand that Nomura is at all times, and will at all times be, acting on their own behalf and not on behalf of the Other Purchasers or any of them;

(e) they have not relied, and will not at any time rely, on Nomura or any of its subsidiaries or any parent of any subsidiaries or any parent company to provide them with any information relating to, or to keep under review on their behalf, any business, financial conditions, prospects, creditworthiness or status of affairs of the Company or conducting any investigation or due diligence into the Company; and

(f) that they understand that they are not clients of Nomura and will not receive the protections that such clients are afforded.

IN WITNESS WHEREOF, the parties have caused this Agreement to be duly executed by their respective officers hereunto duly authorized as of the date first set forth above.

AVANT IMMUNOTHERAPEUTICS, INC.

By:

Name: Una S. Ryan
Title: President and CEO

NOMURA INTERNATIONAL PLC
Nomura House
1 St. Martin's-le-Grand
London EC1A 4NP
UK

By:

Name:
Title:

PICTET & CIE.
29, blvd. Georges-Favon
Geneva
CH-121
Switzerland

By:

Name:
Title:

KLEINWORT BENSON GLOBAL PRIVATE EQUITY
PO Box 18075
River Bank House
2 Swan Lane
London EC4R 3UX
UK

By:

Name:
Title:

REABOURNE, LTD.
Alderman's House
Alderman's Walk
London

By:

Name:
Title:

LOMARD ODIER
11 Rue de la Corraterie
Geneva
CH-1204
Switzerland

By:

Name:
Title:

INTERNATIONAL BIOMEDICINE
Aeschen Platz 7
PO Box 136
Basel
CH-4010
Switzerland

By:

Name:
Title:

APOLLO MEDICAL PARTNERS
68 Jane Street, Suite 2E
New York
New York
USA

By:

Name:
Title:

CURRAN CAPITAL
237 Park Avenue
New York
New York 10017
USA

By:

Name:
Title:

CATALYST PARTNERS
900 Third Avenue, 27th Floor
New York
New York 10022
USA

By:

Name:
Title:

DR BRANDON FADD
68 Jane Street, Suite 2E
New York
New York
USA

By:

Name:
Title:

PETER SEARS
8 Paul Road
St. David
PA 19087
USA

By:

Name:
Title: