

Altus Pharmaceuticals Inc.
Form 424B5
April 10, 2007

Table of Contents

The information in this prospectus supplement is not complete and may be changed. This prospectus supplement and the accompanying prospectus are not an offer to sell these securities and we are not soliciting an offer to buy these securities in any jurisdiction where the offer or sale is not permitted.

Filed Pursuant to Rule 424(b)(5)
Registration No. 333-141414

PROSPECTUS SUPPLEMENT (Subject to Completion)
(To Prospectus dated April 5, 2007)
Issued April 10, 2007

6,000,000 Shares

Common Stock

We are offering 6,000,000 shares of common stock.

Our common stock is listed on the Nasdaq Global Market under the trading symbol ALTU. The last reported sale price of our common stock on April 9, 2007 was \$14.98 per share.

Investing in our common stock involves risks that are described in the Risk Factors section beginning on page S-9 of this prospectus supplement.

	Per Share	Total
Public offering price	\$	\$
Underwriting discounts and commissions	\$	\$
Proceeds, before expenses, to Altus Pharmaceuticals Inc.	\$	\$

The underwriters may also purchase up to an additional 900,000 shares of common stock from us at the public offering price, less the underwriting discounts and commissions, within 30 days from the date of this prospectus supplement to cover over-allotments.

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 shares of common stock will be ready for delivery on or about _____, 2007.

Merrill Lynch & Co.

Morgan Stanley

Cowen and Company

Leerink Swann & Company

TABLE OF CONTENTS

Prospectus Supplement

<u>ABOUT THIS PROSPECTUS SUPPLEMENT</u>	S-1
<u>SUMMARY</u>	S-2
<u>RISK FACTORS</u>	S-9
<u>SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS</u>	S-34
<u>USE OF PROCEEDS</u>	S-35
<u>PRICE RANGE OF COMMON STOCK</u>	S-36
<u>DIVIDENDS</u>	S-36
<u>CAPITALIZATION</u>	S-37
<u>DILUTION</u>	S-38
<u>UNDERWRITERS</u>	S-39
<u>LEGAL MATTERS</u>	S-43
<u>EXPERTS</u>	S-43

Prospectus

<u>ABOUT THIS PROSPECTUS</u>	3
<u>ALTUS PHARMACEUTICALS INC.</u>	3
<u>RISK FACTORS</u>	5
<u>SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS</u>	5
<u>USE OF PROCEEDS</u>	6
<u>PLAN OF DISTRIBUTION</u>	6
<u>LEGAL MATTERS</u>	8
<u>EXPERTS</u>	8
<u>WHERE YOU CAN FIND MORE INFORMATION</u>	8
<u>INCORPORATION OF DOCUMENTS BY REFERENCE</u>	8

Table of Contents

ABOUT THIS PROSPECTUS SUPPLEMENT

This document consists of two parts. The first part is this prospectus supplement, which describes the specific terms of our common stock offering. The second part is the accompanying prospectus, which provides more general information. This prospectus supplement and the accompanying prospectus include important information about us, our common stock and other information you should know before investing. This prospectus supplement also adds, updates and changes information contained in the accompanying prospectus. You should rely only on the information contained or incorporated by reference in this prospectus supplement and the accompanying prospectus or documents to which we otherwise refer you. We have not, and the underwriters have not, authorized anyone to provide you with different information. If anyone provides you with different or inconsistent information, you should not rely on it. If there is any inconsistency between the information in this prospectus supplement or any free writing prospectus we may authorize to be delivered to you, on the one hand, and the information contained in the accompanying prospectus, on the other hand, you should rely on the information in this prospectus supplement or such free writing prospectus, as the case may be. Before purchasing our common stock, you should carefully read both this prospectus supplement and the accompanying prospectus, together with the additional information about us described under **Where You Can Find More Information** and **Incorporation of Documents by Reference** in the accompanying prospectus.

You should assume that the information in this prospectus supplement and the accompanying prospectus is accurate only as of the date on the cover page hereof or thereof, as applicable, and that any information we have incorporated by reference in this prospectus is accurate only as of the date of the document incorporated by reference, unless we indicate otherwise. Our business, financial condition, results of operations and prospects may have changed materially since that date.

This prospectus supplement and the accompanying prospectus do not constitute an offer to sell, or a solicitation of an offer to purchase, the securities offered by this prospectus supplement and the accompanying prospectus in any jurisdiction to or from any person to whom or from whom it is unlawful to make such offer or solicitation of an offer in such jurisdiction.

For investors outside the United States: Neither we nor any of the underwriters have done anything that would permit this offering or possession or distribution of this prospectus in any jurisdiction where action for that purpose is required, other than in the United States. You are required to inform yourselves about and to observe any restrictions relating to this offering and the distribution of this prospectus supplement and the accompanying prospectus.

Table of Contents

SUMMARY

This summary highlights selected information about us and this offering. This summary does not contain all of the information you should consider before buying shares of our common stock. You should read the entire prospectus supplement and the accompanying prospectus carefully, especially the risks of investing in shares of our common stock that we describe under Risk Factors, and our consolidated financial statements and the related notes and the other information included in the documents that are incorporated herein by reference, before deciding to invest in shares of our common stock. Unless the context requires otherwise, references to Altus, we, our and us in this prospectus supplement refer to Altus Pharmaceuticals Inc. and our subsidiary.

Altus Pharmaceuticals Inc.

Overview

We are a biopharmaceutical company focused on the development and commercialization of oral and injectable protein therapeutics for gastrointestinal and metabolic disorders, with two product candidates advancing toward late-stage clinical development. We use our proprietary protein crystallization technology to develop protein therapies which we believe will have significant advantages over existing products and will address unmet medical needs. Our product candidates are designed to degrade toxic metabolites in the gut or increase the amount of a protein that is in short supply in the body. We have successfully completed a Phase II clinical trial of ALTU-135 for the treatment of malabsorption due to exocrine pancreatic insufficiency and we have also successfully completed a Phase II clinical trial of ALTU-238 in adults for the treatment of growth hormone deficiency. We are developing ALTU-238 under an agreement with Genentech, Inc., or Genentech, relating to the development, manufacture and commercialization of this product candidate in North America. We have a pipeline of other product candidates in preclinical research and development. Our most advanced preclinical product candidate is ALTU-237, which is designed to treat hyperoxalurias, a series of conditions in which too much oxalate is present in the body, resulting in an increased risk of developing kidney stones and, in rare instances, crystal formations in other organs.

ALTU-135 for Malabsorption due to Exocrine Pancreatic Insufficiency

Our lead product candidate, ALTU-135, is an orally-administered enzyme replacement therapy consisting of three digestive enzymes, lipase, protease and amylase, for the treatment of malabsorption due to exocrine pancreatic insufficiency. Exocrine pancreatic insufficiency is a deficiency of digestive enzymes normally produced by the pancreas which leads to malabsorption of nutrients, malnutrition, impaired growth and shortened life expectancy. Exocrine pancreatic insufficiency can result from a number of diseases and conditions, including cystic fibrosis, chronic pancreatitis and pancreatic cancer. According to IMS Health, global prescription sales of existing pancreatic enzyme replacement products were approximately \$739 million in 2006.

We believe that ALTU-135, if approved, will have significant competitive advantages compared to existing pancreatic enzyme replacement therapies. We believe these potential advantages include:

benefits associated with a drug that is microbially-derived and manufactured in a controlled environment, rather than a drug derived from pig pancreases, as is the case with existing pancreatic enzyme replacement therapies;

a significantly lower pill burden, allowing patients to take, on average, one capsule per meal or snack compared to, on average, four or five larger capsules per meal or snack with existing products;

a pre-specified and consistent ratio of lipase, protease and amylase;

more consistent and reliable dosing;

S-2

Table of Contents

resistance to degradation early in the gastrointestinal tract, permitting enzyme activity later in the gastrointestinal tract where most digestion and absorption of fats, proteins and carbohydrates occurs;

the potential for an alternative dosage formulation, such as a liquid oral form, which is currently unavailable with existing therapies, for children and adults who are unable to swallow pills or capsules; and

testing in what we believe is the largest well-controlled, scientifically rigorous prospective clinical trial conducted to date in the treatment of cystic fibrosis patients with pancreatic insufficiency.

We believe that many of these advantages are a result of our proprietary protein crystallization technology, which enables improved product consistency and stability, as well as higher concentration and purity.

Existing pancreatic enzyme replacement products have been marketed since before enactment of the Food, Drug and Cosmetic Act, or FDCA, in 1938 and are not marketed under new drug applications, or NDAs, approved by the United States Food and Drug Administration, or FDA. In April 2004, the FDA issued a notice that manufacturers of existing pancreatic enzyme replacement products will be subject to regulatory action if they do not obtain approved NDAs for those products by April 28, 2008. We believe that some of the manufacturers of these products may not be able to satisfy the FDA's requirements for NDAs for these products.

In 2005, we completed a prospective, randomized, double-blind, dose-ranging Phase II clinical trial of the capsule form of ALTU-135. The results of this trial demonstrated that ALTU-135 was well tolerated and in the two higher dose treatment arms ALTU-135 showed a statistically significant improvement in fat absorption (p-value<0.001), the trial's primary endpoint, as well as a statistically significant improvement in protein absorption (p-value<0.001) and a statistically significant decrease in stool weight (p-value<0.001), each of which was a secondary endpoint in the study. In addition, we observed a positive trend, although not statistically significant, in carbohydrate absorption. However, the results of our Phase II clinical trial may not be predictive of the results in our planned Phase III clinical trial of ALTU-135. We expect to initiate a pivotal Phase III clinical efficacy trial of the capsule form of ALTU-135 in patients with cystic fibrosis in the second quarter of 2007 and a long-term safety study in cystic fibrosis patients and chronic pancreatitis patients with pancreatic insufficiency in the second quarter of 2007. The FDA and the European Medicines Agency, or EMEA, have granted ALTU-135 orphan drug designation, which generally provides a drug being developed for a rare disease or condition with marketing exclusivity for seven years in the United States and ten years in the European Union if it is the first drug of its type approved for such indication. In December 2006, the FDA informed us of its intention to revoke our orphan drug designation because it found the prevalence of pancreatic insufficiency exceeded the statutory 200,000 patient limit if all HIV/AIDS patients who suffer from fat malabsorption were included in the patient population. We responded to the FDA that it was never our intent to include HIV/AIDS patients in the orphan population since the vast majority of these patients display malabsorption for reasons other than pancreatic insufficiency. We proposed, if necessary, modifying our orphan drug designation to clarify the exclusion of HIV/AIDS patients. We believe this proposal will enable us to preserve our orphan drug designation in the United States. Additionally, the FDA has granted ALTU-135 fast track designation and admission into its Continuous Marketing Application, or CMA, Pilot 2 Program, both of which are designed to facilitate interactions between a drug developer and the FDA during the drug development process.

We have a collaboration with Dr. Falk Pharma GmbH, or Dr. Falk, a specialty pharmaceutical company headquartered in Germany, to commercialize ALTU-135 in Europe, the countries of the former Soviet Union, Israel and Egypt. We also have a strategic alliance agreement with Cystic Fibrosis Foundation Therapeutics, Inc., or CFFT, which is funding a portion of the development of ALTU-135.

Table of Contents

ALTU-238 for Growth Hormone Deficiency and Related Disorders

Our next most advanced product candidate, ALTU-238, is a crystallized formulation of human growth hormone, or hGH, that is designed to be injected once-weekly with a fine gauge needle for the treatment of growth hormone deficiency and hGH-related disorders. Based on reported revenues of existing products, global sales of hGH products exceeded \$2.5 billion in 2006, and the market grew at a compound annual growth rate of approximately 9.1% from 2002 to 2006. We are developing ALTU-238 for both adult and pediatric populations as an alternative to current therapies. Current medical guidelines for clinical practice generally recommend daily administration of existing therapies by subcutaneous injection. In our Phase I and Phase II clinical trials, ALTU-238 demonstrated pharmacokinetic and pharmacodynamic parameters that are consistent with once-weekly administration. In our Phase II clinical trial, we identified doses of ALTU-238 that achieved insulin-like growth factor 1, or IGF-1, levels within the normal range for age and gender over the course of the study. IGF-1 is a naturally occurring hormone that stimulates the growth of bone, muscle and other body tissues in response to hGH and, in turn, regulates hGH release from the pituitary gland. In addition, once-per-week dosing of ALTU-238 also appeared to result in a consistent, linear dose response of hGH and IGF-1 levels in the blood, which we believe will enable physicians and patients to correlate a given dose of ALTU-238 to desired levels of hGH and IGF-1 in the blood. We believe that the convenience of once-weekly administration of ALTU-238, if approved, would improve patient acceptance and compliance, and thereby effectiveness.

We recently entered into an agreement with Genentech to develop, manufacture and commercialize ALTU-238. The agreement, which became effective on February 21, 2007, provides for an exclusive North American collaboration and license arrangement, which Genentech has the option to expand to a global arrangement. In connection with the North American agreement, in the first quarter of 2007, Genentech paid us a \$15 million up-front payment and also purchased 794,575 shares of our common stock for an aggregate purchase price of \$15 million. We have the potential to receive additional payments of approximately \$148 million based upon the achievement of all development and commercialization milestones for North America. If Genentech exercises its option to extend the collaboration globally, we have the potential to receive additional payments of approximately \$110 million, comprising an option exercise fee and payments contingent upon the achievement of all development and commercialization milestones relating to countries outside of North America. Genentech will be responsible for all ALTU-238 development and commercialization costs in North America and, if Genentech exercises its option to make this a global agreement, all such costs. We have the option to co-promote ALTU-238 with Genentech in North America. If we exercise this option, Genentech will pay us for our co-promotion efforts for a limited period of time. We are entitled to receive royalties based on annual net sales of hGH-related products resulting from the collaboration. Genentech has control over the development and commercialization of ALTU-238.

Pipeline and Technology

We also have a pipeline of product candidates in preclinical research and development that we are designing to address other areas of unmet need in gastrointestinal and metabolic disorders. Our most advanced preclinical product candidate is ALTU-237, which we are developing to treat hyperoxalurias, a series of conditions in which too much oxalate is present in the body, resulting in an increased risk of developing kidney stones and, in rare instances, crystal formations in other organs. Increased oxalate in the body can be the result of a variety of factors including excess dietary intake of oxalate, genetic disorders of metabolism, and disease states such as inflammatory bowel disease. Oxalate combines with calcium in the urine causing formations of calcium oxalate crystals, which can grow into kidney stones. Kidney stones can be a serious medical condition. Kidney stones occur in 10% of adult men and 3% of adult women during their lifetimes. There are a variety of types of kidney stones, but calcium oxalate stones are the most common type in people who have kidney stone disease. We expect to file an investigational new drug application, or IND, for ALTU-237 for the treatment of hyperoxalurias in the first half of 2007.

We are currently testing our product candidate ALTU-236 in animal models for the treatment of phenylketonuria, or PKU, which currently lacks any approved pharmaceutical therapies. PKU is a rare, inherited, metabolic disorder that results from an enzyme deficiency that causes the accumulation of the amino

S-4

Table of Contents

acid phenylalanine in the body. If left untreated, PKU can result in mental retardation, swelling of the brain, delayed speech, seizures and behavior abnormalities.

We are also testing our product candidate ALTU-242 in animal models for the treatment of gout, a condition which we believe is in need of improved pharmaceutical therapies.

Our product candidates are based on our proprietary technology, which enables the large-scale crystallization of proteins for use as therapeutic drugs. We apply our technology to improve known protein drugs, as well as to develop other proteins into protein therapeutics. For example, our product candidate ALTU-135 is based on known enzymes to which we apply our proprietary crystallization technology with the goal of offering a new and improved drug. We have developed our product candidate ALTU-238 by applying our proprietary crystallization technology with the goal of offering an improved version of an approved drug. We believe that, by using our technology, we are able to overcome many of the limitations of existing protein therapies and deliver proteins in capsule and alternative dosage forms, such as a liquid oral form and extended-release injectable formulations. Our product candidates are designed to offer improvements over existing products, such as greater convenience, better safety and efficacy and longer shelf life. In addition, we believe that we may be able to reduce the development risk and time to market for our drug candidates because we apply our technology to existing, well-understood proteins with well-defined mechanisms of action. We believe that our technology is broadly applicable to different classes of proteins, including enzymes, hormones, antibodies, cytokines and peptides. To date, we have crystallized more than 70 proteins for use in our research and development programs. We currently hold worldwide rights to all of our preclinical product candidates.

Our Strategy

Our goal is to become a leading biopharmaceutical company focused on developing and commercializing protein therapies to address unmet medical needs in gastrointestinal and metabolic disorders. Our strategy to achieve this objective includes the following elements:

Focus on advancing our lead product candidates. We have two product candidates advancing toward late-stage clinical development. We are preparing ALTU-135 for a pivotal Phase III clinical trial and a long-term safety study for the treatment of malabsorption due to exocrine pancreatic insufficiency. Based on our discussions with the FDA, we believe that the results of these two clinical trials will be sufficient to support an NDA filing for ALTU-135 with the FDA. In addition, we have completed a Phase II clinical trial of ALTU-238 in adult growth hormone deficient patients. We expect Genentech to advance ALTU-238 into a Phase III clinical trial in adults and Phase II and Phase III clinical trials in pediatric patients. We believe that these product candidates, if approved, will offer significant advantages over existing therapies. In addition, because these product candidates are based on well-understood proteins with known mechanisms of action, we believe we may be able to reduce their development risk and time to market.

Continue to build and advance our product pipeline for gastrointestinal and metabolic disorders. In addition to our product candidates in clinical development, we have built a pipeline of preclinical product candidates based on our proprietary protein crystallization technology. These product candidates are designed to address unmet needs for the treatment of hyperoxalurias, phenylketonuria, gout, and other gastrointestinal and metabolic diseases. We plan to apply the manufacturing, clinical and regulatory experience gained from our two lead product candidates to advance a number of these preclinical product candidates into clinical trials over the next few years. We also plan to add additional product candidates to our pipeline through the application of our proprietary protein crystallization technology to existing protein therapeutics or known proteins with potential therapeutic use. We plan to file an IND for ALTU-237 for the treatment of hyperoxalurias in the first half of 2007.

Establish a commercial infrastructure. We plan to establish a commercial infrastructure and targeted specialty sales force to market ALTU-135 in North America. We may also exercise our

S-5

Table of Contents

right to co-promote ALTU-238 with Genentech in North America. In addition, we plan to leverage our sales and marketing capabilities by targeting the same groups of physician specialists with additional products that we bring to market either through our own development efforts or by in-licensing from others.

Selectively establish collaborations for our product candidates with leading pharmaceutical and biotechnology companies. We have established two such collaborations to date, including a collaboration with Dr. Falk for the commercialization of ALTU-135 in Europe, the countries of the former Soviet Union, Israel and Egypt and a collaboration with Genentech for the development and commercialization of ALTU-238 in North America. We intend to develop additional collaborations in markets outside of North America where we believe that having a collaborator will enable us to gain better access to those markets. We may also collaborate with other companies to accelerate the development of some of our early-stage product candidates, to co-commercialize our product candidates in North America in instances where we believe that a larger sales and marketing presence will expand the market or accelerate penetration, or to advance other business objectives.

Establish additional collaborations to apply our technology to other therapeutic proteins. We believe that our technology has broad applicability to many classes of proteins and can be used to enhance protein therapeutics developed by other parties. In the future, we may derive value from our technology by selectively collaborating with biotechnology and pharmaceutical companies that will use our technology for products that they are either currently marketing or developing.

Our Corporate Information

We were incorporated in Massachusetts in October 1992 as a wholly-owned subsidiary of Vertex Pharmaceuticals Incorporated, or Vertex, from whom we exclusively license specified patents underlying some of our product candidates. In February 1999, we were reorganized as an independent company, and in August 2001 we reincorporated in Delaware. Prior to May 2004, we were named Altus Biologics Inc.

Our principal executive offices are located at 125 Sidney Street, Cambridge, MA 02139, and our telephone number is (617) 299-2900. Our web site address is www.altus.com. The information contained on, or that can be accessed through, our web site is not incorporated by reference into this prospectus. We have included our web site address as a factual reference and do not intend it to be an active link to our web site. We have one subsidiary, Altus Pharmaceuticals Securities Corp., a Massachusetts corporation.

Altus is a trademark of Altus Pharmaceuticals Inc. Each of the other trademarks, trade names or service marks appearing in this prospectus supplement and the accompanying prospectus belongs to its respective holder.

Table of Contents

The Offering

Common stock offered	6,000,000 shares
Common stock to be outstanding after this offering	30,024,719 shares
Use of Proceeds	We intend to use the net proceeds of this offering to fund clinical trial activities, preclinical research and development activities and for other general corporate purposes, including capital expenditures and working capital. See Use of Proceeds.
Nasdaq Global Market symbol	ALTU
Risk Factors	You should read the Risk Factors section of the prospectus supplement and the other information included or incorporated by reference in this prospectus supplement and the accompanying prospectus for a discussion of factors you should carefully consider before deciding to invest in shares of our common stock.

Except as otherwise indicated, the number of shares to be outstanding after this offering throughout this prospectus supplement is based on the number of shares outstanding on March 31, 2007, and excludes:

4,145,577 shares of common stock issuable upon the exercise of outstanding stock options as of March 31, 2007, with a weighted average exercise price of \$10.39 per share;

3,602,753 shares of common stock issuable upon the exercise of outstanding warrants as of March 31, 2007, with a weighted average exercise price of \$7.33 per share; and

516,500 shares available for future issuance under our Amended and Restated 2002 Director, Employee and Consultant Stock Plan as of March 31, 2007.

In addition, except as otherwise indicated, the information throughout this prospectus supplement assumes no exercise by the underwriters of their over-allotment option to purchase up to 900,000 additional shares of common stock from us in the offering.

Table of Contents**Summary Consolidated Financial Data**

The following table sets forth our summary consolidated statements of operations data. This data, which is derived from our audited consolidated financial statements, should be read in conjunction with our audited consolidated financial statements and related notes and statements under the caption "Management's Discussion and Analysis of Financial Condition and Results of Operations" included in our Annual Report on Form 10-K for the fiscal year ended December 31, 2006, as amended, which are incorporated by reference into this prospectus supplement and the accompanying prospectus. Historical results are not necessarily indicative of operating results to be expected in the future.

	Years Ended December 31,		
	2006	2005	2004
	(In thousands, except per share amounts)		
Consolidated Statements of Operations Data:			
Revenue			
Contract revenue	\$ 5,107	\$ 8,288	\$ 4,045
Product sales			185
Total revenue	5,107	8,288	4,230
Operating expenses			
Cost of product sales			87
Research and development	50,316	26,742	19,095
General, sales and administrative	14,799	8,611	6,320
Total operating expenses	65,115	35,353	25,502
Loss from operations	(60,008)	(27,065)	(21,272)
Interest income	5,022	1,018	646
Interest expense	(697)	(825)	(469)
Foreign currency gain (loss) and other	3	(252)	138
Net loss	(55,680)	(27,124)	(20,957)
Preferred stock dividends and accretion	(1,286)	(10,908)	(8,588)
Net loss attributable to common stockholders	\$ (56,966)	\$ (38,032)	\$ (29,545)
Basic and diluted net loss per share attributable to common stockholders	\$ (2.75)	\$ (22.13)	\$ (17.33)
Shares used in computing basic and diluted net loss per share attributable to common stockholders	20,739	1,719	1,704

The following table sets forth our consolidated balance sheet data at December 31, 2006 on an actual basis and on an as adjusted basis to give effect to the sale of 6,000,000 shares of common stock in this offering at an assumed public offering price of \$14.98 per share, after deducting the estimated underwriting discounts and commissions and offering expenses payable by us.

As of
December 31, 2006
As
Actual Adjusted
(In thousands)

Consolidated Balance Sheet Data:

Cash, cash equivalents and marketable securities	\$ 85,914	\$ 170,174
Working capital	71,307	155,567
Total assets	96,461	180,721
Deferred revenue	8,367	8,367
Long-term debt, net of current portion	2,874	2,874
Redeemable preferred stock	6,281	6,281
Total stockholders' equity	69,422	153,682

S-8

Table of Contents

RISK FACTORS

You should carefully consider the risks described below, as well as the risks described in the documents incorporated by reference in this prospectus supplement and the accompanying prospectus, before making a decision to invest in the common stock. These risks are not the only ones we face. The trading price of the common stock could decline due to any of these risks, and you may lose all or part of your investment. This prospectus supplement and the accompanying prospectus and the documents incorporated by reference herein and therein also contain forward-looking statements that involve risks and uncertainties. Actual results could differ materially from those anticipated in these forward-looking statements as a result of certain important factors, including the risks faced by us described below and in the documents incorporated herein by reference.

Risks Related to Our Business and Strategy

If we fail to obtain the additional capital necessary to fund our operations, we will be unable to successfully develop and commercialize our product candidates and may be restricted in our ability to finance discovery of our next generation of product candidates.

We will require substantial future capital in order to continue to complete clinical development and commercialize our clinical-stage product candidates, ALTU-135 and ALTU-238, and to conduct the research and development and clinical and regulatory activities necessary to bring our other product candidates, including ALTU-237, into clinical development. Our future capital requirements will depend on many factors, including:

- the progress and results of our toxicology studies and proposed Phase III clinical efficacy trial and long-term safety study for ALTU-135 and any other trials we may initiate based on the results of these trials or additional discussions with regulatory authorities;
- the results of the planned clinical trials for ALTU-238 that we or our collaborator may initiate;
- the timing, progress and results of ongoing manufacturing development work for ALTU-135, ALTU-238 and ALTU-237;
- the results of our preclinical studies and testing for our earlier stage research products and product candidates, and any decisions to initiate clinical trials if supported by the preclinical results;
- the costs, timing and outcome of regulatory review of our product candidates in clinical development, and any of our preclinical product candidates that progress to clinical trials;
- the costs of establishing commercial operations, including sales and marketing functions, should any of our product candidates approach marketing approval and/or be approved, and of establishing commercial manufacturing and distribution arrangements;
- the outcome of the decision by Genentech as to whether to exercise its option to make our collaboration agreement for ALTU-238 a global arrangement;
- the costs of preparing, filing and prosecuting patent applications, maintaining and enforcing our issued patents, ensuring freedom to operate under any third party intellectual property rights, and defending intellectual property-related claims;

our ability to establish and maintain collaborative arrangements and obtain milestone, royalty and other payments from collaborators; and

the extent to which we acquire or invest in businesses, products or technologies.

S-9

Table of Contents

Additional funds may not be available when we need them on terms that are acceptable to us, or at all. If adequate funds are not available to us on a timely basis, we may be required to:

terminate or delay preclinical studies, clinical trials or other development activities for one or more of our product candidates; or

delay our establishment of sales, marketing and commercial operations capabilities or other activities that may be necessary to commercialize our product candidates.

Based on our operating plans, we estimate that our net cash used in operating activities will be between \$55 million and \$65 million in 2007. We currently expect that our existing cash resources, investment securities, payments, including milestone payments, we expect to receive under agreements with our existing collaborators, and the anticipated proceeds of this offering will be sufficient to support the development of our product candidates and our other operations through the second half of 2009. However, our operating plan may change as a result of many factors, including factors currently unknown to us, and we may need additional funds sooner than planned. We do not expect our available funds and the anticipated proceeds of this offering to be sufficient to fund the completion of the development and commercialization of any of our product candidates, and we expect that we will need to raise additional funds prior to being able to market any products. Additional funding may not be available to us on acceptable terms, or at all.

We are obligated under our agreement with CFFTI and under the terms of our redeemable preferred stock to make significant payments upon the occurrence of specified events. We may not have sufficient resources to make these payments when they become due.

If we receive FDA approval for ALTU-135 or related products, we must pay one of our collaborators, CFFTI, an amount equal to CFFTI's aggregate funding to us plus interest, up to a maximum of \$40.0 million, less the fair market value of the shares of common stock underlying the warrants we issued to CFFTI. This amount, together with accrued interest, will be due in four annual installments, commencing 30 days after the approval date. We will also be required to pay an additional \$1.5 million to CFFTI within 30 days after the approval date. These initial payments to CFFTI, if we receive FDA approval of ALTU-135, will be due before we receive revenue from commercial sales of the product, which could require us to raise additional funds or make it difficult for us to make the payments in a timely manner. In addition, if the holder of our redeemable preferred stock elects to redeem those shares on or after December 31, 2010, we will be required to pay an aggregate of \$7.2 million plus dividends accrued after that date. We may require additional funding to make any such payments. Additional funds for these purposes may not be available to us on acceptable terms, or at all.

We have a history of net losses, which we expect to continue for at least several years and, as a result, we are unable to predict the extent of any future losses or when, if ever, we will achieve, or be able to maintain, profitability.

We have incurred significant losses since 1999, when we were reorganized as a company independent from Vertex. At December 31, 2006, our accumulated deficit was \$175.8 million and we expect to continue to incur losses for at least the next several years. We have only been able to generate limited amounts of revenue from license and milestone payments under our collaboration agreements, and payments for funded research and development, as well as from products we no longer sell. We expect that our annual operating losses will continue to increase over the next several years as we expand our research, development and commercialization efforts.

We must generate significant revenue to achieve and maintain profitability. All of our product candidates are still in early-to-mid stages of development. Even if we succeed in developing and commercializing one or more of our product candidates, we may not be able to generate sufficient revenue or achieve or maintain profitability. Our failure to become and remain profitable would depress the market price of our common stock and could impair our ability to raise capital, expand our business, diversify our product offerings or continue our operations.

S-10

Table of Contents

Our competitors may develop products that are less expensive, safer or more effective, which may diminish or prevent the commercial success of any product candidate that we bring to market.

Competition in the pharmaceutical and biotechnology industries is intense. We face competition from pharmaceutical and biotechnology companies, as well as numerous academic and research institutions and governmental agencies engaged in drug discovery activities or funding, both in the United States and abroad. Some of these competitors have greater financial resources than us, greater experience in research and development, manufacturing, preclinical testing, conducting clinical trials, obtaining regulatory approvals and marketing than we do, and have products or are pursuing the development of product candidates that target the same diseases and conditions that are the focus of our drug development programs, including those set forth below. In addition, there may be others of which we are unaware.

ALTU-135. If approved, ALTU-135, the product candidate we are developing for the treatment of malabsorption due to exocrine pancreatic insufficiency, will compete with currently marketed porcine-derived pancreatic enzyme replacement therapies from companies such as Axcan Pharma, Johnson & Johnson, and Solvay Pharmaceuticals, as well as from generic drug manufacturers such as KV Pharmaceutical and IMPAX Laboratories. In addition, we understand that Biovitrum, Eurand and Meristem Therapeutics have product candidates in clinical development, some more advanced than ALTU-135, that could compete with ALTU-135.

ALTU-238. If approved, ALTU-238, the product candidate we are developing as a once-weekly treatment for hGH deficiency and related disorders in collaboration with Genentech, will compete with existing approved hGH therapies from companies such as BioPartners, Eli Lilly, Genentech, Merck Serono, Novo Nordisk, Pfizer, Sandoz, and Teva Pharmaceutical Industries. In addition, we understand that ALTU-238 may compete with product candidates in clinical development from some of these companies and others, including LG Life Sciences, which is developing a long-acting hGH therapy based on an encapsulated microparticle technology.

ALTU-237. If approved, ALTU-237, the product candidate we are developing for the treatment of hyperoxalurias, may compete with product candidates in development at companies such as Amsterdam Molecular Therapeutics, Medix, NephroGenex, and OxThera.

Existing products to treat exocrine pancreatic insufficiency have been marketed in the United States since before the passage of the Federal Food, Drug, and Cosmetic Act, or FDCA, in 1938 and are currently marketed without FDA-approved NDAs. In 1995, the FDA issued a final rule requiring that these pancreatic enzyme products be marketed by prescription only, and in April 2004, the FDA issued a notice that manufacturers of these products will be subject to regulatory action if they do not obtain approved NDAs for their products by April 28, 2008. Despite the FDA's announced position, the agency may not pursue regulatory action against these companies if they fail to meet the 2008 deadline because there are currently no other products on the market for the treatment of exocrine pancreatic insufficiency. The level of competition that ALTU-135, if approved, will face from these products in the United States will depend on whether the manufacturers of these products obtain approved NDAs by the deadline set by the FDA and, if they are unable to do so, whether the FDA takes regulatory action against these manufacturers and the nature of any such action. The nature of the competition that ALTU-135, if approved, faces from existing pancreatic enzyme products could affect the market acceptance of ALTU-135 or require us to lower the price of ALTU-135, which would negatively impact our margins and our ability to achieve profitability.

Raising additional capital by issuing securities or through collaboration and licensing arrangements may cause dilution to existing stockholders, restrict our operations or require us to relinquish proprietary rights.

We may seek the additional capital necessary to fund our operations through public or private equity offerings, debt financings, and collaboration and licensing arrangements. To the extent that we raise additional capital through the sale of equity or convertible debt securities, existing stock ownership interests will be diluted, and the terms of such securities may include liquidation or other preferences that adversely affect the rights of our existing stockholders. In addition, many of the warrants that we have issued contain anti-dilution

S-11

Table of Contents

provisions that will result in the issuance of additional shares of common stock upon exercise, and thus further dilution, if we issue or are deemed to issue equity at a per share price less than the exercise price of the warrants. Debt financing, if available, may involve agreements that include covenants limiting or restricting our ability to take specific actions such as incurring additional debt, making capital expenditures, or declaring dividends. If we raise additional funds through collaboration and licensing arrangements with third parties, we may have to relinquish valuable rights to our technologies or product candidates, or grant licenses on terms that are not favorable to us.

We may not be successful in maintaining our existing collaborations or in establishing and maintaining additional collaborations on acceptable terms, which could adversely affect our ability to develop and commercialize our products.

An element of our business strategy is to establish collaborative arrangements with third parties, particularly with regard to development, regulatory approval, sales, marketing and distribution of our products outside of North America. We may also collaborate with other companies to accelerate the development of some of our early-stage product candidates, to co-commercialize our product candidates in North America in instances where we believe that a larger sales and marketing presence will expand the market or accelerate penetration, or to advance other business objectives. The process of establishing new collaborative relationships is difficult, time-consuming and involves significant uncertainty. We face, and will continue to face, significant competition in seeking appropriate collaborators. Moreover, if we do establish collaborative relationships, our collaborators may fail to fulfill their responsibilities or seek to renegotiate or terminate their relationships with us due to unsatisfactory clinical results, a change in business strategy, a change of control or other reasons. If we are unable to establish and maintain collaborative relationships on acceptable terms, we may have to delay or discontinue further development of one or more of our product candidates, undertake development and commercialization activities at our own expense or find alternative sources of funding.

For example, we have entered into a collaboration agreement with CFFTI under which we have received significant funding for the development of ALTU-135. We are also eligible to receive an additional payment if we achieve a specified milestone under the agreement. Additionally, the collaboration provides us with access to the Cystic Fibrosis Foundation's network of medical providers, patients, researchers and others involved in the care and treatment of cystic fibrosis patients. Our agreement with CFFTI provides for an exclusive license from us to CFFTI, and an exclusive sublicense back with a right to further sublicense from CFFTI, of intellectual property rights covering the development and commercialization of ALTU-135 in North America. The agreement with CFFTI requires us to use commercially reasonable efforts to develop and commercialize ALTU-135 in North America for the treatment of malabsorption due to exocrine pancreatic insufficiency in patients with cystic fibrosis and other indications. We are also required to meet specified milestones under the agreement by agreed upon dates. If we are unable to satisfy our obligations under the agreement, we may lose further funding under the agreement and lose our exclusive sublicense to ALTU-135 in North America, which will materially harm our business.

In addition, we have entered into a collaboration and license agreement with Genentech under which Genentech has agreed to fund the continued development and commercialization of ALTU-238 in North America. Should there be unsatisfactory clinical results, delays in development or other unsatisfactory developments that result in a delay or a failure to obtain marketing approval, we will not earn the milestones payable under the agreement nor will we earn royalties payable on commercial sales or have the opportunity to participate in the commercialization of the product.

The success of ALTU-238 depends heavily on our collaboration with Genentech, which was established only recently. If Genentech is unable or determines not to further develop or commercialize ALTU-238, or experiences significant delays in doing so, our business will be materially harmed.

We entered into a collaboration and license agreement with Genentech, which became effective on February 21, 2007, related to the development and commercialization of ALTU-238 for the treatment of human growth hormone deficiency. We are substantially dependent on Genentech for the success of ALTU-238. We do not have a long history of working with Genentech and cannot predict the success of the

S-12

Table of Contents

collaboration. Genentech will have control over the conduct and timing of development efforts with respect to ALTU-238. Although we have had discussions with Genentech regarding its current plans and intentions with regard to the clinical development of ALTU-238, Genentech is currently preparing the development plan. Genentech may revise its stated plan for ALTU-238, which could result in delays in the clinical development of ALTU-238. Genentech's failure to devote sufficient financial and other resources to the development plan may result in delayed or unsuccessful development of ALTU-238, which could lead to the non-payment or delay in payment of milestones under our agreement with Genentech and may preclude or delay commercialization of ALTU-238 and any royalties we could receive on commercial sales. Because the license we granted to Genentech is exclusive, our business will be harmed if Genentech does not commercialize ALTU-238 successfully.

In the event Genentech fails to exercise the option that it has to make our arrangement global, we may be required to seek a second collaborator for ALTU-238 outside the United States. In that event, we will have the added risk of managing two collaborations for the same product candidate. This would require a second technology transfer as well as the coordination of dual supply chains and separate development programs. This could result in a loss of the advantage of global coordination and economies of scale as well as a greater risk that conflicts could arise between the two collaborations.

Development and commercialization activities under the collaboration with Genentech are overseen by a steering committee. However, ultimate decision-making authority for these activities is vested in Genentech, which limits significantly our ability to influence the development and commercialization of ALTU-238.

With respect to commercialization, Genentech will generally commercialize ALTU-238, if approved, pursuant to an exclusive license and pay us a royalty on net sales. We have an option to co-promote ALTU-238 with Genentech in North America. If we exercise our option, we may not be able to develop our own sales and marketing force to co-promote successfully ALTU-238.

Genentech may terminate the collaboration without cause upon not less than 180 days' prior written notice and on shorter notice under other circumstances. Either party may terminate the collaboration pursuant to an uncured material default, as defined in the license agreement. Any loss of Genentech as a collaborator in the development or commercialization of ALTU-238, any dispute over the terms of, or decisions regarding, the collaboration or other adverse developments in our relationship with Genentech would materially harm our business and might accelerate our need for additional capital.

We are in discussions with our collaborator Dr. Falk regarding its claim that we have breached a representation in our collaboration agreement. If we are unable to successfully resolve this matter, our business may be materially harmed.

We have entered into a collaboration agreement with Dr. Falk. We have received substantial funding from Dr. Falk for the development and commercialization of ALTU-135 in Europe, the countries of the former Soviet Union, Egypt and Israel, and we are eligible to receive additional payments if we achieve specified milestones under the agreement. Dr. Falk has asserted that there is a third-party European patent issued in specified countries, including Germany, France and the United Kingdom, with claims that may be relevant to ALTU-135 and, therefore, that we breached a representation in our agreement with Dr. Falk and may be liable for damages under our agreement. We do not believe that we breached our agreement, and we have been in discussions with Dr. Falk for some time to resolve this matter. We also believe that if this patent were asserted against us, it is likely that we would not be found to infringe any valid claim of the patent relevant to our development and commercialization of ALTU-135. However, if the patent were successfully asserted against us or Dr. Falk and we were unable to obtain a license on commercially acceptable terms, we and Dr. Falk would be prevented during the patent term from commercializing ALTU-135 in the covered countries. Based on our current development timeline for ALTU-135 in Europe and excluding any patent term

extensions, we expect that the patent in question would expire approximately two years after we would expect to receive marketing authorization for ALTU-135 in Europe. We may not reach a resolution of this matter with Dr. Falk, or prevail if the patent were asserted against us, or, if necessary, be able to obtain a license under the patent

S-13

Table of Contents

on commercially acceptable terms, if at all. If we are unable to do so, our business could be materially harmed.

We and our collaborators may not achieve our projected research and development goals in the time frames we announce and expect, which could have an adverse impact on our business and could cause our stock price to decline.

We set goals for and make public statements regarding the timing of activities, such as the commencement and completion of preclinical studies and clinical trials, anticipated regulatory approval dates and developments and milestones under our collaboration agreements. The actual timing of these events can vary dramatically due to a number of factors such as delays or failures in our or our collaborators' preclinical studies or clinical trials, the amount of time, effort and resources committed to our programs by our collaborators and the uncertainties inherent in the regulatory approval process. We cannot be certain that our or our collaborators' preclinical studies and clinical trials will advance or be completed in the time frames we announce or expect, that we or our collaborators will make regulatory submissions or receive regulatory approvals as planned or that we or our collaborators will be able to adhere to our current schedule for the achievement of key milestones under any of our internal or collaborative programs. If we or our collaborators fail to achieve one or more of these milestones as planned, our business will be materially adversely affected and the price of our common stock could decline.

Risks Related to Development of Our Product Candidates

If we or our collaborators are unable to commercialize our lead product candidates, or experience significant delays in doing so, our business will be materially harmed.

We have invested a significant portion of our time and financial resources to date in the development of oral and injectable crystallized protein therapies, including ALTU-135, ALTU-238, and ALTU-237, for the treatment of gastrointestinal and metabolic disorders. Our ability and the ability of our collaborative partners to successfully develop and commercialize our product candidates, and therefore our ability to generate revenues, will depend on numerous factors, including:

successfully scaling up the manufacturing processes for, and obtaining sufficient supplies of, our product candidates, in order to complete our clinical trials and toxicology studies on a timely basis;

receiving marketing approvals from the FDA and foreign regulatory authorities;

arranging for commercial-scale supplies of our products with contract manufacturers whose manufacturing facilities operate in compliance with current good manufacturing practice regulations, or cGMPs, including the need to scale up the manufacturing process for commercial scale supplies;

establishing sales, marketing and distribution capabilities on our own, including if we exercise our right to co-promote ALTU-238 in North America under our agreement with Genentech, through collaborative agreements or through third parties;

establishing favorable pricing from foreign regulatory authorities; and

obtaining commercial acceptance of our product candidates, if approved, in the medical community and by third-party payors and government pricing authorities.

If we are not successful in commercializing ALTU-135, ALTU-238 or ALTU-237, or are significantly delayed in doing so, our business will be materially harmed.

Because our product candidates are in clinical development, there is a significant risk of failure.

Of the large number of drugs in development, only a small percentage result in the submission of an NDA to the FDA, and even fewer are approved for commercialization. We will only receive regulatory

S-14

Table of Contents

approval to commercialize a product candidate if we can demonstrate to the satisfaction of the FDA or the applicable foreign regulatory authority, in well-designed and conducted clinical trials, that the product candidate is safe and effective and otherwise meets the appropriate standards required for approval for a particular indication. Clinical trials are lengthy, complex and extremely expensive processes with uncertain results. A failure of one or more of our clinical trials may occur at any stage of testing. We have limited experience in conducting and managing the clinical trials necessary to obtain regulatory approvals, including approval by the FDA.

We have not yet completed Phase III clinical trials for any of our product candidates in clinical development, and we have not advanced, and may never advance, any of our other product candidates into clinical trials. We have completed a Phase II clinical trial for the capsule form of ALTU-135 and plan to conduct a Phase III clinical trial for ALTU-135 beginning in the second quarter of 2007. In order for ALTU-135 to be approved by the FDA, we will be required to demonstrate in the Phase III clinical trial, to a statistically significant degree, that ALTU-135 improves absorption of fat in patients suffering from malabsorption as a result of exocrine pancreatic insufficiency. We will also be required to demonstrate the safety of ALTU-135 in a long-term study. However, we may not be successful in meeting the primary or secondary endpoints for the Phase III clinical trial or the goal of the long-term safety study. The possibility exists that even if these trials are successful, we may still be required or may determine it is desirable to perform additional studies for approval or in order to achieve a broad indication for the labeling of the drug. In addition, we will need to complete specified toxicology studies in animals before submitting an NDA, and the results of those studies may not demonstrate sufficient safety.

The ability to recruit and enroll patients in a Phase III clinical trial and a safety study for ALTU-135 depends on the availability and willingness of patients to participate in experimental research, the conduct of recruitment activities that respect human subject protection, and recommendations by physicians to their patients to participate in our clinical trials. We have limited experience with earlier stage clinical trials, and we are developing our capabilities to conduct Phase III clinical trials, which usually involve a larger number of patients. However, in the execution of any Phase III clinical trial, we intend to rely in part on third party contractors to assist with these activities. The design of our Phase III clinical trial for ALTU-135 includes one off-enzyme period for all patients and an additional off-enzyme period for half of the patients, which may make it difficult to enroll patients and, if enrolled, may cause them to drop out of the trial. Off-enzyme periods can be uncomfortable for these patients. Any predictions about the timing of enrollment or the completion of clinical trials are subject to the risks inherent in these activities.

For ALTU-238, we have completed a Phase I clinical trial in healthy adults and a Phase II clinical trial in adults with hGH deficiency. Under our collaboration and license agreement with Genentech, Genentech has the right to plan and determine the future clinical development plan for ALTU-238. We will no longer control the level of resources or the timing for the clinical development of ALTU-238. We expect that Genentech will initiate a Phase III clinical trial. However, the efficacy of ALTU-238 has not yet been tested in a human clinical trial, and ALTU-238 may prove not to be clinically effective as an extended-release formulation of hGH. In addition, it is possible that patients receiving ALTU-238 will suffer additional or more severe side effects than we observed in our Phase I and Phase II clinical trials, which could delay or preclude regulatory approval of ALTU-238 or limit its commercial use.

ALTU-237 has not yet entered human clinical trials. It is possible that based on a review of the preclinical data by the FDA following the filing of an IND, we could be required to conduct additional preclinical research, be requested to file additional information or data, or be required to change our Phase I clinical trial development plans prior to initiating our first human clinical study of that product candidate. This could delay or preclude clinical development or regulatory approval of ALTU-237.

Table of Contents

If we observe serious or other adverse events during the time our product candidates are in development or after our products are approved and on the market, we may be required to perform lengthy additional clinical trials, may be denied regulatory approval of such products, may be forced to change the labeling of such products or may be required to withdraw any such products from the market, any of which would hinder or preclude our ability to generate revenues.

In connection with our completed Phase II clinical trial of ALTU-135, there was one serious adverse event considered by an investigator in our clinical trials as probably or possibly related to treatment with that product candidate. There have not been any serious adverse events related to our other product candidates. The one serious adverse event in our Phase II clinical trial of ALTU-135 involved a subject in the lowest dose group who developed distal intestinal obstructive syndrome, or DIOS, which resolved itself without further complications. DIOS is a condition that is unique to cystic fibrosis and occurs due to the accumulation of viscous mucous and fecal material in the colon. According to a 1987 study, DIOS is relatively common in cystic fibrosis patients, occurring in about 16% of those patients. In our Phase II clinical trial of ALTU-135, we also observed elevated levels of liver transaminases, which can be associated with harm to the liver. These elevations were transient and asymptomatic and were not reported as drug-related serious adverse events. Elevation of liver transaminases is common among cystic fibrosis patients. The elevations we observed may or may not have been caused by ALTU-135. The increases we observed were not associated with increases in bilirubin, which are typically associated with harm to the liver.

If the incidence of these events increases in number or severity, if a regulatory authority believes that these events constitute an adverse effect caused by the drug, or if other effects are identified either during future clinical trials or after any of our drug candidates are approved and on the market:

we may be required to conduct additional pre-clinical or clinical trials, make changes in labeling of any such products, reformulate any such products, or implement changes to or obtain new approvals of our or our contractors or collaborators manufacturing facilities or processes;

regulatory authorities may be unwilling to approve our product candidates or may withdraw approval of our products;

we may experience a significant drop in the sales of the affected products;

our reputation in the marketplace may suffer; and

we may become the target of lawsuits, including class action suits.

Any of these events could prevent approval or harm sales of the affected products or could substantially increase the costs and expenses of commercializing and marketing any such products.

If clinical trials for our product candidates are prolonged or delayed, we may be unable to commercialize our product candidates on a timely basis, or at all, which would require us to incur additional costs and delay our receipt of any revenue from potential product sales.

We may encounter problems with our ongoing or planned clinical trials that could cause us or a regulatory authority to delay or suspend those clinical trials or delay the analysis of data derived from them. A number of events or factors, including any of the following, could delay the completion of our ongoing and planned clinical trials and negatively impact our ability to obtain regulatory approval for, and to market and sell, a particular product candidate, including our clinical-stage product candidates:

conditions imposed on us by the FDA or any foreign regulatory authority regarding the scope or design of our clinical trials;

delays in obtaining, or our inability to obtain or maintain, required approvals from institutional review boards, or IRBs, or other reviewing entities at clinical sites selected for participation in our clinical trials;

delays in the completion of manufacturing development work for our product candidates, such as the delays we experienced in 2006 relating to ALTU-135 and ALTU-238;

S-16

Table of Contents

insufficient supply or deficient quality of our product candidates or other materials necessary to conduct our clinical trials;

difficulties enrolling subjects in our clinical trials, including finding pediatric subjects with hGH deficiency who have not previously received hGH therapy for our pediatric trials of ALTU-238;

delays in the clinical development of ALTU-238, which is now controlled by Genentech in North America, and which Genentech has the option to control in the rest of the world;

high drop-out rates of subjects in our clinical trials;

negative or inconclusive results from clinical trials, or results that are inconsistent with earlier results, that necessitate additional clinical studies;

serious or unexpected drug-related side effects experienced by subjects in clinical trials; or

failure of our third-party contractors or our investigators to comply with regulatory requirements or otherwise meet their contractual obligations to us in a timely manner.

Our clinical trials and those of our collaborators may not begin as planned, may need to be redesigned, and may not be completed on schedule, if at all. For example, on July 24, 2006, we announced that we expected to perform additional manufacturing development work before initiating the planned Phase III clinical trial of ALTU-135 in order to ensure a consistent production process for that product candidate. In addition, on that same date, we announced that the schedule for delivery of equipment for the production of ALTU-238 had been delayed due to several changes to the design specifications for that equipment, which would result in a delay in the initiation of planned Phase III trials of ALTU-238. Delays in our clinical trials may result in increased development costs for our product candidates, which could cause our stock price to decline and could limit our ability to obtain additional financing. In addition, if one or more of our clinical trials are delayed, our competitors may be able to bring products to market before we do, and the commercial advantage, profitability or viability of our product candidates, including our clinical-stage product candidates, could be significantly reduced.

Conducting clinical studies in Eastern Europe involves risks not typically associated with U.S. studies which may result in timing, cost and/or quality problems in our planned clinical trials for our product candidates.

We expect that a significant number of the patients in our upcoming clinical trials will be enrolled in Eastern European countries. We plan to conduct these trials in compliance with good clinical practices. However, ensuring compliance with good clinical practices at Eastern European clinical sites will involve risks, including risks associated with language barriers and the fact that some European clinical investigators have only limited experience in conducting clinical studies in accordance with standards set forth by the FDA and EMEA. We will seek to mitigate this risk by monitoring and auditing the ongoing performance of our studies, using both our employees and outside contract research organizations, to ensure compliance with good clinical practices and all other regulatory requirements. Failure to attain and document good clinical practices compliance would adversely impact the value of any data generated from these trials. In addition, should it require more time or money than we currently anticipate to perform any required site training, monitoring or auditing activities, these trials could be delayed, exceed their budgets, or both, which could have a material adverse impact on our business.

We may fail to select or capitalize on the most scientifically, clinically or commercially promising or profitable indications or therapeutic areas for our product candidates.

We have limited technical, managerial and financial resources to determine the indications on which we should focus the development efforts related to our product candidates. We may make incorrect determinations. Our decisions to allocate our research, management and financial resources toward particular indications or therapeutic areas for our product candidates may not lead to the development of viable commercial products and may divert resources from better opportunities. Similarly, our decisions to delay or

S-17

Table of Contents

terminate drug development programs may also be incorrect and could cause us to miss valuable opportunities. For example, we will need to allocate our resources among ALTU-135, ALTU-237 and ALTU-236, and other preclinical product candidates. If we invest in the advancement of a candidate which proves not to be viable, we will have fewer resources available for potentially more promising candidates.

Risks Related to Regulatory Approval of Our Product Candidates and Other Government Regulations

If we or our collaborators do not obtain required regulatory approvals, we will be unable to commercialize our product candidates, and our ability to generate revenue will be materially impaired.

ALTU-135, ALTU-238, ALTU-237 and any other product candidates we may discover or acquire and seek to commercialize, either alone or in conjunction with a collaborator, are subject to extensive regulation by the FDA and other regulatory authorities in the United States and other countries relating to the testing, manufacture, safety, efficacy, recordkeeping, labeling, packaging, storage, approval, advertising, promotion, sale and distribution of drugs. In the United States and in many foreign jurisdictions, rigorous preclinical testing and clinical trials and an extensive regulatory review process must be successfully completed before a new drug can be sold. We have not obtained regulatory approval for any product. Satisfaction of these and other regulatory requirements is costly, time consuming, uncertain and subject to unanticipated delays.

The time required to obtain approval by the FDA is unpredictable but typically takes many years following the commencement of clinical trials, depending upon numerous factors, including the complexity of the product candidate and the disease to be treated. Our product candidates may fail to receive regulatory approval for many reasons, including:

- a failure to demonstrate to the satisfaction of the FDA or comparable foreign regulatory authorities that a product candidate is safe and effective for a particular indication;

- the results of clinical trials may not meet the level of statistical significance required by the FDA or other regulatory authorities for approval;

- an inability to demonstrate that a product candidate's benefits outweigh its risks;

- an inability to demonstrate that the product candidate presents an advantage over existing therapies;

- the FDA's or comparable foreign regulatory authorities' disagreement with the manner in which we or our collaborators interpret the data from preclinical studies or clinical trials;

- the FDA's or comparable foreign regulatory authorities' failure to approve the manufacturing processes or facilities of third-party contract manufacturers of clinical and commercial supplies; and

- a change in the approval policies or regulations of, or the specific advice provided to us by, the FDA or comparable foreign regulatory authorities or a change in the laws governing the approval process.

The FDA or comparable foreign regulatory authorities might decide that the data are insufficient for approval and require additional clinical trials or other studies. Furthermore, even if we do receive regulatory approval to market a commercial product, any such approval may be subject to limitations on the indicated uses for which we or our collaborative partner may market the product. It is possible that none of our existing product candidates or any product candidates we may seek to develop or have developed by a collaborative partner will ever obtain the appropriate regulatory approvals necessary for us or our collaborators to begin selling them.

Failure to obtain regulatory approvals or to comply with regulatory requirements in foreign jurisdictions would prevent us or our collaborators from marketing our products internationally.

We intend to have our product candidates marketed outside the United States, including in Germany, Japan, the United Kingdom, France, Egypt, Israel and the countries of the former Soviet Union. In order to

S-18

Table of Contents

market products in the European Union and many other non-United States jurisdictions, we or our collaborators must obtain separate regulatory approvals and comply with numerous and varying regulatory requirements. We have no experience in obtaining foreign regulatory approvals for our product candidates. The approval procedures vary among countries and can involve additional and costly preclinical and clinical testing and data review. The time required to obtain approval in other countries may differ from that required to obtain FDA approval. The foreign regulatory approval process may include all of the risks associated with obtaining FDA approval. Approval by the FDA does not ensure approval by regulatory authorities in other countries, and approval by one foreign regulatory authority does not ensure approval by regulatory authorities in other foreign countries or by the FDA. We or our collaborators may not receive necessary approvals to commercialize our products in any market. The failure to obtain these approvals could harm our business and result in decreased revenues from milestones or royalties in our collaboration agreements.

We also face challenges arising from the different regulatory requirements imposed by United States and foreign regulators with respect to clinical trials. The EMEA often imposes different requirements than the FDA with respect to the design of a pivotal Phase III clinical trial. For example, we believe that, based on our discussions with the EMEA, we will be required to conduct a trial comparing ALTU-135 with a currently marketed pancreatic enzyme replacement therapy in order to obtain regulatory approval in the European Union. Our agreement with Dr. Falk contemplates that we will conduct a combined Phase III clinical trial, with both United States and European clinical sites, to be performed in a manner consistent with the requirements of both the FDA and the EMEA. However, the FDA has not required a comparison of ALTU-135 with a currently marketed pancreatic enzyme replacement therapy in a clinical trial and, in light of what we believe to be the different requirements of the FDA and EMEA, we are discussing with Dr. Falk an alternate strategy for the Phase III clinical development of ALTU-135 in the European Union. A failure to develop and reach agreement on a successful strategy with Dr. Falk could result in the delay of or prevent the marketing approval of ALTU-135 by the EMEA and could also result in a claim by Dr. Falk that we breached our agreement with them. If we agree on a strategy that involves a comparison of ALTU-135 with a currently marketed pancreatic enzyme replacement therapy in Europe, it is possible the FDA could delay its approval of ALTU-135 until the comparison study is completed. If the study is completed and it does not demonstrate an advantage of ALTU-135 over the currently marketed pancreatic enzyme replacement therapy, the commercial profitability and viability of ALTU-135 could be materially and adversely affected in Europe as well as the United States.

Our product candidates will remain subject to ongoing regulatory requirements even if they receive marketing approval, and if we fail to comply with these requirements, we could lose these approvals, and the sales of any approved commercial products could be suspended.

Even if we receive regulatory approval to market a particular product candidate, the product will remain subject to extensive regulatory requirements, including requirements relating to manufacturing, labeling, packaging, adverse event reporting, storage, advertising, promotion, distribution and record keeping. Even if regulatory approval of a product is granted, the approval may be subject to limitations on the uses for which the product may be marketed or to the conditions of approval, or contain requirements for costly post-marketing testing and surveillance to monitor the safety or efficacy of the product, which could reduce our revenues, increase our expenses and render the approved product candidate not commercially viable.

In addition, as clinical experience with a drug expands after approval because it is typically used by a larger and more diverse group of patients after approval than during clinical trials, side effects and other problems may be observed after approval that were not seen or anticipated during pre-approval clinical trials or other studies. Any adverse effects observed after the approval and marketing of a product candidate could result in limitations on the use of or withdrawal of any approved products from the marketplace. Absence of long-term safety data may also limit the approved uses of our products, if any. If we fail to comply with the regulatory requirements of the FDA and other applicable United States and foreign regulatory authorities, or previously unknown problems with any approved

commercial products, manufacturers or manufacturing

S-19

Table of Contents

processes are discovered, we could be subject to administrative or judicially imposed sanctions or other setbacks, including:

restrictions on the products, manufacturers or manufacturing processes;

warning letters;

civil or criminal penalties;

fines;

injunctions;

product seizures or detentions;

import or export bans or restrictions;

voluntary or mandatory product recalls and related publicity requirements;

suspension or withdrawal of regulatory approvals;

total or partial suspension of production; and

refusal to approve pending applications for marketing approval of new products or supplements to approved applications.

If we or our collaborators are slow to adapt, or are unable to adapt, to changes in existing regulatory requirements or adoption of new regulatory requirements or policies, we or our collaborators may lose marketing approval for our products when and if any of them are approved, resulting in decreased revenue from milestones, product sales or royalties.

We deal with hazardous materials and must comply with environmental laws and regulations, which can be expensive and restrict how we do business.

Our activities and those of our third-party manufacturers on our behalf involve the controlled storage, use and disposal of hazardous materials, including microbial agents, corrosive, explosive and flammable chemicals and other hazardous compounds. We and our manufacturers are subject to federal, state and local laws and regulations governing the use, manufacture, storage, handling and disposal of these hazardous materials. Although we believe that the safety procedures for handling and disposing of these materials comply with the standards prescribed by these laws and regulations, we cannot eliminate the risk of accidental contamination or injury from these materials.

In the event of an accident, state or federal authorities may curtail our use of these materials and interrupt our business operations. In addition, we could be liable for any resulting civil damages which may exceed our financial resources and may seriously harm our business. While we believe that the amount of insurance we currently carry, providing coverage of \$1 million, should be sufficient for typical risks regarding our handling of these materials, it may not be sufficient to cover pollution conditions or other extraordinary or unanticipated events. Furthermore, an accident could damage, or force us to shut down, our operations. In addition, if we develop a manufacturing capacity, we may incur substantial costs to comply with environmental regulations and would be subject to the risk of accidental contamination or injury from the use of hazardous materials in our manufacturing process.

Risks Related to Our Dependence on Third Parties

We have no manufacturing capacity, and we have relied and expect to continue to rely on third-party manufacturers to produce our product candidates.

We do not own or operate manufacturing facilities for the production of clinical or commercial quantities of our product candidates or any of the compounds that we are testing in our preclinical programs, and we lack the resources and the capabilities to do so. As a result, we currently rely, and we expect to rely in the future, on third-party manufacturers to supply the active pharmaceutical ingredients, or APIs, for our

S-20

Table of Contents

product candidates and to produce and package our drug products. Reliance on third-party manufacturers entails risks to which we would not be subject if we manufactured product candidates or products ourselves, including:

reliance on the third party for manufacturing process development, regulatory compliance and quality assurance;

limitations on supply availability resulting from capacity and scheduling constraints of the third party;

the possible breach of the manufacturing agreement by the third party because of factors beyond our control; and

the possible termination or non-renewal of the agreement by the third party, based on its own business priorities, at a time that is costly or inconvenient for us.

For example, on July 24, 2006, we announced that the schedule for delivery of equipment for the production of ALTU-238 had been delayed due to several changes to the design specifications for that equipment, which would result in a delay in the initiation of the planned Phase III clinical trial of ALTU-238. Our current and anticipated future dependence upon others for the manufacture of our product candidates may adversely affect our future profit margins and our ability to develop our product candidates and commercialize any products that receive regulatory approval on a timely basis.

We currently rely on a limited number of manufacturers for the clinical and commercial supply of each of our product candidates, which could delay or prevent the clinical development and commercialization of our product candidates.

We currently depend on single source suppliers for each of our product candidates. Any disruption in production, inability of a supplier to produce adequate quantities of clinical and other material to meet our needs or other impediments could adversely affect our ability to successfully complete the clinical trials and other studies of our product candidates, delay submissions of our regulatory applications or adversely affect our ability to commercialize our product candidates in a timely manner, or at all.

We currently rely on two contract manufacturers to provide us with ALTU-135 for our Phase III clinical trial. Amano Enzyme Inc., or Amano, located in Nagoya, Japan, is the sole supplier of the enzymes that comprise the APIs for ALTU-135. Patheon Inc., or Patheon, located in Ontario, Canada, is the sole manufacturer of the ALTU-135 drug product which contains the three APIs. Both Amano and Patheon have only supplied us with materials for our clinical trials and our toxicology studies. In addition, Amano's manufacturing facility that produces the APIs for ALTU-135 has not been inspected or approved by the FDA, EMEA or the Japanese Ministry of Health, Labour and Welfare. Pursuant to our agreement with Amano, it has notified us that it will not be the primary manufacturer of the APIs for the initial commercial supply of ALTU-135. Any dispute over the terms of, or decisions regarding, our collaboration with Amano or other adverse developments in our relationship with Amano would materially harm our business and might accelerate our need for additional capital.

We entered into an agreement with Lonza in November 2006 for the commercial scale-up and supply of ALTU-135. We are in the process of working with Lonza to transfer from Amano and us the technology required to manufacture the APIs for ALTU-135. Switching manufacturers will require the cooperation of Amano, training of personnel, and validation of Lonza's processes. Changes in manufacturing processes or procedures, including a change in the location where the drug is manufactured or a change of a third-party manufacturer, may require prior review and approval from the FDA and satisfaction of comparable foreign requirements. This review may be costly and time-consuming and, if we obtain the required marketing approvals, could delay or prevent the launch of a product. If we are unable to

successfully transition the manufacture of the APIs for ALTU-135 from Amano and ourselves to Lonza, our commercialization of ALTU-135 could be delayed, prevented or impaired and the costs related to ALTU-135 may increase.

S-21

Table of Contents

With respect to ALTU-238, we have purchased the hGH, the API in ALTU-238, for our clinical trials to date from Sandoz. Genentech, with whom we recently entered into a collaboration for ALTU-238, is a manufacturer of hGH. We expect Genentech to manufacture and supply the hGH for ALTU-238 for commercial supply. We are planning to conduct a bioequivalence study in connection with the transition from hGH provided by Sandoz to hGH provided by Genentech, although the FDA has not advised us that a bioequivalence study is required. We cannot be certain the results of this bioequivalence study will be favorable.

We have an agreement with Althea Technologies, Inc., or Althea, a contract manufacturing organization, for Althea to use the hGH supplied to it to produce the clinical supplies for our planned clinical trials of ALTU-238. We will need to transfer the manufacturing process for ALTU-238 to Althea and validate this process. Furthermore, prior to the initiation of manufacturing activities for ALTU-238 at Althea we will need to complete additional activities including the delivery, installation and qualification of specialized manufacturing equipment specific to ALTU-238. Delays in these activities, particularly in the delivery of specialized manufacturing equipment, has in the past delayed and could delay again the planned clinical trials for ALTU-238 and result in additional unforeseen expenses.

Our agreement with Althea covers only the manufacture of ALTU-238 for the planned clinical trials of ALTU-238. Although Genentech has agreed to supply the hGH for commercialization of ALTU-238, we or Genentech will need to negotiate an additional agreement under which Althea would provide the commercial supply of ALTU-238 or find an alternative commercial manufacturer. Switching manufacturers would require cooperation with Althea, technology transfers, training, and validation of the alternative manufacturer's processes, and, under some circumstances, will require us to make a specified payment to Althea. Changes in manufacturing processes or procedures, including a change in the location where the drug is manufactured or a change of a third-party manufacturer, may require prior review and approval from the FDA and satisfaction of comparable foreign requirements. This review may be costly and time-consuming and could delay or prevent the launch of a product. If we or Genentech are unable to secure another contract manufacturer for ALTU-238 at an acceptable cost, the commercialization of ALTU-238 could be delayed, prevented or impaired, and the costs related to ALTU-238 may increase. Any dispute over the terms of, or decisions regarding, our collaboration with Althea or other adverse developments in our relationship would materially harm our business and might accelerate our need for additional capital.

We do not have any agreements in place to manufacture our other product candidates on a commercial scale. In order to commercialize our product candidates, our existing suppliers will need to scale up their manufacturing of our product candidates and/or transfer the technology to a commercial supplier. We may be required to fund capital improvements to support scale-up of manufacturing and related activities. Our existing manufacturers may not be able to successfully increase their manufacturing capacity for any of our product candidates for which we obtain marketing approval in a timely or economic manner, or at all. We may need to engage other manufacturers to provide commercial supplies of our product candidates. It may be difficult for us to enter into commercial supply arrangements on a timely basis or on acceptable terms, which could delay or prevent our ability to commercialize our product candidates. If our existing manufacturers are unable or unwilling to increase their manufacturing capacity or we are unable to establish alternative arrangements, the development and commercialization of our product candidates may be delayed or there may be a shortage in supply.

Any performance failure on the part of our or our collaborators' existing or future manufacturers could delay clinical development or regulatory approval of our product candidates or commercialization of any approved products.

The failure of any of our or our collaborators' contract manufacturers to achieve and maintain high manufacturing standards could result in patient injury or death, product liability claims, product recalls, product seizures or withdrawals, delays or failures in testing or delivery, cost overruns, failure of regulatory authorities to grant marketing

approvals, delays, suspensions or withdrawals of approvals, injunctions, fines, civil or criminal penalties, or other problems that could seriously harm our business. Contract manufacturers may encounter difficulties involving production yields, quality control and quality assurance. These

S-22

Table of Contents

manufacturers are subject to ongoing periodic unannounced inspection by the FDA and corresponding state and foreign agencies which audit strict compliance with cGMP and other applicable government regulations and corresponding foreign standards. However, we or our collaborators may have limited control over third-party manufacturers' compliance with these regulations and standards. Present or future manufacturers might not be able to comply with cGMP and other FDA or international regulatory requirements.

We rely on third parties to conduct, supervise and monitor our clinical trials, and those third parties may not perform satisfactorily, including failing to meet established deadlines for the completion of such trials.

We rely on third parties such as contract research organizations, medical institutions and clinical investigators to enroll qualified patients and conduct, supervise and monitor our clinical trials. Our reliance on these third parties for clinical development activities reduces our control over these activities. Our reliance on these third parties, however, does not relieve us of our regulatory responsibilities, including ensuring that our clinical trials are conducted in accordance with good clinical practice regulations, or GCP, and the investigational plan and protocols contained in the IND. Furthermore, these third parties may also have relationships with other entities, some of which may be our competitors. In addition, they may not complete activities on schedule, or may not conduct our preclinical studies or clinical trials in accordance with regulatory requirements or our trial design. If these third parties do not successfully carry out their contractual duties or meet expected deadlines, our efforts to obtain regulatory approvals for, and commercialize, our product candidates may be delayed or prevented.

Because we have entered into and may enter into in the future sales or collaboration transactions, we will be dependent upon our collaborators, and we may be unable to prevent them from taking actions that may be harmful to our business or inconsistent with our business strategy.

Our current licensing and collaboration agreements or any that we may enter into with respect to our product development candidates may reduce or eliminate the control we have over the development and commercialization of our product candidates. Our current or future collaborators may decide to terminate a development program under circumstances where we might have continued such a program, or may be unable or unwilling to pursue ongoing development and commercialization activities as quickly as we would prefer. A collaborator may follow a different strategy for product development and commercialization that could delay or alter development and commercial timelines and likelihood of success. A collaborator may also be unwilling or unable to fulfill its obligations to us, including its development and commercialization responsibilities. Our collaborators will likely have significant discretion in determining the efforts and level of resources that they dedicate to the development and commercialization of our product candidates. In addition, although we seek to structure our agreements with potential collaborators to prevent the collaborator from developing and commercializing a competitive product, we are not always able to negotiate such terms and the possibility exists that our collaborators may develop and commercialize, either alone or with others or through an in-license or acquisition, products that are similar to or competitive with the products that are the subject of the collaboration with us. If any collaborator terminates its collaboration with us or fails to perform or satisfy its obligations to us, the development, regulatory approval or commercialization of our product candidate would be delayed or may not occur and our business and prospects could be materially and adversely affected for that reason. Likewise, if we fail to fulfill our obligations under a collaboration and license agreement, our collaborator may be entitled to damages, to terminate the agreement, or terminate or reduce its financial payment obligations to us under our collaborative agreement.

Our collaborations with outside scientists and consultants may be subject to restriction and change.

We work with chemists, biologists and other scientists at academic and other institutions, and consultants who assist us in our research, development, regulatory and commercial efforts. These scientists and consultants have provided, and we expect that they will continue to provide, valuable advice on our programs. These scientists and consultants

are not our employees, may have other commitments that would limit their future availability to us and typically will not enter into non-compete agreements with us. If a conflict of

S-23

Table of Contents

interest arises between their work for us and their work for another entity, we may lose their services. In addition, we will be unable to prevent them from establishing competing businesses or developing competing products. For example, if a key principal investigator identifies a potential product or compound that is more scientifically interesting to his or her professional interests, his or her availability could be restricted or eliminated.

Risks Related to Commercialization of Our Product Candidates

If we are unable to establish sales and marketing capabilities or enter into agreements with third parties to market and sell our product candidates, we may be unable to generate product revenue.

We have no commercial products, and we do not currently have an organization for the sales and distribution of pharmaceutical products. In order to successfully commercialize any products that may be approved in the future by the FDA or comparable foreign regulatory authorities, we must build our sales and marketing capabilities or make arrangements with third parties to perform these services. Though we currently plan to retain North American commercialization rights to our products in circumstances where we believe that we can successfully commercialize such products on our own or with a partner, we may not be able to successfully develop our own sales and marketing force for product candidates for which we have retained marketing rights. In addition, we may co-promote our product candidates in North America with our collaborators, or we may rely on other third parties to perform sales and marketing services for our product candidates, in order to achieve a variety of business objectives, including expanding the market or accelerating penetration. If we develop our own sales and marketing capability, we may be competing with other companies that currently have experienced and well-funded sales and marketing operations.

If we do enter into arrangements with third parties to perform sales and marketing services, our product revenues may be lower than if we directly sold and marketed our products and any revenues received under such arrangements will depend on the skills and efforts of others. If we are unable to establish adequate sales, marketing and distribution capabilities, whether independently or with third parties, we may not be able to generate product revenue and may not become profitable.

If physicians and patients do not accept our future products, we may be unable to generate significant revenue, if any.

Even if we or our collaborators receive regulatory approval for our product candidates, these product candidates may not gain market acceptance among physicians, healthcare payors, government pricing agencies, patients and the medical community. Physicians may elect not to recommend or patients may elect not to use these products for a variety of reasons, including:

- prevalence and severity of adverse side effects;
- ineffective marketing and distribution support;
- timing of market introduction of competitive products;
- lack of availability of, or inadequate reimbursement from managed care plans and other third-party or government payors;
- lower demonstrated clinical safety and efficacy compared to other products;
- other potential advantages of alternative treatment methods; and

lack of cost-effectiveness or less competitive pricing.

If our approved drugs fail to achieve market acceptance, we will not be able to generate significant revenue, if any.

S-24

Table of Contents

If the government and third-party payors fail to provide coverage and adequate payment rates for our future products, if any, our revenue and prospects for profitability will be harmed.

In both domestic and foreign markets, our sales of any future products will depend in part upon the availability of reimbursement from third-party payors. Such third-party payors include government health programs such as Medicare and Medicaid, managed care providers, private health insurers and other organizations. These third-party payors are increasingly attempting to contain healthcare costs by demanding price discounts or rebates and limiting both coverage on which drugs they will pay for and the amounts that they will pay for new drugs. As a result, they may not cover or provide adequate payment for our drugs.

We might need to conduct post-marketing studies in order to demonstrate the cost-effectiveness of any future products to such payors' satisfaction. Such studies might require us to commit a significant amount of clinical development resources and management time as well as incur significant financial and other expense. Our future products might not ultimately be considered cost-effective. Adequate third-party reimbursement might not be available to enable us to maintain price levels sufficient to realize an appropriate return on investment in product development.

In the United States there have been, and we expect that there will continue to be, a number of federal and state proposals to implement governmental pricing reimbursement controls. The Medicare Prescription Drug and Modernization Act of 2003 imposed new requirements for the distribution and pricing of prescription drugs that may affect the marketing of our products, if we obtain FDA approval for those products. Under this law, Medicare was extended to cover a wide range of prescription drugs other than those directly administered by physicians in a hospital or medical office. Competitive regional private drug plans were authorized to establish lists of approved drugs, or formularies, and to negotiate rebates and other price control arrangements with drug companies. Proposals to allow the government to directly negotiate Medicare drug prices with drug companies, if enacted, might further constrain drug prices, leading to reduced revenues and profitability. While we cannot predict whether any future legislative or regulatory proposals will be adopted, the adoption of such proposals could have a material adverse effect on our business, financial condition and profitability.

Foreign governments tend to impose strict price controls on pharmaceutical products, which may adversely affect our revenues, if any.

In some foreign countries, particularly the countries of the European Union, Canada and Japan, the pricing of prescription pharmaceuticals is subject to governmental control. In these countries, pricing negotiations with governmental authorities can take considerable time after the receipt of marketing approval for a product. To obtain reimbursement or pricing approval in some countries, we may be required to conduct a clinical trial that compares the cost-effectiveness of our product candidate to other available therapies. In some countries, the pricing is limited by the pricing of existing or comparable therapies. If reimbursement of our products is unavailable or limited in scope or amount, or if pricing is set at unsatisfactory levels, our ability to enter into collaborative development and commercialization agreements and our revenues from these agreements could be adversely affected.

There is a substantial risk of product liability claims in our business. If we are unable to obtain sufficient insurance, a product liability claim against us could adversely affect our business.

We face an inherent risk of product liability exposure related to the testing of our product candidates in human clinical trials and will face even greater risks upon any commercialization by us of our product candidates. We have product liability insurance covering our clinical trials in the amount of \$10 million, which we believe is adequate to cover any current product liability exposure we may have. However, liabilities may exceed the extent of our coverage, resulting in material losses. Clinical trial and product liability insurance is becoming increasingly expensive. As a result, we

may be unable to obtain sufficient insurance or increase our existing coverage at a reasonable cost to protect us against losses that could have a material adverse effect on our business. An individual may bring a product liability claim against us if one of our products or product

S-25

Table of Contents

candidates causes, or is claimed to have caused, an injury or is found to be unsuitable for consumer use. Any product liability claim brought against us, with or without merit, could result in:

liabilities that substantially exceed our product liability insurance, which we would then be required to pay from other sources, if available;

an increase of our product liability insurance rates or the inability to maintain insurance coverage in the future on acceptable terms, or at all;

withdrawal of clinical trial volunteers or patients;

damage to our reputation and the reputation of our products, resulting in lower sales;

regulatory investigations that could require costly recalls or product modifications;

litigation costs; and

the diversion of management's attention from managing our business.

Risks Related to Our Intellectual Property

If the combination of patents, trade secrets and contractual provisions that we rely on to protect our intellectual property is inadequate to provide us with market exclusivity, our ability to successfully commercialize our product candidates will be harmed and we may not be able to operate our business profitably.

Our success depends, in part, on our ability to obtain, maintain and enforce our intellectual property rights both domestically and abroad. The patent position of biotechnology companies is generally highly uncertain, involves complex legal and factual questions and has in recent years been the subject of much litigation. The validity, enforceability and commercial value of these rights, therefore, are highly uncertain.

Our patents may not protect us against our competitors. The issuance of a patent is not conclusive as to its scope, validity or enforceability. The scope, validity or enforceability of our patents can be challenged in litigation. Such litigation is often complex, can involve substantial costs and distraction and the outcome of patent litigation is often uncertain. If the outcome is adverse to us, third parties may be able to use our patented inventions and compete directly with us, without payment to us. Third parties may also be able to circumvent our patents by design innovations. We may not receive any additional patents based on the applications that we have filed and are currently pending.

Because patent applications in the United States and many foreign jurisdictions are typically not published until 18 months after filing or, in some cases, not at all, and because publications of discoveries in the scientific literature often lag behind actual discoveries, neither we nor our licensors or collaborators can be certain that we or they were the first to make the inventions claimed in patents or pending patent applications, or that we or they were the first to file for protection of the inventions set forth in these patent applications. Assuming the other requirements for patentability are met, in the United States, the first to make the claimed invention is entitled to the patent, and outside the United States, the first to file is entitled to the patent.

Many of the proteins that are the APIs in our product candidates are off-patent. Therefore, we have obtained and are seeking to obtain patents directed to novel compositions of matter, formulations, methods of manufacturing and methods of treatment to protect some of our products. Such patents may not, however, prevent our competitors from

developing products using the same APIs but different manufacturing methods or formulation technologies that are not covered by our patents.

If third parties successfully assert that we have infringed their patents and proprietary rights or challenge the validity of our patents and proprietary rights, we may become involved in intellectual property disputes and litigation that would be costly, time consuming, and could delay or prevent the development or commercialization of our product candidates.

Our ability to commercialize our product candidates depends on our ability to develop, manufacture, market and sell our product candidates without infringing the proprietary rights of third parties. Third parties may

S-26

Table of Contents

allege our product candidates infringe their intellectual property rights. Numerous United States and foreign patents and pending patent applications, which are owned by third parties, exist in fields that relate to our product candidates and our underlying technology, including patents and patent applications claiming compositions of matter of, methods of manufacturing, and methods of treatment using, specific proteins, combinations of proteins, and protein crystals. For example, we are aware of some issued United States and/or foreign patents that may be relevant to the development and commercialization of our product candidates. However, we believe that, if these patents were asserted against us, it is likely that we would not be found to infringe any valid claim of the patents relevant to our development and commercialization of these products. If any of these patents were asserted against us and determined to be valid and construed to cover any of our product candidates, including, without limitation, ALTU-135 and ALTU-238, our development and commercialization of these products could be materially adversely affected. With respect to one of these patents, Dr. Falk, which holds a license from us to commercialize ALTU-135 in Europe, has asserted that we would be liable for damages to Dr. Falk if the patent were successfully asserted against us. We do not believe that Dr. Falk's assertion has merit, and we are in discussions with Dr. Falk concerning this matter. The outcome of these discussions is uncertain.

Although we believe it is unlikely that we would be found to infringe any valid claim of these patents, we may not succeed in any action in which the patents are asserted against us. In order to successfully challenge the validity of any United States patent, we would need to overcome a presumption of validity. This burden is a high one requiring clear and convincing evidence. If any of these patents were found to be valid and we were found to infringe any of them, or any other patent rights of third parties, we would be required to pay damages, stop the infringing activity or obtain licenses in order to use, manufacture or sell our product candidates. Any required license might not be available to us on acceptable terms, or at all. If we succeeded in obtaining these licenses, payments under these licenses would reduce any earnings from our products. In addition, some licenses might be non-exclusive and, accordingly, our competitors might gain access to the same technology as that which was licensed to us. If we failed to obtain a required license or were unable to alter the design of our product candidates to make the licenses unnecessary, we might be unable to commercialize one or more of our product candidates, which could significantly affect our ability to establish and grow our commercial business.

In order to protect or enforce our patent rights, defend our activities against claims of infringement of third-party patents, or to satisfy contractual obligations to licensees of our own intellectual property, we might be required to initiate patent litigation against third parties, such as infringement suits or nullity, opposition or interference proceedings. We and our collaborators may enforce our patent rights under the terms of our major collaboration and license agreements, but neither we nor our collaborators is required to do so. In addition, others may sue us for infringing their patent rights or file nullity, opposition or interference proceedings against our patents, even if such claims are without merit.

Intellectual property litigation is relatively common in our industry and can be costly. Even if we prevail, the cost of such litigation could deplete our financial resources. Litigation is also time consuming and could divert management's attention and resources away from our business. Furthermore, during the course of litigation, confidential information may be disclosed in the form of documents or testimony in connection with discovery requests, depositions or trial testimony. Disclosure of our confidential information and our involvement in intellectual property litigation could materially adversely affect our business. Some of our competitors may be able to sustain the costs of complex patent litigation more effectively than we can because they have substantially greater resources. In addition, any uncertainties resulting from the initiation and continuation of any litigation could significantly limit our ability to continue our operations.

Many of our employees were previously employed at universities or other biotechnology or pharmaceutical companies, including our competitors or potential competitors. While we try to ensure that our employees do not use the proprietary information or know-how of others in their work for us, we may be subject to claims that we or these

employees have inadvertently or otherwise used or disclosed intellectual property, trade secrets or other proprietary information of any such employee's former employer. Litigation may be necessary to defend against these claims and, even if we are successful in defending ourselves, could result in substantial costs or be distracting to management. If we fail in defending such claims, in addition to paying monetary damages, we may lose valuable intellectual property rights or personnel.

S-27

Table of Contents

If we are unable to protect our trade secrets, we may be unable to protect our interests in proprietary technology, processes and know-how that is not patentable or for which we have elected not to seek patent protection.

In addition to patented technology, we rely upon unpatented proprietary technology, processes and know-how, including particularly our manufacturing know-how relating to the production of the crystallized proteins used in the formulation of our product candidates. In an effort to protect our unpatented proprietary technology, processes and know-how, we require our employees, consultants, collaborators, contract manufacturers and advisors to execute confidentiality agreements. These agreements, however, may not provide us with adequate protection against improper use or disclosure of confidential information, in particular as we are required to make such information available to a larger pool of people as we seek to increase production of our product candidates and their component proteins. These agreements may be breached, and we may not become aware of, or have adequate remedies in the event of, any such breach. In addition, in some situations, these agreements may conflict with, or be subject to, the rights of third parties with whom our employees, consultants, collaborators, contract manufacturers or advisors have previous employment or consulting relationships. Also, others may independently develop substantially equivalent technology, processes and know-how or otherwise gain access to our trade secrets. If we are unable to protect the confidentiality of our proprietary technology, processes and know-how, competitors may be able to use this information to develop products that compete with our products, which could adversely impact our business.

If we fail to comply with our obligations in the agreements under which we license development or commercialization rights to products or technology from third parties, we could lose license rights that are important to our business or incur financial obligations based on our exercise of such license rights.

Several of our collaboration agreements provide for licenses to us of technology that is important to our business, and we may enter into additional agreements in the future that provide licenses to us of valuable technology. These licenses impose, and future licenses may impose, various commercialization, milestone and other obligations on us. If we fail to comply with these obligations, the licensor may have the right to terminate the license even where we are able to achieve a milestone or cure a default after a date specified in an agreement, in which event we would lose valuable rights and our ability to develop our product candidates. For example, under the terms of our strategic alliance agreement with CFFTI, we granted CFFTI an exclusive license under our intellectual property rights covering ALTU-135 and specified derivatives for use in all applications and indications in North America, and CFFTI granted us back an exclusive sublicense of the same scope, including the right to grant sublicenses. CFFTI has the right to retain its exclusive license and terminate our sublicense if we fail to meet specified development milestones, there occurs an unresolved deadlock under the agreement and we discontinue our development activities, there occurs a material default in our obligations under the agreement not cured on a timely basis, including a failure to make required license fee payments to CFFTI on a timely basis if ALTU-135 is approved by the FDA, or a bankruptcy or similar proceeding is filed by or against us. The retention by CFFTI of its exclusive license to ALTU-135 and termination of our sublicense would have a material adverse effect on our business.

In addition, we rely on Amano's intellectual property relating to the manufacturing process used to produce the APIs for ALTU-135, as well as upon technology jointly developed by us and Amano related to the production of those enzymes. Amano is required to grant a license to us of its proprietary technology and its rights under technology jointly developed during our collaboration, which we may sublicense to contract manufacturers we mutually select. Our agreement with Amano requires us to pay Amano a royalty based on the cost of the materials supplied to us by other contract manufacturers. If we were to breach our agreement with Amano, we would be required to pay Amano a higher royalty based on net sales of ALTU-135 to retain our rights to Amano's independently and jointly-developed process technology.

Table of Contents

Risks Related to Our Employees and Growth

Our future success depends on our ability to retain our chief executive officer, our chief scientific officer and other key executives and to attract, retain and motivate qualified personnel.

We are a small company with 144 employees as of December 31, 2006. Our success depends on our ability to attract, retain and motivate highly qualified management and scientific personnel. In particular, we are highly dependent on Sheldon Berkle, our President and Chief Executive Officer, Dr. Alexey L. Margolin, our Chief Scientific Officer, and the other principal members of our executive and scientific teams. All of the arrangements with these principal members of our executive and scientific teams may be terminated by us or the employee at any time without notice. Although we do not have any reason to believe that we may lose the services of any of these persons in the foreseeable future, the loss of the services of any of these persons might impede the achievement of our research, development and commercialization objectives.

Recruiting and retaining qualified scientific personnel and sales and marketing personnel will also be critical to our success. We may not be able to attract and retain these personnel on acceptable terms given the competition among numerous pharmaceutical and biotechnology companies for similar personnel. We also experience competition for the hiring of scientific personnel from universities and research institutions. We do not maintain key person insurance on any of our employees.

As we evolve from a company primarily involved in drug research and development into one that may become involved in the commercialization of drug products, we may have difficulty managing our growth, which could disrupt our operations.

As we advance our drug candidates through the development process, we will need to expand our development, regulatory, manufacturing, sales and marketing capabilities or contract with other organizations to provide these capabilities for us. As our operations expand, we expect that we will need to manage additional relationships with various contract manufacturers, collaborative partners, suppliers and other organizations. Our ability to manage our operations and growth requires us to continue to improve our operational, financial and management controls, reporting systems and procedures. Such growth could place a strain on our management, administrative and operational infrastructure. We may not be able to make improvements to our management information and control systems in an efficient or timely manner and may discover deficiencies in existing systems and controls. In addition, the physical expansion of our operations may lead to significant costs and may divert our management and business development resources. Any inability to manage growth could delay the execution of our business plans or disrupt our operations.

Risks Related to Our Common Stock, This Offering and Public Company Compliance Requirements

Our stock price has been and is likely to continue to be volatile.

Investors should consider an investment in our common stock as risky and subject to significant loss and wide fluctuations in market value. Our common stock has only been publicly traded since January 26, 2006, and accordingly there is a limited history on which to gauge the volatility of our stock price. The stock market has experienced significant volatility, particularly with respect to pharmaceutical, biotechnology and other life sciences company stocks. The volatility of pharmaceutical, biotechnology and other life sciences company stocks may not relate to the operating performance of the companies represented by the stock. Some of the factors that may cause the market price of our common stock, which has been between \$10.75 and \$25.70 per share from the time of our initial public offering until March 31, 2007, to continue to fluctuate include:

delays in or results from our clinical trials or studies;

our entry into or the loss of a significant collaboration, disputes with a collaborator, or delays in the progress of a collaborative development program;

results of clinical trials conducted by others on drugs that would compete with our product candidates;

S-29

Table of Contents

delays or other problems with manufacturing our product candidates or approved products;

failure or delays in advancing product candidates from our preclinical programs, or other product candidates we may discover or acquire in the future, into clinical trials;

failure or discontinuation of any of our research programs;

regulatory review delays, changes in regulatory requirements, new regulatory developments or enforcement policies in the United States and foreign countries;

developments or disputes concerning patents or other proprietary rights;

introduction of technological innovations or new commercial products by us or our competitors;

changes in estimates or recommendations by securities analysts, if any, who cover our common stock;

failure to meet estimates or recommendations by securities analysts, if any, who cover our common stock;

public concern over our product candidates or any approved products;

litigation;

sales, future sales or anticipated sales of our common stock by us or our stockholders;

general market conditions;

changes in the structure of health care payment systems;

failure of any of our product candidates, if approved, to achieve commercial success;

economic and other external factors or other disasters or crises; and

period-to-period fluctuations in our financial results.

These and other external factors may cause the market price and demand for our common stock to fluctuate substantially, which may limit or prevent investors from readily selling their shares of common stock and may otherwise negatively affect the liquidity of our common stock. In addition, in the past, when the market price of a stock has been volatile, holders of that stock have instituted securities class action litigation against the company that issued the stock. If any of our stockholders brought a lawsuit against us, we could incur substantial costs defending the lawsuit regardless of the outcome. Such a lawsuit could also divert the time and attention of our management.

We have limited experience attempting to comply with public company obligations. Attempting to comply with these requirements will increase our costs and require additional management resources, and we still may fail to comply.

As a newly public company, we face and will continue to face substantial growth in legal, accounting, administrative and other costs and expenses as a public company that we did not incur as a private company. Compliance with the Sarbanes-Oxley Act of 2002, as well as other rules of the Securities and Exchange Commission, or SEC, the Public

Company Accounting Oversight Board and the Nasdaq Global Market has resulted in a significant initial cost to us as well as an ongoing increase in our legal, audit and financial compliance costs. We expect to be required to include the reports required by Section 404 of the Sarbanes-Oxley Act relating to internal control over financial reporting in our Form 10-K for the fiscal year ending December 31, 2007. We have commenced a formal process to evaluate our internal controls for purposes of Section 404, and we cannot assure that our internal control over financial reporting will prove to be effective. Effective internal controls over financial reporting are necessary for us to provide reliable financial reports and, together with adequate disclosure controls and procedures, are designed to prevent fraud. Given the status of our efforts, coupled with the fact that guidance from regulatory authorities in the area of internal controls continues to evolve, we cannot be certain that we will be able to comply with the applicable deadlines. Any

S-30

Table of Contents

failure to implement required new or improved controls, or difficulties encountered in their implementation, could harm our operating results or cause us to fail to meet our reporting obligations. Ineffective internal controls could also cause investors to lose confidence in our reported financial information, which could have a negative effect on the trading price of our common stock.

If the estimates we make and the assumptions on which we rely in preparing our financial statements prove inaccurate, our actual results and our stock price may vary significantly.

Our financial statements have been prepared in accordance with accounting principles generally accepted in the United States. The preparation of these financial statements requires us to make estimates, accruals and judgments that affect the reported amounts of our assets, liabilities, revenues and expenses and related disclosure. Such estimates and judgments include the carrying value of our property, equipment and other assets, revenue recognition and the value of certain accrued expenses. We base our estimates, accruals and judgments on historical experience and on various other assumptions that we believe to be reasonable under the circumstances. However, these estimates and judgments, or the assumptions underlying them, may change over time. For example, since the inception of our collaboration agreements with CFFTI and Dr. Falk, we have adjusted our estimated costs to complete the development program for ALTU-135 on four occasions, including during the third quarters of 2005 and 2006, resulting in cumulative changes in our revenue at each time of the change in the estimate. During the third quarter of 2005, we reduced our estimated development costs for ALTU-135, which resulted in a \$3.3 million increase in our cumulative revenue in the third quarter of 2005. During the third quarter of 2006, we increased our estimated development costs for ALTU-135, which resulted in a \$3.7 million decrease in our cumulative revenue in the third quarter of 2006. Given the possibility that our estimates may change, our actual financial results may vary significantly from the estimates contained in our financial statements and our stock price could be adversely affected.

Insiders have substantial influence over us which could delay or prevent a change in corporate control or result in the entrenchment of management and the board of directors.

Our directors and executive officers, together with their affiliates and related persons as of February 28, 2007, beneficially owned, in the aggregate, approximately 35% of our outstanding common stock. As a result, these stockholders, if acting together, may have the ability to influence significantly the outcome of matters submitted to our stockholders for approval, including the election and removal of directors and any merger, consolidation or sale of all or substantially all of our assets. In addition, these persons, acting together, may have the ability to control the management and affairs of our company. Accordingly, this concentration of ownership may harm the market price of our common stock by:

delaying, deferring or preventing a change in control;

entrenching our management and the board of directors;

impeding a merger, consolidation, takeover or other business combination involving Altus; or

discouraging a potential acquirer from making a tender offer or otherwise attempting to obtain control of Altus.

Entities affiliated with Warburg Pincus Private Equity VIII, L.P., or Warburg Pincus, one of our principal stockholders, are entitled to designate up to two individuals as candidates to our board of directors, for so long as Warburg Pincus owns at least 2,691,935 shares of our common stock, or one individual for so long as Warburg Pincus owns at least 1,794,623 shares of our common stock. We have agreed to nominate and use our reasonable efforts to cause the election of such candidates. Currently, Stewart Hen and Jonathan S. Leff are the members of our board of

directors designated by Warburg Pincus.

S-31

Table of Contents

A significant portion of our total outstanding shares may be sold into the market in the near future. This could cause the market price of our common stock to drop significantly, even if our business is doing well.

Sales of a substantial number of shares of our common stock in the public market could occur at any time. These sales, or the perception in the market that the holders of a large number of shares intend to sell shares, could reduce the market price of our common stock. We had 24,024,719 shares of common stock outstanding as of March 31, 2007. Holders of an aggregate of 16,422,383 shares of our common stock, assuming the exercise of warrants to purchase shares of our common stock, have rights, subject to some conditions, to require us to file registration statements covering their shares or to include their shares in registration statements that we may file for ourselves or other stockholders, other than the registration statement of which this prospectus supplement forms a part. We have registered all shares of common stock issuable under our equity compensation plans and they can now be freely sold in the public market upon issuance. A decline in the price of shares of our common stock might impede our ability to raise capital through the issuance of additional shares of our common stock or other equity securities, and may cause our stockholders to lose part or all of their investments in our shares of common stock.

Provisions of our charter, bylaws, and Delaware law may make an acquisition of us or a change in our management more difficult.

Certain provisions of our certificate of incorporation and bylaws could discourage, delay or prevent a merger, acquisition or other change in control that stockholders may consider favorable, including transactions in which stockholders might otherwise receive a premium for their shares. These provisions could limit the price that investors might be willing to pay in the future for shares of our common stock, thereby depressing the market price of our common stock. Stockholders who wish to participate in these transactions may not have the opportunity to do so. Furthermore, these provisions could prevent or frustrate attempts by our stockholders to replace or remove our management. These provisions:

- allow the authorized number of directors to be changed only by resolution of our board of directors;
- establish a classified board of directors, such that not all members of the board are elected at one time;
- authorize our board of directors to issue without stockholder approval blank check preferred stock that, if issued, could operate as a poison pill to dilute the stock ownership of a potential hostile acquirer to prevent an acquisition that is not approved by our board of directors;
- require that stockholder actions must be effected at a duly called stockholder meeting and prohibit stockholder action by written consent;
- establish advance notice requirements for stockholder nominations to our board of directors or for stockholder proposals that can be acted on at stockholder meetings;
- limit who may call stockholder meetings; and
- require the approval of the holders of 80% of the outstanding shares of our capital stock entitled to vote in order to amend certain provisions of our restated certificate of incorporation and restated bylaws.

In addition, because we are incorporated in Delaware, we are governed by the provisions of Section 203 of the Delaware General Corporation Law, which may, unless certain criteria are met, prohibit large stockholders, in

particular those owning 15% or more of our outstanding voting stock, from merging or combining with us for a prescribed period of time.

S-32

Table of Contents

We have broad discretion in the use of the net proceeds from this offering and may not use them effectively.

Management will retain broad discretion over the use of the net proceeds from this offering. Stockholders may not agree with such uses, and our use of the proceeds may not yield a significant return or any return at all for our stockholders. The failure by our management to apply these funds effectively could have a material adverse effect on our business.

We intend to use the proceeds from this offering for clinical activities, including clinical supplies, preclinical research and development activities, general and administrative expenses, working capital needs and other general corporate purposes, including capital expenditures. Because of the number and variability of factors that will determine our use of the proceeds from this offering, their ultimate use may vary substantially from their currently intended use. For a further description of our intended use of the proceeds of this offering, see the **Use of Proceeds** section of this prospectus supplement.

Investors in this offering will pay a much higher price than the book value of our stock.

If you purchase common stock in this offering, you will incur an immediate and substantial dilution in net tangible book value of \$9.70 per share, after giving effect to the sale by us of 6,000,000 shares of common stock offered in this offering at an assumed public offering price of \$14.98 per share. In the past, we have issued options to acquire common stock at prices significantly below this offering price. To the extent these outstanding options are ultimately exercised, you will incur additional dilution. In addition, if the underwriters exercise their over-allotment option, you will incur additional dilution.

Table of Contents

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus supplement, the accompanying prospectus and the documents incorporated by reference into this prospectus supplement and the accompanying prospectus contain forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. These statements involve known and unknown risks, uncertainties and other important factors which may cause our actual results, performance or achievements to be materially different from any future results, performances or achievements expressed or implied by the forward-looking statements. Forward-looking statements include, but are not limited to, statements about:

- the expected timing, progress or success of our preclinical research and development and clinical programs;
- our ability to successfully obtain sufficient supplies of our product candidates for use in clinical trials and toxicology studies and secure sufficient commercial supplies of our product candidates;
- the timing, costs and other limitations involved in obtaining regulatory approval for any of our product candidates;
- the potential benefits of our product candidates over other therapies;
- our ability to market, commercialize and achieve market acceptance for any of our product candidates that we are developing or may develop in the future;
- our estimate of market sizes and anticipated uses of our product candidates;
- our ability to enter into collaboration agreements with respect to our product candidates and the performance of our collaborative partners under such agreements;
- our ability to protect our intellectual property and operate our business without infringing upon the intellectual property rights of others;
- our estimates of future performance;
- our ability to raise sufficient capital to fund our operations; and
- our estimates regarding anticipated operating losses, future revenue, expenses, capital requirements and our needs for additional financing.

In some cases, you can identify forward-looking statements by terms such as anticipates, believes, could, estimates, expects, intends, may, plans, potential, predicts, projects, should, will, would and similar expressions. You should identify forward-looking statements. Forward-looking statements reflect our current views with respect to future events and are based on assumptions and subject to risks and uncertainties. Because of these risks and uncertainties, the forward-looking events and circumstances discussed in this prospectus may not transpire. We discuss many of these risks in this prospectus supplement under the heading **Risk Factors**.

Given these uncertainties, you should not place undue reliance on these forward-looking statements. Also, forward-looking statements represent our estimates and assumptions only as of the date of this document. You should

read this document and the documents that we reference in this prospectus supplement and the accompanying prospectus with the understanding that our actual future results may be materially different from what we expect. Except as required by law, we do not undertake any obligation to update or revise any forward-looking statements contained in this prospectus supplement, the accompanying prospectus and the documents incorporated by reference into this prospectus supplement and the accompanying prospectus whether as a result of new information, future events or otherwise.

S-34

Table of Contents

USE OF PROCEEDS

We estimate that the net proceeds from the sale of 6,000,000 shares of our common stock in this offering will be approximately \$84.3 million, at an assumed public offering price of \$14.98 per share, after deducting estimated underwriting discounts and commissions and the estimated offering expenses payable by us. If the underwriters exercise their over-allotment option in full, we estimate the net proceeds to us from this offering will be approximately \$96.9 million. A \$0.25 increase (decrease) in the assumed public offering price of \$14.98 per share would increase (decrease) our net proceeds from this offering by approximately \$1.4 million, assuming that the number of shares offered by us, as set forth on the cover page of this prospectus supplement, remains the same and after deducting estimated underwriting discounts and commissions.

We currently intend to use the net proceeds of this offering to fund the following:

approximately \$50 million to fund ALTU-135 clinical development activities, including a Phase III clinical efficacy trial, a long-term safety study and related manufacturing activities;

approximately \$30 million to fund preclinical research and development activities for ALTU-237, ALTU-236 and our other preclinical product candidates; and

the remainder to fund general corporate purposes, including capital expenditures and working capital.

This expected use of net proceeds of this offering represents our current intentions based upon our present plans and business conditions. The amounts and timing of our actual expenditures depend on numerous factors, including the ongoing status of and results from clinical trials and other studies for our product candidates, the decision by Genentech as to whether to exercise its option to make our collaboration agreement for ALTU-238 a global agreement, as well as the development of our preclinical product pipeline, any collaborations we may enter into with third parties for our product candidates, and any unforeseen cash needs. As a result, management will retain broad discretion over the allocation of the net proceeds from this offering. We do not expect the net proceeds from this offering to be sufficient to fund the completion of the development and commercialization of any of our product candidates, and we expect that we will need to raise additional funds prior to being able to market any products. We have no current plans, agreements or commitments for acquisitions of any businesses, products or technologies.

Pending use of the net proceeds of this offering, we intend to invest the net proceeds in accordance with our investment policy guidelines, which currently provide for investment of funds in cash equivalents, United States government obligations, high grade and corporate notes and commercial paper.

Table of Contents**PRICE RANGE OF COMMON STOCK**

Our common stock is traded on the Nasdaq Global Market under the trading symbol **ALTU** .

The following table sets forth, for the periods indicated, the range of high and low sales prices per share for our common stock since our initial public offering on January 26, 2006:

	High	Low
Year Ended December 31, 2006		
First Quarter (from January 26, 2006)	\$ 25.70	\$ 15.00
Second Quarter	23.11	16.65
Third Quarter	19.23	10.75
Fourth Quarter	20.50	15.36
Year Ended December 31, 2007		
First Quarter	\$ 19.79	\$ 13.84
Second Quarter (through April 9, 2007)	15.80	14.54

On April 9, 2007, the last reported sale price of our common stock on the Nasdaq Global Market was \$14.98 per share.

As of March 31, 2007, there were approximately 80 holders of record and approximately 1,950 beneficial stockholders of our common stock.

DIVIDENDS

We have never declared dividends on our common stock. We intend to retain earnings, if any, to finance the operation and expansion of our business and, therefore, we do not expect to pay cash dividends on our shares of common stock in the foreseeable future. Any future determination to pay dividends will be at the discretion of our board of directors and will depend on our financial condition, results of operations, capital requirements and other factors that our board of directors deem relevant.

Table of Contents**CAPITALIZATION**

The following table sets forth our capitalization as of December 31, 2006:

on an actual basis; and

on an as adjusted basis to give effect to the sale of 6,000,000 shares of common stock in this offering at an assumed public offering price of \$14.98 per share, after deducting the estimated underwriting discounts and commissions and offering expenses payable by us.

You should read this table together with Management's Discussion and Analysis of Financial Condition and Results of Operations and our consolidated financial statements and the related notes thereto incorporated by reference in the accompanying prospectus.

	As of December 31, 2006	
	Actual	As Adjusted
	(Unaudited, dollars in thousands)	
Current portion of long-term debt	\$ 2,106	\$ 2,106
Long term debt, net of current portion	2,874	2,874
Redeemable Preferred Stock, par value \$0.01 per share; 450,000 shares authorized, issued and outstanding (liquidation value of \$6,281 at December 31, 2006) at accreted redemption value	6,281	6,281
Stockholder's equity		
Common stock, par value \$0.01 per share; 100,000,000 shares authorized; 23,121,477 shares issued and outstanding at December 31, 2006	231	291
Additional paid-in capital	244,985	329,185
Accumulated deficit	(175,814)	(175,814)
Accumulated other comprehensive income	20	20
Total stockholders' equity	69,422	153,682
Total capitalization	\$ 80,683	\$ 164,943

A \$0.25 increase (decrease) in the assumed public offering price of \$14.98 per share would increase (decrease) each of as adjusted additional paid-in capital, as adjusted total stockholders' equity and as adjusted total capitalization by approximately \$1.4 million, assuming that the number of shares offered by us, as set forth on the cover page of this prospectus supplement, remains the same and after deducting estimated underwriting discounts and commissions.

Table of Contents**DILUTION**

Our historical net tangible book value as of December 31, 2006 was \$69.4 million or \$3.00 per share of common stock, based on 23,121,477 shares of common stock outstanding as of December 31, 2006. Historical net tangible book value per share is determined by dividing our total tangible assets less total liabilities and redeemable preferred stock by the actual number of shares of common stock outstanding.

After giving effect to our sale of 6,000,000 shares of common stock in this offering, at an assumed public offering price of \$14.98 per share, less estimated underwriting discounts and commissions and estimated offering expenses payable by us, our as adjusted net tangible book value as of December 31, 2006 would have been \$153.7 million, or \$5.28 per share. This represents an immediate increase in net tangible book value of \$2.28 per share to existing stockholders and an immediate dilution of \$9.70 per share to new investors. Dilution per share represents the difference between the amount per share paid by purchasers of shares of our common stock in this offering and the net tangible book value per share of our common stock immediately afterwards, after giving effect to the sale of 6,000,000 shares in this offering at an assumed public offering price of \$14.98 per share and after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us.

The following table illustrates this per share dilution:

Assumed public offering price per share	\$ 14.98
Historical net tangible book value per share as of December 31, 2006	\$ 3.00
Increase per share attributable to this offering	\$ 2.28
Adjusted net tangible book value per share after this offering	5.28
Dilution per share to new investors	\$ 9.70

If the underwriters exercise their over-allotment option in full to purchase 900,000 additional shares of common stock in this offering, the as adjusted net tangible book value per share after the offering would be \$5.54 per share, the increase in the net tangible book value per share to existing stockholders would be \$2.54 per share and the dilution to new investors purchasing common stock in this offering would be \$9.44 per share. A \$0.25 increase (decrease) in the assumed public offering price of \$14.98 per share would increase (decrease) our as adjusted net tangible book value per share after this offering by approximately \$0.05 and dilution per share to new investors by approximately \$0.20, assuming that the number of shares offered by us, as set forth on the cover page of this prospectus supplement, remains the same and after deducting estimated underwriting discounts and commissions.

The information above does not reflect the sale of 794,575 shares of our common stock which we sold to Genentech in February 2007 for an aggregate purchase price of \$15.0 million and assumes no exercise of any outstanding stock options or warrants. As of December 31, 2006, there were 3,544,138 shares of common stock reserved for issuance upon the exercise of outstanding options at a weighted average exercise price of \$9.34 per share, and 3,602,753 shares of common stock reserved for issuance upon the exercise of outstanding warrants at a weighted average exercise price of \$7.33 per share. If all of these options and warrants had been exercised as of December 31, 2006, as adjusted net tangible book value per share after this offering would be \$5.88 and total dilution per share to new investors would be \$9.10. In addition, many of the warrants that we have issued contain anti-dilution provisions that will result in the issuance of additional shares of common stock upon exercise, and thus further dilution, if we issue or are deemed to

issue equity at a per share price less than the exercise price of the warrants.

S-38

Table of Contents**UNDERWRITERS**

Under the terms and subject to the conditions in a purchase agreement dated the date of this prospectus supplement, the underwriters named below, for whom Merrill Lynch, Pierce, Fenner & Smith Incorporated, Morgan Stanley & Co. Incorporated, Cowen and Company, LLC and Leerink Swann & Co., Inc. are acting as representatives, have severally agreed to purchase, and we have agreed to sell to them, the number of shares indicated below:

Underwriter	Number of Shares
Merrill Lynch, Pierce, Fenner & Smith Incorporated	
Morgan Stanley & Co. Incorporated	
Cowen and Company, LLC	
Leerink Swann & Co., Inc.	

Total:

The underwriters are offering the shares of common stock subject to their acceptance of the shares from us and subject to prior sale. The purchase agreement provides that the obligations of the several underwriters to pay for and accept delivery of the shares of common stock offered by this prospectus supplement are subject to the approval of certain legal matters by their counsel and to other conditions. The underwriters are obligated to take and pay for all of the shares of common stock offered by this prospectus supplement if any such shares are taken. However, the underwriters are not required to take or pay for the shares covered by the underwriters' over-allotment option described below.

The underwriters initially propose to offer part of the shares of common stock directly to the public at the public offering price listed on the cover page of this prospectus supplement and part to certain dealers at a price that represents a concession not in excess of \$ per share under the public offering price. After the initial offering of the shares of common stock, the offering price and other selling terms may from time to time be varied by the representatives.

We have granted to the underwriters an option, exercisable for 30 days from the date of this prospectus supplement, to purchase up to an aggregate of 900,000 additional shares of common stock at the public offering price listed on the cover page of this prospectus supplement, less underwriting discounts and commissions. The underwriters may exercise this option solely for the purpose of covering over-allotments, if any, made in connection with the offering of the shares of common stock offered by this prospectus supplement. To the extent the option is exercised, each underwriter will become obligated, subject to certain conditions, to purchase about the same percentage of the additional shares of common stock as the number listed next to the underwriter's name in the preceding table bears to the total number of shares of common stock listed next to the names of all underwriters in the preceding table.

The following table shows the public offering price, underwriting discount and proceeds before expenses to us. The information assumes either no exercise or full exercise by the underwriters of their over-allotment option.

	Per Share	Without Option	With Option
Public offering price	\$	\$	\$
Underwriting discount	\$	\$	\$
Proceeds, before expenses, to us	\$	\$	\$

The expenses of the offering, not including the underwriting discount, are estimated to be \$227,000 and are payable by us.

Our common stock is listed on the Nasdaq Global Market under the trading symbol `ALTU` .

S-39

Table of Contents

We and all of our directors and executive officers and some of our stockholders have agreed that, without the prior written consent of Merrill Lynch, Pierce, Fenner & Smith Incorporated and Morgan Stanley & Co. Incorporated, on behalf of the underwriters, we and they will not, during the period ending 90 days after the date of this prospectus supplement:

offer, pledge, sell, contract to sell, sell any option or contract to purchase, purchase any option or contract to sell, grant any option, right or warrant to purchase, lend or otherwise transfer or dispose of, directly or indirectly, any shares of our common stock or any securities convertible into or exercisable or exchangeable for our common stock; or

enter into any swap or other arrangement that transfers to another, in whole or in part, directly or indirectly, any of the economic consequences of ownership of our common stock,

whether any such transaction described above is to be settled by delivery of our common stock or such other securities, in cash or otherwise.

In addition, we have agreed not to, without the prior written consent of Merrill Lynch, Pierce, Fenner & Smith Incorporated and Morgan Stanley & Co. Incorporated during the period ending 90 days after the date of this prospectus supplement, file a registration statement with the Securities and Exchange Commission relating to an offering of any shares of our common stock or securities convertible into or exercisable or exchangeable for our common stock, other than pursuant to a demand for registration exercised by a holder of registrable shares under our existing registration rights agreement.

The restrictions applicable to our directors, executive officers and stockholders do not apply to:

transactions relating to shares of our common stock or any security convertible into our common stock under trading plans pursuant to Rule 10b5-1 under the Exchange Act in existence on the date hereof that have been previously disclosed in writing to the underwriters;

transactions relating to shares of our common stock or other securities acquired in open market transactions after the completion of this offering, provided that no filing under Section 16(a) of the Exchange Act, shall be required or voluntarily made in connection with subsequent sales of such common stock or other securities;

transfers of shares of our common stock or any security convertible into our common stock as a bona fide gift or pursuant to a will or other testamentary document or applicable laws of descent;

distributions of shares of our common stock or any security convertible into our common stock to limited partners or stockholders of the distributor;

transfers of shares of our common stock or any security convertible into our common stock to any trust for the direct or indirect benefit of the transferor or the immediate family of the transferor;

transfers of shares of our common stock or any security convertible into our common stock to affiliates or to any investment fund or other entity controlled or managed by the transferor; or

transfers of shares of our common stock or any security convertible into our common stock to any corporation, partnership, limited liability company or other entity all of the beneficial ownership

interests of which are held by the transferor or immediate family of the transferor;

provided that in the case of each of the last five transactions, each donee, transferee or distributee agrees to be subject to the restrictions described above, no filing under Section 16(a) of the Exchange Act is required or will be voluntarily made during the 90-day restricted period and the transaction does not involve a disposition for value.

S-40

Table of Contents

The restrictions applicable to us do not apply to:

the issuance by us of shares of our common stock upon the exercise of an option or warrant or the conversion of a security outstanding on the date hereof and referred to herein;

the issuance by us of shares of our common stock or the granting by us of options to purchase shares of our common stock pursuant to existing employee benefit plans and referred to herein;

the issuance by us of shares of our common stock or options to purchase shares of our common stock to our consultants as compensation for their services; or

the sale by us of up to an aggregate of 100,000 shares of our common stock pursuant to a strategic alliance or collaboration at a price greater than or equal to the then market price of our common stock;

provided that in the case of each of the last two transactions, each recipient agrees to be subject to the restrictions described above.

The 90-day restricted period described above will be extended if:

during the last 17 days of the 90-day restricted period we issue an earnings release or material news or a material event relating to us occurs, or

prior to the expiration of the 90-day restricted period, we announce that we will release earnings results or we become aware that material news or a material event will occur during the 16-day period beginning on the last day of the 90-day period, and in each case

at the end of the 90-day restricted period, (i) our shares are not actively traded securities as such term is defined in Regulation M under the Securities Act or (ii) any of the underwriters are not able, in their sole discretion, to publish or distribute research reports concerning us or our industry pursuant to Rule 139 of the Securities Act,

in which case the restrictions described above will continue to apply until the expiration of the 18-day period beginning on the issuance of the earnings release or the occurrence of the material news or material event, unless Merrill Lynch, Pierce, Fenner & Smith Incorporated and Morgan Stanley & Co. Incorporated waive, in writing, such extension.

In order to facilitate the offering of the common stock, the underwriters may engage in transactions that stabilize, maintain or otherwise affect the price of the common stock. Specifically, the underwriters may sell more shares than they are obligated to purchase under the purchase agreement, creating a short position. A short sale is covered if the short position is no greater than the number of shares available for purchase by the underwriters under the over-allotment option. The underwriters can close out a covered short sale by exercising the over-allotment option or purchasing shares in the open market. In determining the source of shares to close out a covered short sale, the underwriters will consider, among other things, the open market price of shares compared to the price available under the over-allotment option. The underwriters may also sell shares in excess of the over-allotment option, creating a naked short position. The underwriters must close out any naked short position by purchasing shares in the open market. A naked short position is more likely to be created if the underwriters are concerned that there may be downward pressure on the price of the common stock in the open market after pricing that could adversely affect investors who purchase in this offering. As an additional means of facilitating this offering, the underwriters may bid

for, and purchase, shares of our common stock in the open market to stabilize the price of the common stock. These activities may raise or maintain the market price of our common stock above independent market levels or prevent or slow a decline in the market price of our common stock. The underwriters are not required to engage in these activities, and may end any of these activities at any time.

We and the underwriters have agreed to indemnify each other against certain liabilities, including liabilities under the Securities Act.

S-41

Table of Contents

A prospectus in electronic format may be made available on websites maintained by one or more underwriters, or selling group members, if any, participating in this offering. The representatives may agree to allocate a number of shares of common stock to underwriters for sale to their online brokerage account holders. Internet distributions will be allocated by the representatives to underwriters that may make Internet distributions on the same basis as other allocations.

Certain of the underwriters and their respective affiliates have provided in the past to us and our affiliates and may provide from time to time in the future various financial advisory, investment banking and other services for us and such affiliates in the ordinary course of their business, for which they have received and may continue to receive customary fees and commissions. An affiliate of Merrill Lynch Pierce Fenner & Smith Incorporated holds a non-voting equity interest in Warburg Pincus Partners, LLC, the general partner of Warburg Pincus, one of our principal stockholders. See the section entitled "Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters" in our Annual Report on Form 10-K for the year ended December 31, 2006, as amended, which is incorporated by reference herein, for further information regarding Warburg Pincus's beneficial ownership. In addition, affiliates, including some officers and employees, of Cowen and Company, LLC hold shares of our capital stock and warrants to purchase shares of our capital stock.

European Economic Area

In relation to each Member State of the European Economic Area which has implemented the Prospectus Directive, each underwriter has represented and agreed that, with effect from and including the date on which the Prospectus Directive is implemented in that Member State, it has not made and will not make an offer of shares to the public in that Member State, except that it may, with effect from and including such date, make an offer of shares to the public in that Member State:

- (a) at any time to legal entities which are authorised or regulated to operate in the financial markets or, if not so authorised or regulated, whose corporate purpose is solely to invest in securities;
- (b) at any time to any legal entity which has two or more of (1) an average of at least 250 employees during the last financial year; (2) a total balance sheet of more than 43,000,000 and (3) an annual net turnover of more than 50,000,000, as shown in its last annual or consolidated accounts; or
- (c) at any time in any other circumstances which do not require the publication by us of a prospectus pursuant to Article 3 of the Prospectus Directive.

For the purposes of the above, the expression an "offer of shares to the public" in relation to any shares in any Member State means the communication in any form and by any means of sufficient information on the terms of the offer and the shares to be offered so as to enable an investor to decide to purchase or subscribe the shares, as the same may be varied in that Member State by any measure implementing the Prospectus Directive in that Member State and the expression Prospectus Directive means Directive 2003/71/EC and includes any relevant implementing measure in that Member State.

United Kingdom

Each underwriter has represented and agreed that it has only communicated or caused to be communicated and will only communicate or cause to be communicated an invitation or inducement to engage in investment activity (within the meaning of Section 21 of the Financial Services and Markets Act 2000) in connection with the issue or sale of the

shares in circumstances in which Section 21(1) of such Act does not apply to us and it has complied and will comply with all applicable provisions of such Act with respect to anything done by it in relation to any shares in, from or otherwise involving the United Kingdom.

S-42

Table of Contents

LEGAL MATTERS

The validity of the issuance of the common stock offered by us in this offering will be passed upon for us by Mintz, Levin, Cohn, Ferris, Glovsky and Popeo, P.C., Boston, Massachusetts. Certain legal matters will be passed upon for the underwriters by Wilmer Cutler Pickering Hale and Dorr LLP, Boston, Massachusetts. Wilmer Cutler Pickering Hale and Dorr LLP has from time to time represented us on other matters.

EXPERTS

The financial statements incorporated by reference in this prospectus supplement and the accompanying prospectus from Altus Pharmaceuticals Inc.'s Annual Report on Form 10-K for the year ended December 31, 2006 have been audited by Deloitte & Touche LLP, an independent registered public accounting firm, as stated in their report, which is incorporated herein by reference, and has been so incorporated in reliance on the report of such firm given upon their authority as experts in accounting and auditing.

S-43

Table of Contents

PROSPECTUS

ALTUS PHARMACEUTICALS INC.

**\$125,000,000
COMMON STOCK**

This prospectus will allow us to issue up to \$125,000,000 of our common stock from time to time at prices and on terms to be determined at or prior to the time of the offering. We will provide you with specific terms of any offering in one or more supplements to this prospectus. You should read this document and any prospectus supplement carefully before you invest.

Our common stock is listed on the Nasdaq Global Market under the symbol ALTU. On April 5, 2007, the last reported sale price of our common stock was \$15.24 per share. Prospective purchasers of common stock are urged to obtain current information as to the market prices of our common stock.

Investing in our common stock involves a high degree of risk. Before deciding whether to invest in our common stock, you should consider carefully the risks that we have described on page 5 of this prospectus under the caption Risk Factors. We may include specific risk factors in supplements to this prospectus under the caption Risk Factors. This prospectus may not be used to offer or sell our common stock unless accompanied by a prospectus supplement.

Our common stock may be sold directly by us to investors, through agents designated from time to time or to or through underwriters or dealers. For additional information on the methods of sale, you should refer to the section entitled Plan of Distribution in this prospectus. If any underwriters are involved in the sale of our common stock with respect to which this prospectus is being delivered, the names of such underwriters and any applicable commissions or discounts and over-allotment options will be set forth in a prospectus supplement. The price to the public of such common stock and the net proceeds that we expect to receive from such sale will also be set forth in a prospectus supplement.

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 April 5, 2007.

Table of Contents

TABLE OF CONTENTS

	Page
<u>ABOUT THIS PROSPECTUS</u>	3
<u>ALTUS PHARMACEUTICALS INC.</u>	3
<u>RISK FACTORS</u>	5
<u>SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS</u>	5
<u>USE OF PROCEEDS</u>	6
<u>PLAN OF DISTRIBUTION</u>	6
<u>LEGAL MATTERS</u>	8
<u>EXPERTS</u>	8
<u>WHERE YOU CAN FIND MORE INFORMATION</u>	8
<u>INCORPORATION OF DOCUMENTS BY REFERENCE</u>	8

Table of Contents

ABOUT THIS PROSPECTUS

This prospectus is part of a registration statement that we filed with the Securities and Exchange Commission, or SEC, utilizing a shelf registration process. Under this shelf registration process, we may sell shares of our common stock, with an aggregate initial offering price of up to \$125,000,000, in one or more offerings. Each time we sell securities, we will provide a prospectus supplement that will contain specific information about the terms of that offering.

This prospectus does not contain all of the information included in the registration statement. For a more complete understanding of the offering of the securities, you should refer to the registration statement, including its exhibits. The prospectus supplement may also add, update or change information contained or incorporated by reference in this prospectus. However, no prospectus supplement will fundamentally change the terms that are set forth in this prospectus or offer a security that is not registered and described in this prospectus at the time of its effectiveness. This prospectus, together with the applicable prospectus supplements and the documents incorporated by reference into this prospectus, includes all material information relating to this offering. You should carefully read this prospectus, the applicable prospectus supplement, the information and documents incorporated herein by reference and the additional information under the heading **Where You Can Find More Information** before making an investment decision.

You should rely only on the information we have contained or incorporated by reference in this prospectus or any prospectus supplement. We have not authorized anyone to provide you with information different from that contained or incorporated by reference in this prospectus or any prospectus supplement. No dealer, salesperson or other person is authorized to give any information or to represent anything not contained or incorporated by reference in this prospectus or any prospectus supplement. You must not rely on any unauthorized information or representation. This prospectus is an offer to sell only the securities offered hereby, but only under circumstances and in jurisdictions where it is lawful to do so. You should assume that the information in this prospectus or any prospectus supplement is accurate only as of the date on the front of the document and that any information we have incorporated herein by reference is accurate only as of the date of the document incorporated by reference, regardless of the time of delivery of this prospectus or any sale of a security.

This prospectus may not be used to consummate sales of common stock, unless it is accompanied by a prospectus supplement. To the extent there are inconsistencies between any prospectus supplement, this prospectus and any documents incorporated by reference, the document with the most recent date will control.

Unless the context otherwise requires, Altus, the Company, we, us, our and similar names refer to Altus Pharmaceuticals Inc. and our subsidiary.

ALTUS PHARMACEUTICALS INC.

We are a biopharmaceutical company focused on the development and commercialization of oral and injectable protein therapeutics for gastrointestinal and metabolic disorders, with two product candidates advancing toward late stage clinical development. We use our proprietary protein crystallization technology to develop protein therapies which we believe will have significant advantages over existing products and will address unmet medical needs. Our product candidates are designed to degrade toxic metabolites in the gut or increase the amount of a protein that is in short supply in the body. We have successfully completed a Phase II clinical trial of ALTU-135 for the treatment of malabsorption due to exocrine pancreatic insufficiency and we have also successfully completed a Phase II clinical trial of ALTU-238 in adults for the treatment of growth hormone deficiency. We are developing ALTU-238 under an agreement with Genentech, Inc., or Genentech, relating to the development, manufacture and commercialization of

this product candidate in North America. We have a pipeline of other product candidates in preclinical research and development. Our most advanced preclinical product candidate is ALTU-237, which is designed to treat hyperoxalurias, a series of conditions in which too much oxalate is present in the body, resulting in an increased risk of developing kidney stones and, in rare instances, crystal formations in other organs.

Table of Contents

We were incorporated in Massachusetts in October 1992 as a wholly-owned subsidiary of Vertex, from whom we exclusively license specified patents underlying some of our product candidates. In February 1999, we were reorganized as an independent company, and in August 2001 we reincorporated in Delaware. Prior to May 2004, we were named Altus Biologics Inc.

Our principal executive offices are located at 125 Sidney Street, Cambridge, MA 02139, and our telephone number is (617) 299-2900. Our web site address is *www.altus.com*. The information on our web site or any other web site is not incorporated by reference into this prospectus or any accompanying prospectus supplement and does not constitute a part of this prospectus or any accompanying prospectus supplement. We have included our web site address as a factual reference and do not intend it to be an active link to our web site. We have one subsidiary, Altus Pharmaceuticals Securities Corp., a Massachusetts corporation.

Altus is a trademark of Altus Pharmaceuticals Inc. Each of the other trademarks, trade names or service marks appearing in this prospectus belongs to its respective holder.

Our Annual Report on Form 10-K, Quarterly Reports on Form 10-Q and Current Reports on Form 8-K and all amendments to such reports are made available free of charge through the Investor Relations section of our web site as soon as reasonably practicable after they have been filed with or furnished to the SEC.

Table of Contents

RISK FACTORS

Investing in our common stock involves risk. The prospectus supplement applicable to each offering of our common stock will contain a discussion of the risks applicable to an investment in us. Prior to making a decision about investing in our common stock, you should carefully consider the specific factors discussed under the heading "Risk Factors" in the applicable prospectus supplement, together with all of the other information contained or incorporated by reference in the prospectus supplement or appearing or incorporated by reference in this prospectus. You should also consider the risks, uncertainties and assumptions discussed under the heading "Risk Factors" included in our most recent annual report on Form 10-K, as amended, which is on file with the SEC and is incorporated herein by reference, and which may be amended, supplemented or superseded from time to time by other reports we file with the SEC in the future. The risks and uncertainties we have described are not the only ones we face. Additional risks and uncertainties not presently known to us or that we currently deem immaterial may also affect our operations.

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus, any prospectus supplement and the documents we have filed with the SEC that are incorporated herein by reference contain forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. These statements involve known and unknown risks, uncertainties and other important factors which may cause our actual results, performance or achievements to be materially different from any future results, performances or achievements expressed or implied by the forward-looking statements. Forward-looking statements include, but are not limited to, statements about:

- the expected timing, progress or success of our preclinical research and development and clinical programs;
- our ability to successfully obtain sufficient supplies of our product candidates for use in clinical trials and toxicology studies and secure sufficient commercial supplies of our product candidates;
- the timing, costs and other limitations involved in obtaining regulatory approval for any of our product candidates;
- the potential benefits of our product candidates over other therapies;
- our ability to market, commercialize and achieve market acceptance for any of our product candidates that we are developing or may develop in the future;
- our estimate of market sizes and anticipated uses of our product candidates;
- our ability to enter into collaboration agreements with respect to our product candidates and the performance of our collaborative partners under such agreements;
- our ability to protect our intellectual property and operate our business without infringing upon the intellectual property rights of others;
- our estimates of future performance;
- our ability to raise sufficient capital to fund our operations; and

our estimates regarding anticipated operating losses, future revenue, expenses, capital requirements and our needs for additional financing.

In some cases, you can identify forward-looking statements by terms such as anticipates, believes, could, estimates, expects, intends, may, plans, potential, predicts, projects, should, would and similar expressions into forward-looking statements. Forward-looking statements reflect our current views with respect to future events and are based on assumptions and subject to risks and uncertainties. Because of these risks and uncertainties, the forward-looking events and circumstances discussed in this prospectus may not transpire.

Table of Contents

Given these uncertainties, you should not place undue reliance on these forward-looking statements. You should read this document, any supplements to this document and the documents that we reference in this prospectus with the understanding that our actual future results may be materially different from what we expect. Except as required by law, we do not undertake any obligation to update or revise any forward-looking statements contained in this prospectus and any supplements to this prospectus, whether as a result of new information, future events or otherwise.

USE OF PROCEEDS

Unless otherwise indicated in the applicable prospectus supplement, we intend to use any net proceeds from the sale of our common stock for our operations and for other general corporate purposes, including, but not limited to, working capital, development of our clinical and preclinical product candidates, intellectual property protection and enforcement, capital expenditures, investments, acquisitions and repurchases of our securities. Pending use of the net proceeds as described above, we intend to invest the net proceeds in accordance with our investment policy guidelines, which currently provide for investment of funds in cash equivalents, United States government obligations, high grade and corporate notes and commercial paper.

PLAN OF DISTRIBUTION

We may offer the common stock from time to time pursuant to underwritten public offerings, negotiated transactions, block trades or a combination of these methods. We may sell the common stock (1) through underwriters or dealers, (2) through agents or (3) directly to one or more purchasers, or through a combination of such methods. We may distribute the common stock from time to time in one or more transactions at:

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

The accompanying prospectus supplement will describe the terms of the offering of our common stock, including:

- the number of shares of common stock we are offering;
- the name or names of any underwriters;
- any securities exchange or market on which the common stock may be listed;
- the purchase price or other consideration to be paid in connection with the sale of our common stock being offered and the proceeds we will receive from the sale;
- any over-allotment options pursuant to which the underwriters may purchase additional shares of common stock from us;
- any underwriting discounts or agency fees and other items constituting underwriters or agents compensation; and

any discounts or concessions allowed or reallocated or paid to dealers.

We may directly solicit offers to purchase the common stock. We may also designate agents to solicit offers to purchase the common stock from time to time. We will name in a prospectus supplement any agent involved in the offer or sale of our common stock. Unless the prospectus supplement states otherwise, our agent will act on a best-efforts basis for the period of its appointment.

Table of Contents

If we utilize a dealer in the sale of the common stock being offered by this prospectus, we will sell the common stock to the dealer, as principal. The dealer may then resell the common stock to the public at varying prices to be determined by the dealer at the time of resale.

If we utilize an underwriter in the sale of the common stock being offered, we will execute an underwriting agreement with the underwriter at the time of sale. In connection with the sale of the common stock, we, or the purchasers of our common stock for whom the underwriter may act as agent, may compensate the underwriter in the form of underwriting discounts or commissions. The underwriter may sell the common stock to or through dealers, and the underwriter may compensate those dealers in the form of discounts, concessions or commissions. Subject to certain conditions, the underwriters will be obligated to purchase all of the shares of common stock offered by the prospectus supplement. We may change from time to time the public offering price and any discounts or concessions allowed or reallocated or paid to dealers.

With respect to underwritten public offerings, negotiated transactions and block trades, we will provide in the applicable prospectus supplement any compensation we pay to underwriters, dealers or agents in connection with the offering of the common stock, and any discounts, concessions or commissions allowed by underwriters to participating dealers. Underwriters, dealers and agents participating in the distribution of the common stock may be deemed to be underwriters within the meaning of the Securities Act of 1933, as amended, or the Securities Act, and any discounts and commissions received by them and any profit realized by them on resale of the common stock may be deemed to be underwriting discounts and commissions. We may enter into agreements to indemnify underwriters, dealers and agents against civil liabilities, including liabilities under the Securities Act, or to contribute to payments they may be required to make in respect thereof.

Shares of our 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. One or more underwriters may make a market in our common stock, but the underwriters will not be obligated to do so and may discontinue market making at any time without notice. We cannot give any assurance as to liquidity of the trading market for our common stock.

To facilitate the offering of the common stock, certain persons participating in the offering may engage in transactions that stabilize, maintain or otherwise affect the price of our common stock. This may include over-allotments or short sales of the common stock, which involve the sale by persons participating in the offering of more shares of common stock than we sold to them. In these circumstances, these persons would cover such over-allotments or short positions by making purchases in the open market or by exercising their over-allotment option. In addition, these persons may stabilize or maintain the price of the common stock by bidding for or purchasing the common stock in the open market or by imposing penalty bids, whereby selling concessions allowed to underwriters or dealers participating in the offering may be reclaimed if the shares of common stock sold by them are repurchased in connection with stabilization transactions. The effect of these transactions may be to stabilize or maintain the market price of our common stock at a level above that which might otherwise prevail in the open market. These transactions, if commenced, may be discontinued at any time.

Any underwriters who are qualified market makers on the Nasdaq Global Market may engage in passive market making transactions in the common stock on the Nasdaq Global Market in accordance with Rule 103 of Regulation M, during the business day prior to the pricing of the offering, before the commencement of offers or sales of the common stock. Passive market makers must comply with applicable volume and price limitations and must be identified as passive market makers. In general, a passive market maker must display its bid at a price not in excess of the highest independent bid for such security; if all independent bids are lowered below the passive market maker's bid, however, the passive market maker's bid must then be lowered when certain purchase limits are exceeded.

In compliance with guidelines of the National Association of Securities Dealers, or NASD, the maximum consideration or discount to be received by any NASD member or independent broker dealer may not exceed 8% of the aggregate amount of the securities offered pursuant to this prospectus and any applicable prospectus supplement.

Table of Contents

The underwriters, dealers and agents may engage in other transactions with us, or perform other services for us, in the ordinary course of their business. We will describe such relationships in the prospectus supplement naming the underwriter and the nature of any such relationship.

LEGAL MATTERS

Mintz, Levin, Cohn, Ferris, Glovsky and Popeo, P.C., Boston, Massachusetts, will pass upon the validity of the issuance of the common stock offered by this prospectus.

EXPERTS

The financial statements incorporated in this prospectus by reference from the Company's Annual Report on Form 10-K for the year ended December 31, 2006 have been audited by Deloitte & Touche LLP, an independent registered public accounting firm, as stated in their report, which is incorporated herein by reference, and has been so incorporated in reliance upon the report of such firm given upon their authority as experts in accounting and auditing.

WHERE YOU CAN FIND MORE INFORMATION

We are subject to the reporting requirements of the Securities Exchange Act of 1934, as amended, and file annual, quarterly and current reports, proxy statements and other information with the SEC. You may read and copy these reports, proxy statements and other information at the SEC's public reference facilities at 100 F Street, N.E., Room 1580, Washington, D.C. 20549. You can request copies of these documents by writing to the SEC and paying a fee for the copying cost. Please call the SEC at 1-800-SEC-0330 for more information about the operation of the public reference facilities. SEC filings are also available at the SEC's web site at <http://www.sec.gov>. Our common stock is listed on the Nasdaq Global Market, and you can read and inspect our filings at the offices of the National Association of Securities Dealers, Inc. at 1735 K Street, Washington, D.C. 20006.

This prospectus is only part of a registration statement on Form S-3 that we have filed with the SEC under the Securities Act of 1933, as amended, and therefore omits certain information contained in the registration statement. We have also filed exhibits and schedules with the registration statement that are excluded from this prospectus, and you should refer to the applicable exhibit or schedule for a complete description of any statement referring to any contract or other document. You may inspect a copy of the registration statement, including the exhibits and schedules, without charge, at the public reference room or obtain a copy from the SEC upon payment of the fees prescribed by the SEC.

We also maintain a web site at www.altus.com, through which you can access our SEC filings. The information set forth on our web site is not part of this prospectus.

INCORPORATION OF DOCUMENTS BY REFERENCE

The SEC allows us to incorporate by reference information from other documents that we file with them, which means that we can disclose important information in this prospectus by referring to those documents. The information incorporated by reference is considered to be part of this prospectus, and information that we file later with the SEC will automatically update and supersede the information in this prospectus. We incorporate by reference the documents listed below and any future filings made with the SEC under Sections 13(a), 13(c), 14 or 15(d) of the Securities Exchange Act of 1934 after the date of this prospectus and prior to the termination or completion of any offering of securities under this prospectus and accompanying prospectus supplements:

Edgar Filing: Altus Pharmaceuticals Inc. - Form 424B5

our Annual Report on Form 10-K for the fiscal year ended December 31, 2006, filed on March 12, 2007, as amended by Amendment No. 1 on Form 10-K/A, filed on March 19, 2007;

our Current Report on Form 8-K filed on January 3, 2007;

Table of Contents

our Current Report on Form 8-K filed on February 1, 2007;

our Current Report on Form 8-K filed on February 6, 2007;

our Current Report on Form 8-K filed on March 1, 2007;

our Current Report on Form 8-K filed on March 8, 2007;

our Current Report on Form 8-K filed on April 5, 2007;

the description of our common stock contained in our Registration Statement on Form 8-A filed on January 11, 2006; and

all of the documents subsequently filed by us pursuant to Sections 13(a), 13(c), 14 or 15(d) of the Securities Exchange Act of 1934, as amended, prior to the termination of the offering, except in each case for information contained in any such filing where we indicate that such information is being furnished and is not considered filed under the Exchange Act, which filings will be deemed to be incorporated by reference in this prospectus and the accompanying prospectus supplement and to be a part hereof from the date of filing of such documents.

The SEC file number for each of the documents listed above is 000-51711.

We will provide without charge to each person, including any beneficial owner, to whom a copy of this prospectus is delivered, upon the request of any such person, a copy of any or all of the information incorporated herein by reference (exclusive of exhibits to such documents unless such exhibits are specifically incorporated by reference herein). Requests, whether written or oral, for such copies should be directed to Bruce A. Leicher, Esq., Altus Pharmaceuticals Inc., 125 Sidney Street, Cambridge, MA 02139, (617) 299-2900.

Table of Contents