Nile Therapeutics, Inc.
Form 424B5
April 02, 2012

Prospectus Supplement	Filed Pursuant to Rule 424(b)(5)
(To Prospectus dated March 12, 2010)	Registration No. 333-165167

3,350,000 Shares of Common Stock

and

Warrants to Purchase up to 2,512,500 Shares of Common Stock

We are offering up to 3,350,000 shares of our common stock and warrants to purchase up to 2,512,500 shares of our common stock (and the shares of common stock issuable from time to time upon exercise of these warrants) pursuant to this prospectus supplement and the accompanying prospectus. Each share of common stock is being sold together with 0.75 of a five-year warrant to purchase one share of common stock at an exercise price of $0.50 per share. The shares of common stock and warrants will be issued separately.

Our common stock is quoted on the OTCQB tier of the OTC Markets under the symbol “NLTX.PK.” On March 29, 2012, the last reported sale price of our common stock on the OTCQB was $0.50 per share. There is no established public trading market for the warrants, and we do not expect a market to develop. In addition, we do not intend to apply for listing of the warrants on any national securities exchange or other nationally recognized trading system.

We have engaged Roth Capital Partners, LLC as our exclusive placement agent in connection with this offering. The placement agent has no obligation to buy any of the securities from us or to arrange for the purchase or sale of any specific number or dollar amount of securities. See “Plan of Distribution” beginning on page S-39 of this prospectus supplement for more information regarding these arrangements.

Investing in our securities involves a high degree of risk.

Please carefully review the information under the heading “Risk Factors” on page S-8.

	Total

	Per Share	Per Warrant	
Public offering price	$0.39	$0.01	$1,340,000
Placement agent fees[(1)]	$0.0273	$0.0007	$93,800
Proceeds, before expenses, to us.	$0.3627	$0.0093	$1,246,200

(1) In addition, we have agreed to reimburse the placement agent for certain out-of-pocket expenses. See "Plan of Distribution" beginning on page S-39 of this 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 supplement or the accompanying prospectus is truthful or accurate. Any representation to the contrary is a criminal offense.

As of March 12, 2012, the aggregate market value of our outstanding common stock held by non-affiliates was approximately $18,430,408, which is based on 39,712,231 shares of outstanding common stock, of which 31,776,567 shares are held by non-affiliates, and a per share price of $0.58 based on the closing sale price of our common stock on March 12, 2012. As of the date of this prospectus supplement, we have not offered any securities pursuant to General Instruction I.B.6 of Form S-3 during the prior 12 calendar months that ends on the date of this prospectus supplement.

Roth Capital Partners

The date of this prospectus supplement is March 30, 2012

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ABOUT THIS PROSPECTUS SUPPLEMENT

This document is in two parts. The first part is the prospectus supplement, which describes the terms of this offering of our common stock. The second part is the accompanying prospectus, which provides more general information. Generally, when we refer to the prospectus, we are referring to both parts of this document combined. To the extent there is a conflict between the information contained in this prospectus supplement, on the one hand, and the

information contained in the accompanying prospectus or any document incorporated by reference therein, on the other hand, the information in this prospectus supplement shall control. This prospectus supplement contains information about the shares offered in this offering and may add, update or change information in the accompanying prospectus. Before you invest in our common stock, you should carefully read this prospectus supplement, along with the accompanying prospectus, in addition to the information contained in the documents we refer to under the heading "Incorporation of Certain Information by Reference" in this prospectus supplement.

You should rely only on the information contained or incorporated by reference into this prospectus supplement and the accompanying prospectus. We have not authorized any person, including any salesman or broker, to provide information or represent anything other than that provided in this prospectus supplement and the accompanying prospectus. We have not authorized anyone to provide you with different information. You must not rely on any unauthorized information or representations. We are not making an offer in any jurisdiction or under any circumstances where the offer is not permitted. You should assume that the information in this prospectus supplement and the accompanying prospectus is accurate only as of the date on its cover page and that any information we have incorporated by reference is accurate only as of the date of the document incorporated by reference.

In this prospectus supplement and the accompanying prospectus, the terms "Nile," "we," "us" and "our" refer to Nile Therapeutics, Inc., a Delaware corporation.

PROSPECTUS SUPPLEMENT SUMMARY

This summary highlights information contained elsewhere in this prospectus supplement and the accompanying prospectus. This summary does not contain all of the information you should consider before investing in our securities. We urge you to read this entire prospectus supplement and the accompanying prospectus carefully, especially the risks of investing in this offering that we discuss under "Risk Factors" in this prospectus supplement, as well as the documents identified under "Incorporation of Certain Information by Reference" in the accompanying prospectus.

Nile Therapeutics, Inc.

Overview

We are a development stage, biopharmaceutical company developing innovative products for the treatment of cardiovascular and renal diseases, with an initial focus on heart failure. We currently have two drug candidates in development, cenderitide (formerly CD-NP) and CU-NP. Cenderitide, our lead product candidate, is a chimeric natriuretic peptide that we are developing for the treatment of heart failure. We are developing cenderitide for the treatment of patients for up to 90 days following admission for acutely decompensated heart failure, or ADHF. We refer to this setting as the "post-acute" period. In 2011, we completed a 58-patient Phase 1 clinical trial of cenderitide in the post-acute setting. We conducted this clinical trial in collaboration with Medtronic, Inc., delivering cenderitide through continuous intravenous infusion using Medtronic's pump technology. Following that Phase 1 clinical trial, we plan to initiate a Phase 2 clinical trial of cenderitide in 2012. In addition to treating heart failure, we believe cenderitide may be useful in several other cardiovascular and renal indications.

We hold exclusive, worldwide rights to several patents and patent applications relating to cenderitide and CU-NP pursuant to separate license agreements entered into in January 2006 and June 2008, respectively, between us and the Mayo Foundation for Medical Education and Research, or the Mayo Foundation, which is a part of the Mayo Clinic.

Our Product Candidates

The following table summarizes our product development programs:

Product	Indications	Commercial Rights	Status
Cenderitide	Heart failure	Nile	Completed single-blind, placebo-controlled Phase 1 study of cenderitide in chronic heart failure patients in October 2011. The primary objective of the study was to assess the pharmacokinetics of cenderitide delivered through a subcutaneous micro-needle pump to patients in the post-acute setting. In 2012, subject to available capital, we plan to initiate a Phase 2 placebo-controlled study in order to assess the safety of chronic subcutaneous dosing for 90 days, and will also collect data on multiple secondary end-points to evaluate potential efficacy.
CU-NP	Cardiovascular / Renal	Nile	Preclinical.

Background on Heart Failure

Heart failure, or HF, is a condition that exists when the heart cannot pump blood to the body as quickly as needed. Blood returning to the heart faster than the heart can eject it, congests the system behind it. Decreased blood flow to organs, such as the kidneys, causes the body to retain more fluid, which further complicates the problem. As a result, HF can often cause damage to the kidneys and other organs, which in turn can worsen the condition of the heart.

HF is the fastest-growing clinical cardiac disease in the United States according to the American Heart Association, affecting over 5 million Americans. Over 1.2 million patients in the U.S. each year are hospitalized with ADHF, an acute exacerbation of their condition. This hospitalization rate is almost double the rate seen 15 years ago. HF is the most frequent cause of hospital admission in the U.S. for patients older than 65 years, generating annual inpatient costs of more than $35 billion, according to the American Heart Association. We believe that approval of a novel agent with safety and efficacy improvements over existing therapies could significantly expand the HF market.

Patients with heart failure are treated with a combination of drugs in an attempt to improve cardiac output and reverse fluid overload. Diuretics, such as furosemide, are used as a first-line treatment to relieve the symptoms of ADHF patients by helping to remove excess fluid from the body, which then helps to increase cardiac output. However, some studies have correlated high doses of intravenous (i.v.) furosemide, a diuretic, with a decreased kidney function and some patients can become resistant to the effects of furosemide. Second-line treatments are often palliative, and can come at the cost of an increased mortality rate. Despite aggressive therapy, 1 in 3 patients die of the disease within a year of diagnosis, reflecting a substantial need for novel treatments.

Only one new treatment for ADHF patients has been approved by the FDA in over 20 years: nesiritide, which is also known as Natrecor®, or B-type natriuretic peptide, or BNP. Nesiritide, a drug marketed by Johnson & Johnson, is a natriuretic peptide that targets the A-type natriuretic peptide receptor and was approved in 2001 by the FDA.

Within 90 days following hospital admission for ADHF, which we refer to as the “post-acute” period, approximately 40% of patients with ADHF return to the hospital. To prevent a return to the hospital, post-acute patients need sustained cardiac and renal function support to prevent a recurrence of their acute symptoms. While this post-acute indication is a novel indication in the HF space, we believe that post-acute patients represent one of the greatest areas of unmet need in the HF market.

Cenderitide Program

Cenderitide is a novel chimeric natriuretic peptide in clinical development for the treatment of HF patients. Cenderitide was rationally designed by scientists at the Mayo Clinic's cardio-renal research labs. Current therapies for ADHF, including nesiritide, have been associated with favorable pharmacologic effects, but have also been associated with hypotension and decreased renal function which limit their utility in clinical practice. Cenderitide was designed to preserve the favorable effects of existing natriuretic peptide therapies while reducing or attenuating the hypotensive response and enhancing or preserving renal function. We believe that cenderitide has potential utility in multiple cardio-renal indications, including preservation of cardiac function following acute myocardial infarction and prevention of renal damage following cardiac surgery.

Prior Clinical Studies

In 2007, we completed a Phase 1 dose-escalation study in healthy volunteers to examine the safety and pharmacodynamic effects of various doses of cenderitide. The study placed particular emphasis on the effects of cenderitide on blood pressure and renal function. Data from the completed Phase 1 study in healthy volunteers was consistent with several pre-clinical findings, including that cenderitide was associated with increased levels of plasma cGMP, a secondary messenger of the target receptor, preserved renal function, increased urinary excretion of sodium, or natriuresis, and increased urination, or diuresis. The study also showed that cenderitide had a minimal effect on mean arterial pressure, a measurement of pumped blood flow in the arteries.

In 2008, we initiated two additional dose-escalation studies to assess the safety and pharmacodynamic profile of cenderitide in heart failure patients. The first study was a Phase 1 study in chronic heart failure patients with signs of fluid overload designed to understand the maximum tolerated dose of the product candidate. Patients with chronic heart failure with signs of fluid overload were enrolled into the study. The effects of 24 hours of cenderitide delivered through i.v. infusion was compared to the patient's baseline established in the 24 hours prior to cenderitide infusion. The patient's oral diuretic and vasoactive medications were withheld during the cenderitide infusion. While the study was not powered for statistical analysis, data from the Phase 1 study indicate the following:

- Cenderitide was tolerated at doses of up to 20 ng/kg/min;
- Cenderitide blood pressure effects were dose-dependent and well characterized;
- Cenderitide infusion resulted in increases in diuresis at doses of 3, 10 and 20 ng/kg/min as compared to each patient's base-line, which included oral diuretic medication;
- With a 24-hour infusion, cenderitide produced decreases in serum creatinine and cystatin-c in stable heart failure patients, consistent with enhanced renal function; and
- As expected, the limiting toxicity of cenderitide was shown to be symptomatic hypotension, which was experienced by one of six patients at the maximum tolerated dose of 20 ng/kg/min, and by two of two patients at a dose of 30 ng/kg/min.

The second study initiated in 2008 was a Phase 2 study in acute heart failure patients designed to better understand the hemodynamic properties of cenderitide, or how cenderitide affected blood circulation. The subjects were enrolled 24-48 hours after admission to the hospital for acute heart failure. In the first 24-48 hours after admission, subjects were treated with the standard of care. The subjects were enrolled into the study only after an investigator had determined that the patient needed a Swan-Ganz catheter to better monitor pulmonary capillary wedge pressure, or PCWP, and after the patient's acute condition had stabilized. All patients received a continuous i.v. infusion of furosemide throughout the administration of cenderitide. Data from this Phase 2 study indicate the following:

- Cenderitide was tolerated at all study doses, including 1, 3, 10 and 20 ng/kg/min;
- Cenderitide had minimal blood pressure effects at all doses;

- In the first cohort, where patients were dosed at 3 and then 10 ng/kg/min, the cenderitide infusions produced clinically relevant reductions in PCWP;
- In the second cohort, where patients were dosed at 1 and 20 ng/kg/min, the cenderitide infusions did not result in clinically relevant reductions in PCWP;
- Cenderitide produced a clinically relevant increase in diuresis at doses of 3, 10 and 20 ng/kg/min when administered concurrently with i.v. furosemide; and

- There was no clinically relevant change in serum creatinine and there were no cases of symptomatic hypotension in any subject.

In March 2009, the FDA placed a clinical hold on the cenderitide program. The FDA requested additional data on our Phase 2 clinical trial, which was finalized in March 2009, and modifications to cenderitide's current investigator brochure. We submitted a full response to the FDA in April 2009 and the cenderitide program was released from clinical hold in May 2009.

In June 2010, we completed dosing of a 77 patient, open-label, placebo controlled Phase 2 study of cenderitide in patients with ADHF and mild to moderate renal dysfunction. Cenderitide infusion at 1.25, 2.5 and 3.75 ng/kg/min appeared to be well tolerated. A dose-related effect on blood pressure was observed, with minimal or mild blood pressure reduction at 1.25 and 2.5 ng/kg/min, and moderate blood pressure reduction at 3.75 ng/kg/min. Dose escalation was limited by significant blood pressure reduction at 5 ng/kg/min. Secondary and exploratory analyses demonstrated favorable effects of cenderitide on renal function, particularly at the 1.25 and 2.5 ng/kg/min doses. At these doses, cenderitide appeared to preserve or enhance renal function compared to placebo, as evidenced by favorable trends in several biomarkers correlated with kidney function, including creatinine and cystatin-c.

In October 2011, we completed dosing of a 58 patient, open-label, placebo controlled Phase I clinical trial that was designed to understand the doses required to achieve pre-determined plasma levels of cenderitide when delivered through a subcutaneous infusion pump. The target cenderitide plasma levels were based on our previous Phase 2 clinical trials, in which cenderitide was delivered through continuous i.v. infusion. The Phase 2 study enrolled patients in three parts. In Part A of the trial, 12 patients received two subcutaneous bolus injections of cenderitide. In Part B of the trial, 34 patients received a 24-hour continuous subcutaneous infusion of either of two fixed doses of cenderitide or placebo. In Part C, 12 patients received a 24-hour continuous subcutaneous infusion of either a weight-based dose of cenderitide, or placebo. All infusions were delivered through subcutaneous pump technology of Medtronic, Inc. pursuant to the parties' February 2011 collaboration agreement. In accordance with the terms of that agreement, Medtronic agreed to reimburse us for certain expenses of this Phase 1 study and provided the subcutaneous pumps used in the study.

The top line results from the Phase 1 trial are as follows:

- The primary end-point was met – cenderitide achieved target pharmacokinetic, or PK, levels when delivered through Medtronic's subcutaneous pump technology;
- 24-hour subcutaneous delivery of cenderitide through Medtronic's pump technology was well-tolerated, with no injection site irritation;
- Subcutaneously delivered cenderitide has an acceptable bioavailability profile;
- Cenderitide's PK profile achieved steady-state when delivered through subcutaneous infusion;
- Weight-based dosing reduced PK variability, as compared to a fixed dosing regimen.

In addition to our own studies, in July 2008, the Mayo Clinic initiated a Phase 1 study, under an investigator-sponsored investigational new drug application, or IND, to better understand cenderitide's renal properties.

Future Clinical Studies

In mid-2012, we plan to initiate a Phase 2 single-blind, placebo-controlled, dose ranging study in post-acute patients. The Phase 2 study will evaluate the endpoints of cardiac remodeling, renal function, re-hospitalization and mortality in patients following 90 days of chronic therapy. Stabilized patients admitted for ADHF with documented cardiac ejection fraction (EF) of ≤ 40%, and who have been admitted for ADHF within the previous 9 months, will be targeted for enrollment in the study. Study drug will be initiated in the hospital (after the patient has been stabilized and no longer on intravenous diuretic and vasoactive medication) and continued for up to 90 days.

The primary objective of this single-blind, placebo-controlled, dose-ranging, multi-centered study will be to ensure that patients can tolerate subcutaneous infusion for up to 90 days in an outpatient setting. Up to 96 heart failure patients will be given a subcutaneous infusion of cenderitide or placebo for 90 days in an outpatient setting. Patients will be randomized initially to a low, medium, high or placebo dose. The secondary objectives of the study are to assess multiple secondary end-points evaluating the potential efficacy of cenderitide, including re-hospitalization at 90 days, 6 minute walk test, quality of life assessment, biomarkers of renal function, and left ventricular remodeling as measured by echocardiogram. After 96 patients, assuming a successful safety review, we intend to expand the trial by up to 200 additional patients to provide additional data on the secondary end-points. If initiated in mid-2012, we expect to complete enrollment of the first 96 patients in the study in 2013.

We do not currently have the capital resources that will be required to initiate and conduct this planned Phase 2 study, nor will the proceeds from this offering be sufficient to fund this study. We are in discussions with several potential strategic parties with which we may collaborate to conduct our planned Phase 2 clinical trial. If we are unable to reach an agreement with such parties, we may be required to fund the entire clinical trial on our own and will need substantial additional capital, well beyond the proceeds from this offering, in order to do so. We estimate the costs to conduct this Phase 2 study will be approximately $15 million to $20 million and will take approximately 30 months to complete. Further, even if we reach an agreement with a collaborator, we may still be required to fund a portion of the planned Phase 2 activities ourselves and will need additional capital to do so. There can be no assurance that such additional capital will be available to us on acceptable terms or even at all. See “Risk Factors – Risks Relating to Our Business – We need substantial additional funding beyond the proceeds of this offering before we can complete the development of our product candidates. If we are unable to obtain such additional capital, we will be forced to delay, reduce or eliminate our product development programs and may not have the capital required to otherwise operate our business.”

CU-NP

CU-NP is also a natriuretic peptide that was designed by scientists at the Mayo Clinic. We are currently evaluating CU-NP in preclinical studies for potential treatment of a number of cardiovascular and renal diseases.

Corporate Information

We were originally incorporated under Delaware law in August 2005 under the name Nile Pharmaceuticals, Inc., and we changed our name to Nile Therapeutics, Inc. in January 2007. On September 17, 2007, we were acquired by SMI Products, Inc., or SMI, which was then a public shell company, in a reverse merger transaction whereby a

wholly-owned subsidiary of SMI merged with and into Nile Therapeutics, with Nile Therapeutics remaining as the surviving corporation and a wholly-owned subsidiary of SMI. In accordance with the terms of this transaction, the stockholders of Nile Therapeutics exchanged all of their shares of Nile Therapeutics common stock for shares of SMI common stock, which immediately following the transaction represented approximately 95 percent of the issued and outstanding common stock of SMI. Upon completion of the merger, the sole officer and director of SMI resigned and was replaced by the officers and directors of Nile Therapeutics. Additionally, following the merger, Nile Therapeutics, or Old Nile, was merged into SMI, and SMI changed its name to Nile Therapeutics, Inc. and adopted the business plan of Old Nile.

Our executive offices are located at 4 West 4th Avenue, Suite 400, San Mateo, California 94402. Our telephone number is (650) 458-2670, and our Internet address is *www.nilethera.com*. We do not incorporate the information on our website into this prospectus, and you should not consider it part of this prospectus or part of any prospectus supplement.

The Offering

Common stock offered by us	3,350,000 shares
Common stock to be outstanding after the offering	43,062,231 shares
Warrants offered by us	Each share of common stock is being sold together with 0.75 of a five-year warrant to purchase one share of common stock at an exercise price of $0.50 per share. The warrants are exercisable for a five-year period beginning on the earlier of (i) the effective date of a registration statement covering the exercise of the warrants and subsequent resale of the warrant shares and (ii) one year and one day from the date of issuance. This prospectus supplement also relates to the offering of the shares of common stock issuable upon exercise of the warrants. See "Description of the Securities We Are Offering."
Use of proceeds	We intend to use the net proceeds from this offering for general working capital. However, we will need substantial additional capital to fund the further development of cenderitide beyond the proceeds from this offering. See "Use of Proceeds" beginning on page S-33.
Market for our securities	Our common stock is quoted on the OTCQB tier of the OTC Markets under the symbol NLTX.PK. There is no established public trading market for the warrants, and we do not expect a market to develop. In addition, we do not intend to apply for listing of the warrants on any national securities exchange or other nationally recognized trading system.
Risk factors	This investment involves a high degree of risk. See "Risk Factors" beginning on page S-8 of this prospectus supplement as well as the other information included in or incorporated by reference in this prospectus supplement and the accompanying prospectus for a discussion of factors you should consider carefully before making an investment decision.
Insider participation	We anticipate that certain of our officers, directors, or other affiliates will invest up to an aggregate of $110,000 in this offering on the same terms offered to all investors in the offering.

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The number of shares of our common stock outstanding immediately prior to and to be outstanding immediately after this offering is based on the number of shares issued and outstanding as of March 29, 2012, and does not include:

- The shares of common stock issuable upon exercise of the warrants offered hereby;
- 8,484,334 shares of common stock issuable upon the exercise of outstanding stock options, with a weighted average exercise price of $1.52 per share;
- 1,227,984 shares of common stock available for future issuance under our Amended & Restated 2005 Stock Option Plan; and
- 8,662,484 shares of common stock issuable upon the exercise of outstanding warrants, with a weighted average exercise price of $1.21 per share.

RISK FACTORS

An investment in our securities involves a high degree of risk. In considering whether to purchase the securities offered by this prospectus supplement, you should carefully consider all of the information we have included or incorporated by reference in this prospectus supplement and the accompanying prospectus. In particular, you should carefully consider the following risk factors and the factors listed in "Cautionary Note Regarding Forward-Looking Statements," as well as those incorporated by reference into this prospectus supplement and the accompanying prospectus from the reports we file with the Securities and Exchange Commission, or SEC. You should carefully review all of the information in this prospectus supplement and the accompanying prospectus about these securities.

Risks Relating to Our Business

We need substantial additional funding beyond the proceeds of this offering before we can complete the development of our product candidates. If we are unable to obtain such additional capital, we will be forced to delay, reduce or eliminate our product development programs and may not have the capital required to otherwise operate our business.

Developing biopharmaceutical products, including conducting pre-clinical studies and clinical trials and establishing manufacturing capabilities, is expensive. We expect our research and development expenses to increase in connection with our ongoing activities, particularly as we continue to develop cenderitide, our lead product candidate, and initiate clinical development of CU-NP, our second product candidate. In addition, our expenses could increase beyond expectations if the Food and Drug Administration, or FDA, requires that we perform additional studies to those that we currently anticipate, and the timing of any potential product approval may be delayed. Other than our cash on hand, we currently have no commitments or arrangements for any additional financing to fund the research and development of our product candidates. We have not generated any product revenues, and do not expect to generate any revenues until, and only if, we receive approval to sell our drug candidates from the FDA and other regulatory authorities for our product candidates. As of September 30, 2011, we had cash and cash equivalents totaling $2.6 million. During the fiscal year ended December 31, 2010, and the nine months ended September 30, 2011, we used net cash in operating activities totaling $4.3 million and $3.1 million, respectively. We expect our negative cash flows from operations to continue for the foreseeable future and beyond potential regulatory approval and any product launch.

We expect that our current cash resources, together with the net proceeds from this offering, will be sufficient to fund our operations through approximately the middle of the fourth quarter of 2012. Although such cash resources would be sufficient to fund certain planning and start-up expenses relating to our planned Phase 2 clinical trial of cenderitide, we need substantial additional capital in order to fund the costs of such study. We are in discussions with different strategic partners about potentially collaborating on the future development of cenderitide, including our planned Phase 2 clinical trial, and the terms of any such collaboration may provide that our partner would fund all or a portion

of the expenses of such further development. However, we do not have any agreement or commitment from any collaboration partner, and there is no assurance we will be able to reach any such agreement. If we are unable to reach an agreement with a collaboration partner, we will be required to fund the entire costs of the planned Phase 2 trial on our own, which we estimate may cost approximately $15 million to $20 million and take approximately 30 months to complete. There can be no assurance that we will be able to secure the capital needed to fund this clinical trial, whether through a collaboration with a third party or by ourselves.

Until we can generate a sufficient amount of product revenue, if ever, we expect to finance future cash needs, including the cash needed to fund our planned Phase 2 clinical trial of cenderitide, through public or private equity offerings, debt financings, or corporate collaboration and licensing arrangements. 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, we may be required to delay, reduce the scope of, or eliminate one or more of our research or development programs or our commercialization efforts. In addition, we could be forced to discontinue product development and reduce or forego attractive business opportunities. To the extent that we raise additional funds by issuing equity securities, our stockholders may experience additional significant dilution, and debt financing, if available, may involve restrictive covenants. To the extent that we raise additional funds through collaboration and licensing arrangements, it may be necessary to relinquish some rights to our technologies or our product candidates, or grant licenses on terms that may not be favorable to us. We may seek to access the public or private capital markets whenever conditions are favorable, even if we do not have an immediate need for additional capital at that time.

Our forecasts regarding our beliefs of the sufficiency of our financial resources to support our current and planned operations are forward-looking statements and involve significant risks and uncertainties, and actual results could vary as a result of a number of factors, including the factors discussed elsewhere in this “Risk Factors” section. We have based this estimate on assumptions that may prove to be wrong, and we could utilize our available capital resources sooner than we currently expect. Our future funding requirements will depend on many factors, including, but not limited to:

- the scope, rate of progress, cost and results of our research and development activities, especially our planned Phase 2 clinical trial of cenderitide;
- the costs and timing of regulatory approval;
- the costs of filing, prosecuting, defending and enforcing any patent claims and other intellectual property rights;
- the effect of competing technological and market developments;
- the terms and timing of any collaboration, licensing or other arrangements that we may establish;
- the cost and timing of completion of clinical and commercial-scale outsourced manufacturing activities; and
- the costs of establishing sales, marketing and distribution capabilities for any product candidates for which we may receive regulatory approval.

We are largely dependent on the viability of cenderitide, our lead product candidate, and we cannot be certain it will receive regulatory approval to be commercialized.

We will need FDA approval to market and sell cenderitide in the United States and approvals from the FDA-equivalent regulatory authorities in foreign jurisdictions to commercialize our product candidates in those jurisdictions. In order to obtain FDA approval of any of our product candidates, we must submit to the FDA a new drug application, or NDA, demonstrating that the product candidate is safe for humans and effective for its intended use. This demonstration requires significant research and animal tests, which are referred to as pre-clinical studies, as well as human tests, which are referred to as clinical trials. Satisfaction of the FDA's regulatory requirements typically takes many years, depends upon the type, complexity, and novelty of the product candidate, and requires substantial resources for research, development, and testing. We cannot predict whether our research and clinical approaches will result in drugs that the FDA considers safe for humans and effective for indicated uses. The FDA has substantial discretion in the drug approval process and may require us to conduct additional pre-clinical and clinical testing or to perform post-marketing studies. The approval process may also be delayed by changes in government regulation, future legislation, or administrative action or changes in FDA policy that occur prior to or during our regulatory review.

Even if we comply with all FDA requests, the FDA may ultimately reject one or more of our NDAs. We cannot be sure that we will ever obtain regulatory clearance for our product candidates. Failure to obtain FDA approval of any of our product candidates will severely undermine our business by reducing our number of salable products and, therefore, corresponding product revenues, and will have a material and adverse impact on our business.

We are substantially dependent on our relationship with the Mayo Foundation, from which we license the rights to both of our cenderitide and CU-NP drug candidates. If requirements under our license agreements are not met, we could suffer significant harm, including losing rights to our drug candidates.

Our rights to our cenderitide and CU-NP drug candidates are both derived from separate license agreements between us and the Mayo Foundation, an affiliate of Mayo Clinic. Our business depends substantially on these agreements to maintain the intellectual property rights to both our product candidates. These license agreements require us to perform certain obligations that affect our rights under these licensing agreements, including making cash payments upon the achievement of certain milestones relating to the development of each product candidate. Both of these agreements last either throughout the life of the patents, or with respect to other licensed technology, for a number of years after the first commercial sale of the relevant product. If we fail to comply with our obligations in our license agreements with the Mayo Foundation, we could lose important patent and other intellectual property rights which are critical to our business.

In addition, we are responsible for the cost of filing and prosecuting certain patent applications and maintaining certain issued patents licensed to us. If we do not meet our obligations under our license agreements in a timely manner, we could lose the rights to our proprietary technology.

Finally, we may be required to obtain licenses to patents or other proprietary rights of third parties in connection with the development and use of our product candidates and technologies. Licenses required under any such patents or proprietary rights might not be made available on terms acceptable to us, if at all.

Each of our product candidates is in an early stage of development.

Each of our two product candidates, cenderitide and CU-NP, is in an early stage of development and requires extensive clinical testing before it will be approved by the FDA or another regulatory authority in a jurisdiction outside the United States, which could take several years to complete, if ever. We cannot predict with any certainty the results of such clinical testing, including the results of our planned Phase 2 clinical trial of cenderitide in the post-acute heart failure setting. We cannot predict with any certainty if, or when, we might commence any such clinical trials or whether such trials will yield sufficient data to permit us to proceed with additional clinical development and ultimately submit an application for regulatory approval of our product candidates in the United

States or abroad, or whether such applications will be accepted by the appropriate regulatory agency.

We have a limited operating history upon which to base an investment decision, and we expect a number of factors to cause our operating results to fluctuate on a quarterly and annual basis, which may make it difficult to predict our future performance.

Our operations to date have been primarily limited to organizing and staffing our company, developing our technology, and undertaking pre-clinical studies and clinical trials of our product candidates. We have not yet obtained regulatory approvals for any of our product candidates. Consequently, any predictions you make about our future success or viability may not be as accurate as they could be if we had a longer operating history. Specifically, our financial condition and operating results have varied significantly in the past and will continue to fluctuate from quarter-to-quarter and year-to-year in the future due to a variety of factors, many of which are beyond our control. Factors relating to our business that may contribute to these fluctuations include the following factors, as well as other factors described elsewhere in this prospectus supplement:

- our need for substantial additional capital to fund our development programs;
- delays in the commencement, enrollment, and timing of clinical testing;
- the success of our clinical trials through all phases of clinical development;
- the success of clinical trials of our cenderitide and CU-NP product candidates or future product candidates;
- any delays in regulatory review and approval of our product candidates in clinical development;
- our ability to receive regulatory approval or commercialize our two product candidates, cenderitide and CU-NP, within and outside the United States;
- potential side effects of our current or future products and product candidates that could delay or prevent commercialization or cause an approved treatment drug to be taken off the market;
- regulatory difficulties relating to products that have already received regulatory approval;
- market acceptance of our product candidates;
- our ability to establish an effective sales and marketing infrastructure once our products are commercialized;
- competition from existing products or new products that may emerge;
- the impact of competition in the market in which we compete on the commercialization of cenderitide and CU-NP;
- guidelines and recommendations of therapies published by various organizations;
- the ability of patients to obtain coverage of or sufficient reimbursement for our products;
- our ability to maintain adequate insurance policies;
- our dependency on third parties to formulate and manufacture our product candidates;

- our ability to establish or maintain collaborations, licensing or other arrangements;
- our ability and third parties' abilities to protect intellectual property rights;
- costs related to and outcomes of potential intellectual property litigation;
- compliance with obligations under intellectual property licenses with third parties;
- our ability to adequately support future growth;

- our ability to attract and retain key personnel to manage our business effectively; and

- the level of experience in running a public company of our senior management who are relatively new to their current roles as managers of a public company.

We have a history of net losses, expect to continue to incur substantial and increasing net losses for the foreseeable future, and we may never achieve or maintain profitability.

For the year ended December 31, 2010 and the nine months ended September 30, 2011, respectively, we had a net loss of $6.0 million and $5.2 million. Since our inception on August 1, 2005, through September 30, 2011, we have accumulated a deficit of $43.2 million and have stockholders' equity of $2.4 million. We expect to incur substantial losses and negative operating cash flow for the foreseeable future, and we may never achieve or maintain profitability. Even if we succeed in developing and commercializing one or more of our product candidates, we expect to incur substantial losses for the foreseeable future, as we:

- continue to undertake pre-clinical development and clinical trials for our product candidates;

- seek regulatory approvals for our product candidates;

- in-license or otherwise acquire additional products or product candidates;

- implement additional internal systems and infrastructure; and

- hire additional personnel.

We also expect to experience negative cash flow for the foreseeable future as we fund our operating losses and capital expenditures. These losses and negative cash flows have had, and will continue to have, an adverse effect on our stockholders' equity and working capital. Our failure to achieve or maintain profitability could negatively impact the value of our common stock.

Because of the numerous risks and uncertainties associated with pharmaceutical product development, we are unable to accurately predict the timing or amount of increased expenses or when, or if, we will be able to achieve or maintain profitability. In addition, our expenses could increase beyond expectations if we are required by the FDA to perform studies in addition to those that we currently anticipate. Currently, we have no products approved for commercial sale, and to date we have not generated any product revenue. We have financed our operations primarily through the sale of

equity securities and debt financings. The size of our future net losses will depend, in part, on the rate of growth of our expenses and the rate of growth, if any, of our revenues. Revenues from potential strategic partnerships are uncertain because we may not enter into any strategic partnerships. If we are unable to develop and commercialize one or more of our product candidates, or if sales revenue from any product candidate that receives marketing approval is insufficient, we will not achieve profitability. Even if we do achieve profitability, we may not be able to sustain or increase profitability.

The relationships between Two River Consulting, Riverbank Capital Securities and certain of our officers and directors may present potential conflicts of interest.

Arie S. Belldegrun and Joshua A. Kazam, each of whom are currently directors of our company, and David M. Tanen, a co-founder, director and secretary of our company until September 2009, are the managing members of Two River Consulting, LLC, or Two River. Since June 2009, Mr. Kazam has also served as our President and Chief Executive Officer. In June 2009, we entered into a services agreement with Two River pursuant to which it performs various management, clinical development, operational and administrative activities and services for us, including the services of Mr. Kazam as our President and Chief Executive Officer. The terms of the services agreement were reviewed and approved by a special committee of our Board of Directors consisting of independent, disinterested directors. As consideration for the services provided under the services agreement, we paid Two River a monthly cash fee of $65,000 through March 2011, which were thereafter reduced to $30,082 per month due to reduced services being provided by Two River. In addition, upon entering into the services agreement, we issued to designees of Two River (excluding Dr. Belldegrun and Messrs. Kazam and Tanen) stock options to purchase an aggregate of 750,000 shares of our common stock at an exercise price of $0.89 per share. Twenty-five percent of the stock options vested immediately and the remaining 75% were scheduled to vest pursuant to the achievement of certain milestones relating to the clinical development of cenderitide. On January 3, 2011, the final block of stock options vested. Of the 750,000 stock options issued, 535,172 stock options vested and the remaining 214,828 stock options were forfeited. Also, in connection with an August 2010 amendment extending the term of the services agreement with Two River, we issued to designees of Two River (excluding Dr. Belldegrun and Messrs. Kazam and Tanen) fully-vested and immediately-exercisable stock options to purchase an aggregate of 250,000 shares of our common stock at an exercise price of $0.38 per share. In March 2011, we and Two River amended the services agreement to provide for a reduced scope of service and to reduce the monthly cash fee payable to Two River to $31,702. Additional operational and clinical development services may be provided by Two River, and billed to us, on an hourly basis. Each of Messrs. Kazam and Tanen, as well as Peter M. Kash, a director of our company, are also officers and directors of Riverbank Capital Securities, Inc., or Riverbank, a registered broker-dealer, which served as placement agent in connection with our July 2009 private placement. Scott L. Navins, the Financial and Operations Principal of Riverbank, serves as our Treasurer pursuant to the Two River services agreement.

Generally, Delaware corporate law requires that any transactions between us and any of our affiliates be on terms that, when taken as a whole, are substantially as favorable to us as those then reasonably obtainable from a person who is not an affiliate in an arms-length transaction. We believe that the terms of the agreements that we have entered into with Two River and Riverbank satisfy the requirements of Delaware law, but in the event one or more parties challenges the fairness of such terms we may have to expend substantial resources in resolving such challenges and can make no guarantees of the result. Further, none of our affiliates or Two River is obligated pursuant to any agreement or understanding with us to make any additional products or technologies available to us, nor can there be any assurance, and the investors should not expect, that any biomedical or pharmaceutical product or technology identified by such affiliates or Two River in the future will be made available to us. In addition, certain of our current officers and directors or certain of any officers or directors hereafter appointed may from time to time serve as officers or directors of other biopharmaceutical or biotechnology companies. There can be no assurance that such other companies will not have interests in conflict with our own.

We are substantially dependent on the services of Two River and other consultants.

We currently have only three employees – Richard Brewer, our Executive Chairman; Daron Evans, our Chief Financial Officer; and Hsiao Lieu, our Vice President of Clinical Development. We currently rely on Two River, an entity affiliated with certain of our officers and directors, to render various management and administrative activities and services for us. We also rely in substantial part, and for the foreseeable future will continue to rely, on certain independent organizations and consultants to provide other important services, including substantially all aspects of regulatory guidance, clinical management, and manufacturing. There can be no assurance that the services of independent organizations, advisors and consultants will continue to be available to us on a timely basis when needed, or that we can find qualified replacements.

Our Executive Chairman and our CEO provide their services on a part-time basis and significant other services are currently being rendered by outside consultants. If we are unable to hire additional qualified personnel in the future, our ability to grow our business may be harmed.

Although we currently engage Two River to provide personnel to perform a variety of management and other services on our behalf on a consulting basis, including the services of Joshua Kazam as our President and Chief Executive Officer, we expect to directly hire employees, including at the senior management level, in the future as we further the development of our clinical programs. In addition, Richard Brewer, our Executive Chairman, provides his services as a part-time employee. As we further the development of our product candidates, we intend to hire employees to perform the services currently being rendered by external consultants and Two River. Accordingly, our ability to attract and retain qualified personnel will be critical to managing and growing our business in the future, especially the hiring and retention of key executive personnel and scientific staff. There is intense competition and demand for qualified personnel in our area of business and no assurances can be made that we will be able to retain the personnel necessary for the development of our business on commercially reasonable terms, if at all.

We may not be able to manage our growth.

Should we achieve our near-term milestones, such as completion of our planned Phase 2 clinical trial of cenderitide with positive data, of which no assurance can be given, our long-term viability will depend upon the expansion of our operations and the effective management of our growth, which will place a significant strain on our management and on our administrative, operational and financial resources. To manage this growth, we may need to expand our facilities, augment our operational, financial and management systems and hire and train additional qualified personnel. If we are unable to manage our growth effectively, our business would be harmed.

We face potential product liability exposure, and if claims are brought against us or if we are found liable, we may incur substantial liability for a product candidate and may have to limit its commercialization.

The use of our product candidates in clinical trials and the sale of any products for which we obtain marketing approval, if at all, expose us to the risk of product liability claims. Product liability claims might be brought against us by consumers, health care providers or others using, administering or selling our products. If we cannot successfully defend ourselves against these claims, we will incur substantial liabilities. Regardless of merit or eventual outcome, liability claims may result in:

- withdrawal of clinical trial participants;

- termination of clinical trial sites or entire trial programs;
- costs of related litigation;
- substantial monetary awards to patients or other claimants;
- decreased demand for our product candidates;
- impairment of our business reputation;
- loss of revenues; and
- the inability to commercialize our product candidates.

We have obtained product liability insurance coverage for our clinical trials, both foreign and domestically. However, our insurance coverage may not reimburse us or may not be sufficient to reimburse us for any expenses or losses we may suffer. Moreover, insurance coverage is becoming increasingly expensive, and, in the future, we may not be able to maintain insurance coverage at a reasonable cost or in sufficient amounts to protect us against losses due to liability. We intend to expand our insurance coverage to include the sale of commercial products if we obtain marketing approval for our product candidates in development, but we may be unable to obtain commercially reasonable product liability insurance for any products approved for marketing. On occasion, large judgments have been awarded in class action lawsuits based on drugs that had unanticipated side effects. A successful product liability claim or series of claims brought against us could cause our stock price to fall and, if judgments exceed our insurance coverage, could decrease our cash and adversely affect our business.

We are controlled by current directors, officers, and principal stockholders.

Our directors, officers, and principal stockholders beneficially own approximately 40% of our outstanding common stock. Accordingly, our executive officers, directors, and principal stockholders will have the ability to exert substantial influence over the election of our Board of Directors and the outcome of issues submitted to our stockholders.

Recent turmoil in the financial markets and the global recession has adversely affected and may continue to adversely affect our industry, business and ability to obtain financing.

Recent global market and economic conditions have been unprecedented and challenging with tighter credit conditions leading to decreased spending by businesses and consumers alike. Continued turbulence in the U.S. and international markets and economies and prolonged declines in business and consumer spending may adversely affect our liquidity and financial condition, including our ability to access the capital markets to meet our liquidity needs. If the conditions in the U.S. and world economic markets remain uncertain or continue to be volatile, or if they deteriorate further, our industry and business may be adversely affected.

Risks Relating to the Clinical Testing, Regulatory Approval, Manufacturing and Commercialization of Our Product Candidates

If clinical trials of our cenderitide and CU-NP product candidates or future product candidates do not produce results necessary to support regulatory approval in the United States or elsewhere or if they show undesirable side effects, we will be unable to commercialize these product candidates.

To receive regulatory approval for the commercial sale of cenderitide, CU-NP or any other product candidates, we must conduct adequate and well-controlled clinical trials to demonstrate efficacy and safety in humans. Clinical testing is expensive, takes many years and has an uncertain outcome. Clinical failure can occur at any stage of the testing. Our clinical trials may produce negative or inconclusive results, and we may decide, or regulators may require us, to conduct additional clinical and/or non-clinical testing. In addition, the results of our clinical trials may show that our product candidates may cause undesirable side effects, which could interrupt, delay or halt clinical trials, resulting in the denial of regulatory approval by the FDA and other regulatory authorities.

In light of widely publicized events concerning the safety risk of certain drug products, regulatory authorities, members of Congress, the Government Accounting Office, medical professionals and the general public have raised concerns about potential drug safety issues. These events have resulted in the withdrawal of drug products, revisions to drug labeling that further limit use of the drug products and establishment of risk management programs that may, for instance, restrict distribution of drug products. The increased attention to drug safety issues may result in a more cautious approach by the FDA to clinical trials. Data from clinical trials may receive greater scrutiny with respect to safety, which may make the FDA or other regulatory authorities more likely to terminate clinical trials before completion, or require longer or additional clinical trials that may result in substantial additional expense and a delay or failure in obtaining approval or approval for a more limited indication than originally sought.

Our failure to adequately demonstrate the efficacy and safety of cenderitide, CU-NP or any other product candidates would prevent regulatory approval and, ultimately, the commercialization of that product candidate.

Delays in the commencement, enrollment, and completion of clinical testing could result in increased costs to us and delay or limit our ability to obtain regulatory approval for our product candidates.

Delays in the commencement, enrollment, and completion of clinical testing could also significantly affect our product development costs. We do not know whether our planned Phase 2 clinical trial of cenderitide will be completed on schedule or at all. Thereafter, subject to the results of our planned Phase 2 trial, we do not know whether further planned clinical trials for cenderitide will begin on time or be completed on schedule, if at all. The commencement and completion of clinical trials requires us to identify and maintain a sufficient number of trial sites, many of which may already be engaged in other clinical trial programs for the same indication as our product candidates, may be required to withdraw from a clinical trial as a result of changing standards of care, or may become ineligible to participate in clinical studies.

The commencement, enrollment, and completion of clinical trials can be delayed for a variety of other reasons, including delays related to:

- reaching agreements on acceptable terms with prospective clinical research organizations, or CROs, and trial sites, the terms of which can be subject to extensive negotiation and may vary significantly among different CROs and trial sites;
- obtaining regulatory approval to commence a clinical trial;
- obtaining institutional review board, or IRB, approval to conduct a clinical trial at numerous prospective sites;
- recruiting and enrolling patients to participate in clinical trials for a variety of reasons, including meeting the enrollment criteria for our study and competition from other clinical trial programs for the same indication as our product candidates;
- retaining patients who have initiated a clinical trial but may be prone to withdraw due to the treatment protocol, lack of efficacy, personal issues, or side effects from the therapy, or who are lost to further follow-up;
- maintaining and supplying clinical trial material on a timely basis;

- complying with design protocols of any applicable special protocol assessment we receive from the FDA; and

- collecting, analyzing and reporting final data from the clinical trials.

In addition, a clinical trial may be suspended or terminated by us, the FDA, or other regulatory authorities due to a number of factors, including:

- failure to conduct the clinical trial in accordance with regulatory requirements or our clinical protocols;

- inspection of the clinical trial operations or trial sites by the FDA or other regulatory authorities resulting in the imposition of a clinical hold;

- unexpected delays in approvals of protocol amendments by regulatory authorities;

- unforeseen safety issues or any determination that a trial presents unacceptable health risks;

- lack of adequate funding to continue the clinical trial, including the incurrence of unforeseen costs due to enrollment delays; or

- requirements to conduct additional trials and studies, and increased expenses associated with the services of our CROs and other third parties.

If we are required to conduct additional clinical trials or other testing of our product candidates beyond those that we currently contemplate, we or our development partners, if any, may be delayed in obtaining, or may not be able to obtain, marketing approval for these product candidates. Based upon our discussions with the FDA, we intend to conduct clinical programs for each of our cenderitide and CU-NP product candidates. We may not be able to obtain approval for indications that are as broad as intended, or we may be able to obtain approval only for indications that are entirely different than those indications for which we sought approval.

Additionally, changes in regulatory requirements and guidance may occur, and we may need to amend clinical trial protocols to reflect these changes with appropriate regulatory authorities. Amendments may require us to resubmit our clinical trial protocols to IRBs for re-examination, which may impact the costs, timing, or successful completion of a clinical trial. If we experience delays in the completion of, or if we terminate, our clinical trials, the commercial prospects for our product candidates will be harmed, and our ability to generate product revenues will be delayed. In addition, many of the factors that cause, or lead to, a delay in the commencement or completion of clinical trials may also ultimately lead to the denial of regulatory approval of a product candidate. Even if we are able to ultimately commercialize our product candidates, other therapies for the same or similar indications may have been introduced to the market and established a competitive advantage.

Any delays in obtaining regulatory approvals may:

- delay commercialization of, and our ability to derive product revenues from, our product candidates;

- impose costly procedures on us; or

- diminish any competitive advantages that we may otherwise enjoy.

As the results of earlier clinical trials are not necessarily predictive of future results, cenderitide, CU-NP or any other product candidate we advance into clinical trials may not have favorable results in later clinical trials or receive regulatory approval.

Even if our clinical trials are completed as planned, including our planned Phase 2 clinical trial of cenderitide, we cannot be certain that their results will support the claims of our product candidates. Positive results in pre-clinical testing and early clinical trials does not ensure that results from later clinical trials will also be positive, and we cannot be sure that the results of later clinical trials will replicate the results of prior clinical trials and pre-clinical testing. A number of companies in the pharmaceutical industry, including those with greater resources and experience, have suffered significant setbacks in Phase 3 clinical trials, even after seeing promising results in earlier clinical trials.

Our clinical trial process may fail to demonstrate that our product candidates are safe for humans and effective for indicated uses. This failure would cause us to abandon a product candidate and may delay development of other product candidates. Any delay in, or termination of, our clinical trials will delay the filing of our NDAs with the FDA and, ultimately, our ability to commercialize our product candidates and generate product revenues. In addition, our clinical trials to date involve a small patient population. Because of the small sample size, the results of these clinical trials may not be indicative of future results.

Despite the results reported in earlier clinical trials for our product candidates, we do not know whether any Phase 2, Phase 3 or other clinical programs we may conduct will demonstrate adequate efficacy and safety to result in regulatory approval to market our product candidates.

If we do not establish strategic partnerships, we will have to undertake development and commercialization efforts on our own, which would be costly and delay our ability to commercialize any future products or product candidates.

An element of our business strategy includes potentially partnering with pharmaceutical, biotechnology and other companies to obtain assistance for the development and potential commercialization of our product candidates, including the cash and other resources we need for such development and potentially commercialization. We intend to enter into potential strategic partnerships with third parties to develop and commercialize our product candidates, including, as discussed elsewhere in this prospectus supplement, our planned development of cenderitide. We also intend to enter into strategic partnerships to commercialize our product candidates that are intended for larger markets, and we may enter into strategic partnerships for product candidates that are targeted toward specialty markets. We face significant competition in seeking appropriate strategic partners, and these potential strategic partnerships can be intricate and time consuming to negotiate and document. In addition, the early development stage of our product candidates may make it more difficult for us to identify and secure a strategic partner because of the additional risks inherent in early stage technologies. We may not be able to negotiate strategic partnerships on acceptable terms, or at all. We are unable to predict when, if ever, we will enter into any potential strategic partnerships because of the numerous risks and uncertainties associated with establishing strategic partnerships. If we are unable to negotiate strategic partnerships for our product candidates we may be forced to curtail the development of a particular candidate, reduce or delay its development program, delay its potential commercialization, reduce the scope of our sales or marketing activities or undertake development or commercialization activities at our own expense. In addition, we will bear all the risk related to the development of that product candidate. If we elect to increase our expenditures to fund development or commercialization activities on our own, we will need to obtain substantial additional capital, which may not be available to us on acceptable terms, or at all. If we do not have sufficient funds, we will not be able to bring our product candidates to market and generate product revenue.

If we enter into strategic partnerships, we may be required to relinquish important rights to and control over the development of our product candidates or otherwise be subject to terms unfavorable to us.

If we enter into any strategic partnerships with pharmaceutical, biotechnology or other life sciences companies we will be subject to a number of risks, including:

- we may not be able to control the amount and timing of resources that our strategic partners devote to the development or commercialization of product candidates;

- strategic partners may delay clinical trials, provide insufficient funding, terminate a clinical trial or abandon a product candidate, repeat or conduct new clinical trials or require a new version of a product candidate for clinical testing;

- strategic partners may not pursue further development and commercialization of products resulting from the strategic partnering arrangement or may elect to discontinue research and development programs;

- strategic partners may not commit adequate resources to the marketing and distribution of any future products, limiting our potential revenues from these products;

- disputes may arise between us and our strategic partners that result in the delay or termination of the research, development or commercialization of our product candidates or that result in costly litigation or arbitration that diverts management's attention and consumes resources;

- strategic partners may experience financial difficulties;

- strategic partners may not properly maintain or defend our intellectual property rights or may use our proprietary information in a manner that could jeopardize or invalidate our proprietary information or expose us to potential litigation;

- business combinations or significant changes in a strategic partner's business strategy may also adversely affect a strategic partner's willingness or ability to complete its obligations under any arrangement; and

- strategic partners could independently move forward with a competing product candidate developed either independently or in collaboration with others, including our competitors.

Our product candidates use novel alternative technologies and therapeutic approaches, which have not been widely studied.

Our product development efforts focus on novel alternative technologies and therapeutic approaches that have not been widely studied. These approaches and technologies may not be successful. We are applying these approaches and technologies in our attempt to discover new treatments for conditions that are also the subject of research and development efforts of many other companies.

Our drug development programs depend upon third-party researchers who are outside our control.

We will depend upon independent investigators and collaborators, such as universities and medical institutions, to conduct our pre-clinical and clinical trials under agreements with us. These collaborators are not our employees, and we cannot control the amount or timing of resources that they devote to our programs. These investigators may not

assign as great a priority to our programs or pursue them as diligently as we would if we were undertaking such programs ourselves. If outside collaborators fail to devote sufficient time and resources to our drug-development programs, or if their performance is substandard, the approval of our FDA applications, if any, and our introduction of new drugs, if any, will be delayed. These collaborators may also have relationships with other commercial entities, some of whom may compete with us. If our collaborators assist our competitors at our expense, our competitive position would be harmed.

We rely exclusively on third parties to formulate and manufacture our product candidates.

We have no experience in drug formulation or manufacturing and do not intend to establish our own manufacturing facilities. We lack the resources and expertise to formulate or manufacture our own product candidates. We currently, and intend in the future to, contract with one or more manufacturers to manufacture, supply, store, and distribute drug supplies for our clinical trials. If any of our product candidates receive FDA approval, we will rely on one or more third-party contractors to manufacture supplies of our drug candidates. Our current and anticipated future reliance on a limited number of third-party manufacturers exposes us to the following risks:

- We may be unable to identify manufacturers needed to manufacture our product candidates on acceptable terms or at all, because the number of potential manufacturers is limited, and subsequent to approval of a new drug application, or NDA, the FDA must approve any replacement contractor. This approval would require new testing and compliance inspections. In addition, a new manufacturer may have to be educated in, or develop substantially equivalent processes for, production of our products after receipt of FDA approval, if any.

- Some of the raw materials needed to manufacture our product candidates are available from a very limited number of suppliers. Although we believe we have good relationships with these suppliers, we may have difficulty identifying alternative suppliers if our arrangements with our current suppliers are disrupted or terminated.

- Our third-party manufacturers might be unable to formulate and manufacture our drugs in the volume and of the quality required to meet our clinical and commercial needs, if any.

- Our future contract manufacturers may not perform as agreed or may not remain in the contract manufacturing business for the time required to supply our clinical trials or to successfully produce, store, and distribute our products.

- Drug manufacturers are subject to ongoing periodic unannounced inspection by the FDA, the Drug Enforcement Agency, and corresponding state agencies to ensure strict compliance with good manufacturing practice and other government regulations and corresponding foreign standards. We do not have control over third-party manufacturers' compliance with these regulations and standards.

Each of these risks could delay our clinical trials, the approval, if any, of our product candidates by the FDA, or the commercialization of our product candidates, or result in higher costs or deprive us of potential product revenues.

Our product candidates may have undesirable side effects and cause our approved drugs to be taken off the market.

If any of our product candidates receive marketing approval and we or others later identify undesirable side effects caused by such product candidates:

- regulatory authorities may require the addition of labeling statements, specific warnings, a contraindication, or field alerts to physicians and pharmacies;

- regulatory authorities may withdraw their approval of the product;

- we may be required to change the way the product is administered, conduct additional clinical trials or change the labeling of the product;

- we may have limitations on how we promote our drugs;

- regulatory authorities may require us to take our approved drug off the market;

- sales of products may decrease significantly;

- we may be subject to litigation or product liability claims; and

- our reputation may suffer.

Any of these events could prevent us from achieving or maintaining market acceptance of the affected product or could substantially increase our commercialization costs and expenses, which in turn could delay or prevent us from generating significant revenues from its sale.

Even if our product candidates receive regulatory approval in the United States, we may never receive approval or commercialize our product candidates outside of the United States.

In order to market and commercialize any product candidate outside of the United States, we must establish and comply with numerous and varying regulatory requirements of other countries regarding safety and efficacy. Approval procedures vary among countries and can involve additional product testing and additional administrative review periods. For example, European regulatory authorities generally require a trial comparing the efficacy of the new drug to an existing drug prior to granting approval. The time required to obtain approval in other countries might differ from that required to obtain FDA approval. The regulatory approval process in other countries may include all of the risks detailed above regarding FDA approval in the United States as well as other risks. Regulatory approval in one country does not ensure regulatory approval in another, but a failure or delay in obtaining regulatory approval in one country may have a negative effect on the regulatory approval process in others. Failure to obtain regulatory approval in other countries or any delay or setback in obtaining such approval could have the same adverse effects detailed above regarding FDA approval in the United States. Such effects include the risks that our product candidates may not be approved for all indications requested, which could limit the uses of our product candidates and have an adverse effect on product sales and potential royalties, and that such approval may be subject to limitations on the indicated uses for which the product may be marketed or require costly, post-marketing follow-up studies.

We have no experience selling, marketing, or distributing products and no internal capability to do so. If we are unable to establish an effective and focused sales force and marketing infrastructure, we will not be able to commercialize our product candidates successfully.

We currently have no sales, marketing, or distribution capabilities. We do not anticipate having resources in the foreseeable future to allocate to the sales and marketing of our proposed products. Our future success depends, in part, on our ability to enter into and maintain sales and marketing collaborative relationships, or on our ability to build sales and marketing capabilities internally. If we enter into a sales and marketing collaborative relationship, then we will be dependent upon the collaborator's strategic interest in the products under development, and such collaborator's ability to successfully market and sell any such products. We intend to pursue collaborative arrangements regarding the sales and marketing of our products, however, there can be no assurance that we will be able to establish or maintain such collaborative arrangements, or if able to do so, that they will have effective sales forces. To the extent that we decide not to, or are unable to, enter into collaborative arrangements with respect to the sales and marketing of our proposed products, significant capital expenditures, management resources, and time will be required to establish and develop an in-house marketing and sales force with technical expertise. There can also be no assurance that we will be able to

establish or maintain relationships with third-party collaborators or develop in-house sales and distribution capabilities. To the extent that we depend on third parties for marketing and distribution, any revenues we receive will depend upon the efforts of such third parties, and there can be no assurance that such efforts will be successful. In addition, there can also be no assurance that we will be able to market and sell our product in the United States or overseas.

We will experience intense competition with respect to our existing and future product candidates.

The pharmaceutical industry is highly competitive, with a number of established, large pharmaceutical companies, as well as many smaller companies. Many of these companies have greater financial resources, marketing capabilities, and experience in obtaining regulatory approvals for product candidates. There are many pharmaceutical companies, biotechnology companies, public and private universities, government agencies, and research organizations actively engaged in research and development of products which may target the same indications as our product candidates. We expect any future products and product candidates we develop to compete on the basis of, among other things, product efficacy and safety, time to market, price, extent of adverse side effects, and convenience of treatment procedures. One or more of our competitors may develop products based upon the principles underlying our proprietary technologies earlier than us, obtain approvals for such products from the FDA more rapidly than us, or develop alternative products or therapies that are safer, more effective and/or more cost effective than any products developed by us.

Competitors may seek to develop alternative formulations of our product candidates that address our targeted indications. The commercial opportunity for our product candidates could be significantly harmed if competitors are able to develop alternative formulations outside the scope of our product candidates. Compared to us, many of our potential competitors have substantially greater:

- capital resources;
- development resources, including personnel and technology;
- clinical trial experience;
- regulatory experience;
- expertise in prosecution of intellectual property rights;
- manufacturing and distribution experience; and
- sales and marketing experience.

As a result of these factors, our competitors may obtain regulatory approval of their products more rapidly than we are able to or may obtain patent protection or other intellectual property rights that limit our ability to develop or commercialize our product candidates. Our competitors may also develop drugs that are more effective, useful, and less costly than ours, and may also be more successful than us in manufacturing and marketing their products.

Developments by competitors may render our product candidates or technologies obsolete or non-competitive.

The biotechnology and pharmaceutical industries are intensely competitive and subject to rapid and significant technological change. The drugs that we are attempting to develop will have to compete with existing therapies. In addition, a large number of companies are pursuing the development of pharmaceuticals that target the same diseases and conditions that we are targeting. We face competition from pharmaceutical and biotechnology companies in the United States and abroad. In addition, companies pursuing different but related fields represent substantial competition. Many of these organizations competing with us have substantially greater capital resources, larger research and development staffs and facilities, longer drug development history in obtaining regulatory approvals, and greater manufacturing and marketing capabilities than we do. These organizations also compete with us to attract qualified personnel and parties for acquisitions, joint ventures, or other collaborations.

If any of our product candidates for which we receive regulatory approval do not achieve broad market acceptance, the revenues that we generate from their sales will be limited.

The commercial viability of our product candidates for which we obtain marketing approval from the FDA or other regulatory authorities will depend upon their acceptance among physicians, the medical community, and patients, and coverage and reimbursement of them by third-party payors, including government payors. The degree of market acceptance of any of our approved products will depend on a number of factors, including:

- limitations or warnings contained in a product's FDA-approved labeling;
- changes in the standard of care for the targeted indications for any of our product candidates, which could reduce the marketing impact of any claims that we could make following FDA approval;
- limitations inherent in the approved indication for any of our product candidates compared to more commonly understood or addressed conditions;
- lower demonstrated clinical safety and efficacy compared to other products;
- prevalence and severity of adverse effects;
- ineffective marketing and distribution efforts;
- lack of availability of reimbursement from managed care plans and other third-party payors;
- lack of cost-effectiveness;
- timing of market introduction and perceived effectiveness of competitive products;
- availability of alternative therapies at similar costs; and
- potential product liability claims.

Our ability to effectively promote and sell our product candidates in the marketplace will also depend on pricing and cost effectiveness, including our ability to manufacture a product at a competitive price. We will also need to demonstrate acceptable evidence of safety and efficacy and may need to demonstrate relative convenience and ease of administration. Market acceptance could be further limited depending on the prevalence and severity of any expected or unexpected adverse side effects associated with our product candidates. If our product candidates are approved but do not achieve an adequate level of acceptance by physicians, health care payors, and patients, we may not generate sufficient revenue from these products, and we may not become or remain profitable. In addition, our efforts to educate the medical community and third-party payors on the benefits of our product candidates may require significant resources and may never be successful. If our approved drugs fail to achieve market acceptance, we will not be able to generate significant revenue, if any.

Even if our product candidates receive regulatory approval, we may still face future development and regulatory difficulties.

Even if United States regulatory approval is obtained, the FDA may still impose significant restrictions on a product's indicated uses or marketing, or impose ongoing requirements for potentially costly post-approval studies. Given the number of recent high-profile adverse safety events with certain drug products, the FDA may require, as a condition of approval, costly risk management programs which may include safety surveillance, restricted distribution and use, patient education, enhanced labeling, special packaging or labeling, expedited reporting of certain adverse events, pre-approval of promotional materials, and restrictions on direct-to-consumer advertising. Furthermore, heightened Congressional scrutiny on the adequacy of the FDA's drug approval process and the agency's efforts to assure the safety of marketed drugs has resulted in the proposal of new legislation addressing drug safety issues. If enacted, any new legislation could result in delays or increased costs during the period of product development, clinical trials, and regulatory review and approval, as well as increased costs to assure compliance with any new post-approval regulatory requirements. Any of these restrictions or requirements could force us to conduct costly studies or increase the time for us to become profitable. For example, any labeling approved for cenderitide, CU-NP, or any other product candidates may include a restriction on the term of its use, or it may not include one or more of our intended indications.

Our product candidates will also be subject to ongoing FDA requirements for the labeling, packaging, storage, advertising, promotion, record-keeping, and submission of safety and other post-market information on the drug. In addition, approved products, manufacturers, and manufacturers' facilities are subject to continual review and periodic inspections. If a regulatory agency discovers previously unknown problems with a product, such as adverse events of unanticipated severity or frequency, or problems with the facility where the product is manufactured, a regulatory agency may impose restrictions on that product or us, including requiring withdrawal of the product from the market. If our product candidates fail to comply with applicable regulatory requirements, such as current cGMPs, a regulatory agency may:

- issue warning letters;
- require us to enter into a consent decree, which can include imposition of various fines, reimbursements for inspection costs, required due dates for specific actions, and penalties for noncompliance;
- impose other civil or criminal penalties;
- suspend regulatory approval;
- suspend any ongoing clinical trials;
- refuse to approve pending applications or supplements to approved applications filed by us;
- impose restrictions on operations, including costly new manufacturing requirements; or
- seize or detain products or require a product recall.

Our ability to generate product revenues will be diminished if our drugs sell for inadequate prices or patients are unable to obtain adequate levels of reimbursement.

Our ability to generate significant sales of our products depend on the availability of adequate coverage and reimbursement from third-party payors. Healthcare providers that purchase medicine or medical products for treatment of their patients generally rely on third-party payors to reimburse all or part of the costs and fees associated with the products. Adequate coverage and reimbursement from governmental, such as Medicare and Medicaid, and commercial payors is critical to new product acceptance. Patients are unlikely to use our products if they do not receive reimbursement adequate to cover the cost of our products.

In addition, the market for our future products will depend significantly on access to third-party payors' drug formularies, or lists of medications for which third-party payors provide coverage and reimbursement. Industry competition to be included in such formularies results in downward pricing pressures on pharmaceutical companies. Third-party payors may refuse to include a particular branded drug in their formularies when a generic equivalent is available.

All third-party payors, whether governmental or commercial, whether inside the United States or outside, are developing increasingly sophisticated methods of controlling healthcare costs. In addition, in the United States, no uniform policy of coverage and reimbursement for medical technology exists among all these payors. Therefore, coverage of and reimbursement for medical products can differ significantly from payor to payor.

Further, we believe that future coverage and reimbursement may be subject to increased restrictions both in the United States and in international markets. Third-party coverage and reimbursement for our products may not be available or adequate in either the United States or international markets, limiting our ability to sell our products on a profitable basis.

Significant uncertainty exists as to the reimbursement status of newly approved healthcare products. Healthcare payors, including Medicare, are challenging the prices charged for medical products and services. Government and other healthcare payors increasingly attempt to contain healthcare costs by limiting both coverage and the level of reimbursement for drugs. Even if our product candidates are approved by the FDA, insurance coverage may not be available, and reimbursement levels may be inadequate, to cover our drugs. If government and other healthcare payors do not provide adequate coverage and reimbursement levels for any of our products, once approved, market acceptance of our products could be reduced.

Risks Related to Our Intellectual Property

It is difficult and costly to protect our proprietary rights, and we may not be able to ensure their protection. If we fail to protect or enforce our intellectual property rights adequately or secure rights to patents of others, the value of our intellectual property rights would diminish.

Our commercial viability will depend in part on obtaining and maintaining patent protection and trade secret protection of our product candidates, and the methods used to manufacture them, as well as successfully defending these patents against third-party challenges. Our ability to stop third parties from making, using, selling, offering to sell, or importing our products is dependent upon the extent to which we have rights under valid and enforceable patents or trade secrets that cover these activities.

We license certain patent and other intellectual property rights that covers our product candidates from the Mayo Foundation. We rely on the Mayo Foundation to file, prosecute, and maintain patent applications, and otherwise protect the intellectual property to which we have a license, and we have not had and do not have primary control over these activities for certain of these patents or patent applications and other intellectual property rights. We cannot be certain that such activities by the Mayo Foundation have been or will be conducted in compliance with applicable laws and regulations, or will result in valid and enforceable patents and other intellectual property rights. Our enforcement of certain of these licensed patents or defense of any claims asserting the invalidity of these patents would also be subject to the cooperation of the third parties.

The patent positions of pharmaceutical and biopharmaceutical companies can be highly uncertain and involve complex legal and factual questions for which important legal principles remain unresolved. No consistent policy

regarding the breadth of claims allowed in biopharmaceutical patents has emerged to date in the United States. The biopharmaceutical patent situation outside the United States is even more uncertain. Changes in either the patent laws or in interpretations of patent laws in the United States and other countries may diminish the value of our intellectual property. Accordingly, we cannot predict the breadth of claims that may be allowed or enforced in the patents we own or to which we have a license or third-party patents. Further, if any of our patents are deemed invalid and unenforceable, it could impact our ability to commercialize or license our technology.

The degree of future protection for our proprietary rights is uncertain because legal means afford only limited protection and may not adequately protect our rights or permit us to gain or keep our competitive advantage. For example:

- others may be able to make compounds that are similar to our product candidates but that are not covered by the claims of any of our patents;

- we might not have been the first to make the inventions covered by any issued patents or patent applications we may have (or third parties from whom we license intellectual property may have);

- we might not have been the first to file patent applications for these inventions;

- it is possible that any pending patent applications we may have will not result in issued patents;

- any issued patents may not provide us with any competitive advantages, or may be held invalid or unenforceable as a result of legal challenges by third parties;

- we may not develop additional proprietary technologies that are patentable; or

- the patents of others may have an adverse effect on our business.

We also may rely on trade secrets to protect our technology, especially where we do not believe patent protection is appropriate or obtainable. However, trade secrets are difficult to protect. Although we use reasonable efforts to protect our trade secrets, our employees, consultants, contractors, outside scientific collaborators, and other advisors may unintentionally or willfully disclose our information to competitors. Enforcing a claim that a third party illegally obtained and is using any of our trade secrets is expensive and time consuming, and the outcome is unpredictable. In addition, courts outside the United States are sometimes less willing to protect trade secrets. Moreover, our competitors may independently develop equivalent knowledge, methods, and know-how.

If any of our trade secrets, know-how or other proprietary information is disclosed, the value of our trade secrets, know-how and other proprietary rights would be significantly impaired and our business and competitive position would suffer.

Our viability also depends upon the skills, knowledge and experience of our scientific and technical personnel, our consultants and advisors as well as our licensors and contractors. To help protect our proprietary know-how and our inventions for which patents may be unobtainable or difficult to obtain, we rely on trade secret protection and confidentiality agreements. To this end, we require all of our employees, consultants, advisors and contractors to enter into agreements which prohibit the disclosure of confidential information and, where applicable, require disclosure and assignment to us of the ideas, developments, discoveries and inventions important to our business. These agreements may not provide adequate protection for our trade secrets, know-how or other proprietary information in the event of any unauthorized use or disclosure or the lawful development by others of such information. If any of our

trade secrets, know-how or other proprietary information is disclosed, the value of our trade secrets, know-how and other proprietary rights would be significantly impaired and our business and competitive position would suffer.

We may incur substantial costs as a result of litigation or other proceedings relating to patent and other intellectual property rights and we may be unable to protect our rights to, or use of, our technology.

If we choose to go to court to stop someone else from using the inventions claimed in our patents, that individual or company has the right to ask the court to rule that these patents are invalid and/or should not be enforced against that third party. These lawsuits are expensive and would consume time and other resources even if we were successful in stopping the infringement of these patents. In addition, there is a risk that the court will decide that these patents are not valid and that we do not have the right to stop the other party from using the inventions. There is also the risk that, even if the validity of these patents is upheld, the court will refuse to stop the other party on the ground that such other party's activities do not infringe our rights to these patents. In addition, the United States Supreme Court has recently invalidated some tests used by the United States Patent and Trademark Office, or USPTO, in granting patents over the past 20 years. As a consequence, several issued patents may be found to contain invalid claims according to the newly revised standards. Some of our own or in-licensed patents may be subject to challenge and subsequent invalidation in a re-examination proceeding before the USPTO or during litigation under the revised criteria which make it more difficult to obtain patents.

Furthermore, a third party may claim that we or our manufacturing or commercialization partners are using inventions covered by the third party's patent rights and may go to court to stop us from engaging in our normal operations and activities, including making or selling our product candidates. These lawsuits are costly and could affect our results of operations and divert the attention of managerial and technical personnel. There is a risk that a court would decide that we or our commercialization partners are infringing the third party's patents and would order us or our partners to stop the activities covered by the patents. In addition, there is a risk that a court will order us or our partners to pay the other party damages for having violated the other party's patents. We have agreed to indemnify certain of our commercial partners against certain patent infringement claims brought by third parties. The biotechnology industry has produced a proliferation of patents, and it is not always clear to industry participants, including us, which patents cover various types of products or methods of use. The coverage of patents is subject to interpretation by the courts, and the interpretation is not always uniform. If we are sued for patent infringement, we would need to demonstrate that our products or methods of use either do not infringe the patent claims of the relevant patent and/or that the patent claims are invalid, and we may not be able to do this. Proving invalidity, in particular, is difficult since it requires a showing of clear and convincing evidence to overcome the presumption of validity enjoyed by issued patents.

Because some patent applications in the United States may be maintained in secrecy until the patents are issued, because patent applications in the United States and many foreign jurisdictions are typically not published until eighteen months after filing, and because publications in the scientific literature often lag behind actual discoveries, we cannot be certain that others have not filed patent applications for technology covered by our issued patents or our pending applications, or that we were the first to invent the technology. Our competitors may have filed, and may in the future file, patent applications covering technology similar to ours. Any such patent application may have priority over our patent applications or patents, which could further require us to obtain rights to issued patents covering such technologies. If another party has filed a United States patent application on inventions similar to ours, we may have to participate in an interference proceeding declared by the USPTO to determine priority of invention in the United States. The costs of these proceedings could be substantial, and it is possible that such efforts would be unsuccessful if unbeknownst to us, the other party had independently arrived at the same or similar invention prior to our own

invention, resulting in a loss of our United States patent position with respect to such inventions.

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 have a material adverse effect on our ability to raise the funds necessary to continue our operations.

Risks Relating to this Offering and Our Common Stock

We expect that our stock price will fluctuate significantly, and you may not be able to resell your shares at or above your investment price.

The stock market, particularly in recent years, 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 often does not relate to the operating performance of the companies represented by the stock. Factors that could cause volatility in the market price of our common stock include, but are not limited to:

- our financial condition, including our need for additional capital;
- results from, delays in, or discontinuation of, any of the clinical trials for our drug candidates, and including delays resulting from slower than expected or suspended patient enrollment or discontinuations resulting from a failure to meet pre-defined clinical end-points;
- announcements concerning clinical trials;
- failure or delays in entering additional drug candidates into clinical trials;
- failure or discontinuation of any of our research programs;
- issuance of new or changed securities analysts' reports or recommendations;
- developments in establishing new strategic alliances;
- market conditions in the pharmaceutical, biotechnology and other healthcare related sectors;
- actual or anticipated fluctuations in our quarterly financial and operating results;
- developments or disputes concerning our intellectual property or other proprietary rights;

- introduction of technological innovations or new commercial products by us or our competitors;
- issues in manufacturing our drug candidates or drugs;
- market acceptance of our drugs;
- third-party healthcare coverage and reimbursement policies;
- FDA or other United States or foreign regulatory actions affecting us or our industry;
- litigation or public concern about the safety of our drug candidates or drugs;
- additions or departures of key personnel; or
- volatility in the stock prices of other companies in our industry.

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, 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. Such a lawsuit could also divert our management's time and attention.

Since we have broad discretion in how we use the proceeds from this offering, we may use the proceeds in ways with which you disagree.

We intend to use the net proceeds from this offering first to fund our general corporate expenses and working capital, including expenses related to the planning, design and initiation of our planned Phase 2 clinical trial of cenderitide. However, our management will have significant flexibility in applying the net proceeds of this offering. You will be relying on the judgment of our management with regard to the use of these net proceeds, and you will not have the opportunity, as part of your investment decision, to assess whether the proceeds are being used appropriately. It is possible that the net proceeds will be invested in a way that does not yield a favorable, or any, return for us. The failure of our management to use such funds effectively could have a material adverse effect on our business, financial condition, operating results and cash flow.

There is no minimum offering amount required to consummate this offering.

There is no minimum offering amount which must be raised in order for us to consummate this offering. Accordingly, the amount of money raised may not be sufficient for us to meet our business objectives, and in any case, we will still need substantial additional capital to fund the costs of our planned Phase 2 clinical trial of cenderitide. Moreover, if only a small amount of money is raised, all or substantially all of the offering proceeds may be applied to cover the offering expenses and we will not otherwise benefit from the offering. In addition, because there is no minimum offering amount required, investors will not be entitled to a return of their investment if we are unable to raise sufficient proceeds to meet our business objectives.

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

If you purchase our securities in this offering, you will incur an immediate and substantial dilution in net tangible book value of $0.32 per share, based upon our tangible net book value as of September 30, 2011, after giving effect to the sale by us of the common stock in this offering, and attributing no value to the warrants.

There is no public market for the warrants being sold in this offering.

There is no established public trading market for the warrants, and we do not expect a market to develop. In addition, we do not intend to apply for listing of the warrants on any national securities exchange or other nationally recognized trading system. Without an active market, the liquidity of the warrants will be limited.

The warrants included in this offering may not have any value.

The warrants have an exercise price of $0.50 per share and will be exercisable for a five-year period beginning on the earlier of (i) the effective date of a registration statement covering the exercise of the warrants and subsequent resale of the warrant shares and (ii) one year and one day from the date of issuance. In the event our common stock price does not exceed the exercise price of the warrants during the period when the warrants are exercisable, the warrants may not have any value.

Holders of our warrants will have no rights as common stockholders until they acquire our common stock.

Until you acquire shares of our common stock upon exercise of your warrants, you will have no rights with respect to our common stock. Upon exercise of your warrants, you will be entitled to exercise the rights of a common stockholder only as to matters for which the record date occurs after the exercise date.

Because our common stock is not listed on a national securities exchange, U.S. holders of warrants may not be able to exercise their warrants without compliance with applicable state securities laws and the value of your warrants may be significantly reduced.

Our common stock is not currently listed on, and is not currently eligible to be listed on, a national stock exchange. Therefore, the exercise of the warrants by U.S. holders may not be exempt from state securities laws. As a result, depending on the state of residence of a holder of the warrants, a U.S. holder may not be able to exercise its warrants unless we comply with any state securities law requirements necessary to permit such exercise or an exemption applies. Although we plan to use our reasonable efforts to assure that U.S. holders will be able to exercise their warrants under applicable state securities laws if no exemption exists, there is no assurance that we will be able to do so. Accordingly, your ability to exercise your warrants may be limited. The value of the warrants may be significantly reduced if U.S. holders are not able to exercise their warrants under applicable state securities laws.

If our common stock is not listed on a national securities exchange, compliance with applicable state securities laws may be required for subsequent offers, transfers and sales of the shares of common stock and warrants offered hereby.

The shares of our common stock and the warrants are being offered pursuant to one or more exemptions from registration and qualification under applicable state securities laws. Because our common stock is not listed on a national stock exchange, we may be required to register or qualify in any state the subsequent offer, transfer or sale of the common stock or warrants. Subsequent transfers of the shares of our common stock and warrants offered hereby by U.S. holders may not be exempt from state securities laws. In such event, it will be the responsibility of the holder of shares or warrants to register or qualify the shares or the warrants for any subsequent offer, transfer or sale in the United States or to determine that any such offer, transfer or sale is exempt under applicable state securities laws.

Because our common stock is primarily traded on the OTCQB tier of the OTC Markets, the volume of shares traded and the prices at which such shares trade may result in lower prices than might otherwise exist if our common stock was traded on a national securities exchange.

Trading of our common stock on the Nasdaq Capital Market was suspended in May 2011 and trading in our common stock has since been conducted on the OTCQB tier of the OTC Markets, an automated quotation system. Stocks traded on the OTCQB are often less liquid than stocks traded on national securities exchanges, not only in terms of the number of shares that can be bought and sold at a given price, but also in terms of delays in the timing of transactions and reduced coverage of us by security analysts and the media. This may result in lower prices for our common stock than might otherwise be obtained if our common stock were traded on a national securities exchange, and could also result in a larger spread between the bid and asked prices for our common stock.

We have never paid dividends and we do not anticipate paying dividends in the future.

We have never paid dividends on our capital stock and do not anticipate paying any dividends for the foreseeable future. As a result, capital appreciation, if any, of our common stock will be your sole source of gain for the foreseeable future.

There may be additional issuances of shares of blank check preferred stock in the future.

Our certificate of incorporation authorizes the issuance of up to 10,000,000 shares of preferred stock, none of which are issued or currently outstanding. Our Board of Directors will have the authority to fix and determine the relative rights and preferences of preferred shares, as well as the authority to issue such shares, without further stockholder approval. As a result, our Board of Directors could authorize the issuance of a series of preferred stock that is senior to the our common stock that would grant to holders preferred rights to our assets upon liquidation, the right to receive dividends, additional registration rights, anti-dilution protection, the right to the redemption to such shares, together with other rights, none of which will be afforded holders of our common stock.

Because we became public by means of a reverse merger, we may not be able to attract the attention of major brokerage firms.

Additional risks may exist since we became public through a "reverse merger." Security analysts of major brokerage firms may not provide coverage of us since there is no incentive to brokerage firms to recommend the purchase of our common stock. No assurance can be given that brokerage firms will want to conduct any secondary offerings on behalf of our company in the future. The lack of such analyst coverage may decrease the public demand for our common stock, making it more difficult for you to resell your shares when you deem appropriate.

If our results do not meet analysts' forecasts and expectations, our stock price could decline.

In the future, any analysts who cover our business and operations may provide valuations regarding our stock price and make recommendations whether to buy, hold or sell our stock. Our stock price may be dependent upon such valuations and recommendations. Analysts' valuations and recommendations are based primarily on our reported results and their forecasts and expectations concerning our future results regarding, for example, expenses, revenues, clinical trials, regulatory marketing approvals and competition. Our future results are subject to substantial uncertainty, and we may fail to meet or exceed analysts' forecasts and expectations as a result of a number of factors, including those discussed above under the sections "Risks Related to Our Business" and "Risks Related to the Clinical Testing, Regulatory Approval, Manufacturing and Commercialization of Our Product Candidates." If our results do not meet analysts' forecasts and expectations, our stock price could decline as a result of analysts lowering their valuations and recommendations or otherwise.

The operational and other projections and forecasts that we may make from time to time are subject to inherent risks.

The projections and forecasts that our management may provide from time to time (including, but not limited to, those relating to timing, progress and anticipated results of the clinical development, regulatory processes, clinical trial timelines and any anticipated benefits of our product candidates) reflect numerous assumptions made by management, including assumptions with respect to our specific as well as general business, economic, market and financial conditions and other matters, all of which are difficult to predict and many of which are beyond our control. Accordingly, there is a risk that the assumptions made in preparing the projections, or the projections themselves, will prove inaccurate. There will be differences between actual and projected results, and actual results may be materially different from than those contained in the projections. The inclusion of the projections in (or incorporated by reference in) this prospectus supplement should not be regarded as an indication that we or our management or representatives considered or consider the projections to be a reliable prediction of future events, and the projections should not be relied upon as such.

Our certificate of incorporation and by-laws contain provisions that may discourage, delay or prevent a change in our management team that stockholders may consider favorable.

Our certificate of incorporation, our bylaws and Delaware law contain provisions that may have the effect of preserving our current management, such as:

- authorizing the issuance of "blank check" preferred stock without any need for action by stockholders;
- eliminating the ability of stockholders to call special meetings of stockholders; and
- establishing advance notice requirements for nominations for election to the board of directors or for proposing matters that can be acted on by stockholders at stockholder meetings.

These provisions could make it more difficult for our stockholders to affect our corporate policies, make changes in our Board of Directors and for a third party to acquire us, even if doing so would benefit our stockholders.

Our common stock is considered a "penny stock."

The SEC has adopted regulations which generally define a "penny stock" to be an equity security that has a market price of less than $5.00 per share or an exercise price of less than $5.00 per share, subject to specific exemptions. The market price of our common stock is below $5.00 per share and the exercise price of the warrants offered hereby is less than $5.00 per share. Therefore, the securities offered hereby will be deemed a "penny stock" according to SEC rules. This designation requires any broker or dealer selling these securities to disclose certain information concerning the transaction, obtain a written agreement from the purchaser and determine that the purchaser is reasonably suitable to purchase the securities, subject to certain exceptions. These rules may restrict the ability of brokers or dealers to sell our securities, which may discourage investor interest in and limit the marketability of any securities that you purchase in this offering.

CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus supplement and the accompanying prospectus, including the documents that we incorporate by reference, contain forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, or the Securities Act, and Section 21E of the Securities Exchange Act of 1934, as amended, or the Exchange Act. Any statements about our expectations, beliefs, plans, objectives, assumptions or future events or performance are not historical facts and may be forward-looking. These statements are often, but not always, made through the use of words or phrases such as "anticipate," "estimate," "plan," "project," "continuing," "ongoing," "expect," "believe" "intend" a words or phrases. Accordingly, these statements involve estimates, assumptions and uncertainties that could cause actual results to differ materially from those expressed in them. Any forward-looking statements are qualified in their entirety by reference to the factors discussed in this prospectus supplement, the accompanying prospectus or incorporated by reference.

Because the factors discussed in this prospectus supplement, the accompanying prospectus or incorporated by reference into this prospectus supplement or the accompanying prospectus could cause actual results or outcomes to differ materially from those expressed in any forward-looking statements made by us or on our behalf, you should not place undue reliance on any such forward-looking statements. These statements are subject to risks and uncertainties, known and unknown, which could cause actual results and developments to differ materially from those expressed or implied in such statements. Such risks and uncertainties relate to, among other factors:

- the development of our product candidates;
- the regulatory approval of our product candidates;
- our use of clinical research centers and other contractors;

- our ability to find collaborative partners for research, development and commercialization of potential products;
- acceptance of our products by doctors, patients or payors;
- our ability to market any of our product candidates;
- our history of operating losses;
- our ability to compete against other companies and research institutions;
- our ability to secure adequate protection for our intellectual property;
- our ability to attract and retain key personnel;
- availability of reimbursement for our product candidates;
- the effect of potential strategic transactions on our business;
- our ability to obtain adequate financing; and
- the volatility of our stock price.

These and other risks are detailed in this prospectus supplement under the discussion entitled “Risk Factors,” as well as in our reports filed with the SEC from time to time under the Securities Act and the Exchange Act. You are encouraged to read these filings as they are made.

Further, any forward-looking statement speaks only as of the date on which it is made, and we undertake no obligation to update any forward-looking statement or statements to reflect events or circumstances after the date on which such statement is made or to reflect the occurrence of unanticipated events. New factors emerge from time to time, and it is not possible for us to predict which factors will arise. In addition, we cannot assess the impact of each factor on our business or the extent to which any factor, or combination of factors, may cause actual results to differ materially from those contained in any forward-looking statements.

USE OF PROCEEDS

We estimate that the net proceeds of this offering, after deducting placement agent fees and estimated offering expenses payable by us, will be approximately $1.16 million. We will receive additional proceeds from any cash exercise of the warrants offered by this prospectus supplement. We cannot provide any assurance as to the amount or timing of receipt of any such additional proceeds.

We expect to use the net proceeds of this offering, and our existing cash and cash equivalents, for general corporate purposes, including funding our activities related to planning and designing our next Phase 2 clinical trial of cenderitide. However, the net proceeds from this offering together with our existing cash resources are not sufficient to fund our planned Phase 2 trial.

We are discussing with several potential strategic and other partners the possibility of collaborating on the next phase of development of cenderitide. The terms of any such collaboration agreement, if reached at all, may provide that our collaboration partner will fund all or a portion of the expenses of the planned Phase 2 study. If we are required to fund a portion of the Phase 2 study under the terms of any such agreement, we will likely require additional cash resources beyond the net proceeds from this offering, which additional capital may be substantial. Further, if we are not able to agree to terms with a collaboration partner, we may be required to fund our planned Phase 2 study entirely ourselves, which we estimate may cost approximately $15 million to $20 million and take approximately 30 months to complete. In that case, we would need to obtain significant amounts of additional capital beyond the net proceeds of this offering. See “Risk Factors – Risks Relating to Our Business” beginning at page S-8 and “Risk Factors – Risks Relating to the Clinical Testing, Regulatory Approval, Manufacturing and Commercialization of Our Product Candidates” beginning at page S-15 above. Therefore, we will retain broad discretion over the use of the net proceeds of this offering. We have no present understandings, commitments or agreements with respect to any collaborations, acquisitions, investments or joint ventures and no portion of the net proceeds has been allocated for any acquisition.

Pending the use of the net proceeds, we intend to invest the net proceeds in short-term, interest-bearing, investment-grade securities.

PRICE RANGE OF COMMON STOCK AND DIVIDEND POLICY

Prior to May 12, 2011, our common stock traded on the NASDAQ Capital Market under the symbol "NLTX." Since May 12, 2011, our common stock has traded on the OTCQB tier of the OTC Markets under the symbol "NLTX.PK." The following table lists the high and low sale price for our common stock as quoted, in U.S. dollars, by the NASDAQ Capital Market and the OTCQB, as applicable, during each quarter within the last two completed fiscal years and the first quarter of the current fiscal year. The quotations reflect inter-dealer prices, without retail markup, markdown, or commission, and may not represent actual transactions. Consequently, the information provided below may not be indicative of our common stock price under different conditions.

	High	Low
Year ended December 31, 2010		
First Quarter	$1.50	$0.90
Second Quarter	1.09	0.30
Third Quarter	0.80	0.29
Fourth Quarter	0.79	0.41
Year ended December 31, 2011		
First Quarter	$0.97	$0.50
Second Quarter	1.02	0.53
Third Quarter	0.82	0.59
Fourth Quarter	0.64	0.45
Year ended December 31, 2012		
First Quarter (through March 29, 2012)	$0.59	$0.44

On March 29, 2012, the last reported sale price of our common stock on the OTCQB was $0.50 per share.

We have never declared or paid any cash dividend on our common stock. We currently expect to retain any future earnings in the operation and expansion of our business and do not anticipate paying any cash dividends on our common stock for the foreseeable future.

DILUTION

If you invest in this offering, your ownership interest will be diluted to the extent of the difference between the combined public offering price of the common stock and warrants offered hereby, assuming no value is attributed to the warrants you purchase in this offering, and the pro forma net tangible book value per share of our common stock after this offering. Our historical net tangible book value as of September 30, 2011, was approximately $2.37 million, or approximately $0.06 per share. Net tangible book value per share represents the amount of our total tangible assets, less our total liabilities, divided by the total number of shares of our common stock outstanding. Dilution in historical net tangible book value per share represents the difference between the amount per share paid by purchasers in this offering and the pro forma net tangible book value per share of our common stock immediately after the closing of this offering.

After giving effect to the sale of 3,350,000 shares of common stock and warrants to purchase 2,512,500 shares of common stock in this offering at the combined public offering price of $0.40 per share and warrant, after deducting placement agent fees and estimated offering expenses, our pro forma net tangible book value as of September 30, 2011, would have been approximately $3.53 million, or $0.08 per share of common stock. This represents an immediate increase in pro forma net tangible book value of $0.02 per share to existing stockholders and an immediate dilution of $0.32 per share to new investors purchasing our securities in this offering, attributing none of the combined public offering price to the warrants offered hereby.

The following table illustrates dilution on a per share basis:

Combined public offering price per share and warrant		$0.40
Historical net tangible book value per share as of September 30, 2011	$0.06	
Increase per share attributable to new investors	$0.02	
Pro forma net tangible book value per share after this offering		$0.08
Dilution per share to new investors		$0.32

The above discussion and table are based on 43,057,764 shares of common stock outstanding as of September 30, 2011, and does not include, as of September 30, 2011:

- 8,428,801 shares of common stock issuable upon the exercise of outstanding stock options, with a weighted average exercise price of $1.52 per share;
- 1,277,984 shares of common stock available for future issuance under our Amended & Restated 2005 Stock Option Plan; and

- 8,662,484 shares of common stock issuable upon the exercise of outstanding warrants, with a weighted average exercise price of $1.21 per share.

DESCRIPTION OF SECURITIES

In this offering, we are offering 3,350,000 shares of common stock and warrants to purchase up to 2,512,500 shares of common stock. Each share of common stock is being sold together with 0.75 of a five-year warrant to purchase one share of common stock at an exercise price of $0.50 per share. The shares of common stock and warrants will be issued separately. This prospectus also relates to the offering of shares of our common stock upon exercise, if any, of the warrants.

Common Stock

The material terms and provisions of our common stock and each other class of our securities which qualifies or limits our common stock are described under the caption “Description of Common Stock” in the accompanying prospectus.

Warrants

The material terms and provisions of the warrants included in the units offered by this prospectus supplement are summarized below. This summary is subject to, and qualified in its entirety by, the form of warrant included as an exhibit to our Current Report on Form 8-K that will be filed with the SEC in connection with this offering. Prospective investors should carefully review the terms and provisions of the form of warrant for a complete description of the terms and conditions of the warrants.

Duration and Exercise Price. The warrants offered hereby will entitle the holders thereof to purchase up to an aggregate of 2,512,500 shares of our common stock at an initial exercise price per share of $0.50. The warrants are exercisable beginning on the earlier of (i) the effective date of date of a registration statement under the Securities Act covering the exercise of the warrants and the subsequent resale of the warrant shares and (ii) the date that is one year and one day from issuance of the warrant, and will expire on the fifth anniversary of the date they first become exercisable. Warrants will be issued in certificated form only.

Exercisability. The warrants will be exercisable, at the option of each holder, in whole or in part, by delivering to us a duly executed exercise notice accompanied by payment in full for the number of shares of our common stock purchased upon such exercise (except in the case of a cashless exercise as discussed below).

Cashless Exercise. If, at the time a holder exercises its warrant, there is no effective registration statement registering, or the prospectus contained therein is not available for an issuance of the shares underlying the warrant to the holder, then, to the extent an exemption from registration is not available for such issuance, in lieu of making the cash payment otherwise contemplated to be made to us upon such exercise in payment of the aggregate exercise price, the holder may elect instead to receive upon such exercise (either in whole or in part) the net number of shares of common stock determined according to a formula set forth in the warrant.

Registration. We have agreed to file, within 15 business days after the closing of this offering, a registration statement under the Securities Act covering the issuance of the warrant shares upon exercise of the warrants and the subsequent resale of the warrant shares. We have further agreed that we will use commercially reasonable efforts to cause such registration statement to be declared effective within 90 days following the closing of the offering. In the event such registration statement is not declared effective by the SEC within such 90-day period, we have agreed to pay liquidated damages to each purchaser in the amount of 1% of such purchaser's aggregate investment amount in this offering for each 30-day period until the registration statement is declared effective, subject to an aggregate limit of 12% of such purchaser's aggregate investment amount.

Transferability. Subject to applicable laws, warrants may be transferred at the option of the holder upon surrender of the warrants to us together with the appropriate instruments of transfer.

Adjustments. The exercise price of the warrants and the number of shares of common stock issuable upon the exercise of the warrants are subject to adjustment in certain circumstances. If we issue shares of common stock or are deemed to have issued shares of common stock at an effective price less than the then-current exercise price of the warrants, the exercise price will be reduced to such effective price.

Listing. There is no established public trading market for the warrants, and we do not expect a market to develop. In addition, we do not intend to apply for listing of the warrants on any national securities exchange or other nationally recognized trading system.

Fundamental Transactions. In the event of any fundamental transaction, as described in the warrants and generally including any merger with or into another entity, sale of all or substantially all of our assets, tender offer or exchange offer, or reclassification of our common stock, then upon any subsequent exercise of a warrant, the holder will have the right to receive as alternative consideration, for each share of our common stock that would have been issuable upon such exercise immediately prior to the occurrence of such fundamental transaction, the number of shares of common stock of the successor or acquiring corporation or of our company, if it is the surviving corporation, and any additional consideration receivable upon or as a result of such transaction by a holder of the number of shares of our common stock for which the warrant is exercisable immediately prior to such event. In addition, in the event of a fundamental transaction, that is (1) an all cash transaction, (2) a “Rule 13e-3 transaction” as defined in Rule 13e-3 under the Exchange Act or (3) with certain limited exceptions, a fundamental transaction involving a person or entity not traded on The New York Stock Exchange, Inc., The NYSE Amex, LLC, The NASDAQ Global Select Market, The NASDAQ Global Market or The NASDAQ Capital Market, then we or any successor entity shall pay at the holder’s option, exercisable at any time concurrently with or within 90 days after the consummation of the fundamental transaction, an amount of cash equal to the value of the warrant as determined in accordance with the Black Scholes option pricing model.

Exercise Limitation. A holder may not exercise its warrants if, after giving effect to the exercise, the holder and certain related parties would beneficially own more than 9.99% of our common stock. A holder may increase or decrease that limitation up to a maximum of 9.99% of our common stock upon not less than 61 days' prior notice to us.

Right as a Stockholder. Except as otherwise provided in the warrants or by virtue of such holder’s ownership of shares of our common stock, the holders of the warrants do not have the rights or privileges of holders of our common stock, including any voting rights, until they exercise their warrants.

Waivers and Amendments. Subject to certain exceptions, any term of the warrants may be amended or waived with our written consent and the written consent of the holders of at least a majority of the then-outstanding warrants.

Penny Stock Regulations

You should note that the securities we are offering under this prospectus fit within the definition of “penny stock” under the SEC's rules and regulations. The SEC has adopted Rule 15g-9, which generally defines “penny stock” to be any equity security that has a market price (as defined) less than $5.00 per share or an exercise price of less than $5.00 per share, subject to certain exceptions. Our securities are covered by the penny-stock rules, which impose additional sales-practice requirements on broker-dealers that sell to persons other than established customers and “accredited investors.” The term “accredited investor” refers generally to institutions with assets in excess of $5,000,000 or individuals with a net worth in excess of $1,000,000 or annual income exceeding $200,000 or $300,000 jointly with their spouse. The penny-stock rules require a broker-dealer, prior to a transaction in a penny stock not otherwise exempt from the rules, to deliver a standardized-risk disclosure document in a form prepared by the SEC that provides information about penny stocks and the nature and level of risks in the penny-stock market. The broker-dealer also must provide the customer with current bid and offer quotations for the penny stock, the compensation of the broker-dealer and its salesperson in the transaction and monthly account statements showing the market value of each penny stock held in the customer's account. The bid and offer quotations, and the broker-dealer and salesperson compensation information, must be given to the customer orally or in writing prior to effecting the transaction and must be given to the customer in writing before or with the customer's confirmation. In addition, the penny-stock rules require that, prior to a transaction in a penny stock not otherwise exempt from these rules, the broker-dealer must make a special written determination that the penny stock is a suitable investment for the purchaser and receive the purchaser's written agreement to the transaction. These disclosure requirements may have the effect of reducing the level of trading activity in the secondary market for the stock that is subject to these penny-stock rules. Consequently, these penny-stock rules may affect the ability of broker-dealers to trade our securities. We believe that the penny-stock rules may discourage investor interest in and limit the marketability of our common stock.

PLAN OF DISTRIBUTION

Roth Capital Partners, LLC, which we refer to as the placement agent, has agreed to act as the exclusive placement agent in connection with this offering subject to the terms and conditions of a placement agent agreement, dated March 30, 2012. The placement agent may engage selected dealers to assist in the placement of the shares and warrants. The placement agent is not purchasing or selling any shares and warrants offered by this prospectus supplement and the related prospectus, nor is it required to arrange the purchase or sale of any specific number or dollar amount of the shares and warrants, but has agreed to use its reasonable efforts to arrange for the sale of all of the shares and warrants offered hereby. We will enter into subscription agreements directly with investors in connection with this offering and we may not sell the entire amount of shares offered pursuant to this prospectus supplement and the related prospectus. The public offering price of the shares and warrants offered hereby has been determined based upon arm’s-length negotiations between the purchasers and us.

The placement agent proposes to arrange for the sale to one or more purchasers of the shares and warrants offered pursuant to this prospectus supplement and the related prospectus through direct subscription agreements between the purchasers and us.

Commissions and Expenses

We have agreed to pay the placement agent an aggregate cash placement fee equal to seven percent of the gross proceeds in this offering

The following table shows the combined per share and total cash placement agent's fees we will pay to the placement agent in connection with the sale of the shares and warrants offered pursuant to this prospectus supplement and the related prospectus assuming the purchase of all of the shares and warrants offered hereby:

Per Share of Common Stock and Per Warrant	$0.028
Total	$93,800

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Because there is no minimum offering amount required as a condition to closing in this offering, the actual total placement agent fees, if any, are not presently determinable and may be substantially less than the maximum amount set forth above. We have also agreed to reimburse the placement agent for its out-of-pocket expenses in an amount not to exceed $35,000 without our prior approval, such approval not to be unreasonably withheld. In accordance with the rules and regulations of the Financial Industry Regulatory Authority, Inc., or FINRA, in no event may the maximum compensation payable to FINRA members and independent broker-dealers exceed 8.0% of the gross proceeds of this offering.

Our obligation to issue and sell shares and warrants to the purchasers is subject to the conditions set forth in the subscription agreements, which may be waived by us at our discretion. A purchaser's obligation to purchase shares and warrants is subject to the conditions set forth in his or her subscription agreement as well, which may also be waived.

We currently anticipate that the sale of the shares and warrants will be completed on or about April 4, 2012. We estimate the total offering expenses of this offering that will be payable by us, excluding the placement agent's fees, will be approximately $85,000, which includes legal and printing costs, various other fees and reimbursement of the placements agent's expenses. At the closing, The Depository Trust Company will credit the shares of common stock to the respective accounts of the purchasers. We will mail warrants directly to the investors at the respective addresses set forth in their subscription agreement with us.

Indemnification

We have agreed to indemnify the placement agent against liabilities under the Securities Act of 1933, as amended. We have also agreed to contribute to payments the placement agent may be required to make in respect of such liabilities.

Lock-up Agreements

We and our officers and directors have agreed, subject to certain exceptions, for a period of 30 days after the date of this prospectus, not to offer, sell, contract to sell, pledge, grant any option to purchase, make any short sale or otherwise dispose of, directly or indirectly any common shares or any securities convertible into or exchangeable for our common shares either owned as of the date hereof or thereafter acquired without the prior written consent of the placement agent; provided, however that we may issue securities with an effective offering price per share of common stock not less than the public offering price set forth on the cover of this prospectus supplement. This 30-day period may be extended if (1) during the last 17 days of the 30-day period, we issue an earnings release or material news or a material event regarding us occurs or (2) prior to the expiration of the 30-day period, we announce that we will release earnings results during the 16-day period beginning on the last day of the 30-day period, then the period of such extension will be 18-days, beginning on the issuance of the earnings release or the occurrence of the material news or

material event. If after any announcement described in clause (2) of the preceding sentence, we announce that we will not release earnings results during the 16-day period, the lock-up period shall expire the later of the expiration of the 30-day period and the end of any extension of such period made pursuant to clause (1) of the preceding sentence. The placement agent may, in its sole discretion and at any time or from time to time before the termination of the lock-up period, without notice, release all or any portion of the securities subject to lock-up agreements.

Electronic Distribution

This prospectus supplement and the related prospectus may be made available in electronic format on websites or through other online services maintained by the placement agent, or by an affiliate. Other than this prospectus supplement and the related prospectus, the information on the placement agent's website and any information contained in any other website maintained by the placement agent is not part of this prospectus supplement and the related prospectus or the registration statement of which this prospectus supplement and the related prospectus forms a part, has not been approved and/or endorsed by us or the placement agent, and should not be relied upon by investors.

The foregoing does not purport to be a complete statement of the terms and conditions of the placement agency agreement and subscription agreements. A copy of the placement agent agreement and the form of subscription agreement with the purchasers are included as exhibits to our current report on Form 8-K that will be filed with the SEC and incorporated by reference into the Registration Statement of which this prospectus supplement forms a part. See "Where You Can Find More Information" on page S-42.

Regulation M Restrictions

The placement agent may be deemed to be an underwriter within the meaning of Section 2(a)(11) of the Securities Act, and any commissions received by it and any profit realized on the resale of the units sold by it while acting as a principal might be deemed to be underwriting discounts or commissions under the Securities Act. As an underwriter, the placement agent would be required to comply with the requirements of the Securities Act and the Securities Exchange Act of 1934, as amended, including, without limitation, Rule 415(a)(4) under the Securities Act and Rule 10b-5 and Regulation M under the Exchange Act. These rules and regulations may limit the timing of purchases and sales of shares and warrants by the placement agent acting as a principal. Under these rules and regulations, the placement agent:

- must not engage in any stabilization activity in connection with our securities; and

- must not bid for or purchase any of our securities or attempt to induce any person to purchase any of our securities, other than as permitted under the Exchange Act, until it has completed its participation in the distribution.

Other

The placement agent and its affiliates may provide various investment banking, financial advisory and other services to us and our affiliates for which services they have received, and may in the future receive, customary fees. In the course of their businesses, the placement agent and its affiliates may actively trade our securities or loans for their own account or for the accounts of customers, and, accordingly, the placement agent and its affiliates may at any time hold long or short positions in such securities or loans.

LEGAL MATTERS

The validity of the securities offered hereby will be passed upon for us by Fredrikson & Byron, P.A., Minneapolis, Minnesota. Lowenstein Sandler PC, Roseland, New Jersey, is acting as counsel for the placement agent in connection

with various matters relating to the securities offered hereby.

EXPERTS

Our financial statements as of December 31, 2010 and 2009 and for the years then ended and for the period from August 1, 2005 (inception) through December 31, 2010 incorporated into the accompanying prospectus by reference to our Annual Report on Form 10-K for the year ended December 31, 2010 have been so incorporated in reliance on the report of Crowe Horwath LLP, an independent registered public accounting firm, given on the authority of said firm as experts in auditing and accounting.

WHERE YOU CAN FIND MORE INFORMATION

We have filed a registration statement on Form S-3 with the SEC for the securities we are offering by this prospectus supplement. This prospectus supplement and the accompanying prospectus do not include all of the information contained in the registration statement. You should refer to the registration statement and its exhibits for additional information.

We are required to file annual and quarterly reports, special reports, proxy statements, and other information with the SEC. We make these documents publicly available, free of charge, on our website at www.nilethera.com as soon as reasonably practicable after filing such documents with the SEC. You can read our SEC filings, including the registration statement, on the SEC's website at *http://www.sec.gov*. You also may read and copy any document we file with the SEC at its public reference facility at:

Public Reference Room
100 F Street N.E.
Washington, DC 20549.

Please call the SEC at 1-800-732-0330 for further information on the operation of the public reference facilities.

INCORPORATION OF CERTAIN INFORMATION BY REFERENCE

The SEC allows us to "incorporate by reference" into this prospectus supplement and the accompanying prospectus the information we file with it, which means that we can disclose important information to you by referring you to those documents. The information incorporated by reference is considered to be part of this prospectus supplement and the accompanying prospectus, and information in documents that we file later with the SEC will automatically update and supersede information in this prospectus supplement. We incorporate by reference into this prospectus supplement the documents listed below and any future filings made by us with the SEC under Section 13(a), 13(c), 14 or 15(d) of the Exchange Act until we close this offering, including all filings made after the date of the initial registration statement and prior to the effectiveness of the registration statement. We hereby incorporate by reference the following documents:

- Our Annual Report on Form 10-K for the year ended December 31, 2010 (File No. 001-34058);

- Our definitive proxy statement filed with the SEC on April 8, 2011;

- Our Quarterly Reports on Form 10-Q for each of the quarters ended March 31, 2011, June 30, 2011 and September 30, 2011;

- Our Current Reports on Form 8-K filed on each of March 3, 2011, April 22, 2011, and June 24, 2011; and

- The description of our common stock contained in our registration statement on Form 8-A filed May 9, 2008, under the Exchange Act, including any amendment or report filed for the purpose of updating such description.

You may request a copy of these filings, at no cost, by writing or telephoning us at the following address:

Nile Therapeutics, Inc.

4 West 4th Avenue, Suite 400

San Mateo, CA 94402

Attention: Investor Relations

Phone: (650) 458-2670

Copies of these filings are also available, without charge, through the “Investor Relations” section of our website (www.nilethera.com) as soon as reasonably practicable after they are filed electronically with the SEC. The information contained on our website is not a part of this prospectus supplement.

PROSPECTUS

Nile Therapeutics, Inc.

$25,000,000

Common Stock

Preferred Stock

Debt Securities

Warrants

From time to time, we may offer and sell up to $25,000,000 of any combination of the following securities, either individually or in units:

·shares of our common stock;

·shares of our preferred stock;

·debt securities consisting of debentures, notes or other evidences of indebtedness; or

·warrants to purchase shares of our common stock, preferred stock and/or debt securities.

This prospectus provides a general description of the securities we may offer. Each time we sell these securities, we will provide the specific terms of the securities offered in a supplement to this prospectus. We may also authorize one or more free writing prospectuses to be provided to you in connection with these offerings. The prospectus supplement and any related free writing prospectus may also add, update or change information contained in this prospectus. You should carefully read this prospectus, the applicable prospectus supplement and any related free writing prospectus, as well as any documents incorporated by reference, before buying any of the securities being offered.

The securities may be sold directly by us to our stockholders or to purchasers, through agents on our behalf or to or through underwriters or dealers. If any agents or underwriters are involved in the sale of the securities, the applicable prospectus supplement will provide the names of the agents or underwriters and any applicable fees, commissions or discounts. For additional information on the methods of sale, you should refer to the section entitled "Plan of Distribution" in this prospectus.

Our common stock is listed on the Nasdaq Capital Market under the symbol "NLTX." On March 12, 2010, the last sale price for our common stock, as reported by the Nasdaq Capital Market, was $1.14.

As of March 2, 2010, the aggregate market value of our outstanding common stock held by non-affiliates was approximately $25,969,689, which is based on 27,085,824 shares of outstanding common stock, of which 21,641,408 shares are held by non-affiliates, and a per share price of $1.20 based on the closing sale price of our common stock on March 2, 2010. As of the date of this prospectus, we have not offered any securities pursuant to General Instruction I.B.6 of Form S-3 during the prior 12 calendar months that ends on the date of this prospectus.

Investing in our securities involves a high degree of risk. You should review carefully the risks and uncertainties described under the heading "Risk Factors" contained in the applicable prospectus supplement and any related free writing prospectus, and under similar headings in the other documents that are incorporated by reference into this prospectus.

This prospectus may not be used to consummate a sale of any securities unless accompanied by a prospectus supplement.

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

The date of this prospectus is March 12, 2010.

ABOUT THIS PROSPECTUS

This prospectus is part of a registration statement on Form S-3 that we filed with the Securities and Exchange Commission, or SEC, utilizing a "shelf" registration process. Under this shelf registration statement, we may, from time to time, sell any combination of the securities referred to herein in one or more offerings for total gross proceeds of up to $25,000,000. This prospectus provides you with a general description of the securities we may offer. Each time we offer a type or series of securities under this prospectus, we will provide a prospectus supplement that will contain more specific information about the terms of the offered securities. We also may authorize one or more free writing prospectuses to be provided to you that may contain material information relating to these offerings. This prospectus, together with applicable prospectus supplements and any related free writing prospectuses, includes all the material information relating to these offerings. We also may add, update or change, in the prospectus supplement and in any related free writing prospectus that we may authorize to be provided to you, any of the information contained in this prospectus or in the documents that we have incorporated by reference into this prospectus. We urge you to read carefully this prospectus, any applicable prospectus supplement and any related free writing prospectus, together with the information incorporated herein by reference as described under the section entitled "Where You Can Find Additional Information," in this prospectus before buying any of the securities being offered.

THIS PROSPECTUS MAY NOT BE USED TO CONSUMMATE A SALE OF SECURITIES UNLESS IT IS ACCOMPANIED BY A PROSPECTUS SUPPLEMENT.

You should rely only on the information that we have provided or incorporated by reference in this prospectus, any applicable prospectus supplement and any related free writing prospectus that we may authorize to be provided to you. We have not authorized any other person to provide you with different information. No dealer, salesperson or other person is authorized to give any information or to represent anything not contained in this prospectus, any applicable prospectus supplement or any related free writing prospectus that we may authorize to be provided to you. You must not rely on any unauthorized information or representation. This prospectus, any applicable supplement to this prospectus or any related free writing prospectus does not constitute an offer to sell or the solicitation of an offer to buy any securities other than the registered securities to which they relate, nor does this prospectus, any applicable supplement to this prospectus or any related free writing prospectus constitute an offer to sell or the solicitation of an offer to buy securities in any jurisdiction to any person to whom it is unlawful to make such offer or solicitation in such jurisdiction. You should not assume that the information contained in this prospectus and any accompanying prospectus supplement, if any, is accurate on any date subsequent to the date set forth on the front of the document or that any information we have incorporated by reference is correct on any date subsequent to the date of the document incorporated by reference, even though this prospectus and any accompanying prospectus supplement is delivered or securities are sold on a later date.

OUR COMPANY

We are a development stage biopharmaceutical company in the business of developing innovative products for the treatment of cardiovascular diseases. We currently have rights to develop two drug candidates:

- ***CD-NP***, our lead product candidate, is a novel chimeric natriuretic peptide in clinical development for an initial indication of acute decompensated heart failure, or ADHF. CD-NP was rationally designed by scientists at the Mayo Clinic's cardio-renal research labs. Current therapies for ADHF, including B-type natriuretic peptide, have been associated with favorable pharmacologic effects, but have also been associated with hypotension and decreased renal function which limit their utility in clinical practice. CD-NP was designed to preserve the favorable effects of current therapies while eliminating or attenuating the hypotensive response, and enhancing or preserving renal function. In addition to an initial indication for ADHF, CD-NP has potential utility in other indications which include preservation of cardiac function subsequent to acute myocardial infarction, and prevention of renal damage following to cardiac surgery.

In July 2009, we dosed the first patient in a single-blind, placebo-controlled Phase II clinical trial designed to provide additional information on the safety and tolerability of CD-NP when infused for up to 72 hours in hospitalized patients with acute heart failure and renal function insufficiency. The purpose of the study is to determine a safe and tolerable dose range of CD-NP that can be used in ADHF patients in the acute setting in combination with the standard of care. The study also contains several exploratory efficacy endpoints to provide insight into the potential for CD-NP to preserve or enhance renal function in acute heart failure patients. We anticipate completing this Phase II clinical trial and obtain its complete data in the second half of 2010.

- ***CU-NP***, is a pre-clinical rationally designed natriuretic peptide that consists of amino acid chains identical to those produced by the human body, specifically the ring structure of C-type natriuretic peptide, or CNP, and the N- and C-termini of Urodilatin, or URO. We are currently evaluating the potential for the chronic dosing of CU-NP, which could be used to treat a number of cardiovascular and renal diseases.

We were originally incorporated under Delaware law in August 2005 under the name Nile Pharmaceuticals, Inc. and we changed our name to Nile Therapeutics, Inc. in January 2007. On September 17, 2007, we were acquired by SMI Products, Inc., or SMI, which was then a public shell company, in a reverse merger transaction whereby a wholly-owned subsidiary of SMI merged with and into Nile Therapeutics, with Nile Therapeutics remaining as the surviving corporation and a wholly-owned subsidiary of SMI. In accordance with the terms of this transaction, the stockholders of Nile Therapeutics exchanged all of their shares of Nile Therapeutics common stock for shares of SMI common stock, which immediately following the transaction represented approximately 95 percent of the issued and outstanding common stock of SMI. Upon completion of the merger, the sole officer and director of SMI resigned and was replaced by the officers and directors of Nile Therapeutics. Additionally, following the merger, Nile Therapeutics, or Old Nile, was merged into SMI, and SMI changed its name to Nile Therapeutics, Inc. and adopted the business plan of Old Nile.

Our executive offices are located at 4 West 4th Avenue, Suite 400, San Mateo, California 94402. Our telephone number is (650) 458-2670 and our Internet address is *www.nilethera.com*. We do not incorporate the information on our website into this prospectus, and you should not consider it part of this prospectus or part of any prospectus supplement.

RISK FACTORS

Investing in our securities involves risk. You should consider the risks, uncertainties and assumptions discussed under the heading “Risk Factors” in our Annual Report on Form 10-K for the fiscal year ended December 31, 2009 filed on March 3, 2010 with the SEC, which is incorporated herein by reference, and 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. If any of these risks were to occur, our business, financial condition, and results of operations could be severely harmed. This could cause the trading price of our common stock to decline, and you could lose all or part of your investment.

In addition, any prospectus supplement applicable to each offering of the securities described in this prospectus will contain a discussion of the risks applicable to such an investment in us. Prior to making a decision about investing in our securities, 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 such prospectus supplement or appearing or incorporated by reference in this prospectus.

NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus and the documents incorporated by reference in this prospectus contain forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, which we refer to as the Securities Act, and Section 21E of the Securities Exchange Act of 1934, as amended, which we refer to as the Exchange Act. These statements involve known and unknown risks, uncertainties and other important factors that 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. All statements, other than statements of historical facts, are forward-looking statements for purposes of these provisions, including without limitation any statements relating to:

- our strategy, including our plans with respect to the development of our product candidates;
- our research and development programs, including clinical testing;
- sufficiency of our cash resources;
- any statements concerning proposed regulatory activities or licensing or collaborative arrangements,

- our research and development and other expenses;
- our operations and legal risks; and
- assumptions underlying any of the foregoing.

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 inte identify forward-looking statements. Discussions containing these forward-looking statements may be found, among other places, in the “Business” and “Management’s Discussion and Analysis of Financial Condition and Results of Operations” sections incorporated by reference from our most recent Annual Report on Form 10-K and from our most recent Quarterly Report on Form 10-Q, as well as any amendments thereto reflected in subsequent filings with the SEC. Forward-looking statements reflect our current views with respect to future events, are based on assumptions and are subject to risks, uncertainties and other important factors. We discuss many of these risks, uncertainties and other important factors in greater detail under the heading “Risk Factors” contained in our most recent Annual Report on Form 10-K and in our most recent Quarterly Report on Form 10-Q, as well as any amendments thereto reflected in subsequent filings with the SEC. Given these risks, uncertainties and other important factors, you should not place undue reliance on these forward-looking statements. Also, these forward-looking statements represent our estimates and assumptions only as of the date such forward-looking statements are made. You should carefully read this supplement and any prospectus supplement, together with the information incorporated herein by reference as described under the section entitled “Where You Can Find Additional Information,” completely and with the understanding that our actual future results may be materially different from what we expect. We can give no assurances that any of the events anticipated by the forward-looking statements will occur or, if any of them do, what impact they will have on our business, results of operations and financial condition.

USE OF PROCEEDS

We will retain broad discretion over the use of the net proceeds from the sale of the securities described in this prospectus. Except as described in any prospectus supplement, we currently intend to use the net proceeds from the sale of these securities to fund the research and development of our product candidates and other general and administrative expenses, and for general corporate purposes. We may also use a portion of the net proceeds to acquire or invest in businesses, products and technologies that are complementary to our own.

PLAN OF DISTRIBUTION

We may sell the common stock covered by this prospectus:

- to or through one or more underwriters or dealers;
- directly to purchasers, or to purchasers through agents; or
- through a combination of any of these methods of sale.

We may distribute the common stock offered hereby:

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

We will describe the method of distribution of the securities in the applicable prospectus supplement.

We may determine the price or other terms of the common stock offered under this prospectus by use of an electronic auction. We will describe how any auction will determine the price or any other terms, how potential investors may participate in the auction and the nature of the obligations of the underwriter, dealer or agent in the applicable prospectus supplement.

Underwriters, dealers or agents may receive compensation in the form of discounts, concessions or commissions from us or our purchasers (as their agents in connection with the sale of the common stock). In addition, underwriters may sell common stock to or through dealers, and those dealers may receive compensation in the form of discounts, concessions or commissions from the underwriters and/or commissions from the purchasers for whom they act as agent. These underwriters, dealers or agents may be considered to be underwriters under the Securities Act. As a result, discounts, commissions, or profits on resale received by the underwriters, dealers or agents may be treated as underwriting discounts and commissions. Each applicable prospectus supplement will identify any such underwriter, dealer or agent, and describe any compensation received by them from us. Any initial public offering price and any discounts or concessions allowed or reallowed or paid to dealers may be changed from time to time.

We may enter into agreements that provide for indemnification against certain civil liabilities, including liabilities under the Securities Act, or for contribution with respect to payments made by the underwriters, dealers or agents and to reimburse these persons for certain expenses.

We may grant underwriters who participate in the distribution of the common stock an option to purchase additional shares of common stock to cover over-allotments, if any, in connection with the distribution. Underwriters or agents and their associates may be customers of, engage in transactions with, or perform services for us in the ordinary course of business.

In connection with the offering of the common stock, certain underwriters and selling group members and their respective affiliates, may engage in transactions that stabilize, maintain or otherwise affect the market price of the common stock. These transactions may include stabilization transactions effected in accordance with Rule 104 of Regulation M promulgated by the SEC pursuant to which these persons may bid for or purchase common stock for the purpose of stabilizing its market price.

The underwriters in an offering of the common stock may also create a “short position” for their account by selling more common stock in connection with the offering than they are committed to purchase from us. In that case, the underwriters could cover all or a portion of the short position by either purchasing common stock in the open market or by exercising any over-allotment option granted to them by us. In addition, any managing underwriter may impose “penalty bids” under contractual arrangements with other underwriters, which means that they can reclaim from an underwriter (or any selling group member participating in the offering) for the account of the other underwriters, the selling concession for the common stock that are distributed in the offering but subsequently purchased for the account of the underwriters in the open market. Any of the transactions described in this paragraph or comparable transactions that are described in any accompanying prospectus supplement may result in the maintenance of the price of the common stock at a level above that which might otherwise prevail in the open market. None of the transactions described in this paragraph or in an accompanying prospectus supplement are required to be taken by any underwriters and, if they are undertaken, may be discontinued at any time.

DESCRIPTION OF COMMON STOCK

The following summary of the terms of our common stock is subject to and qualified in its entirety by reference to our charter and by-laws, copies of which are on file with the SEC as exhibits to previous SEC filings. Please refer to "Where You Can Find More Information" below for directions on obtaining these documents.

As of the date of this prospectus, we are authorized to issue 100,000,000 shares of common stock, par value $0.001 per share. As of March 1, 2010, we had 27,085,824 shares of common stock outstanding.

General

The holders of our common stock are entitled to one vote for each share on all matters voted on by stockholders, including elections of directors, and, except as otherwise required by law or provided in any resolution adopted by our board with respect to any series of preferred stock, the holders of such shares possess all voting power. Our certificate of incorporation does not provide for cumulative voting in the election of directors. Subject to any preferential rights of any outstanding series of our preferred stock created by our board from time to time, the holders of common stock are entitled to such dividends as may be declared from time to time by our board from funds available therefore and upon liquidation are entitled to receive pro rata all assets available for distribution to such holders. Our common stock is not redeemable.

The holders of our common stock have no preemptive rights. The rights, preferences and privileges of holders of common stock are subject to, and may be adversely affected by, the rights of the holders of shares of any series of preferred stock which we may designate and issue in the future.

Transfer Agent and Registrar

The transfer agent and registrar for our common stock is American Stock Transfer and Trust Company, LLC.

Nasdaq Capital Market

Our common stock is listed for quotation on the Nasdaq Capital Market under the symbol “NLTX.”

DESCRIPTION OF PREFERRED STOCK

We are authorized to issue up to 10,000,000 shares of preferred stock, par value $0.001 per share. Our board of directors, without further action by the holders of our common stock, may issue shares of our preferred stock. Our board is vested with the authority to fix by resolution the designations, preferences and relative, participating, optional or other special rights, and such qualifications, limitations or restrictions thereof, including, without limitation, redemption rights, dividend rights, liquidation preferences and conversion or exchange rights of any class or series of preferred stock, and to fix the number of classes or series of preferred stock, the number of shares constituting any such class or series and the voting powers for each class or series.

The authority possessed by our board to issue preferred stock could potentially be used to discourage attempts by third parties to obtain control of Nile through a merger, tender offer, proxy contest or otherwise by making such attempts more difficult or more costly. Our board may issue preferred stock with voting rights or conversion rights that, if exercised, could adversely affect the voting power of the holders of common stock. There are no current agreements or understandings with respect to the issuance of preferred stock.

If we offer a specific class or series of preferred stock under this prospectus, we will describe the terms of the preferred stock in the prospectus supplement for such offering and will file a copy of the certificate establishing the terms of the preferred stock with the SEC. To the extent required, this description will include:

- the title and stated value;
- the number of shares offered, the liquidation preference per share and the purchase price;

- the dividend rate(s), period(s) and/or payment date(s), or method(s) of calculation for such dividends;
- whether dividends will be cumulative or non-cumulative and, if cumulative, the date from which dividends will accumulate;
- the procedures for any auction and remarketing, if any;
- the provisions for a sinking fund, if any;
- the provisions for redemption, if applicable;
- any listing of the preferred stock on any securities exchange or market;
- whether the preferred stock will be convertible into our common stock, and, if applicable, the conversion price (or how it will be calculated) and conversion period;
- whether the preferred stock will be exchangeable into debt securities, and, if applicable, the exchange price (or how it will be calculated) and exchange period;
- voting rights, if any, of the preferred stock;
- a discussion of any material U.S. federal income tax considerations applicable to the preferred stock;
- the relative ranking and preferences of the preferred stock as to dividend rights and rights upon liquidation, dissolution or winding up of the affairs of the Company; and
- any material limitations on issuance of any class or series of preferred stock ranking senior to or on a parity with the series of preferred stock as to dividend rights and rights upon liquidation, dissolution or winding up of the Company.

The preferred stock offered by this prospectus, when issued, will not have, or be subject to, any preemptive or similar rights.

Transfer Agent and Registrar

The transfer agent and registrar for any series or class of preferred stock will be set forth in each applicable prospectus supplement.

DESCRIPTION OF WARRANTS

The following description, together with the additional information that we include in any applicable prospectus supplement and in any related free writing prospectus that we may authorize to be distributed to you, summarizes the material terms and provisions of the warrants that we may offer under this prospectus. While the terms we have summarized below will apply generally to any warrants that we may offer under this prospectus, we will describe the particular terms of any warrants in more detail in the applicable prospectus supplement. The following description of warrants will apply to the warrants offered by this prospectus unless we provide otherwise in the applicable prospectus supplement. The applicable prospectus supplement for a particular series of warrants may specify different or additional terms.

We will file as exhibits to the registration statement of which this prospectus is a part, or will incorporate by reference from reports that we file with the SEC, the form of warrant and warrant agreement that describe the terms of the warrants we are offering, and any supplemental agreements, before the issuance of such warrants. The following summaries of material terms and provisions of the warrants are subject to, and qualified in their entirety by reference to, all the provisions of the warrant agreement and any supplemental agreements applicable to a particular series of warrants. We urge you to read the applicable prospectus supplement related to the particular series of warrants that we may offer under this prospectus, as well as any related free writing prospectus and the complete warrant agreement and any supplemental agreements that contain the terms of the warrants.

General

The warrants may be issued independently or together with any common stock, preferred stock or debt securities and may be attached to or separate from any such securities. The warrants will be issued under warrant agreements to be entered into between us and a bank or trust company, as warrant agent, all as shall be set forth in a prospectus supplement relating to the warrants being offered pursuant to such prospectus supplement.

We will describe in the applicable prospectus supplement the terms of the warrants being offered, including:

- the specific designation and aggregate number of, and the price at which we will issue, the warrants;
- the currency or currency units in which the offering price, if any, and the exercise price are payable;
- the designation, amount and terms of the securities purchasable upon exercise of the warrants;
- if applicable, the exercise price for shares of our common stock and the number of shares of common stock to be received upon exercise of the warrants;
- if applicable, the exercise price for shares of our preferred stock, the number of shares of preferred stock to be received upon exercise, and a description of that class or series of our preferred stock;
- if applicable, the exercise price for our debt securities, the amount of our debt securities to be received upon exercise, and a description of that series of debt securities;
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the date on which the right to exercise the warrants will begin and the date on which that right will expire or, if the warrants may not be continuously exercised throughout that period, the specific date or dates on which the warrants may be exercised;

- whether the warrants will be issued in fully registered form or bearer form, in definitive or global form or in any combination of these forms, although, in any case, the form of a warrant included in a unit will correspond to the form of the unit and of any security included in that unit;

- any applicable material U.S. federal income tax consequences;

- the identity of the warrant agent for the warrants and of any other depositaries, execution or paying agents, transfer agents, registrars or other agents;

- the proposed listing, if any, of the warrants or any securities purchasable upon exercise of the warrants on any securities exchange;

- if applicable, the date from and after which the warrants and the common stock, preferred stock and/or debt securities will be separately transferable;

- if applicable, the minimum or maximum amount of the warrants that may be exercised at any one time;

- information with respect to book-entry procedures, if any;

- the anti-dilution provisions of the warrants, if any;

- any redemption or call provisions;

- whether the warrants are to be sold separately or with other securities as parts of units; and

- any additional terms of the warrants, including terms, procedures and limitations relating to the exchange and exercise of the warrants.

Transfer Agent and Registrar

The transfer agent and registrar for any warrants will be set forth in the applicable prospectus supplement.

DESCRIPTION OF DEBT SECURITIES

We will issue the debt securities offered by this prospectus and any accompanying prospectus supplement under an indenture to be entered into between us and the trustee identified in the applicable prospectus supplement. The terms of the debt securities will include those stated in the indenture and those made part of the indenture by reference to the Trust Indenture Act of 1939, as in effect on the date of the indenture. We have filed a copy of the form of indenture as an exhibit to the registration statement in which this prospectus is included. The indenture will be subject to and governed by the terms of the Trust Indenture Act of 1939.

We may offer under this prospectus up to an aggregate principal amount of $25,000,000 in debt securities, or if debt securities are issued at a discount, or in a foreign currency, foreign currency units or composite currency, the principal amount as may be sold for an initial public offering price of up to $25,000,000. Unless otherwise specified in the applicable prospectus supplement, the debt securities will represent direct, unsecured obligations of the Company and will rank equally with all of our other unsecured indebtedness.

The following statements relating to the debt securities and the indenture are summaries, qualified in their entirety by reference to the detailed provisions of the indenture.

General

We may issue the debt securities in one or more series with the same or various maturities, at par, at a premium, or at a discount. We will describe the particular terms of each series of debt securities in a prospectus supplement relating to that series, which we will file with the SEC.

The prospectus supplement will set forth, to the extent required, the following terms of the debt securities in respect of which the prospectus supplement is delivered:

- the title of the series;
- the aggregate principal amount;
- the issue price or prices, expressed as a percentage of the aggregate principal amount of the debt securities;
- any limit on the aggregate principal amount;
- the date or dates on which principal is payable;
- the interest rate or rates (which may be fixed or variable) or, if applicable, the method used to determine such rate or rates;
- the date or dates from which interest, if any, will be payable and any regular record date for the interest payable;
- the place or places where principal and, if applicable, premium and interest, is payable;
- the terms and conditions upon which we may, or the holders may require us to, redeem or repurchase the debt securities;
- the denominations in which such debt securities may be issuable, if other than denominations of $1,000 or any integral multiple of that number;
- whether the debt securities are to be issuable in the form of certificated securities (as described below) or global securities (as described below);
- the portion of principal amount that will be payable upon declaration of acceleration of the maturity date if other than the principal amount of the debt securities;
- the currency of denomination;
- the designation of the currency, currencies or currency units in which payment of principal and, if applicable, premium and interest, will be made;

· if payments of principal and, if applicable, premium or interest, on the debt securities are to be made in one or more currencies or currency units other than the currency of denomination, the manner in which the exchange rate with respect to such payments will be determined;

· if amounts of principal and, if applicable, premium and interest may be determined by reference to an index based on a currency or currencies or by reference to a commodity, commodity index, stock exchange index or financial index, then the manner in which such amounts will be determined;

· the provisions, if any, relating to any collateral provided for such debt securities;

· any addition to or change in the covenants and/or the acceleration provisions described in this prospectus or in the indenture;

· any events of default, if not otherwise described below under “Events of Default”;

· the terms and conditions, if any, for conversion into or exchange for shares of our common stock or preferred stock;

· any depositaries, interest rate calculation agents, exchange rate calculation agents or other agents; and

· the terms and conditions, if any, upon which the debt securities shall be subordinated in right of payment to other indebtedness of the Company.

We may issue discount debt securities that provide for an amount less than the stated principal amount to be due and payable upon acceleration of the maturity of such debt securities in accordance with the terms of the indenture. We may also issue debt securities in bearer form, with or without coupons. If we issue discount debt securities or debt securities in bearer form, we will describe material U.S. federal income tax considerations and other material special considerations which apply to these debt securities in the applicable prospectus supplement.

We may issue debt securities denominated in or payable in a foreign currency or currencies or a foreign currency unit or units. If we do, we will describe the restrictions, elections, and general tax considerations relating to the debt securities and the foreign currency or currencies or foreign currency unit or units in the applicable prospectus supplement.

Exchange and/or Conversion Rights

We may issue debt securities which can be exchanged for or converted into shares of our common stock or preferred stock. If we do, we will describe the terms of exchange or conversion in the prospectus supplement relating to these debt securities.

Transfer and Exchange

We may issue debt securities that will be represented by either:

· *"book-entry securities,"* which means that there will be one or more global securities registered in the name of a depositary or a nominee of a depositary; or

·

"certificated securities," which means that they will be represented by a certificate issued in definitive registered form.

We will specify in the prospectus supplement applicable to a particular offering whether the debt securities offered will be book-entry or certificated securities.

Certificated Debt Securities

If you hold certificated debt securities, you may transfer or exchange such debt securities at the trustee's office or at the paying agent's office or agency in accordance with the terms of the indenture. You will not be charged a service charge for any transfer or exchange of certificated debt securities but may be required to pay an amount sufficient to cover any tax or other governmental charge payable in connection with such transfer or exchange.

You may effect the transfer of certificated debt securities and of the right to receive the principal of, premium, and/or interest, if any, on the certificated debt securities only by surrendering the certificate representing the certificated debt securities and having us or the trustee issue a new certificate to the new holder.

Global Securities

If we decide to issue debt securities in the form of one or more global securities, then we will register the global securities in the name of the depositary for the global securities or the nominee of the depositary, and the global securities will be delivered by the trustee to the depositary for credit to the accounts of the holders of beneficial interests in the debt securities.

The prospectus supplement will describe the specific terms of the depositary arrangement for debt securities of a series that are issued in global form. None of our Company, the trustee, any payment agent or the security registrar will have any responsibility or liability for any aspect of the records relating to or payments made on account of beneficial ownership interests in a global debt security or for maintaining, supervising or reviewing any records relating to these beneficial ownership interests.

No Protection in the Event of Change of Control

The indenture does not have any covenants or other provisions providing for a put or increased interest or otherwise that would afford holders of our debt securities additional protection in the event of a recapitalization transaction, a change of control of the Company, or a highly leveraged transaction. If we offer any covenants or provisions of this type with respect to any debt securities covered by this prospectus, we will describe them in the applicable prospectus supplement.

Covenants

Unless otherwise indicated in this prospectus or the applicable prospectus supplement, our debt securities will not have the benefit of any covenants that limit or restrict our business or operations, the pledging of our assets or the incurrence by us of indebtedness. We will describe in the applicable prospectus supplement any material covenants in respect of a series of debt securities.

Consolidation, Merger and Sale of Assets

We have agreed in the indenture that we will not consolidate with or merge into any other person or convey, transfer, sell or lease our properties and assets substantially as an entirety to any person, unless:

- the person formed by the consolidation or into or with which we are merged or the person to which our properties and assets are conveyed, transferred, sold or leased, is a corporation organized and existing under the laws of the U.S., any state or the District of Columbia or a corporation or comparable legal entity organized under the laws of a foreign jurisdiction and, if we are not the surviving person, the surviving person has expressly assumed all of our obligations, including the payment of the principal of and, premium, if any, and interest on the debt securities and the performance of the other covenants under the indenture; and

- immediately before and immediately after giving effect to the transaction, no event of default, and no event which, after notice or lapse of time or both, would become an event of default, has occurred and is continuing under the indenture.

Events of Default

Unless otherwise specified in the applicable prospectus supplement, the following events will be events of default under the indenture with respect to debt securities of any series:

- we fail to pay any principal or premium, if any, when it becomes due;

- we fail to pay any interest within 30 days after it becomes due;

- we fail to observe or perform any other covenant in the debt securities or the indenture for 60 days after written notice specifying the failure from the trustee or the holders of not less than 25% in aggregate principal amount of the outstanding debt securities of that series; and

- certain events involving bankruptcy, insolvency or reorganization of Nile or any of our significant subsidiaries.

The trustee may withhold notice to the holders of the debt securities of any series of any default, except in payment of principal of or premium, if any, or interest on the debt securities of a series, if the trustee considers it to be in the best interest of the holders of the debt securities of that series to do so.

If an event of default (other than an event of default resulting from certain events of bankruptcy, insolvency or reorganization) occurs, and is continuing, then the trustee or the holders of not less than 25% in aggregate principal amount of the outstanding debt securities of any series may accelerate the maturity of the debt securities. If this happens, the entire principal amount, plus the premium, if any, of all the outstanding debt securities of the affected series plus accrued interest to the date of acceleration will be immediately due and payable. At any time after the acceleration, but before a judgment or decree based on such acceleration is obtained by the trustee, the holders of a majority in aggregate principal amount of outstanding debt securities of such series may rescind and annul such acceleration if:

- all events of default (other than nonpayment of accelerated principal, premium or interest) have been cured or waived;

- all lawful interest on overdue interest and overdue principal has been paid; and

- the rescission would not conflict with any judgment or decree.

In addition, if the acceleration occurs at any time when we have outstanding indebtedness which is senior to the debt securities, the payment of the principal amount of outstanding debt securities may be subordinated in right of payment to the prior payment of any amounts due under the senior indebtedness, in which case the holders of debt securities will be entitled to payment under the terms prescribed in the instruments evidencing the senior indebtedness and the indenture.

If an event of default resulting from certain events of bankruptcy, insolvency or reorganization occurs, the principal, premium and interest amount with respect to all of the debt securities of any series will be due and payable

immediately without any declaration or other act on the part of the trustee or the holders of the debt securities of that series.

The holders of a majority in principal amount of the outstanding debt securities of a series will have the right to waive any existing default or compliance with any provision of the indenture or the debt securities of that series and to direct the time, method and place of conducting any proceeding for any remedy available to the trustee, subject to certain limitations specified in the indenture.

No holder of any debt security of a series will have any right to institute any proceeding with respect to the indenture or for any remedy under the indenture, unless:

- the holder gives to the trustee written notice of a continuing event of default;

- the holders of at least 25% in aggregate principal amount of the outstanding debt securities of the affected series make a written request and offer reasonable indemnity to the trustee to institute a proceeding as trustee;

- the trustee fails to institute a proceeding within 60 days after such request; and

- the holders of a majority in aggregate principal amount of the outstanding debt securities of the affected series do not give the trustee a direction inconsistent with such request during such 60-day period.

These limitations do not, however, apply to a suit instituted for payment on debt securities of any series on or after the due dates expressed in the debt securities.

We will periodically deliver certificates to the trustee regarding our compliance with our obligations under the indenture.

Modification and Waiver

From time to time, we and the trustee may, without the consent of holders of the debt securities of one or more series, amend the indenture or the debt securities of one or more series, or supplement the indenture, for certain specified purposes, including:

- to provide that the surviving entity following a change of control of Nile permitted under the indenture will assume all of our obligations under the indenture and debt securities;

- to provide for certificated debt securities in addition to uncertificated debt securities;

- to comply with any requirements of the SEC under the Trust Indenture Act of 1939;

- to provide for the issuance of and establish the form and terms and conditions of debt securities of any series as permitted by the indenture;

- to cure any ambiguity, defect or inconsistency, or make any other change that does not materially and adversely affect the rights of any holder; and

- to appoint a successor trustee under the indenture with respect to one or more series.

From time to time we and the trustee may, with the consent of holders of at least a majority in principal amount of an outstanding series of debt securities, amend or supplement the indenture or the debt securities series, or waive compliance in a particular instance by us with any provision of the indenture or the debt securities. We may not, however, without the consent of each holder affected by such action, modify or supplement the indenture or the debt securities or waive compliance with any provision of the indenture or the debt securities in order to:

- reduce the amount of debt securities whose holders must consent to an amendment, supplement, or waiver to the indenture or such debt security;

- reduce the rate of or change the time for payment of interest or reduce the amount of or postpone the date for payment of sinking fund or analogous obligations;

- reduce the principal of or change the stated maturity of the debt securities;

- make any debt security payable in money other than that stated in the debt security;

- change the amount or time of any payment required or reduce the premium payable upon any redemption, or change the time before which no such redemption may be made;

- waive a default in the payment of the principal of, premium, if any, or interest on the debt securities or a redemption payment;

- waive a redemption payment with respect to any debt securities or change any provision with respect to redemption of debt securities; or

- take any other action otherwise prohibited by the indenture to be taken without the consent of each holder affected by the action.

Defeasance of Debt Securities and Certain Covenants in Certain Circumstances

The indenture permits us, at any time, to elect to discharge our obligations with respect to one or more series of debt securities by following certain procedures described in the indenture. These procedures will allow us either:

- to defease and be discharged from any and all of our obligations with respect to any debt securities except for the following obligations (which discharge is referred to as "legal defeasance"):
  - to register the transfer or exchange of such debt securities;
  - to replace temporary or mutilated, destroyed, lost or stolen debt securities;
  - to compensate and indemnify the trustee; or
  - to maintain an office or agency in respect of the debt securities and to hold monies for payment in trust; or

- to be released from our obligations with respect to the debt securities under certain covenants contained in the indenture, as well as any additional covenants which may be contained in the applicable supplemental indenture (which release is referred to as "covenant defeasance").

In order to exercise either defeasance option, we must deposit with the trustee or other qualifying trustee, in trust for that purpose:

. money;

. U.S. Government Obligations (as described below) or Foreign Government Obligations (as described below) which through the scheduled payment of principal and interest in accordance with their terms will provide money; or

. a combination of money and/or U.S. Government Obligations and/or Foreign Government Obligations sufficient in the written opinion of a nationally-recognized firm of independent accountants to provide money;

which in each case specified above, provides a sufficient amount to pay the principal of, premium, if any, and interest, if any, on the debt securities of the series, on the scheduled due dates or on a selected date of redemption in accordance with the terms of the indenture.

In addition, defeasance may be effected only if, among other things:

- in the case of either legal or covenant defeasance, we deliver to the trustee an opinion of counsel, as specified in the indenture, stating that as a result of the defeasance neither the trust nor the trustee will be required to register as an investment company under the Investment Company Act of 1940;

- in the case of legal defeasance, we deliver to the trustee an opinion of counsel stating that we have received from, or there has been published by, the Internal Revenue Service a ruling to the effect that, or there has been a change in any applicable federal income tax law with the effect that (and the opinion shall confirm that), the holders of outstanding debt securities will not recognize income, gain or loss for U.S. federal income tax purposes solely as a result of such legal defeasance and will be subject to U.S. federal income tax on the same amounts, in the same manner, including as a result of prepayment, and at the same times as would have been the case if legal defeasance had not occurred;

- in the case of covenant defeasance, we deliver to the trustee an opinion of counsel to the effect that the holders of the outstanding debt securities will not recognize income, gain or loss for U.S. federal income tax purposes as a result of covenant defeasance and will be subject to U.S. federal income tax on the same amounts, in the same manner and at the same times as would have been the case if covenant defeasance had not occurred; and

- certain other conditions described in the indenture are satisfied.

If we fail to comply with our remaining obligations under the indenture and applicable supplemental indenture after a covenant defeasance of the indenture and applicable supplemental indenture, and the debt securities are declared due and payable because of the occurrence of any undefeased event of default, the amount of money and/or U.S. Government Obligations and/or Foreign Government Obligations on deposit with the trustee could be insufficient to pay amounts due under the debt securities of the affected series at the time of acceleration. We will, however, remain liable in respect of these payments.

The term “U.S. Government Obligations” as used in the above discussion means securities which are direct obligations of or non-callable obligations guaranteed by the United States of America for the payment of which obligation or guarantee the full faith and credit of the United States of America is pledged.

The term “Foreign Government Obligations” as used in the above discussion means, with respect to debt securities of any series that are denominated in a currency other than U.S. dollars (1) direct obligations of the government that issued or caused to be issued such currency for the payment of which obligations its full faith and credit is pledged or (2) obligations of a person controlled or supervised by or acting as an agent or instrumentality of such government the timely payment of which is unconditionally guaranteed as a full faith and credit obligation by that government, which in either case under clauses (1) or (2), are not callable or redeemable at the option of the issuer.

Regarding the Trustee

We will identify the trustee with respect to any series of debt securities in the prospectus supplement relating to the applicable debt securities. You should note that if the trustee becomes a creditor of Nile, the indenture and the Trust Indenture Act of 1939 limit the rights of the trustee to obtain payment of claims in certain cases, or to realize on certain property received in respect of any such claim, as security or otherwise. The trustee and its affiliates may engage in, and will be permitted to continue to engage in, other transactions with us and our affiliates. If, however, the trustee acquires any "conflicting interest" within the meaning of the Trust Indenture Act of 1939, it must eliminate such conflict or resign.

The holders of a majority in principal amount of the then outstanding debt securities of any series may direct the time, method and place of conducting any proceeding for exercising any remedy available to the trustee. If an event of default occurs and is continuing, the trustee, in the exercise of its rights and powers, must use the degree of care and skill of a prudent person in the conduct of his or her own affairs. Subject to that provision, the trustee will be under no obligation to exercise any of its rights or powers under the indenture at the request of any of the holders of the debt securities, unless they have offered to the trustee reasonable indemnity or security.

CERTAIN PROVISIONS OF DELAWARE LAW,

THE CERTIFICATE OF INCORPORATION AND BYLAWS

Limitations on Directors' Liability

Our Certificate of Incorporation and bylaws contain provisions indemnifying our directors and officers to the fullest extent permitted by law. In addition, as permitted by Delaware law, the Certificate of Incorporation provides that no director will be liable to us or our stockholders for monetary damages for breach of certain fiduciary duties as a director. The effect of this provision is to restrict our rights and the rights of our stockholders in derivative suits to recover monetary damages against a director for breach of certain fiduciary duties as a director, except that a director will be personally liable for:

- any breach of his or her duty of loyalty to the registrant or its stockholders;
- acts or omissions not in good faith which involve intentional misconduct or a knowing violation of law;
- the payment of dividends or the redemption or purchase of stock in violation of Delaware law; or
- any transaction from which the director derived an improper personal benefit.

This provision does not affect a director's liability under the federal securities laws.

To the extent that our directors, officers and controlling persons are indemnified under the provisions contained in the Certificate of Incorporation, Delaware law or contractual arrangements against liabilities arising under the Securities Act, we have been informed that in the opinion of the Securities and Exchange Commission such indemnification is against public policy as expressed in the Securities Act, and is therefore unenforceable.

Provisions that May Have an Anti-Takeover Effect

Certain provisions set forth in our certificate of incorporation, bylaws and in Delaware law, which are summarized below, are intended to enhance the likelihood of continuity and stability in the composition of our Board of Directors and in the policies formulated by our Board of Directors and to discourage certain types of transactions that may involve an actual or threatened change of control. In that regard, these provisions are designed to reduce our vulnerability to an unsolicited acquisition proposal. The provisions also are intended to discourage certain tactics that may be used in proxy fights. However, such provisions could have the effect of discouraging others from making tender offers for our shares and, as a consequence, they also may inhibit fluctuations in the market price of our common stock that could result from actual or rumored takeover attempts. Such provisions also may have the effect of preventing changes in our management.

Blank Check Preferred Stock. Our certificate of incorporation contains provisions that permit our Board of Directors to issue, without any further vote or action by the stockholders, up to 10,000,000 shares of preferred stock in one or more series and, with respect to each such series, to fix the number of shares constituting the series and the designation of the series, the voting powers (if any) of the shares of the series, and the preferences and relative, participating, optional and other special rights, if any, and any qualifications, limitations or restrictions, of the shares of such series. As a result, our Board of Directors could authorize the issuance of shares of preferred stock with terms and conditions that could have the effect of delaying, deferring or preventing a transaction or a change in control that might involve a premium price for holders of the registrant's common stock or otherwise be in their best interest.

Special Meetings of Stockholders. Our bylaws provide that special meetings of stockholders may be called only by the Board of Directors. Stockholders are not permitted to call a special meeting of stockholders or to require that the Board of Directors call such a special meeting.

Delaware Takeover Statute. In general, Section 203 of the Delaware General Corporation Law prohibits a Delaware corporation that is a public company from engaging in any "business combination" (as defined below) with any "interested stockholder" (defined generally as an entity or person beneficially owning 15% or more of the outstanding voting stock of the corporation and any entity or person affiliated with such entity or person) for a period of three years following the date that such stockholder became an interested stockholder, unless: (1) prior to such date, the board of directors of the corporation approved either the business combination or the transaction that resulted in the stockholder becoming an interested stockholder; (2) on consummation of the transaction that resulted in the stockholder becoming an interested stockholder, the interested stockholder owned at least 85% of the voting stock of the corporation outstanding at the time the transaction commenced, excluding for purposes of determining the number of shares outstanding those shares owned (x) by persons who are directors and also officers and (y) by employee stock plans in which employee participants do not have the right to determine confidentially whether shares held subject to the plan will be tendered in a tender or exchange offer; or (3) on or subsequent to such date, the business combination is approved by the board of directors and authorized at an annual or special meeting of stockholders, and not by written consent, by the affirmative vote of at least two-thirds of the outstanding voting stock that is not owned by the interested stockholder.

Section 203 of the Delaware General Corporation Law defines "business combination" to include: (1) any merger or consolidation involving the corporation and the interested stockholder; (2) any sale, transfer, pledge or other disposition of 10% or more of the assets of the corporation involving the interested stockholder; (3) subject to certain exceptions, any transaction that results in the issuance or transfer by the corporation of any stock of the corporation to the interested stockholder; (4) any transaction involving the corporation that has the effect of increasing the proportionate share of the stock of any class or series of the corporation beneficially owned by the interested stockholder; or (5) the receipt by the interested stockholder of the benefit of any loans, advances, guarantees, pledges or other financial benefits provided by or through the corporation.

WHERE YOU CAN FIND MORE INFORMATION

We have filed a registration statement on Form S-3 with the SEC for the securities we are offering by this prospectus. This prospectus does not include all of the information contained in the registration statement. You should refer to the registration statement and its exhibits for additional information.

We are required to file annual and quarterly reports, special reports, proxy statements, and other information with the SEC. We make these documents publicly available, free of charge, on our website at www.nilethera.com as soon as reasonably practicable after filing such documents with the SEC. You can read our SEC filings, including the registration statement, on the SEC's website at http://www.sec.gov. You also may read and copy any document we file with the SEC at its public reference facility at:

Public Reference Room
100 F Street N.E.
Washington, DC 20549.

Please call the SEC at 1-800-732-0330 for further information on the operation of the public reference facilities.

INCORPORATION OF CERTAIN DOCUMENTS BY REFERENCE

The SEC allows us to "incorporate by reference" into this prospectus the information we file with it, which means that we can disclose important information to you by referring you to those documents. The information incorporated by reference is considered to be part of this prospectus, and information in documents that we file later with the SEC will automatically update and supersede information in this prospectus. We incorporate by reference into this prospectus the documents listed below and any future filings made by us with the SEC under Section 13(a), 13(c), 14 or 15(d) of the Exchange Act until we close this offering, including all filings made after the date of the initial registration statement and prior to the effectiveness of the registration statement. We hereby incorporate by reference the following documents:

- Our Annual Report on Form 10-K for the year ended December 31, 2009 (File No. 001-34058); and

- The description of our common stock contained in our registration statement on Form 8-A filed May 9, 2008, under the Exchange Act, including any amendment or report filed for the purpose of updating such description.

You may request a copy of these filings, at no cost, by writing or telephoning us at the following address:

Nile Therapeutics, Inc.

4 West 4th Avenue, Suite 400

San Mateo, CA 94402

Attention: Investor Relations

Phone: (650) 458-2670

Copies of these filings are also available, without charge, through the “Investor Relations” section of our website (www.nilethera.com) as soon as reasonably practicable after they are filed electronically with the SEC. The information contained on our website is not a part of this prospectus.

LEGAL MATTERS

The validity of the issuance of the securities offered hereby will be passed upon for us by Fredrikson & Byron, P.A., Minneapolis, Minnesota. The validity of any securities will be passed upon for any underwriters or agents by counsel that we will name in the applicable prospectus supplement.

EXPERTS

The financial statements as of December 31, 2009 and for the year then ended and for the period from August 1, 2005 (inception) through December 31, 2009 incorporated in this prospectus by reference to the Annual Report on Form 10-K for the year ended December 31, 2009 have been so incorporated in reliance on the report of Crowe Horwath LLP, an independent registered public accounting firm, given on the authority of said firm as experts in auditing and accounting.

The financial statements as of December 31, 2008, and for the year then ended incorporated in this prospectus by reference to the Annual Report on Form 10-K for the year ended December 31, 2009 have been so incorporated in reliance on the report of Hays & Company LLP, independent registered public accounting firm, given on the authority of said firm as experts in auditing and accounting.

No dealer, salesperson or any other person is authorized to give any information or make any representations in connection with this offering other than those contained in this prospectus supplement and, if given or made, the information or representations must not be relied upon as having been authorized by us. This prospectus supplement does not constitute an offer to sell or a solicitation of an offer to buy any security other than the securities offered by this prospectus, or an offer to sell or a solicitation of an offer to buy any securities by anyone in any jurisdiction in which the offer of solicitation is not authorized or is unlawful.

3,350,000 Shares of Common Stock

Warrants to Purchase up to 2,512,500 Shares of Common Stock

PROSPECTUS SUPPLEMENT

March 30, 2012