

**UNITED STATES
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
(State of Incorporation)

13-3191702
(I.R.S. Employer Identification Number)

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)

Copies to:

Stuart M. Cable, P.C.
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Goodwin Procter 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 this Registration Statement becomes effective, as determined by the Registrant.

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.

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 this Form is a registration statement pursuant to General Instruction I.D. or a post-effective amendment thereto that shall become effective upon filing with the Commission pursuant to Rule 462(e) under the Securities Act, check the following box.

If this Form is a post-effective amendment to a registration statement filed pursuant to General Instruction I.D. filed to register additional securities or additional classes of securities pursuant to Rule 413(b) under the Securities Act, check the following box.

CALCULATION OF REGISTRATION FEE

Title of Securities Being Registered	Proposed Maximum Aggregate Offering Price(1)(2)	Amount of Registration Fee(2)(3)
Common Stock, par value \$0.001(4)		
Warrants to Purchase Common Stock(5)		
Preferred Stock Purchase Rights(6)		
Total	\$ 40,000,000	\$ 1,228

(1) In no event will the aggregate offering price of all securities issued from time to time by the registrant under this registration statement exceed \$40,000,000 or its equivalent in any other currency, currency units, or composite currency or currencies. The securities covered by this registration statement may be sold separately, together, or as units with other securities registered under this registration statement.

(2) The proposed maximum aggregate offering price has been estimated solely for the purpose of computing the amount of the registration fee pursuant to Rule 457(o) under the Securities Act of 1933, as amended (the "Securities Act").

(3) Pursuant to Rule 429 under the Securities Act, the prospectus included in this registration statement is a combined prospectus which relates to Registration Statement No. 333-109583, previously filed by the Registrant on Form S-3, under which the amount of 6,035,000 shares of common stock and 2,250,000 warrants to purchase common stock remains unissued and is being carried forward. Registration fees of \$1,736 were previously paid with respect to the common stock and warrants being carried forward from Registration Statement No. 333-109583, calculated using the registration fees in effect in October 2003, and shall be applied to the fee payable in connection with this registration statement.

(4) Subject to note (1), this registration statement covers such an indeterminate amount of common stock (with accompanying preferred stock purchase rights), as may be sold, from time to time, at indeterminate prices, by the registrant.

(5) Subject to note (1), this registration statement covers such an indeterminate amount and number of warrants to purchase common stock as may be sold from time to time at indeterminate prices by the registrant. Also covered is such an indeterminate amount of common stock (with accompanying preferred stock purchase rights) as may be required for delivery upon exercise of any warrants as a result of anti-dilution provisions.

(6) Subject to note (1), this registration statement covers an indeterminate amount and number of Preferred Stock Purchase Rights to purchase shares of Series C-1 Junior Participating Cumulative Preferred Stock of the Registrant, which are attached to all shares of common stock issued, pursuant to the terms of the Registrant's Shareholder Rights Agreement dated as of November 5, 2004. Until the occurrence of certain prescribed events, the rights are not exercisable, are evidenced by the certificates for the common stock and will be transferred with and only with such stock.

Pursuant to Rule 429 under the Securities Act, the prospectus included in this registration statement is a combined prospectus which also relates to Registration Statement No. 333-109583, previously filed by the Registrant on Form S-3, under which 6,035,000 shares of common stock and 2,250,000 warrants to purchase common stock remains unissued. This registration statement also constitutes a post-effective amendment to Registration Statement No. 333-109583.

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, as amended, or until the Registration Statement shall become effective on such date as the Securities and Exchange Commission, acting pursuant to said Section 8(a), may determine.

Subject to Completion, dated , 2007

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

Prospectus

\$40,000,000

AVANT Immunotherapeutics, Inc.

Common Stock

Warrants

This prospectus will allow us to issue, from time to time in one or more offerings,

- shares of our common stock,
- warrants to purchase shares of our common stock, and
- the rights to acquire our series C-1 junior participating cumulative preferred stock that are attached to, and trade with, the common stock.

The common stock and warrants may be offered and sold separately or together in one or more series of issuances.

In this prospectus, we refer to the common stock and the warrants collectively as the “securities.”

This prospectus provides general description of the securities we may offer. Each time we sell securities we will provide a prospectus supplement that will contain specific information about the terms of that sale and may add, update or change the information contained in this prospectus. You should read this prospectus and any prospectus supplement carefully before you invest in our securities.

Our common stock is listed on the Nasdaq Global Market under the symbol “AVAN.” On May 18, 2007, the last reported sale price of our common stock on the Nasdaq Global Market was \$1.04.

Investing in our securities involves a high degree of risk. See “Risk Factors” on page 3 for information you should consider before you invest in our securities.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or determined if this prospectus is truthful or complete. Any representation to the contrary is a criminal offense.

The date of this prospectus is , 2007

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ABOUT THIS PROSPECTUS

This prospectus is part of a registration statement that we filed with the Securities and Exchange Commission, or the SEC, utilizing a “shelf” registration process. Under this shelf registration process, we may offer from time to time any combination of the securities described in this prospectus up to a total dollar amount of \$40,000,000. This prospectus provides you with a general description of the securities we may offer. Each time we sell securities, we will provide a prospectus supplement that will contain specific information about the terms of that offering. The prospectus supplement may also add, update or change information contained in this prospectus. You should read both this prospectus and any prospectus supplement together with additional information described under the heading “Where You Can Find More Information.”

We have not authorized any dealer, salesperson or other person to give any information or to make any representation other than those contained or incorporated by reference in this prospectus and any accompanying prospectus supplement. You must not rely upon any information or representation not contained or incorporated by reference in this prospectus or any accompanying prospectus supplement as if we had authorized it. This prospectus and any accompanying prospectus supplement do not constitute an offer to sell or the solicitation of an offer to buy any securities other than the registered securities to which they relate, nor does this prospectus and any accompanying prospectus supplement constitute an offer to sell or the solicitation of an offer to buy securities in any jurisdiction to any person to whom it is unlawful to make such offer or solicitation in such jurisdiction. You should not assume that the information contained in this prospectus and any accompanying prospectus supplement is correct on any date after their respective dates, even though this prospectus or any prospectus supplement is delivered or securities are sold on a later date.

ABOUT AVANT

We are a biopharmaceutical company that uses novel applications of immunology to develop products for the prevention and treatment of diseases. We are developing a broad portfolio of vaccines and immunotherapeutics addressing a wide range of applications including bacterial and viral diseases, biodefense, food safety and cardiovascular disease. These include single-dose, oral vaccines that protect against important disease-causing infectious agents, a treatment to reduce complement-mediated tissue damage associated with cardiac by-pass surgery, and a novel, proprietary vaccine candidate for cholesterol management. Our strategy is to demonstrate proof-of-concept for our product candidates before leveraging their value through partnerships or, in appropriate situations, continuing late stage development ourselves. Demonstrating proof-of-concept for a product candidate generally involves bringing it through Phase 1 clinical trials and one or more Phase 2 clinical trials so that we are able to demonstrate, based on human trials, good safety data for the product candidate and some data indicating its effectiveness. Our current collaborations encompass the commercialization of an oral human rotavirus vaccine, the development

of an oral cholera vaccine, vaccines to combat threats of biological warfare, and vaccines addressed to human food safety and animal health. Our product candidates address large market opportunities for which we believe current therapies are inadequate or non-existent.

AVANT's web site is located at <http://www.avantimmune.com>. On AVANT's web site, investors can obtain a copy of AVANT's annual report on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, and amendments to those reports filed or furnished pursuant to Section 13(a) or 15(d) of the Exchange Act of 1934, as amended, as soon as reasonably practicable after AVANT files such material electronically with, or furnishes it to, the Securities and Exchange Commission.

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Our focus is on using the power of the immune system to prevent and treat disease. We have assembled a broad portfolio of technologies and intellectual property that we believe will give us a strong competitive position in vaccines and immunotherapeutics. This portfolio includes:

- Cholera- and Salmonella-vectored vaccine delivery technologies;
- platform technology for the expression of viral disease antigens, such as influenza, based on novel virus-like particles "VLPs";
- patent rights directed to a rotavirus strain;
- our VitriLife[®] patented drying system for the preservation of proteins, cells, bacteria and viruses;
- technology and patents for complement inhibitors based on sCR1 "TP10"; and
- technology and patents supporting our CETP product candidates, which are aimed at increasing levels of HDL, or "good" cholesterol.

We currently have three products on the market and four products in clinical development. Our goal is to become a leading developer of innovative vaccines and immunotherapeutics that address health care needs on a global basis. Our success has depended and will continue to depend upon many factors, including our ability and that of our licensees and collaborators to successfully develop, obtain regulatory approval for and commercialize our product candidates. To date, commercial sales have only been generated from Rotarix[®] and our Megan poultry vaccines. We have had no commercial revenues from sales of our human therapeutic or other human vaccine products and we have had a history of operating losses. It is possible that we may not be able to successfully develop, obtain regulatory approval for or commercialize our product candidates, and we are subject to a number of risks that you should be aware of before investing in AVANT. These risks are disclosed more fully in Item 1A. "Risk Factors" of our Annual Report on Form 10-K for the fiscal year ended December 31, 2006, filed with the SEC on March 16, 2007, which is incorporated by reference in this prospectus.

Our common stock has been quoted on the Nasdaq Global Market under the symbol "AVAN" since August 24, 1998. Prior to that time, our common stock traded on the Nasdaq National Market, beginning May 15, 1986, under the symbol "TCEL."

Our executive offices are located at 119 Fourth Avenue, Needham, Massachusetts 02494-2725 and our telephone number is (781) 433-0771. Additional information regarding our company, 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 9 and "Incorporation of Certain Information by Reference" on page 10.

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RISK FACTORS

You should consider carefully the "Risk Factors" included under Item 1A. of our Annual Report on Form 10-K for the fiscal year ended December 31, 2006, filed with the SEC on March 16, 2007, which is incorporated by reference in this prospectus. The risks and uncertainties we describe are not the only ones facing us. Additional risks not presently known to us or that we currently deem immaterial may also impair our business operations. If any of these risks were to occur, our business, financial condition or results of operations would likely suffer. In that event, the trading price of our common stock could decline, and you could lose all or part of your investment.

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus contains forward-looking statements within the meaning of the federal securities laws. You can identify forward-looking statements by the use of the words "believe," "expect," "anticipate," "intend," "estimate," "project," "will," "should," "may," "plan," "intend," "assume" and other expressions which predict or indicate future events and trends to and which do not relate to historical matters. You should not rely on forward-looking statements, because they involve known and unknown risks, uncertainties and other factors, some of which are beyond the control of AVANT. These risks, uncertainties and other factors may cause the actual results, performance or achievements of AVANT to be materially different from the anticipated future results, performance or achievements expressed or implied by the forward-looking statements.

Some of the factors that might cause these differences include the following:

- the integration of multiple technologies and programs;
- the ability to adapt AVANT's vectoring systems to develop new, safe and effective orally administered vaccines against anthrax and plague or other bioterrorism threats or emerging health care threats;
- the ability to successfully complete development and commercialization of TP10, CETP vaccines, CholeraGarde[®] (Peru-15), Ty800, ETEC E. coli, VLPs and other products and AVANT's expectations regarding market growth;
- we may be unable to realize any benefit from our agreement with Select Vaccines and may face the loss of our investment of financial resources and time in the joint development program;
- the cost, timing, scope and results of ongoing safety and efficacy trials of TP10, CETP vaccines, CholeraGarde[®] (Peru-15), Ty800, ETEC E. coli and other preclinical and clinical testing;
- the ability to successfully complete product research and further development, including animal, pre-clinical and clinical studies of TP10, CETP vaccines, CholeraGarde[®] (Peru-15), Ty800, ETEC E. coli and other products;

- the ability of AVANT to manage multiple late stage clinical trials for a variety of product candidates;
- the volume and profitability of product sales of Megan[®] Vac 1, Megan[®] Egg and other future products;
- the process of obtaining regulatory approval for the sale of Rotarix[®] in major commercial markets, as well as the timing and success of worldwide commercialization of Rotarix[®] by our partner, GlaxoSmithKline;

- GlaxoSmithKline's strategy and business plans to launch and supply Rotarix[®] worldwide, including in the U.S. and other major markets and its payment of royalties to AVANT;
- changes in existing and potential relationships with corporate collaborators and partners;
- the availability, cost, delivery and quality of clinical and commercial grade materials supplied by contract manufacturers;
- the timing, cost and uncertainty of obtaining regulatory approvals to use TP10, CETP vaccines, CholeraGarde[®] (Peru-15), Ty800 and ETEC E. coli, among other purposes, for adults undergoing cardiac surgery, to raise serum HDL cholesterol levels and to protect travelers and people in endemic regions from diarrhea causing diseases, respectively;
- the ability to obtain substantial additional funding;
- the ability to develop and commercialize products before competitors that are superior to the alternatives developed by competitors;
- the ability to retain certain members of management;
- AVANT's expectations regarding research and development expenses and general and administrative expenses;
- AVANT's expectations regarding CETP vaccines' ability to improve cholesterol levels and AVANT's ability to develop and commercialize CETP vaccines;
- AVANT's expectations regarding cash balances, capital requirements, anticipated royalty payments (including those from Glaxo), revenue and expenses, including infrastructure expenses;
- our belief regarding the validity of our patents and potential litigation; and
- other factors detailed from time to time in filings with the Securities and Exchange Commission.

In addition, the factors described under "Risk Factors" in this prospectus, as may be updated from time to time by our future filings under the Securities Exchange Act, and elsewhere in the documents incorporated by reference in this prospectus, may result in these differences. You should carefully review all of these factors. These forward-looking statements were based on information, plans and estimates at the date of this prospectus, and we do not promise to update any forward-looking statements to reflect changes in underlying assumptions or factors, new information, future events or other changes.

USE OF PROCEEDS

Unless we provide otherwise in a supplement to this prospectus, we intend to use the net proceeds from the sale of our common stock for one or more of the following:

- research and clinical development activities;
- working capital;
- potential future acquisitions of companies and/or technologies in our industry;
- capital expenditures; and
- other general corporate purposes.

Our management will have broad discretion in the allocation of the net proceeds of any offering. Pending such uses, we intend to invest the net proceeds in short-term, investment grade, interest-bearing securities.

DESCRIPTION OF COMMON STOCK

As of the date of the prospectus, we are authorized to issue up to 100,000,000 shares of common stock, \$.001 par value per share. As of May 1, 2007, 74,184,048 shares of common stock were outstanding.

Dividends

The Board of Directors may, out of funds legally available, at any regular or special meeting, declare dividends to the holders of shares of our common stock as and when they deem expedient, subject to the rights of holders of the preferred stock, if any.

Voting

Each share of common stock entitles the holders to one vote per share on all matters requiring a vote of the stockholders, including the election of directors. No holders of shares of common stock shall have the right to vote such shares cumulatively in any election for the Board of Directors.

Rights Upon Liquidation

In the event of our voluntary or involuntary liquidation, dissolution, or winding up, the holders of our common stock will be entitled to share equally in our assets available for distribution after payment in full of all debts and after the holders of preferred stock, if any, have received their liquidation preferences in full.

Miscellaneous

No holders of shares of our common stock shall have any preemptive rights to subscribe for, purchase or receive any shares of any class, whether now or hereafter authorized, or any options or warrants to purchase any such shares, or any securities convertible into or exchanged for any such shares, which may at any time be issued, sold or offered for sale by us.

DESCRIPTION OF WARRANTS

We may issue warrants for the purchase of our common stock. Warrants may be issued independently or together with our common stock and may be attached to or separate from any offered securities. Each series of warrants will be issued under a separate warrant agreement to be entered into between us and a bank or trust company, as warrant agent. The warrant agent will act solely as our agent in connection with the warrants and will not have any obligation or relationship of agency or trust for or with any holders or beneficial owners of warrants. This summary of some provisions of the warrants is not complete. You should refer to the warrant agreement, including the forms of warrant certificate representing the warrants, relating to the specific warrants being offered for the complete terms of the warrant agreement and the warrants. Such warrant agreement, together with the terms of warrant certificate and warrants, will be filed with the SEC in connection with the offering of the specific warrants.

The prospectus supplement relating to a particular issue of warrants to issue common stock will describe the terms of the warrants, including the following:

- the title of the warrants;
- the offering price for the warrants, if any;
- the aggregate number of the warrants;
- the designation and terms of the common stock that may be purchased upon exercise of the warrants;
- if applicable, the designation and terms of the securities that the warrants are issued with and the number of warrants issued with each security;
- if applicable, the date from and after which the warrants and any securities issued with the warrants will be separately transferable;
- the number of shares of common stock that may be purchased upon exercise of a warrant and the price at which the shares may be purchased upon exercise;
- the dates on which the right to exercise the warrants commence and expire;
- if applicable, the minimum or maximum amount of the warrants that may be exercised at any one time;
- the currency or currency units in which the offering price, if any, and the exercise price are payable;
- if applicable, a discussion of material U. S. federal income tax considerations;
- anti-dilution provisions of the warrants, if any;
- redemption or call provisions, if any, applicable to the warrants;
- any additional terms of the warrants, including terms, procedures and limitations relating to the exchange and exercise of the warrants; and
- any other information we think is important about the warrants.

Each warrant will entitle the holder of the warrant to purchase the number of shares of common stock at the exercise price as shall in each case be set forth in, or be determinable as set forth in, the prospectus supplement relating to the warrants offered. Warrants may be exercised at any time up to the close of business on the expiration date set forth in the applicable prospectus supplement. After the close of business on the expiration date, unexercised warrants will become void. Prior to the exercise of any warrants to purchase common stock, holders of the warrants will not have any of the rights of holders of common stock purchasable upon exercise of the warrants, including the right to vote on the common stock.

PLAN OF DISTRIBUTION

We may sell our common stock from time to time in any manner permitted by the Securities Act, including any one or more of the following ways:

- directly to investors;
- to investors through agents;
- to dealers; and
- through one or more underwriters.

Any underwritten offering may be on a best efforts or a firm commitment basis. We may also make direct sales through subscription rights distributed to our stockholders on a pro rata basis, which may or may not be transferable. In any distribution of subscription rights to stockholders, if all of the underlying securities are not subscribed for, we may then sell the unsubscribed securities directly to third parties or may engage the services of one or more underwriters, dealers or agents, including standby underwriters, to sell the unsubscribed securities to third parties. Under agreements into which we may enter, underwriters, dealers and agents who participate in the distribution of the securities may be entitled to indemnification by us against some liabilities, including liabilities under the Securities Act, or contribution from us to payments which the underwriters, dealers or agents may be required to make. Underwriters, dealers and agents may engage in transactions with us or perform services for us from time to time in the ordinary course of business.

The distribution of the securities may be effected from time to time in one or more transactions:

- at a fixed price or prices, which may be changed;
- at market prices prevailing at the time of sale;
- at prices related to such prevailing market prices; or
- at negotiated prices.

Any of the prices may represent a discount from prevailing market prices.

Shares of common stock sold pursuant to the registration statement of which this prospectus is a part will be authorized for quotation and trading on the Nasdaq Global Market. In the sale of the securities, underwriters or agents may receive compensation from us or from purchasers of the securities, for whom they may act as agents, in the form of discounts, concessions or commissions. Underwriters may sell the securities 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. Underwriters, dealers and agents that participate in the distribution of the securities may be deemed to be underwriters under the Securities Act of 1933, and any discounts or commissions they receive from us and any profit on the resale of securities they realize may be deemed to be underwriting discounts and commissions under the Securities Act.

Each time we sell securities, we will describe the method of distribution of the securities in the prospectus supplement relating to such transaction. The applicable prospectus supplement will, where applicable:

- identify any such underwriter or agent;
- describe any compensation in the form of discounts, concessions, commissions or otherwise received from us by each such underwriter or agent and in the aggregate to all underwriters and agents;

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- identify the amounts underwritten; and
 - identify the nature of the underwriter's obligation to take the securities.

If underwriters are utilized in the sale of the securities, the securities may be acquired by the underwriters for their own account and may be resold from time to time in one or more transactions, including negotiated transactions, at fixed public offering prices or at varying prices determined by the underwriters at the time of the sale. We may offer the securities to the public either through underwriting syndicates represented by managing underwriters or directly by the managing underwriters. If any underwriters are utilized in the sale of the securities, unless otherwise stated in the applicable prospectus supplement, the underwriting agreement will provide that the obligations of the underwriters are subject to specified conditions precedent and that the underwriters with respect to a sale of the securities will be obligated to purchase all of the securities offered if any are purchased.

Until the distribution of the securities is completed, rules of the Securities and Exchange Commission may limit the ability of any underwriters and selling group members to bid for and purchase the securities. As an exception to these rules, underwriters are permitted to engage in some transactions that stabilize the price of the securities, such as over allotment, stabilizing transactions, short covering transactions and penalty bids in accordance with Regulation M under the Securities Exchange Act of 1934. Over allotment involves sales in excess of the offering size which create a short position. Stabilizing transactions consist of bids or purchases for the purpose of pegging, fixing or maintaining the price of the securities. Short covering transactions involve purchases of the securities in the open market after the distribution is completed to cover short positions. The underwriters may also impose a penalty bid, under which selling concessions allowed to syndicate members or other broker-dealers for securities sold in the offering for their account may be reclaimed by the syndicate if the securities are repurchased by the syndicate in stabilizing or covering transactions. In general, purchases of a security for the purpose of stabilization or to reduce a short position could cause the price of the security to be higher than it might be in the absence of such purchases. The imposition of a penalty bid might also have an effect on the price of a security to the extent that it were to discourage resales of the security before the distribution is completed.

We do not make any representation or prediction as to the direction or magnitude of any effect that the transactions described above might have on the price of the securities. In addition, we do not make any representation that underwriters will engage in such transactions or that such transactions, once commenced, will not be discontinued without notice.

Underwriters, dealers and agents may engage in transactions with us or perform services for us in the ordinary course of business.

If indicated in the applicable prospectus supplement, we will authorize underwriters or other persons acting as our agents to solicit offers by particular institutions to purchase securities from us at the public offering price set forth in such prospectus supplement pursuant to delayed delivery contracts providing for payment and delivery on the date or dates stated in such prospectus supplement. Each delayed delivery contract will be for an amount no less than, and the aggregate principal amounts of securities sold under delayed delivery contracts shall be not less nor more than, the respective amounts stated in the applicable prospectus supplement. Institutions with which such contracts, when authorized, may be made include commercial and savings banks, insurance companies, pension funds, investment companies, educational and charitable institutions and others, but will in all cases be subject to our approval. The obligations of any purchaser under any such contract will be subject to the conditions that (a) the purchase of the securities shall not at the time of delivery be prohibited under the laws of any jurisdiction in the United States to which the purchaser is subject, and (b) if the securities are being sold to underwriters, we shall have sold to the underwriters the total principal amount of the securities less the principal amount thereof covered by the contracts. The underwriters and such other agents will not have any responsibility in respect of the validity or performance of such contracts.

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

EXPERTS

The consolidated financial statements and management's assessment of the effectiveness of internal controls over financial reporting (which is included in Management's Report on Internal Control over Financial Reporting) incorporated in this Prospectus by reference to the Annual Report on Form 10-K for the year ended December 31, 2006 have been so incorporated in reliance upon the report of PricewaterhouseCoopers LLP, an independent registered public accounting firm, given on the authority of said firm as experts in auditing and accounting.

LEGAL MATTERS

Certain legal matters with respect to the securities offered pursuant to this registration statement will be passed upon for us by Goodwin Procter LLP, Boston, Massachusetts. Certain legal matters may be passed upon for any agents or underwriters by counsel for such agents or underwriters identified in the applicable prospectus supplement.

WHERE YOU CAN FIND MORE INFORMATION

We must comply with the informational requirements of the Securities Exchange Act of 1934, as amended, 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 other information at the Public Reference Room maintained by the Securities and Exchange Commission at 100 F Street, N.E., Washington, D.C. 20549. 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 also maintains a web site that contains reports, proxy and information statements and other information regarding issuers like us 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>.

Statements contained in this prospectus as to the contents of any contract or other document are not necessarily complete, and in each instance we refer you to the copy of the contract or document filed as an exhibit to the registration statement, each such statement being qualified in all respects by such reference.

INCORPORATION OF CERTAIN INFORMATION 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. Our SEC file number is 0-15006. 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, as amended, until all of the shares of common stock and warrant shares covered by this prospectus are sold:

- our Annual Report on Form 10-K for the fiscal year ended December 31, 2006, as amended, including information specifically incorporated by reference into our Form 10-K from our definitive proxy statement for our 2007 Annual Meeting of Stockholders;
- our Quarterly Report on Form 10-Q filed with the Securities and Exchange Commission on May 9, 2007;
- the definitive Proxy Statement for our annual meeting of stockholders filed on April 20, 2007;
- our Current Reports on Forms 8-K filed with the Securities and Exchange Commission on March 7, 2007, April 16, 2007, April 17, 2007 and May 3, 2007;
- the description of the rights to purchase shares of our Series C-1 Junior Participating Cumulative Preferred Stock contained in our Registration Statement on Form 8-A, filed on November 8, 2004, including all amendments and reports updating that description; and
- 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, including any beneficial owner, to whom this prospectus is delivered, upon written or oral 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.

PROSPECTUS

, 2007

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	\$ 1,228
Accountants Fees and Expenses	\$ 10,000
Legal Fees and Expenses	\$ 50,000
Printing Expenses	\$ 3,500
Miscellaneous	\$ 1,500
Total	<u>\$ 66,228</u>

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

Item 15. Indemnification of Directors and Officers.

AVANT is a Delaware corporation. In accordance with the Delaware General Corporation Law (the “DGCL”), Article Six of the Registrant’s Third Restated Certificate of Incorporation, as amended, provides that no director of the Registrant shall be personally liable to the Registrant or its stockholders for breach of fiduciary duty as a director, except for liability (i) for any breach of the director’s duty of loyalty to AVANT or its stockholders, (ii) for acts or omissions not in good faith or which involve intentional misconduct or a knowing violation of law, (iii) under Section 174 of the DGCL, or (iv) for any transaction from which the director derived an improper personal benefit.

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, agreement, 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 Amended and Restated Bylaws of AVANT (the “Bylaws”) provide for indemnification to the directors, officers, employees and agents of AVANT consistent with that authorized by the DGCL. Insofar as indemnification for liabilities arising under the Securities Act of 1933, as amended, may be permitted to directors and officers of AVANT pursuant to the foregoing provision or otherwise, AVANT has been advised that, in the opinion of the Securities and Exchange Commission, such indemnification is against public policy as expressed in the Securities Exchange Act of 1934, as amended, and is therefore, unenforceable.

AVANT currently carries a directors’ and officers’ liability insurance policy which provides for payment of expenses of AVANT’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.

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Item 16. Exhibits.

Exhibit No.	Description	Location
1.1	Form of Underwriting Agreement	*
3.1	Third Restated Certificate of Incorporation of AVANT	Incorporated by reference to Exhibit 3.1 of AVANT’s Registration Statement on Form S-4 (Reg. No. 333-59215), filed July 16, 1998
3.2	Certificate of Amendment of Third Restated Certificate of Incorporation of AVANT	Incorporated by reference to Exhibit 3.1 of AVANT’s Registration Statement on Form S-4 (Reg. No. 333-59215), filed July 16, 1998
3.3	Second Certificate of Amendment of Third Restated Certificate of Incorporation of AVANT	Incorporated by reference to Exhibit 3.2 of AVANT’s Registration Statement on Form S-4 (Reg. No. 333-59215), filed July 16, 1998

3.4	Amended and Restated By-Laws of AVANT as of November 10, 1994	Incorporated by reference to Exhibit 3.3 of AVANT's Registration Statement on Form S-4 (Reg. No. 333-59215), filed July 16, 1998
3.5	Third Certificate of Amendment of Third Restated Certificate of Incorporation of AVANT	Incorporated by reference to Exhibit 3.1 of AVANT's Quarterly Report on Form 10-Q, filed May 10, 2002
3.6	Certificate of Elimination of Series C-1 Junior Participating Cumulative Preferred Stock	Incorporated by reference to Exhibit 3.6 of AVANT's Annual Report on Form 10-K, filed March 16, 2005
3.7	Certificate of Designations, Preferences and Rights of a Series of Preferred Stock of AVANT Immunotherapeutics, Inc. classifying and designating the Series C-1 Junior Participating Cumulative Preferred Stock	Incorporated by reference to Exhibit 3.1 of AVANT's Registration Statement on Form 8-A filed November 8, 2004
4.1	Form of Warrant	*
4.2	Form of Warrant Agreement	*
4.3	Shareholder Rights Agreement dated November 5, 2004 between AVANT and EquiServe Trust Company, N.A. as Rights Agent	Incorporated by reference to Exhibit 4.1 of AVANT's Registration Statement on Form 8-A filed November 8, 2004
5.1	Opinion of Goodwin Procter LLP	**
23.1	Consent of Independent Registered Public Accounting Firm	**
23.2	Consent of Goodwin Procter LLP	Included in Exhibit 5.1
24.1	Powers of Attorney	Included in the signature pages of this Registration Statement

* To be filed by amendment or as an exhibit to a Current Report on Form 8-K.

** Filed herewith.

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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 end 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% change in the maximum aggregate offering price set forth in the "Calculation of Registration Fee" table in the effective registration statement; and

(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 by the undersigned registrant pursuant to Section 13 or Section 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 shall be deemed 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.

(4) That, for the purpose of determining liability under the Securities Act to any purchaser, (A) each prospectus filed by the registrant pursuant to Rule 424(b)(3) shall be deemed to be part of the registration statement as of the date the filed prospectus was deemed part of and included in the registration statement; and (B) each prospectus required to be filed pursuant to Rule 424(b)(2), (b)(5), or (b)(7) as part of a registration statement in reliance on Rule 430B relating to an offering made pursuant to Rule 415(a)(1)(i), (vii), or (x) for the purpose of providing the information required by section 10(a) of the Securities Act of 1933 shall be deemed to be part of and included in the registration statement as of the earlier of the date such form of prospectus is first used after effectiveness or the date of the first contract of sale of securities in the offering described in the prospectus. As provided in Rule 430B, for liability purposes of the issuer and any person that is at that date an underwriter, such date shall be deemed to be a new effective date of the registration statement relating to the securities in the registration statement to which that prospectus relates, and the offering of such securities at that time shall be deemed to be the initial *bona fide* offering thereof. Provided, however, that no statement made in a registration statement or prospectus that is part of the registration statement or made in a document incorporated or deemed incorporated by reference into the registration statement or prospectus that is part of the registration statement will, as to a purchaser with a time of contract of sale prior to such effective date, supersede or

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modify any statement that was made in the registration statement or prospectus that was part of the registration statement or made in any such document immediately prior to such effective date.

(5) That, for the purpose of determining liability of the registrant under the Securities Act to any purchaser in the initial distribution of the securities:

The undersigned registrant undertakes that in a primary offering of securities of the undersigned registrant pursuant to this registration statement, regardless of the underwriting method used to sell the securities to the purchaser, if the securities are offered or sold to such purchaser by means of any of the following communications, the undersigned registrant will be a seller to the purchaser and will be considered to offer or sell such securities to such purchaser:

(i) Any preliminary prospectus or prospectus of the undersigned registrant relating to the offering required to be filed pursuant to Rule 424;

(ii) Any free writing prospectus relating to the offering prepared by or on behalf of the undersigned registrant or used or referred to by the undersigned registrant;

(iii) The portion of any other free writing prospectus relating to the offering containing material information about the undersigned registrant or its securities provided by or on behalf of the undersigned registrant; and

(iv) Any other communication that is an offer in the offering made by the undersigned registrant to the purchaser.

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

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SIGNATURES

Pursuant to the requirements of the Securities Act, 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 Town of Needham, Commonwealth of Massachusetts, on April 12, 2007.

AVANT IMMUNOTHERAPEUTICS, INC.

By: /s/ UNA S. RYAN, PH.D.

Una S. Ryan, Ph.D.

President and Chief Executive Officer

POWER OF ATTORNEY

Pursuant to the requirements of the Securities Act, this Registration Statement has been signed by the following persons in the capacities and on the dates indicated, each of whom also constitutes and appoints Una S. Ryan and Avery W. Catlin, and each of them singly, his or her true and lawful attorney-in-fact and agent, for him or her, with full power of substitution and resubstitution, for him or her and in his or her name, place and stead, in any and all capacities, to sign any and all amendments to this Registration Statement, and to file the same and all exhibits thereto and any other documents in connection therewith with the Securities and Exchange Commission, granting unto each attorney-in-fact and agent full power and authority to do and perform each and every act and thing requisite and necessary to be done, as fully to all intents and purposes as he or she might or could do in person, hereby ratifying and confirming all that each attorney-in-fact and agent or his or her substitute or substitutes may lawfully do or cause to be done by virtue hereof.

<u>Signature</u>	<u>Title</u>	<u>Date</u>
<u>/s/ UNA S. RYAN, PH.D.</u> Una S. Ryan, Ph.D.	President, Chief Executive Officer and Director (Principal Executive Officer)	April 12, 2007
<u>/s/ J. BARRIE WARD, PH.D.</u> J. Barrie Ward, Ph.D.	Chairman	April 12, 2007
<u>/s/ AVERY W. CATLIN</u> Avery W. Catlin	Senior Vice President, Chief Financial Officer and Treasurer (Principal Financial Officer and Principal Accounting Officer)	April 12, 2007
<u>/s/ HARRY H. PENNER, JR.</u> Harry H. Penner, Jr.	Director	April 13, 2007
<u>/s/ PETER A. SEARS</u> Peter A. Sears	Director	April 23, 2007
<u>/s/ KAREN SHOOS LIPTON</u> Karen Shoos Lipton	Director	April 17, 2007

<u>/s/ LARRY ELLBERGER</u> Larry Ellberger	Director	April 19, 2007
<u>/s/ ALF A. LINDBERG, M.D., PH.D.</u> Alf A. Lindberg, M.D., Ph.D.	Director	April 14, 2007
<u>/s/ FRANCIS R. CANO, PH.D.</u> Francis R. Cano, Ph.D.	Director	April 29, 2007

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* To be filed by amendment or as an exhibit to a Current Report on Form 8-K.

** Filed herewith.

May 21, 2007

AVANT Immunotherapeutics, Inc.
119 Fourth Avenue
Needham, Massachusetts 02494
Attn: Dr. Una S. Ryan

Re: *Securities Being Registered under Registration Statement on Form S-3*

Ladies and Gentlemen:

This opinion letter is furnished to you in connection with your filing of a Registration Statement on Form S-3 (as amended or supplemented, the "Registration Statement") pursuant to the Securities Act of 1933, as amended (the "Securities Act"), relating to the registration of the offering by AVANT Immunotherapeutics, Inc., a Delaware corporation (the "Company") of up to \$40,000,000 aggregate public offering price of the Company's Common Stock, \$0.001 par value per share (the "Shares"), warrants to purchase Common Stock (the "Warrants", and together with the Shares, the "Securities"), and the rights to purchase shares of Series C-1 Junior Participating Cumulative Preferred Stock, which are attached to all shares of Common Stock (the "Associated Rights"). The Registration Statement provides that the Securities may be offered separately or together, in separate series, in amounts, at prices and terms to be set forth on one or more prospectus supplements (each a "Prospectus Supplement") to the Prospectus contained in the Registration Statement.

We have reviewed such documents and made such examination of law as we have deemed appropriate to give the opinions expressed below. We have relied, without independent verification, on certificates of public officials and, as to matters of fact material to the opinions set forth below, on certificates of officers of the Company.

The opinion expressed below is limited to the Delaware General Corporation Law (which includes applicable provisions of the Delaware Constitution and reported judicial decisions interpreting the Delaware General Corporation Law and the Delaware Constitution).

Based on the foregoing, we are of the opinion that: (i) when the Securities and the Associated Rights are specifically authorized for issuance by the Company's Board of Directors or an authorized committee thereof (the "Authorizing Resolution"), (ii) upon receipt by the Company of the full consideration therefor as provided in the Authorizing Resolution and (iii) upon the issuance of the Securities and the Associated Rights as described in the Registration Statement and a Prospectus Supplement that is consistent with the Authorizing Resolution, the Shares and Associated Rights will be validly issued, the Shares will be fully paid and non-assessable and the Warrants will be binding obligations of the Company.

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. This opinion is given as of the date first set forth above, and we assume no obligation to update this opinion after the date hereof.

We hereby consent to the inclusion of this opinion as Exhibit 5.1 to the Registration Statement and to the references to our firm under the caption "Legal Matters" in the Registration Statement. In giving our consent, we do not admit that we are in the category of persons whose consent is required under Section 7 of the Securities Act or the rules and regulations thereunder.

Very truly yours,

/s/ GOODWIN PROCTER LLP

GOODWIN PROCTER LLP

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We hereby consent to the incorporation by reference in this Registration Statement on Form S-3 of AVANT Immunotherapeutics, Inc. of our report dated March 16, 2007 relating to the financial statements, management's assessment of the effectiveness of internal control over financial reporting and the effectiveness of internal control over financial reporting, which appears in AVANT Immunotherapeutics, Inc.'s Annual Report on Form 10-K for the year ended December 31, 2006. We also consent to the reference to us under the heading "Experts" in such Registration Statement.

/s/ PRICEWATERHOUSECOOPERS LLP

PricewaterhouseCoopers LLP

Boston, Massachusetts

May 21, 2007
