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Nile Therapeutics, Inc.
Form S-1
April 25, 2012

As filed with the Securities and Exchange Commission on April 25, 2012 Registration No. 333-

UNITED STATES SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM S-1**

REGISTRATION STATEMENT UNDER THE SECURITIES ACT OF 1933

NILE THERAPEUTICS, INC.

(Exact name of registrant as specified in its charter)

Delaware

2834

88-0363465

(State or other jurisdiction of incorporation (Primary Standard Industrial Classification (I.R.S. Employer or organization) Code Number Identification No.)

4 West 4th Street, Suite 400

San Mateo, California 94402

(650) 458-2670

(Address, including zip code, and telephone number, including area code, of registrant's principal executive offices)

Daron Evans
Chief Financial Officer
Nile Therapeutics, Inc.
4 West 4th Street, Suite 400
San Mateo, California 94402
(650) 458-2670

(Name, address, including zip code, and telephone number,
including area code, of agent for service)

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Approximate date of commencement of proposed sale to the public: From time to time after the effective date of this registration statement, as shall be determined by the selling stockholders identified herein.

If any of the securities being registered on this Form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933, as amended, check the following box.

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

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

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

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company. See the definitions of "large accelerated filer," "accelerated filer" and "smaller reporting company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer o Accelerated filer o
 Non-accelerated filer o (Do not check if a smaller reporting company) Smaller reporting company b

CALCULATION OF REGISTRATION FEE (1)

Title of Each Class of Securities to be Registered	Amount to be Registered(1)	Proposed Maximum Offering Price Per Share (2)	Proposed Maximum Aggregate Offering Price	Amount of Registration Fee
Common stock, par \$.001 par value per share (3)	2,512,500	\$ 0.295	\$ 741,188	\$ 84.94
Common stock, par \$.001 par value per share (4)	2,750,000	-	-	-
Total			\$ 741,188	\$ 84.94

Pursuant to Rule 416 under the Securities Act, the shares being registered hereunder include such indeterminate (1) number of shares as may be issuable with respect to the shares being registered hereunder as a result of stock splits, stock dividends or similar transactions.

Estimated solely for purposes of calculating the amount of the registration fee pursuant to Rule 457. The offering (2) price per share and the aggregate offering price are based upon the average of the high and low prices of the registrant's common stock as reported on the OTCQB Pink Sheets on April 20, 2012.

This Registration Statement relates to the sale of up to 2,512,500 shares of common stock issuable upon the (3) exercise of outstanding warrants, and to the resale of such shares by certain of the selling stockholders identified herein.

In accordance with Rule 429, this Registration Statement also relates to the resale by certain of the selling (4) stockholders of 2,750,000 shares of common stock issuable upon the exercise of outstanding warrants, previously registered on Form S-1, File No. 333-175726, and for which a fee was previously paid.

The Registrant hereby amends this Registration Statement on such date or dates as may be necessary to delay its effective date until the Registrant shall file a further amendment which specifically states that this Registration Statement shall thereafter become effective in accordance with section 8(a) of the Securities Act of 1933 or until this Registration Statement shall become effective on such date as the Commission, acting pursuant to such Section 8(a), may determine.

**In accordance with Rule 429, upon effectiveness, this Registration Statement shall also act as a post-effective amendment to the Registrant's Form S-1, File No. 333-175726, for which a registration fee was previously paid.

A registration statement relating to these securities has been filed with the Securities and Exchange Commission. These securities may not be sold nor may offers to buy be accepted prior to the time the registration statement becomes effective. This prospectus shall not constitute an offer to sell or the solicitation of an offer to buy nor shall there be any sale of these securities in any state in which such offer, solicitation or sale would be unlawful prior to registration or qualification under the securities laws of any such state.

Subject to completion, dated April 25, 2012

OFFERING PROSPECTUS

2,512,500 Shares of Common Stock Issuable Upon Exercise of Warrants

Resale of up to 5,262,500 Shares Common Stock

The prospectus relates the sale of up to 2,512,500 shares of our common stock that may be issuable upon the exercise of outstanding warrants that we issued on April 4, 2012. In addition, the selling stockholders identified in this prospectus are offering for resale up to 5,262,500 shares of our common stock, of which 2,512,500 shares are issuable upon the exercise of the April 2012 warrants and 2,750,000 shares are issuable upon the exercise of warrants issued by us on June 23, 2011.

Our common stock is quoted on the OTCQB tier of the OTC Markets, LLC under the symbol "NLTX.PK." On _____, 2012, the last sale price of our common stock as reported on the OTCQB was \$ _____.

The securities offered by this prospectus involve a high degree of risk.

See "Risk Factors" beginning on page 4.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of 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 , 2012.

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PROSPECTUS SUMMARY

This summary highlights information contained elsewhere in this prospectus. Because it is a summary, it may not contain all of the information that is important to you. Accordingly, you are urged to carefully review this prospectus in its entirety, including the risks of investing in our securities discussed under the caption “Risk Factors” and the financial statements and other information that is contained in or incorporated by reference into this prospectus or the registration statement of which this prospectus is a part before making an investment decision. References to the “Company,” “Nile,” “we,” “us,” or “our” in this prospectus refer to Nile Therapeutics, Inc., a Delaware corporation, unless the context indicates otherwise.

Company 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*), 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.

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., or Nile, and adopted the business plan of Old Nile. We collectively refer to these two merger transactions in this prospectus as the “Merger.” Because the Merger was accounted for as a reverse acquisition under generally accepted accounting principles, the financial statements for periods prior to September 17, 2007 reflect only the operations of Old Nile.

Our executive offices are located at 4 West 4th Ave., Suite 400, San Mateo, California 94402. Our telephone number is (650) 458-2670 and our Internet address is www.nilethera.com. Information contained in, or accessible through, our website does not constitute a part of this prospectus.

Risk Factors

As with most pharmaceutical product candidates, the development of our product candidates is subject to numerous risks, including our dependence on our cenderitide program, our ability to obtain the substantial additional capital that is required to continue our development activities, the risk of being unable to obtain necessary regulatory approvals to market the product candidates, unforeseen safety issues relating to our product candidates, dependence on third party collaborators to conduct research and development of our product candidates, and a lack of adequate capital needed to develop our product candidates. Because we have only a limited history of operations, we are also subject to many risks associated with early-stage companies. For a more detailed discussion of some of the risks you should consider before purchasing shares of our common stock, you are urged to carefully review and consider the section entitled “Risk Factors” beginning on page 4 of this prospectus.

Recent Developments

On March 30, 2012, we entered into subscription agreements with certain purchasers pursuant to which we agreed to sell an aggregate of 3,350,000 shares of our common stock to such purchasers for a purchase price of \$0.40 per share. In addition, for each share of common stock purchased, each purchaser was also entitled to receive three-fourths of a warrant to purchase an additional share of common stock at an exercise price of \$0.50 per share, resulting in the issuance of warrants to purchase an aggregate of 2,512,500 shares of our common stock. The warrants are exercisable for a period of five years beginning on the earlier of (i) the date on which an “Additional Registration Statement” (as defined below) is declared effective by the SEC, and (ii) one year and one day after issuance. The total gross proceeds from the offering were \$1.34 million, before deducting anticipated selling commissions and expenses of approximately \$0.2 million. The closing of the offering occurred on April 4, 2012.

In connection with the offering, we engaged Roth Capital Partners, LLC to serve as placement agent pursuant to the terms of a placement agent agreement dated March 30, 2012. Pursuant to the placement agent agreement, we agreed to pay Roth Capital a cash fee equal to 7% of the gross proceeds received by us, or \$93,800, plus a non-accountable expense allowance of \$35,000. The placement agent agreement contains customary representations, warranties, and covenants by us, and also provides for customary indemnification provisions between us and Roth Capital for losses or damages arising out of or in connection with the offering.

Richard B. Brewer, our Executive Chairman, Joshua A. Kazam, our President and Chief Executive Officer and a director, Daron Evans, our Chief Financial Officer, and Hsiao Lieu, M.D., our Executive VP of Clinical Development, participated in the offering on the same terms as the unaffiliated purchasers, and collectively purchased 275,000 shares of our common stock and warrants to purchase 206,250 shares of common stock, for an aggregate purchase price of \$110,000.

The offer and sale of the shares and warrants was made pursuant to our shelf registration statement on Form S-3 (SEC File No. 333-165167), which became effective on March 12, 2010. Pursuant to the subscription agreements, we agreed to file, within 15 business days after the closing of the offering, a registration statement under the Securities Act covering the issuance of the shares of our common stock upon exercise of the warrants and the subsequent resale of such shares (the “Additional Registration Statement”), and to cause such registration statement to be declared effective within 90 days following the closing of the offering. In the event the Additional Registration Statement is not declared effective by the SEC within such 90-day period, we agreed to pay liquidated damages to each purchaser in the amount of 1% of such purchaser’s aggregate investment amount for each 30-day period until the Additional Registration Statement is declared effective, subject to an aggregate limit of 12% of such purchaser’s aggregate investment amount. This prospectus is part of a registration statement that we have filed with the SEC intended to satisfy our obligation to file the Additional Registration Statement.

The Offering

By this prospectus, we are offering up to 2,512,500 shares of our common stock upon the exercise of our outstanding warrants that we issued on April 4, 2012, which we sometimes refer to in this prospectus as our April 2012 warrants. In addition, the selling stockholders identified beginning on page 29 of this prospectus are offering on a resale basis a total of 5,262,500 shares of our common stock, which are comprised of the 2,512,500 shares that may be issued upon exercise of our April 2012 warrants, as well as 2,750,000 shares that may be issued upon the exercise of warrants that we issued on June 23, 2011, which we sometimes refer to in this prospectus as our June 2011 warrants.

Common stock offered by Nile	2,512,500 shares
Common stock offered by selling stockholders	5,262,500 shares
Common stock outstanding before the offering ⁽¹⁾	43,062,231 shares
Common stock outstanding after the offering ⁽²⁾	48,324,731 shares

Use of proceeds Upon exercise of the June 2011 or April 2012 warrants, we will receive \$0.60 and \$0.50, respectively, or such lower price as may result from the anti-dilution protection features of such warrants. However, in the event there is not a current and effective registration statement covering the exercise of the April 2012 warrants or the resale of the shares issuable upon exercise of the June 2011 and April 2012 warrants at any time during the applicable exercise periods, then such warrants may be exercised on a cashless basis, in which case we will receive no proceeds. We expect to use any proceeds from the exercise of the warrants to fund our operating expenses and for other general corporate purposes. There is no assurance that the warrant holders will elect to exercise any or all of the June 2011 or April 2012 warrants.

The selling stockholders will receive all the proceeds from any resales of the shares of common stock issuable upon exercise of the June 2011 and April 2012 warrants covered by this prospectus. We will not receive any proceeds from resale of such warrant shares by the selling stockholders, but we will incur expenses in connection with the registration of the resale of such shares.

Terms of April
2012 Warrants

Exercisability: Each April 2012 warrant is exercisable for one share of our common stock during the five-year period commencing on the earlier of (i) one year and one day from issuance, or April 5, 2013, or (ii) the effective date of a registration statement under the Securities Act covering the exercise of the warrants and the resale by such warrant holders of the shares of our common stock issuable upon such exercise. The registration statement of which this prospectus forms a part was declared effective by the SEC on ____ 2012, meaning the April 2012 warrants are exercisable for a 5 year period beginning on such date.

In the event there is not an effective registration statement covering the resale of the warrant shares at any time during the warrant exercise period, the holders may be exercised on a cashless basis for that number of shares of common stock equal to the quotient obtained by dividing (x) the product of the number of shares of common stock underlying the warrants, multiplied by the difference between the exercise price of the warrants and the fair market value of the common stock by (y) the fair market value of the common stock, pursuant to the warrant agreement. "Fair market value" is defined as the average of the closing sale price of the common stock for the five trading days ending on the trading day preceding the date of exercise.

Exercise Price: \$0.50 per share, which is subject to adjustment for stock splits, combinations and similar recapitalization events. In addition, if during the term of the warrant we issue additional shares of our common stock, or securities convertible into or exercisable for our common stock, at a price per share less than the warrant exercise price, then the warrant exercise price will be reduced to such lower price.

OTCQB
Symbol NLTX.PK

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Based on the number of shares outstanding as of April 20, 2012, not including 19,599,318 shares issuable upon (1) exercise of various warrants and options to purchase our common stock, including the shares issuable upon exercise of our April 2012 and June 2011 warrants.

(2) Assumes the issuance of all shares upon exercise of our April 2012 and June 2011 warrants.

RISK FACTORS

Investment in our common stock involves significant risk. You should carefully consider the information described in the following risk factors, together with the other information appearing elsewhere in this prospectus, before making an investment decision regarding our common stock. If any of the events or circumstances described in these risks actually occur, our business, financial conditions, results of operations and future growth prospects would likely be materially and adversely affected. In these circumstances, the market price of our common stock could decline, and you may lose all or a part of your investment in our common stock. Moreover, the risks described below are not the only ones that we face.

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 December 31, 2011, we had cash and cash equivalents totaling \$1.0 million. During the fiscal year ended December 31, 2011, we used net cash in operating activities totaling \$4.6 million. 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 our March 2012 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, 2011, we had a net loss of \$4.9 million. Since our inception on August 1, 2005, through December 31, 2011, we have accumulated a deficit of \$44.8 million and have stockholders' equity of \$0.8 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;

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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 that we may receive upon exercise of the warrants, if any, to fund our general corporate expenses and working capital. However, our management will have significant flexibility in applying any 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.

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 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.

NOTE REGARDING FORWARD-LOOKING STATEMENTS

Any statements contained in this prospectus about our expectations, beliefs, plans, objectives, assumptions or future events or performance are not historical facts and may be forward-looking. These forward-looking statements include, but are not limited to, statements about:

the development of our drug candidates, including when we expect to undertake, initiate and complete clinical trials of our product candidates;

· the regulatory approval of our drug 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 and the availability of reimbursement for our product candidates;

· our ability to market any of our products;

· our history of operating losses;

· our ability to secure adequate protection for our intellectual property;

· our ability to compete against other companies and research institutions;

the effect of potential strategic transactions on our business;

our ability to attract and retain key personnel;

the volatility of our stock price; and

other risks and uncertainties detailed in “Risk Factors” in this prospectus.

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” and similar words or phrases. Readers of this prospectus are cautioned not to place undue reliance on these forward-looking statements, which speak only as of the date of this prospectus. These forward-looking statements are based largely on our expectations and projections about future events and future trends affecting our business, and are subject to risks and uncertainties that could cause actual results to differ materially from those anticipated in the forward-looking statements. These forward-looking statements involve risks and uncertainties, including the risks discussed under “Risk Factors,” that could cause our actual results to differ materially from those in the forward-looking statements. Except as required by law, we undertake no obligation to publicly revise our forward-looking statements, whether resulting from new information, future events or otherwise. The risks discussed in this prospectus should be considered in evaluating our prospects and future financial performance.

In addition, past financial or operating performance is not necessarily a reliable indicator of future performance and you should not use our historical performance to anticipate results or future period trends. 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 results of operations and financial condition.

DESCRIPTION OF THE SECURITIES OFFERED HEREBY

Through this prospectus, we are offering 2,512,500 shares of our common stock upon the exercise of outstanding warrants that we originally issued on April 4, 2012, which we sometimes refer to in this prospectus as our April 2012 warrants. In addition, this prospectus also relates to the resale by the selling security holders named herein of a total of 5,262,500 shares of our common stock, which are comprised of the 2,512,500 shares that may be issued upon exercise of our April 2012 warrants, as well as 2,750,000 shares that may be issued upon the exercise of warrants that we issued on June 23, 2011, which we sometimes refer to in this prospectus as our June 2011 warrants.

General

Our certificate of incorporation authorizes us to issue 110,000,000 shares of capital stock, par value \$0.001 per share, comprised of 100,000,000 shares of common stock, and 10,000,000 shares of preferred stock, none of which is currently outstanding.

Our board of directors has the authority to issue the authorized but unissued shares of our common stock without action by our stockholders. The issuance of such shares would reduce the percentage ownership held by current stockholders. Our board of directors also has 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 common stock and 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. See “Risk Factors – Risks Related to Our Securities – There may be issuances of shares of blank check preferred stock in the future.”

As of April 20, 2012, we have issued and outstanding approximately:

43,062,231 shares of our common stock;

options to purchase 8,424,334 shares of our common stock at a weighted average exercise price of \$1.52 per share;
and

warrants to purchase 11,174,984 shares of our common stock at a weighted average exercise price of \$0.94 per share.

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.

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.

Trading Market. Our common stock is quoted on the OTCQB tier of the OTC Markets, LLC under the symbol “NLTX.”

April 2012 Warrants

The material terms and provisions of our April 4, 2012 warrants are summarized below. In this prospectus, we sometimes refer to these warrants as the April 2012 warrants. 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 we filed on April 2, 2012 in connection with our offering the original offer and sale of the warrants. 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.

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, on or before April 25, 2012, 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 15c-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.

USE OF PROCEEDS

Upon the exercise of the April 2012 warrants, we will receive \$0.50 per share (subject to certain adjustments described under "Description of the Securities Offered Hereby – Warrants – Adjustments," above) for each warrant exercised for the purchase of a share of our common stock. Upon the exercise of our June 2011 warrants, we will receive \$0.60 per share. We expect that any proceeds we receive from the exercise of the warrants will be used as working capital, operating expenses and other general corporate purposes. There is no assurance, however, that the

holders of the June 2011 warrants or the April 2012 warrants will exercise all or any part of such warrants. We will not receive any of the proceeds resulting from the resale of the shares of common stock offered by the selling stockholders identified below.

SELLING STOCKHOLDERS

This prospectus also covers the resale by the selling stockholders identified below of a total of 5,262,500 shares of our common stock, as follows:

- 2,512,500 shares issuable upon the exercise of our April 2012 warrants; and
- 2,750,000 shares issuable upon the exercise of our June 2011 warrants.

The following table sets forth the number of shares of our common stock beneficially owned by the selling stockholders as of April 20, 2012, and after giving effect to this offering, except as otherwise referenced below.

Selling Stockholder	Shares beneficially owned before offering (1)	Number of outstanding shares offered by selling stockholder	Number of shares offered by selling stockholder upon exercise of warrants	Percentage beneficial ownership after offering(2)
<u>Shares Issuable Upon Exercise of April 2012 Warrants</u>				
Capital Ventures International (3)	742,700	-	375,000	*
Cranshire Capital Master Fund, Ltd (4)	354,375	-	178,125	*
Daron Evans (5)	906,423	-	9,375	1.9
Empery Asset Master, LTD (6)	288,300	-	140,625	*
Freestone Advantage Partners II, LP (7)	18,125	-	9,375	*
Hartz Capital Investments, LLC (8)	288,300	-	140,625	*
Hsiao Dee Lieu (9)	628,143	-	9,375	1.3
Hudson Bay Master Fund, Ltd. (10)	437,500	-	187,500	*
Iroquois Master Fund, Ltd (11)	350,500	-	187,500	*
Joshua Kazam (12)	3,036,157	-	93,750	6.1
Kiernan Family Trust (13)	1,146,308	-	93,750	1.6
Kingsbrook Opportunities Master Fund LP (14)	743,500	-	375,000	*
M.S.B. Research Inc. (15)	800,000	-	150,000	1.0
Midsummer Small Cap Master, Ltd. (16)	281,250	-	281,250	-
Richard B. Brewer (17)	1,006,250	-	93,750	1.9
Stonepine Capital, LP (18)	5,837,500	-	187,500	8.0
Subtotal			2,512,500	
<u>Shares Issuable Upon Exercise of June 2011 Warrants</u>				
Stonepine Capital, L.P. (18)	5,837,500	-	1,800,000	8.0
Gregory Kiernan (13)	1,146,308	-	300,000	1.6
Timothy McInerney (19)	1,034,147	-	350,000	1.4
M.S.B. Research Inc. (15)	800,000	-	150,000	1.0
Wolcot Capital Inc. (20)	65,000	-	30,000	*
Blue Ridge Capital Inc. (21)	20,000	-	20,000	-
Peter M. Kash (22)	2,837,693	-	19,500	5.8
Scott L. Navins (23)	339,040	-	21,500	*
Benjamin Bernstein (24)	704,931	-	21,500	1.4
Ladenburg Thalmann & Co. Inc. (25)	37,500	-	37,500	-
Subtotal			2,750,000	

TOTAL

5,262,500

* denotes less than 1%

(1) Based on 43,062,231 shares of common stock outstanding as of April 20, 2012. Beneficial ownership is determined in accordance with Rule 13d-3 under the Securities Act, and includes any shares as to which the stockholder has sole or shared voting power or investment power, and also any shares which the stockholder has the right to acquire within 60 days of the date hereof, whether through the exercise or conversion of any stock option, convertible security, warrant or other right. The indication herein that shares are beneficially owned is not an admission on the part of the stockholder that it is a direct or indirect beneficial owner of those shares.

(2) Post-offering percentage ownership calculations assume the issuance of all shares offered hereby that are issuable upon the exercise of warrants.

(3) Heights Capital Management, Inc., the authorized agent of Capital Ventures International (“CVI”), has discretionary authority to vote and dispose of the shares held by CVI and may be deemed to be the beneficial owner of these shares. Martin Kobinger, in his capacity as Investment Manager of Heights Capital Management, Inc., may also be deemed to have investment discretion and voting power over the shares held by CVI. Mr. Kobinger disclaims any such beneficial ownership of the shares. CVI is affiliated with one or more registered broker-dealers. CVI purchased the shares being registered hereunder in the ordinary course of business and at the time of purchase, had no agreements or understandings, directly or indirectly, with any other person to distribute such shares.

Cranshire Capital Advisors, LLC (“CCA”) is the investment manager of Cranshire Capital Master Fund, Ltd. (“Cranshire Master Fund”) and has voting control and investment discretion over securities held by Cranshire Master Fund. Mitchell P. Kopin (“Mr. Kopin”), the president, the sole member and the sole member of the Board of Managers of CCA, has voting control over CCA. As a result, each of Mr. Kopin and CCA may be deemed to have beneficial ownership of the securities held by Cranshire Master Fund.

CCA is also the investment manager of Freestone Advantage Partners II, LP (“Freestone II”), and CCA has voting control and investment discretion over securities held Freestone II. Mr. Kopin, the president, the sole member and the sole member of the Board of Managers of CCA, has voting control over CCA. As a result, each of Mr. Kopin and CCA also may be deemed to have beneficial ownership of an additional 18,125 shares of common stock of the issuer, consisting of (i) 8,750 shares of common stock of the issuer that are held by Freestone II and (ii) 9,375 shares of common stock of the issuer that are issuable upon the exercise of warrants held by Freestone II.

In addition to the shares offered hereby, beneficial ownership includes (i) 856,844 shares issuable upon the exercise of stock options held by Mr. Evans; (ii) 3,952 shares issuable upon the exercise of warrants held by Mr. Evans; and (iii) a total of 10,600 shares held by Mr. Evans’ spouse and minor children. Mr. Evans is our Chief Financial Officer.

Empery Asset Management LP, the authorized agent of Empery Asset Master, LTD (“EAM”), has discretionary authority to vote and dispose of the shares held by EAM and may be deemed to be the beneficial owner of these shares. Martin Hoe and Ryan Lane, in their capacity as investment managers of Empery Asset Management LP, may also be deemed to have investment discretion and voting power over the shares held by EAM. Mr. Hoe and Mr. Lane disclaim any beneficial ownership of these shares.

Cranshire Capital Advisors, LLC (“CCA”) is the investment manager of a managed account for Freestone Advantage Partners II, LP (“Freestone II”) and has voting control and investment discretion over securities held in by Freestone II in such managed account. Mitchell P. Kopin (“Mr. Kopin”), the president, the sole member and the sole member of the Board of Managers of CCA, has voting control over CCA. As a result, each of Mr. Kopin and CCA may be deemed to have beneficial ownership of the securities held by Freestone II in such managed account.

CCA is also the investment manager of Cranshire Capital Master Fund, Ltd. (“Cranshire Master Fund”). Mr. Kopin, the president, the sole member and the sole member of the Board of Managers of CCA, has voting control over CCA. As a result, each of Mr. Kopin and CCA may be deemed to have beneficial ownership of an additional 354,375 shares of common stock of the issuer, consisting of (i) 176,250 shares of common stock of the issuer that are held by Cranshire Master Fund and (ii) 178,125 shares of common stock of the issuer that are issuable upon the exercise of warrants held by Cranshire Master Fund.

Empery Asset Management LP, the authorized agent of Hartz Capital Investments, LLC (“HCI”), has discretionary authority to vote and dispose of the shares held by HCI and may be deemed to be the beneficial owner of these shares. Martin Hoe and Ryan Lane, in their capacity as investment managers of Empery Asset Management LP, may also be deemed to have investment discretion and voting power over the shares held by HCI. Mr. Hoe and Mr. Lane disclaim any beneficial ownership of these shares.

- (9) In addition to the shares offered hereby, beneficial ownership includes 606,168 shares of common stock issuable upon the exercise of stock options. Dr. Lieu is our Executive Vice President of Clinical Development.

- (10) Hudson Bay Capital Management LP, the investment manager of Hudson Bay Master Fund, Ltd., has voting and investment power over these securities. Sander Gerber is the managing member of Hudson Bay Capital GP, LLC, which is the general partner of Hudson Bay Capital Management LP. Sander Gerber disclaims beneficial ownership of these securities.

- (11) Iroquois Capital Management L.L.C. (“Iroquois Capital”) is the investment manager of Iroquois Master Fund, Ltd (“IMF”). Consequently, Iroquois Capital has voting control and investment discretion over securities held by IMF. As managing members of Iroquois Capital, Joshua Silverman and Richard Abbe make voting and investment decisions on behalf of Iroquois Capital as investment manager to IMF. As a result of the foregoing, Mr. Silverman and Mr. Abbe may be deemed to have beneficial ownership of the securities held by IMF. Notwithstanding the foregoing, Mr. Silverman and Mr. Abbe disclaim such beneficial ownership.

- (12) In addition to the shares offered hereby, beneficial ownership includes (i) 300,000 shares issuable upon the exercise of stock options held by Mr. Kazam; (ii) 244,278 shares issuable upon the exercise of warrants held by Mr. Kazam; (iii) 613,841 shares held by the Kazam Family Trust, of which Mr. Kazam’s spouse is the trustee and his children are beneficiaries, and as to which Mr. Kazam’s disclaims beneficial ownership except to the extent of any pecuniary interest therein; (iv) 165,530 shares held by Mr. Kazam’s spouse as custodian for the benefit of their minor children, to which Mr. Kazam disclaims beneficial ownership except to the extent of his pecuniary interest therein; and (v) 165,530 shares held by the Kash Family Foundation, of which Mr. Kazam is trustee but as to which he has no pecuniary interest. Mr. Kazam is President, Chief Executive Officer, and a director of our Company.

- (13) Gregory Kiernan holds voting and investment control over the shares held by the Kiernan Family Trust.

- (14) Kingsbrook Partners LP (“Kingsbrook Partners”) is the investment manager of Kingsbrook Opportunities Master Fund LP (“Kingsbrook Opportunities”) and consequently has voting control and investment discretion over securities held by Kingsbrook Opportunities. Kingsbrook Opportunities GP LLC (“Opportunities GP”) is the general partner of Kingsbrook Opportunities and may be considered the beneficial owner of any securities deemed to be beneficially owned by Kingsbrook Opportunities. KB GP LLC (“GP LLC”) is the general partner of Kingsbrook Partners and may be considered the beneficial owner of any securities deemed to be beneficially owned by Kingsbrook Partners. Ari J. Storch, Adam J. Chill and Scott M. Wallace are the sole managing members of Opportunities GP and GP LLC and as a result may be considered beneficial owners of any securities deemed beneficially owned by Opportunities GP and GP LLC. Each of Kingsbrook Partners, Opportunities GP, GP LLC and Messrs. Storch, Chill and Wallace disclaim beneficial ownership of these securities.

- (15) Mark Berg holds voting and investment control over the shares held by the selling stockholder.
- (16) Joshua Thomas and Michel Amsalem hold voting and/or investment control over the shares held by the selling stockholder.
- (17) In addition to the shares offered hereby, beneficial ownership includes 787,500 shares of common stock issuable upon the exercise of stock options. Mr. Brewer is our Executive Chairman.
- (18) Timothy P. Lynch and Jon M. Plexico, each general partners of the selling stockholder, hold voting and/or investment control over the shares held by the selling stockholder.
- (19) In addition to the shares offered hereby, beneficial ownership includes 85,000 shares of common stock issuable upon the exercise of warrants.
- (20) Nicholas Ponzio holds voting and investment control over the shares held by the selling stockholder.
- (21) Nancy Cooper holds voting and investment control over the shares held by the selling stockholder.
- In addition to the shares offered hereby, beneficial ownership includes (i) 335,000 shares issuable upon the exercise of stock options held by Dr. Kash, (ii) 224,866 shares issuable upon the exercise of warrants held by Dr. Kash, (iii) 496,589 shares held by Dr. Kash's spouse as custodian for the benefit of their minor children under the UGMA, to which Dr. Kash disclaims beneficial ownership except to the extent of his pecuniary interest therein, and (iv) 165,530 shares held by the Kash Family Foundation. Dr. Kash is a director of our Company.
- (22) In addition to the shares offered hereby, beneficial ownership includes 110,628 shares of common stock issuable upon the exercise of stock options. Mr. Navins is our Treasurer.
- (23) In addition to the shares offered hereby, beneficial ownership includes (i) 110,628 shares issuable upon the exercise of stock options; and (ii) 48,624 shares issuable upon the exercise of warrants.
- (24) In addition to the shares offered hereby, beneficial ownership includes (i) 110,628 shares issuable upon the exercise of stock options; and (ii) 48,624 shares issuable upon the exercise of warrants.

(25) Ladenburg Thalmann & Co. Inc. is a registered broker-dealer and received the warrant pursuant to which the shares of common stock it is offering hereby are issuable as compensation for serving as placement in connection with our June 2011 private placement.

PLAN OF DISTRIBUTION

Distributions by the Company

This prospectus relates to the sale of 2,512,500 shares of our common stock upon the exercise of our April 2012 warrants, the terms of which are described in this prospectus under the caption “Description of the Securities Offered Hereby – Warrants.” The shares will be distributed to those warrant holders who surrender the warrant certificates representing their warrants and provide payment of the exercise price to us. Upon such exercise, any subsequent resale of the warrant shares may be effected by the applicable warrant holder in the manner described below under “—Distributions by the Selling Stockholders.”

Distributions by the Selling Stockholders

This prospectus also relates to the resale by the selling stockholders identified above of shares of our common stock issuable upon the exercise of our June 2011 and April 2012 warrants. The selling stockholders, which as used herein includes donees, pledgees, transferees or other successors-in-interest selling shares of common stock or interests in shares of common stock received after the date of this prospectus from a selling stockholder as a gift, pledge, partnership distribution or other transfer, may, from time to time, sell, transfer or otherwise dispose of any or all of their shares of common stock or interests in shares of common stock on any stock exchange, market or trading facility on which the shares are traded or in private transactions. These dispositions may be at fixed prices, at prevailing market prices at the time of sale, at prices related to the prevailing market price, at varying prices determined at the time of sale, or at negotiated prices. To the extent any of the selling stockholders gift, pledge or otherwise transfer the shares offered hereby, such transferees may offer and sell the shares from time to time under this prospectus, provided that this prospectus has been amended under Rule 424(b)(3) or other applicable provision of the Securities Act to include the name of such transferee in the list of selling stockholders under this prospectus.

The selling stockholders may use any one or more of the following methods when disposing of shares or interests therein:

- ordinary brokerage transactions and transactions in which the broker-dealer solicits purchasers;

· block trades in which the broker-dealer will attempt to sell the shares as agent, but may position and resell a portion of the block as principal to facilitate the transaction;

purchases by a broker-dealer as principal and resale by the broker-dealer for its account;

an exchange distribution in accordance with the rules of the applicable exchange;

privately negotiated transactions;

short sales;

through the writing or settlement of options or other hedging transactions, whether through an options exchange or otherwise;

broker-dealers may agree with the selling stockholders to sell a specified number of such shares at a stipulated price per share;

a combination of any such methods of sale; and

any other method permitted pursuant to applicable law.

The selling stockholders may, from time to time, pledge or grant a security interest in some or all of the shares of common stock owned by them and, if they default in the performance of their secured obligations, the pledgees or secured parties may offer and sell the shares of common stock, from time to time, under this prospectus, or under an amendment to this prospectus under Rule 424(b)(3) or other applicable provision of the Securities Act amending the list of selling stockholders to include the pledgee, transferee or other successors in interest as selling stockholders under this prospectus.

In connection with the sale of our common stock or interests therein, the selling stockholders may enter into hedging transactions with broker-dealers or other financial institutions, which may in turn engage in short sales of our common stock in the course of hedging the positions they assume. The selling stockholders may also sell shares of our common stock short and deliver these securities to close out their short positions, or loan or pledge our common stock to broker-dealers that in turn may sell these securities. The selling stockholders may also enter into option or other transactions with broker-dealers or other financial institutions or the creation of one or more derivative securities which require the delivery to such broker-dealer or other financial institution of shares offered by this prospectus, which shares such broker-dealer or other financial institution may resell pursuant to this prospectus (as supplemented or amended to reflect such transaction).

The aggregate proceeds to the selling stockholders from the sale of the common stock offered by them will be the purchase price of the common stock less discounts or commissions, if any. Each of the selling stockholders reserves the right to accept and, together with their agents from time to time, to reject, in whole or in part, any proposed purchase of common stock to be made directly or through agents. We will not receive any of the proceeds from this offering. Upon any exercise of the warrants by payment of cash, however, we will receive the exercise price of the warrants.

The selling stockholders also may resell all or a portion of the shares in open market transactions in reliance upon Rule 144 under the Securities Act of 1933, provided that they meet the criteria and conform to the requirements of that rule.

The selling shareholders might be, and any broker-dealers that act in connection with the sale of securities will be, deemed to be “underwriters” within the meaning of Section 2(11) of the Securities Act, and any commissions received by such broker-dealers and any profit on the resale of the securities sold by them while acting as principals will be deemed to be underwriting discounts or commissions under the Securities Act.

To the extent required, the shares of our common stock to be sold, the names of the selling stockholders, the respective purchase prices and public offering prices, the names of any agents, dealer or underwriter, any applicable commissions or discounts with respect to a particular offer will be set forth in an accompanying prospectus supplement or, if appropriate, a post-effective amendment to the registration statement that includes this prospectus.

In order to comply with the securities laws of some states, if applicable, our common stock may be sold in these jurisdictions only through registered or licensed brokers or dealers. In addition, in some states our common stock may not be sold unless it has been registered or qualified for sale or an exemption from registration or qualification requirements is available and is complied with.

We have advised the selling stockholders that the anti-manipulation rules of Regulation M under the Exchange Act may apply to sales of shares in the market and to the activities of the selling stockholders and their affiliates. In addition, we will make copies of this prospectus (as it may be supplemented or amended from time to time) available to the selling stockholders for the purpose of satisfying the prospectus delivery requirements of the Securities Act. The selling stockholders may indemnify any broker-dealer that participates in transactions involving the sale of the shares against certain liabilities, including liabilities arising under the Securities Act.

We have agreed to indemnify the selling stockholders against liabilities, including liabilities under the Securities Act and state securities laws, relating to the registration of the shares offered by this prospectus. The selling stockholders have agreed to indemnify us in certain circumstances against certain liabilities, including liabilities under the Securities Act.

We have agreed with the selling stockholders to keep the registration statement that includes this prospectus effective until the earlier of (1) such time as all of the shares covered by this prospectus have been disposed of pursuant to and in accordance with the registration statement or (2) the date on which the shares may be sold pursuant to Rule 144 of the Securities Act. We have agreed to pay all expenses in connection with this offering, but not including underwriting discounts, concessions, commissions or fees of the selling stockholders or any fees and expenses of counsel or other advisors to the selling stockholders.

Shares Eligible For Future Sale

Upon completion of this offering and assuming the issuance of all of the shares covered by this prospectus that are issuable upon the exercise of warrants, there will be 48,324,731 shares of our common stock issued and outstanding. The shares purchased in this offering will be freely tradable without registration or other restriction under the Securities Act. Following the date of this prospectus, we cannot predict the effect, if any, that sales of our common stock or the availability of our common stock for sale will have on the market price prevailing from time to time. Nevertheless, sales by existing stockholders of substantial amounts of our common stock could adversely affect prevailing market prices for our stock.

MARKET FOR COMMON EQUITY AND RELATED STOCKHOLDER MATTERS**Market for Common Stock**

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. 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

Record Holders

According to the records of our transfer agent, American Stock Transfer & Trust Company, as of April 20, 2012, we had 161 holders of record of common stock, not including those held in “street name.”

Dividends

We have not paid or declared any dividends on our common stock and we do not anticipate paying dividends on our common stock in the foreseeable future.

Securities Authorized for Issuance Under Equity Compensation Plans

Our Amended and Restated 2005 Stock Option Plan (the “Plan”), which is currently our only equity compensation plan, has been approved by our stockholders. The following table sets forth certain information as of December 31, 2011 with respect to the Plan:

Plan category	Number of Securities to be Issued Upon Exercise of Outstanding Options (A)	Weighted- Average Exercise Price of Outstanding Options (B)	Number of Securities Remaining Available for Future Issuance Under Equity Compensation Plans (Excluding Securities Reflected in Column (A))
Equity compensation plans approved by security holders:			
Amended and Restated 2005 Stock Option Plan	7,890,584	\$ 1.42	1,217,984
Equity compensation plans not approved by stockholders:			
Outside any plan (1).	593,750	\$ 2.71	—
Total	8,484,334	\$ 1.51	1,217,984

(1) Represents shares of common stock issuable upon exercise of stock options issued outside of the Plan

MANAGEMENT'S DISCUSSION AND ANALYSIS

OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

The following discussion of our financial condition and results of operations should be read in conjunction with the financial statements and the notes to those statements included in this prospectus. This discussion includes forward-looking statements that involve risk and uncertainties. As a result of many factors, such as those set forth in this prospectus under "Risk Factors," actual results may differ materially from those anticipated in these forward-looking statements.

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), our lead product candidate, is a chimeric natriuretic peptide that we are developing for the treatment of heart failure. Specifically, 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.

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 have no product sales to date and we will not generate any product revenue until we receive approval from the U.S. Food and Drug Administration, or the FDA, or equivalent foreign regulatory bodies to begin selling our pharmaceutical product candidates. Developing pharmaceutical products is a lengthy and very expensive process. Assuming we do not encounter any unforeseen safety issues during the course of developing our product candidates, we do not expect to complete the development of a product candidate for several years, if ever. To date, most of our development expenses have related to our lead product candidate, cenderitide. As we proceed with the clinical development of cenderitide and as we further develop CU-NP, our second product candidate, our research and development expenses will further increase. To the extent we are successful in acquiring additional product candidates for our development pipeline, our need to finance further research and development will continue increasing. Accordingly, our success depends not only on the safety and efficacy of our product candidates, but also on our ability to finance the development of the products. Our major sources of working capital have been proceeds from public and private sales of our equity and debt securities.

Research and development, or R&D, expenses consist primarily of salaries and related personnel costs, fees paid to consultants and outside service providers for pre-clinical, clinical, and manufacturing development, legal expenses resulting from intellectual property prosecution, contractual review, and other expenses relating to the design, development, testing, and enhancement of our product candidates. We expense our R&D costs as they are incurred.

General and administrative, or G&A, expenses consist primarily of salaries and related expenses for executive, finance and other administrative personnel, personnel recruiting fees, accounting, legal and other professional fees, business development expenses, rent, business insurance and other corporate expenses.

Our results include non-cash compensation expense as a result of the issuance of stock, stock options, and warrants. We expense the fair value of stock options and warrants over the vesting period. When more precise pricing data is unavailable, we determine the fair value of stock options using the Black-Scholes option-pricing model. The terms and vesting schedules for share-based awards vary by type of grant and the employment status of the grantee. Generally, the awards vest based upon time-based or performance-based conditions. Performance-based conditions generally include the attainment of goals related to our financial performance and product development. Stock-based compensation expense is included in the respective categories of expense in the statements of operations. We expect to record additional non-cash compensation expense in the future, which may be significant.

Results of Operations

General and Administrative Expenses. G&A expenses for the years ended December 31, 2011 and 2010 were approximately \$2.1 million and \$2.2 million, respectively. There were no significant changes in the Company's G&A expenses in 2011 over 2010.

Research and Development Expenses. R&D expenses for the years ended December 31, 2011 and 2010 were approximately \$4.1 million and \$4.1 million, respectively. There was no significant net change in the Company's R&D expenses for 2011 over 2010 as decreases in the cenderitide Phase II ADHF trial of approximately \$2.3 million were offset by an increase of approximately \$2.6 million relating to the cenderitide subcutaneous studies.

Cenderitide (formerly CD-NP). Although the development of cenderitide is still in its early stages, we believe that it has potential applications to treat heart failure. Assuming we obtain adequate financing, we expect to spend \$2.0 to \$2.5 million in fiscal 2012, of which \$0.5 to \$1.0 million will be external development costs relating to manufacturing and toxicology expenses. In mid-2012, we plan to initiate a Phase 2 single-blind, placebo-controlled, dose ranging study in post-acute patients. Up to 96 heart failure patients will be given a subcutaneous infusion of cenderitide or placebo for 90 days in an outpatient setting. After 96 patients, assuming a successful safety review, we intend to expand the trial by up to 200 additional patients. If initiated in mid-2012, we expect to complete enrollment of the first

96 patients in the study in 2013.

CU-NP. Since acquiring our rights to *CU-NP* in June 2008, we have incurred a total of approximately \$0.6 million through December 31, 2011. *CU-NP* has only undergone preclinical studies and has yet to be studied in humans. Based on our current development plans for *CU-NP*, we anticipate that we will expend a minimal amount on external development costs until we have obtained significant additional capital.

Our expenditures on current and future clinical development programs, particularly our cenderitide program, are expected to be substantial, particularly in relation to our available capital resources, and to increase. However, these planned expenditures are subject to many uncertainties, including the results of clinical trials and whether we develop any of our drug candidates with a partner or independently. As a result of such uncertainties, we cannot predict with any significant degree of certainty the duration and completion costs of our research and development projects or whether, when and to what extent we will generate revenues from the commercialization and sale of any of our product candidates. The duration and cost of clinical trials may vary significantly over the life of a project as a result of unanticipated events arising during clinical development and a variety of factors, including:

- the number of trials and studies in a clinical program;

- the number of patients who participate in the trials;

- the number of sites included in the trials;

- the rates of patient recruitment and enrollment;

- the duration of patient treatment and follow-up;

- the costs of manufacturing our drug candidates; and

- the costs, requirements, timing of, and the ability to secure regulatory approvals.

Collaboration income. We realized collaboration income of approximately \$1.4 million during the year ended December 31, 2011, all of which represents the funds paid to us by Medtronic as reimbursement of expenses we incurred in connection with our Phase 1 clinical trial of cenderitide in accordance with the terms of our February 2011 clinical trial funding agreement with Medtronic. All amounts due under the agreement were paid as of February 2012 at which time the agreement expired. We did not have any collaboration income for the year ended December 31, 2010.

Interest Income. Interest income for the years ended December 31, 2011 and 2010 was approximately \$6,006 and \$20,377, respectively. This decrease in interest income over 2010 is due to lower interest rates earned on cash in bank accounts, and lower average cash balances in 2011 than 2010 levels.

Other Income. Other income for the years ended December 31, 2011 and 2010 was approximately \$8,338 and \$241,685, respectively. Other income realized during fiscal year 2010 includes a \$244,479 grant awarded to us in November 2010 under the Therapeutic Discovery Tax Credit program that was created as part of the Patient Protection and Affordable Care Act of 2010. This program was designed to provide a tax credit or grant of up to 50% of eligible costs and expenses for the tax years of 2009 and 2010 for qualifying research and development expenses incurred for innovative projects that are determined by the U.S. Department of Health and Human Services to have reasonable potential to result in a new therapy, reduce health care costs, or represent a significant advance in finding a cure for human disease. The grant awarded to us related to our R&D expenditures incurred in connection with our cenderitide program. We received the funds granted in the fourth quarter of 2010. There was no such grant available during 2011.

Liquidity and Capital Resources

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The following table summarizes our liquidity and capital resources as of and for each of the last two fiscal years, and is intended to supplement the more detailed discussion that follows. The amounts stated are expressed in thousands.

	December 31,	
Liquidity and capital resources	2011	2010
Cash and cash equivalents	\$1,039	\$3,378
Working capital	769	2,528
Stockholders' equity	831	2,597

Cash flow data	Year ended December 31,		Period from Aug.
Cash provided by (used in):	2011	2010	1, 2005 (inception)
			to Dec. 31, 2011
Operating activities	\$ (4,649)	\$ (4,318)	\$ (32,704)
Investing activities	(2)	(2)	(474)
Financing activities	2,312	4,523	34,218
Net increase (decrease) in cash and cash equivalents	\$ (2,339)	\$ 203	\$ 1,039

Our total cash resources as of December 31, 2011 were \$1.0 million, compared to \$3.4 million as of December 31, 2010. As of December 31, 2011, we had approximately \$0.5 million in liabilities, and \$0.8 million in net working capital. We incurred a net loss of \$4.9 million and had negative cash flow from operating activities of \$4.6 million for the year ended December 31, 2011. Since August 1, 2005 (inception) through December 31, 2011, we have incurred an aggregate net loss of approximately \$44.8 million, while negative cash flow from operating activities has amounted to \$32.7 million. As we continue to develop our product candidates, we expect to continue to incur substantial and increasing losses, which will continue to generate negative net cash flows from operating activities as we expand our technology portfolio and engage in further research and development activities, particularly the conducting of pre-clinical studies and clinical trials.

From inception through December 31, 2011, we have financed our operations through public and private sales of our equity and debt securities. As we have not generated any revenue from operations to date, and we do not expect to generate revenue for several years, if ever, we will need to raise substantial additional capital in order to continue to fund our research and development, including our long-term plans for clinical trials and new product development, as well as to fund our immediate general corporate activities. We may seek to raise additional funds through various potential sources, such as equity and debt financings, or through strategic collaborations and license agreements. We can give no assurances that we will be able to secure such additional sources of funds to support our operations, or if such funds are available to us, that such additional financing will be sufficient to meet our needs.

On March 30, 2012, we entered into subscription agreements with certain purchasers under which we agreed to sell to such purchasers an aggregate of 3,350,000 shares of our common stock and warrants to purchase 2,512,500 shares of our common stock in consideration for an aggregate purchase price of approximately \$1.34 million. The closing of this offering occurred on April 4, 2012. See “—Financing Activities,” below. We believe that the anticipated net proceeds from this offering, together with our existing cash resources, provides us with sufficient capital to fund our general corporate activities only to mid-fourth quarter of 2012. Further, beyond our general corporate activities, we need substantial additional capital to fund our planned Phase 2 clinical trial of cenderitide. 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 any such 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 our general corporate activities or the planned Phase 2 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. If we are not able to obtain financing when needed, we may be unable to carry out our business plan, including further clinical development of cenderitide. As a result, we may have to significantly limit our planned operations, which would materially harm our business, financial condition and results of operations. In such an event, we will be required to undertake a thorough review of our programs and the opportunities presented by such programs and allocate our resources in the manner most prudent.

Further, our actual cash requirements may vary materially from those now planned because of a number of factors, including the changes in the focus and direction of our research and development programs, including the acquisition and pursuit of development of new product candidates; competitive and technical advances; costs of commercializing any of our product candidates; and costs of filing, prosecuting, defending and enforcing any patent claims and any other intellectual property rights. If we are unable to raise additional funds when needed, we may not be able to market our products as planned or continue development and regulatory approval of our products, we could be required to delay, scale back or eliminate some or all our research and development programs and we may need to wind down our operations altogether. Each of these alternatives would likely have a material adverse effect on our business. We will need additional capital to fund our operations through the fourth quarter of 2012.

We have based our estimate on assumptions that may prove to be wrong. We may need to obtain additional funds sooner than planned or in greater amounts than we currently anticipate. The actual amount of funds we will need to operate is subject to many factors, some of which are beyond our control. These factors include the following:

the progress of our research activities;

the number and scope of our research programs;

the progress of our pre-clinical and clinical development activities;

the progress of the development efforts of parties with whom we have entered into research and development agreements;

our ability to maintain current research and development programs and to establish new research and development and licensing arrangements;

the cost involved in prosecuting and enforcing patent claims and other intellectual property rights; and the cost and timing of regulatory approvals.

Financing Activities

March 2012 Financing. On March 30, 2012, we entered into subscription agreements with certain purchasers pursuant to which we agreed to sell an aggregate of 3,350,000 shares of our common stock to such purchasers for a purchase price of \$0.40 per share. In addition, for each share purchased, each purchaser will also receive three-fourths of a five-year warrant to purchase an additional share of common stock at an exercise price of \$0.50 per share, resulting in the issuance of warrants to purchase an aggregate of 2,512,500 shares of our common stock. The total gross proceeds from the offering will be \$1.34 million, before deducting anticipated selling commissions and expenses of approximately \$0.2 million. The offer and sale of these securities was registered under our Form S-3 shelf registration statement declared effective in March 2010. The closing of the offering is occurred April 4, 2012. In connection with the offering, we engaged Roth Capital Partners, LLC, or Roth, to serve as placement agent. Pursuant to the terms of the placement agent agreement, we agreed to pay Roth a cash fee equal to seven percent of the gross proceeds received by us, or approximately \$0.1 million, plus a non-accountable expense allowance of \$35,000. Richard B. Brewer, our Executive Chairman, Joshua A. Kazam, our President and Chief Executive Officer and a director, Daron Evans, our Chief Financial Officer, and Hsiao Lieu, M.D., our Executive VP of Clinical Development, are participating in the offering on the same terms as the unaffiliated purchasers, and have collectively subscribed to purchase 275,000 shares of our common stock and warrants to purchase 206,250 shares of our common stock for an aggregate purchase price of \$110,000.

June 2011 Financing. On June 20, 2011, we sold in a private placement offering a total of 5,000,000 units of our securities at an offering price of \$0.50 per unit. Each unit contained one share of common stock and 0.50 warrants to purchase one share of common stock at an exercise price of \$0.60 per share. We may call the warrants for redemption upon 30 days' notice if the volume weighted average price of the common stock for any 20 consecutive business days is equal to or greater than \$1.50 per share. The total gross proceeds from the 2011 Offering were \$2.5 million, before deducting selling commissions and expenses, which were approximately \$0.2 million. The closing of the private placement occurred on June 23, 2011. Pursuant to the Purchase Agreement, the Company agreed to file a registration statement with the Securities and Exchange Commission seeking to register the resale of the Shares and Warrant Shares. The registration statement was filed on July 22, 2011. In connection with the private placement offering, we engaged Riverbank Capital Securities, Inc. (or "Riverbank") to serve as placement agent, and Ladenburg Thalmann & Co. Inc. served as a sub-placement agent. Pursuant to the terms of the engagement agreement, we paid the placement agents a cash fee of \$175,000 and issued warrants to purchase 250,000 shares of common stock, valued at \$99,100. Peter M. Kash, a director, and Joshua A. Kazam, our President and Chief Executive Officer and a director, are each officers of Riverbank. Dr. Kash was allocated a portion of the warrants issuable to the placement agents. In light of the relationship between Dr. Kash, Mr. Kazam and Riverbank, the selection of Riverbank as a placement agent and the terms of the engagement were reviewed and approved by a special committee of the our Board consisting of disinterested directors with no affiliation to Riverbank or its affiliates.

April 2010 Financing. On April 21, 2010, we sold, in an underwritten public offering, a total of 6,500,000 units of our securities at a public offering price of \$0.70 per unit. Each unit contained one share of common stock and 0.30 warrants to purchase common stock, each whole warrant representing the right to purchase one share of common stock at an exercise price of \$0.94 per share. We may call the warrants for redemption upon 30 days' notice if the price of our common stock is at least \$3.00 per share for any 20 trading days within a period of 30 consecutive trading days. The units separated immediately and the common stock and warrants were issued separately. The warrants are approved for trading on the Nasdaq Capital Market under the symbol "NLTXW" and began trading on April 22, 2010. The sale of these 6,500,000 units closed on April 27, 2010. Pursuant to the terms of the underwriting agreement, we granted the underwriters an option for a period of 45 days to purchase up to an additional 975,000 units to cover over-allotments, if any. We also issued the underwriters a five-year warrant to purchase 390,000 shares of our common stock at an exercise price of \$0.94 per share. On May 6, 2010, the underwriters exercised their option to purchase the maximum amount of 975,000 over-allotment units. The sale of the over-allotment units closed on May 10, 2010. The net proceeds to us from the sale of the units, after deducting underwriting discounts and commissions, was approximately \$4.5 million when including the proceeds from the sale of the 975,000 over-allotment units.

July 2009 Financing. On July 7, 2009, we entered into a securities purchase agreement with various accredited investors pursuant to which we agreed to sell in a private placement an aggregate of 2,691,394 shares of our common stock and five-year warrants to purchase an equal number of additional shares of common stock. The purchase price for each unit of one share of common stock and one warrant was \$1.25. The sale of the shares and warrants resulted in aggregate gross proceeds of approximately \$3.37 million, before deducting expenses. The issuance and sale of the units pursuant to the securities purchase agreement was completed on July 15, 2009.

In accordance with the terms of the securities purchase agreement, the warrants issued to the investors are evidenced by three separate certificates, which collectively represented at issuance the right to purchase a number of shares of common stock equal to the number of shares purchased by such investor in the private placement, as follows:

A warrant representing the right to purchase 25% of the warrant shares at an exercise price equal to \$1.25, which represented 110% of the \$1.14 consolidated closing bid price of our common stock on the date of the securities purchase agreement;

A warrant representing the right to purchase 25% of the warrant shares at an exercise price equal to \$1.71, which represented 150% of the closing bid price of our common stock on the date of the securities purchase agreement; and

A warrant representing the right to purchase 50% of the warrant shares at an exercise price equal to \$2.28, which represented 200% of the closing bid price of our common stock on the date of the securities purchase agreement.

These warrants are redeemable by us, at a redemption price of \$0.001 per warrant share, upon 30 days' notice, if at any time, the volume weighted average price of our common stock for any 20 consecutive business days is equal to or greater than 200% of the then applicable exercise price of the warrants.

Issuance costs related to the financing were \$282,773, including the issuance of warrants to purchase 218,300 shares of common stock to designees of Riverbank Capital Securities, Inc., or Riverbank, which served as our placement agent in connection with the private placement. Certain of our officers and directors are principals of Riverbank. See “Transactions with Related Persons, Promoters and Certain Control Persons.”

License Agreement Commitments

CD-NP License Agreement

Pursuant to our license agreement with Mayo for CD-NP, in July 2008 we made a milestone payment of \$400,000 to Mayo upon the dosing of the first patient in a Phase II trial. Subsequent milestones achieved will require us to make additional milestone payments to Mayo. We agreed to make contingent cash payments up to an aggregate of \$31.9 million upon successful completion of specified clinical and regulatory milestones relating to CD-NP. This aggregate amount is subject to increase upon the receipt of regulatory approval for each additional indication of CD-NP as well as for additional compounds or analogues contained in the intellectual property.

The CD-NP license agreement, unless earlier terminated, will continue in full force and effect until January 20, 2026. However, to the extent any patent covered by the license is issued with an expiration date beyond January 20, 2026, the term of the agreement will continue until such expiration date. Mayo may terminate the agreement earlier (i) for our material breach of the agreement that remains uncured after 90 days’ written notice to us, (ii) our insolvency or bankruptcy, or (iii) if we challenge the validity or enforceability of any of the patents in any manner. We may terminate the agreement without cause upon 90 days’ written notice.

CU-NP License Agreement

On June 13, 2008, we entered into a second license agreement with Mayo pursuant to which we acquired our rights to CU-NP. Under the terms of the agreement, Mayo granted to us a worldwide, exclusive license for the rights to commercially develop CU-NP for all therapeutic indications. We were also entitled to rights to improvements to CU-NP and know-how that arose out of the laboratory of Dr. John Burnett and Dr. Candace Lee, the inventors of CU-NP and employees of the Mayo Clinic, until June 12, 2011.

Under the terms of the CU-NP license agreement, we made an up-front cash payment to Mayo and agreed to make future contingent cash payments up to an aggregate of \$24.3 million upon achievement of specific clinical and regulatory milestones relating to CU-NP, including a milestone payment due in connection with the initiation of the first Phase II clinical trial of the licensed product. This aggregate amount of \$24.3 million is subject to increase upon the receipt of regulatory approval for each additional indication of CU-NP, as well as for additional compounds or analogues contained in the intellectual property. Pursuant to the agreement, we must also pay Mayo an annual maintenance fee and a percentage of net sales of licensed products.

In addition to these cash payments payable with respect to the CU-NP license agreement, we also agreed to issue shares of our common stock and warrants to Mayo. In June 2008, we issued 49,689 shares of common stock to Mayo having a fair market value as of June 13, 2008 equal to \$250,000. This amount has been recorded in research and development expenses in the accompanying Statements of Operations. Additionally, Dr. Burnett has applied for funding through Mayo's Discovery-Translation Program. In the event Dr. Burnett is awarded funding through this program, and the funding is used for the development of the licensed product based on the patent applications, we agreed to grant to Mayo an equivalent dollar value in warrants to purchase shares of our common stock. The number of shares purchasable under these warrants will be calculated using the Black-Scholes option-pricing model and the warrants will include a cashless exercise provision with language to be negotiated in good faith between the parties.

The CU-NP License Agreement, unless earlier terminated, will continue in full force and effect until June 13, 2028. However, to the extent any patent covered by the license is issued with an expiration date beyond June 13, 2028, the term of the agreement will continue until such expiration date. Mayo may terminate the agreement earlier (i) for our material breach of the agreement that remains uncured after 90 days' written notice to us, (ii) our insolvency or bankruptcy, (iii) if we challenge the validity or enforceability of any of the patents in any manner, or (iv) or upon receipt of notice from the Company that we have terminated all development efforts under the agreement. We may terminate the agreement without cause upon 90 days' written notice.

Off -Balance Sheet Arrangements

There were no off-balance sheet arrangements as of December 31, 2011.

Critical Accounting Policies and Estimates

Our financial statements are prepared in accordance with generally accepted accounting principles. The preparation of these financial statements requires us to make estimates and assumptions that affect the reported amounts of assets, liabilities, revenues, expenses and related disclosures. We evaluate our estimates and assumptions on an ongoing basis, including research and development and clinical trial accruals, and stock-based compensation estimates. Our estimates are based on historical experience and various other assumptions that we believe to be reasonable under the circumstances. Our actual results could differ from these estimates. We believe the following critical accounting policies reflect the more significant judgments and estimates used in the preparation of our financial statements and accompanying notes.

Research and Development Expenses and Accruals

R&D expenses consist primarily of salaries and related personnel costs, fees paid to consultants and outside service providers for pre-clinical, clinical, and manufacturing development, legal expenses resulting from intellectual property prosecution, contractual review, and other expenses relating to the design, development, testing, and enhancement of our product candidates. Except for capitalized patent expenses, R&D costs are expensed as incurred. Amounts due under such arrangements may be either fixed fee or fee for service, and may include upfront payments, monthly payments, and payments upon the completion of milestones or receipt of deliverables.

Our cost accruals for clinical trials and other R&D activities are based on estimates of the services received and efforts expended pursuant to contracts with numerous clinical trial centers and CROs, clinical study sites, laboratories, consultants, or other clinical trial vendors that perform the activities. Related contracts vary significantly in length, and may be for a fixed amount, a variable amount based on actual costs incurred, capped at a certain limit, or for a combination of these elements. Activity levels are monitored through close communication with the CRO's and other clinical trial vendors, including detailed invoice and task completion review, analysis of expenses against budgeted amounts, analysis of work performed against approved contract budgets and payment schedules, and recognition of any changes in scope of the services to be performed. Certain CRO and significant clinical trial vendors provide an estimate of costs incurred but not invoiced at the end of each quarter for each individual trial. The estimates are reviewed and discussed with the CRO or vendor as necessary, and are included in R&D expenses for the related period. For clinical study sites, which are paid periodically on a per-subject basis to the institutions performing the clinical study, we accrue an estimated amount based on subject screening and enrollment in each quarter. All estimates may differ significantly from the actual amount subsequently invoiced, which may occur several months after the related services were performed.

In the normal course of business we contract with third parties to perform various R&D activities in the on-going development of our product candidates. The financial terms of these agreements are subject to negotiation and vary from contract to contract and may result in uneven payment flows. Payments under the contracts depend on factors such as the achievement of certain events, the successful enrollment of patients, and the completion of portions of the clinical trial or similar conditions. The objective of our accrual policy is to match the recording of expenses in our financial statements to the actual services received and efforts expended. As such, expense accruals related to clinical trials and other R&D activities are recognized based on our estimate of the degree of completion of the event or events specified in the specific contract.

No adjustments for material changes in estimates have been recognized in any period presented.

Stock-Based Compensation

Our results include non-cash compensation expense as a result of the issuance of stock, stock options and warrants. We have issued stock options to employees, directors, consultants and Scientific Advisory Board members under our Amended and Restated 2005 Stock Option Plan.

We expense the fair value of stock-based compensation over the vesting period. When more precise pricing data is unavailable, we determine the fair value of stock options using the Black-Scholes option-pricing model. This valuation model requires us to make assumptions and judgments about the variables used in the calculation. These variables and assumptions include the weighted-average period of time that the options granted are expected to be outstanding, the volatility of our common stock, the risk-free interest rate and the estimated rate of forfeitures of unvested stock options.

Stock options or other equity instruments to non-employees (including consultants and all members of the Company's Scientific Advisory Board) issued as consideration for goods or services received by the Company are accounted for based on the fair value of the equity instruments issued (unless the fair value of the consideration received can be more reliably measured). The fair value of stock options is determined using the Black-Scholes option-pricing model. The fair value of any options issued to non-employees is recorded as expense over the applicable vesting periods.

The terms and vesting schedules for share-based awards vary by type of grant and the employment status of the grantee. Generally, the awards vest based upon time-based or performance-based conditions. Performance-based conditions generally include the attainment of goals related to our financial and development performance. Stock-based compensation expense is included in the respective categories of expense in the Statements of Operations. We expect to record additional non-cash compensation expense in the future, which may be significant.

In the quarter ending March 31, 2009, with two years of employee performance and forfeiture history, we began to estimate forfeitures of performance-based stock options. Prior to December 31, 2008, we did not include an estimate for forfeitures in our compensation expenses on a quarterly basis. Instead, adjustments to the performance-based stock compensation expense for the full year were made in the fourth quarter at the time of performance assessment. Forfeiture rates for performance stock options vested in 2008, 2009, 2010 and 2011 were between 0% and 55%.

OUR BUSINESS

Company 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*), 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.

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., or Nile, and adopted the business plan of Old Nile. We collectively refer to these two merger transactions in this prospectus as the “Merger.” Because the Merger was accounted for as a reverse acquisition under generally accepted accounting principles, the financial statements for periods prior to September 17, 2007 reflect only the operations of Old Nile.

Our executive offices are located at 4 West 4th Ave., Suite 400, San Mateo, California 94402. Our telephone number is (650) 458-2670 and our Internet address is www.nilethera.com. The information on, or accessible through, our

website is not part of this prospectus.

Our Product Candidates

The following table summarizes our product development programs:

Product	Indications	Commercial Rights	Ongoing Studies / 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 March 2011, the FDA granted Fast Track designation to our post-acute development program for cenderitide.

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) \leq 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. 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 in order to do so. We estimate the costs to conduct this Phase 2 study, up to 296 patients, 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 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 Program

CU-NP is our novel natriuretic peptide rationally designed by scientists at the Mayo Clinic's cardio-renal research labs. CU-NP was designed to combine the favorable hemodynamic venodilating effects of CNP generated via NPR-B receptor agonism, with the beneficial renal effects of Urodilatin generated via NPR-A receptor agonism. In animal models, CU-NP was shown to increase natriuresis, diuresis, and glomerular filtration rate in a dose dependent manner, decrease cardiac filling pressure, and inhibit the renin-angiotensin system without inducing significant hypotension.

Intellectual Property, License and Collaboration Agreement

Our goal is to obtain, maintain and enforce patent protection for our products, formulations, processes, methods and other proprietary technologies, preserve our trade secrets, and operate without infringing on the proprietary rights of other parties, both in the United States and abroad. Our policy is to actively seek to obtain, where appropriate, the broadest intellectual property protection possible for our current product candidates and any future product candidates, proprietary information and proprietary technology through a combination of contractual arrangements and patents, both in the United States and abroad. Even patent protection, however, may not always afford us with complete protection against competitors who seek to circumvent our patents. If we fail to adequately protect or enforce our intellectual property rights or secure rights to patents of others, the value of our intellectual property rights would diminish.

We will continue to depend upon the skills, knowledge and experience of our scientific and technical personnel, as well as that of our advisors, consultants and other contractors, none of which is patentable. To help protect our proprietary know-how, which is not patentable, and for inventions for which patents may be difficult to enforce, we currently rely and will in the future rely on trade secret protection and confidentiality agreements to protect our interests. To this end, we require all of our employees, consultants, advisors and other contractors to enter into confidentiality agreements that 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.

License Agreements

Cenderitide

On January 20, 2006, we entered into an exclusive, worldwide, royalty-bearing license agreement, or the cenderitide License Agreement, with Mayo Foundation for Medical Education and Research, or the Mayo Foundation, for the

rights to issued patents, patent applications and know-how relating to the use of cenderitide in all therapeutic uses. We were also entitled to rights to improvements to cenderitide that arose out of the laboratory of Dr. John Burnett, the co-inventor of cenderitide, until January 19, 2009.

Under the terms of the cenderitide License Agreement, we paid the Mayo Foundation an up-front cash payment and reimbursed it for past patent expenses. We issued to the Mayo Foundation 1,379,419 shares of common stock. Additionally, we agreed to make contingent cash payments up to an aggregate of \$31.9 million upon successful completion of specified clinical and regulatory milestones relating to cenderitide. This aggregate amount is subject to increase upon the receipt of regulatory approval for each additional indication of cenderitide as well as for additional compounds or analogues contained in the intellectual property. In July 2008, we made a milestone payment of \$400,000 to the Mayo Foundation upon the dosing of the first patient in a Phase II trial. There were no such milestone payments due for the year ended December 31, 2011. Based on the current stage of research we do not expect to make any milestone payments for the year ending December 31, 2012 Pursuant to the cenderitide License Agreement, we will pay the Mayo Foundation an annual maintenance fee and a percentage of net sales of licensed products, as well as \$50,000 per year for the consulting services of Dr. Burnett while serving as chairman of the Company's Scientific Advisory Board.

In addition to the potential milestone payments discussed above, the cenderitide License Agreement requires us to issue shares of common stock to the Mayo Foundation for an equivalent dollar amount of grants received in excess of \$300,000, but not to exceed \$575,000. For the period from August 1, 2005 (inception) through December 31, 2011, the Company received \$482,235 in grant income for which it has issued to the Mayo Foundation 63,478 shares (representing \$182,236) of common stock. No such shares have been issued since the year ended December 31, 2008.

The cenderitide License Agreement, unless earlier terminated, will continue in full force and effect until January 20, 2026. However, to the extent any patent covered by the license is issued with an expiration date beyond January 20, 2026, the term of the agreement will continue until such expiration date. Mayo may terminate the agreement earlier (i) for our material breach of the agreement that remains uncured after 90 days' written notice to us, (ii) our insolvency or bankruptcy, or (iii) if we challenge the validity or enforceability of any of the patents in any manner. We may terminate the agreement without cause upon 90 days' written notice.

Pursuant to our cenderitide license agreement with Mayo Foundation, we have exclusive rights to 3 issued U.S. patents and 3 pending U.S. patent applications, 16 issued foreign patents and 3 pending foreign applications, covering composition of matter and methods of use. These patents and patent applications cover cenderitide, and other similar natriuretic peptides, as well as methods of use of the peptides in the treatment of multiple cardiovascular and renal indications. The issued composition of matter patent expires in 2019 and, if allowed, the last of the pending U.S. patents would expire in 2028.

CU-NP

On June 13, 2008, we entered into an exclusive, worldwide, royalty-bearing license agreement, or the CU-NP License Agreement, with the Mayo Foundation for the rights to intellectual property and to develop commercially CU-NP for all therapeutic indications. We were also entitled to rights to improvements to CU-NP that arose out of the Mayo Clinic laboratory of Dr. John Burnett and Dr. Candace Lee, the inventors of CU-NP, until June 12, 2011.

Under the terms of the CU-NP License Agreement, we made an up-front cash payment to the Mayo Foundation and agreed to make future contingent cash payments up to an aggregate of \$24.3 million upon achievement of specific clinical and regulatory milestones relating to CU-NP, including a milestone payment due in connection with the initiation of the first Phase 2 clinical trial of the licensed product. This aggregate amount of \$24.3 million is subject to increase upon the receipt of regulatory approval for each additional indication of CU-NP, as well as for additional compounds or analogues contained in the intellectual property. There were no such milestone payments due for the year ended December 31, 2011. Based on the current stage of research, we do not expect to make any milestone payments for the year ending December 31, 2012. Pursuant to the agreement, we must also pay the Mayo Foundation an annual maintenance fee and a percentage of net sales of licensed products.

In addition to these cash payments payable with respect to the CU-NP License Agreement, we also agreed to issue shares of our common stock and warrants to the Mayo Foundation. In June 2008, we issued 49,689 shares of common stock to the Mayo Foundation having a fair market value as of June 13, 2008 equal to \$250,000. Additionally, Dr. Burnett has applied for funding through Mayo's Discovery-Translation Program. In the event Dr. Burnett is awarded funding through this program, and the funding is used for the development of the licensed product based on the patent applications, we agreed to grant to the Mayo Foundation an equivalent dollar value in warrants to purchase shares of our common stock. The number of shares purchasable under these warrants will be calculated using the Black-Scholes

option-pricing model and the warrants will include a cashless exercise provision with language to be negotiated in good faith between the parties.

The CU-NP License Agreement, unless earlier terminated, will continue in full force and effect until June 13, 2028. However, to the extent any patent covered by the license is issued with an expiration date beyond June 13, 2028, the term of the agreement will continue until such expiration date. The Mayo Foundation may terminate the agreement earlier (i) for our material breach of the agreement that remains uncured after 90 days' written notice to us, (ii) our insolvency or bankruptcy, (iii) if we challenge the validity or enforceability of any of the patents in any manner, or (iv) or upon receipt of notice from us that we have terminated all development efforts under the agreement. We may terminate the agreement without cause upon 90 days' written notice.

Pursuant to our CU-NP license agreement with Mayo Foundation, we have exclusive rights to 1 pending U.S. patent application and 3 pending foreign applications, covering composition of matter and methods of use. These patents and patent applications cover CU-NP, and other similar natriuretic peptides, as well as methods of use of the peptides in the treatment of multiple cardiovascular and renal indications. If allowed, the pending U.S. patent would expire in 2028.

Collaboration Agreement

In February 2011, we entered into a Clinical Trial Funding Agreement with Medtronic, Inc. Pursuant to the agreement, Medtronic provided the funding and equipment necessary for us to conduct our Phase 1 clinical trial to assess the pharmacokinetics and pharmacodynamics of cenderitide when delivered to heart failure patients through continuous subcutaneous infusion using Medtronic's diabetes pump technology.

Under the agreement, we agreed not to enter into an agreement with a third party to develop or commercialize cenderitide or any drug/device combination developed under the agreement until the earlier of: (i) three months following delivery to Medtronic of a final database with respect to the Phase 1 trial; and (ii) 15 months after the date of the agreement. The final database was delivered to Medtronic on November 19, 2011.

The agreement provides that intellectual property conceived in or otherwise resulting from the performance of the Phase I clinical trial shall be jointly owned by us and Medtronic (the “Joint Intellectual Property”), and that we shall pay royalties to Medtronic based on the net sales of any Nile product, the manufacture, use or sale of which is covered or claimed in one or more issued patents constituting Joint Intellectual Property. The agreement further provides that, if the parties fail to enter into a definitive commercial license agreement with respect to cenderitide, then each party shall have a right of first negotiation to license exclusive rights to any Joint Intellectual Property.

Pursuant to its terms, the agreement expired in February 2012, following the completion of the Phase 1 clinical trial and the delivery of data and reports related to such study.

Government Regulation

The research, development, testing, manufacture, labeling, promotion, advertising, distribution, and marketing, among other things, of our product candidates are extensively regulated by governmental authorities in the United States and other countries. In the United States, the Food and Drug Administration, or FDA, regulates drugs under the Federal Food, Drug, and Cosmetic Act, or the FDCA, and its implementing regulations. Failure to comply with the applicable United States requirements may subject us to administrative or judicial sanctions, such as FDA refusal to approve a pending NDA, warning letters, product recalls, product seizures, total or partial suspension of production or distribution, injunctions, and/or criminal prosecution.

Drug Approval Process

A drug or drug candidate may not be marketed or sold in the United States until it has received FDA approval. The process to receiving such approval is long, expensive and risky, and includes the following steps:

- pre-clinical laboratory tests, animal studies, and formulation studies;
- submission to the FDA of an IND for human clinical testing, which must become effective before human clinical trials may begin;
- adequate and well-controlled human clinical trials to establish the safety and efficacy of the drug for each indication;

Clinical trials are typically conducted in three sequential “Phases”, although the Phases may overlap. The study protocol and informed consent information for study subjects in clinical trials must also be approved by an Institutional Review Board for each institution where the trials will be conducted. Study subjects must sign an informed consent form before participating in a clinical trial. Phase I usually involves the initial introduction of the investigational drug into human patients to evaluate its short-term safety, dosage tolerance, metabolism, pharmacokinetics and pharmacologic actions, and, if possible, to gain an early indication of its effectiveness. Phase II usually involves trials in a limited patient population to (i) evaluate dosage tolerance and appropriate dosage; (ii) identify possible adverse effects and safety risks; and (iii) evaluate preliminarily the efficacy of the drug for specific indications. Phase III trials usually further evaluate clinical efficacy and test further for safety by using the drug in its final form in an expanded patient population. There can be no assurance that Phase I, Phase II, or Phase III testing will be completed successfully within any specified period of time, if at all. Furthermore, we or the FDA may suspend clinical trials at any time on various grounds, including a finding that the subjects or patients are being exposed to an unacceptable health risk.

The FDCA permits the FDA and the IND sponsor to agree in writing on the design and size of clinical studies intended to form the primary basis of an effectiveness claim in an NDA. This process is known as Special Protocol Assessment. These agreements may not be changed after the clinical studies begin, except in limited circumstances.

Assuming successful completion of the required clinical testing, the results of the pre-clinical studies and of the clinical studies, together with other detailed information, including information on the manufacture and composition of the drug, are submitted to the FDA in the form of an NDA requesting approval to market the product for one or more indications. The testing and approval process requires substantial time, effort, and financial resources. The FDA reviews the application and may deem it to be inadequate to support the registration, and companies cannot be sure that any approval will be granted on a timely basis, if at all. The FDA may also refer the application to the appropriate advisory committee, typically a panel of clinicians, for review, evaluation, and a recommendation as to whether the application should be approved. The FDA is not bound by the recommendations of the advisory committee.

The FDA has various programs, including fast track, priority review, and accelerated approval, that are intended to expedite or simplify the process for reviewing drugs, and/or provide for approval on the basis of surrogate endpoints. Generally, drugs that may be eligible for one or more of these programs are those for serious or life-threatening conditions, those with the potential to address unmet medical needs, and those that provide meaningful benefit over existing treatments. We cannot be sure that any of our drugs will qualify for any of these programs, or that, if a drug does qualify, the review time will be reduced.

Section 505(b)(2) of the FDCA allows the FDA to approve a follow-on drug on the basis of data in the scientific literature or a prior FDA approval of an NDA for a related drug. This procedure potentially makes it easier for generic drug manufacturers to obtain rapid approval of new forms of drugs based on proprietary data of the original drug manufacturer.

Before approving an NDA, the FDA usually will inspect the facility or the facilities at which the drug is manufactured and will not approve the product unless cGMP compliance is satisfactory. If the FDA evaluates the NDA and the manufacturing facilities as acceptable, the FDA may issue an approval letter, or in some cases, an approvable letter followed by an approval letter. Both letters usually contain a number of conditions that must be met in order to secure final approval of the NDA. When and if those conditions have been met to the FDA's satisfaction, the FDA will issue an approval letter. The approval letter authorizes commercial marketing of the drug for specific indications. As a condition of NDA approval, the FDA may require post-marketing testing and surveillance to monitor the drug's safety or efficacy, or impose other conditions.

After approval, certain changes to the approved product, such as adding new indications, making certain manufacturing changes, or making certain additional labeling claims, are subject to further FDA review and approval. Before we can market our product candidates for additional indications, we must obtain additional approvals from the FDA. Obtaining approval for a new indication generally requires that additional clinical studies be conducted. We cannot be sure that any additional approvals for new indications for any product candidate will be approved on a timely basis, or at all.

Post-Approval Requirements

Often times, even after a drug has been approved by the FDA for sale, the FDA may require that certain post-approval requirements be satisfied, including the conduct of additional clinical studies. If such post-approval requirements are not satisfied, the FDA may withdraw its approval of the drug. In addition, holders of an approved NDA are required to report certain adverse reactions to the FDA, comply with certain requirements concerning advertising and promotional labeling for their products, and continue to have quality control and manufacturing procedures conform to cGMP after approval. The FDA periodically inspects the sponsor's records related to safety reporting and/or manufacturing facilities; this latter effort includes assessment of compliance with cGMP. Accordingly, manufacturers must continue to expend time, money, and effort in the area of production and quality control to maintain cGMP compliance. We intend to use third-party manufacturers to produce our products in clinical and commercial quantities, and future FDA inspections may identify compliance issues at the facilities of our contract manufacturers that may disrupt production or distribution, or require substantial resources to correct. In addition, discovery of problems with a product after approval may result in restrictions on a product, manufacturer, or holder of an approved NDA, including withdrawal of the product from the market.

Manufacturing

We do not currently have our own manufacturing facilities. We intend to continue to use our financial resources to accelerate development of our product candidates rather than diverting resources to establish our own manufacturing facilities. We meet our pre-clinical and clinical trial manufacturing requirements by establishing relationships with third-party manufacturers and other service providers to perform these services for us. We rely on individual proposals and purchase orders to meet our needs and typically rely on terms and conditions proposed by the third party or us to govern our rights and obligations under each order (including provisions with respect to intellectual property, if any). We do not have any long-term agreements or commitments for these services. Likewise, we do not have any long-term agreements or commitments with vendors to supply the underlying component materials of our product candidates, some of which are available from only a single supplier.

Should any of our product candidates obtain marketing approval, we anticipate establishing relationships with third-party manufacturers and other service providers in connection with the commercial production of our products. We have some flexibility in securing other manufacturers to produce our product candidates; however, our alternatives may be limited due to proprietary technologies or methods used in the manufacture of some of our product candidates.

Competition

We face significant competition from companies with substantial financial, technical, and marketing resources, which could limit our future revenues from sales of cenderitide and CU-NP. Our success will depend, in part, upon our ability to achieve market share at the expense of existing and future products in the relevant target markets. Existing and future products, therapies, technologies, technological innovations, and delivery systems will likely compete directly with our products.

The development and commercialization of new products to treat cardiovascular diseases is highly competitive, and there will be considerable competition from major pharmaceutical, biotechnology, and other companies. With respect to cenderitide, many therapeutic options are available for patients with ADHF, including, without limitation, nitroglycerine, inotropic agents, diuretics, as well as Natrecor®. Some of our competitors include, without limitation, Scios (a Johnson & Johnson company), Bayer, Merck, Zealand Pharma, and Novartis. We are not currently aware of other compounds being developed to treat ADHF patients in the post-acute period.

With respect to CU-NP, competitors would include many of the same companies included as competitors for cenderitide. Because of our intent to investigate the compound's potential for chronic administration, additional competitors could include, without limitation, Teva Pharmaceuticals and Palatin Technologies.

Our competitors generally have substantially more resources than we do, including both financial and technical resources. In addition, many of these companies have more experience than Nile in pre-clinical and clinical development, manufacturing, regulatory, and global commercialization. We are also competing with academic institutions, governmental agencies, and private organizations that are conducting research in the field of cardiovascular disease. Competition for highly qualified employees is intense.

Research and Development Expenses

Research and development, or R&D, expenses consist primarily of salaries and related personnel costs, fees paid to consultants and outside service providers for pre-clinical, clinical, and manufacturing development, legal expenses resulting from intellectual property prosecution, contractual review, and other expenses relating to the design, development, testing, and enhancement of our product candidates. R&D expenses for the years ended December 31, 2011 and 2010 were approximately \$4.1 million and \$4.1 million, respectively.

Employees

As of December 31, 2011, we had two full-time and two part-time employees. None of our employees are covered by a collective bargaining agreement. We believe our relations with our employees are satisfactory.

We retain several consultants who serve in various operational and administrative capacities, and we utilize clinical research organizations and third parties to perform our pre-clinical studies, clinical studies, and manufacturing. We may hire additional research and development staff, as required, to support our product development.

Legal Proceedings

We are not a party to any material legal proceedings.

Description of Property

We do not own any real property. Our principal offices are located at 4 West 4th Ave. Suite 400, San Mateo, CA, 94402. Under the terms of an open-ended lease, cancellable upon 60 days notice, the base rent is \$2,000 per month. The office space is approximately 1,200 square feet. In connection with this lease, we have made a \$2,000 cash security deposit.

We relocated our principal offices effective August 15, 2009 from San Francisco, California to San Mateo, California. We occupied our former San Francisco office under a non-cancelable operating lease that was to expire in March 2012. In October 2009, we entered into a lease termination and surrender of premises agreement with the landlord.

As our operations expand, we expect our space requirements and related expenses to increase.

MANAGEMENT AND BOARD OF DIRECTORS

Directors and Executive Officers

The following table lists our executive officers and directors and their respective ages and positions as of the date of this prospectus:

Name	Age	Positions Held
Richard B. Brewer	60	Executive Chairman
Joshua A. Kazam	35	President, Chief Executive Officer and Director
Daron Evans	38	Chief Financial Officer
Hsiao Lieu, M.D.	41	Executive VP of Clinical Development
Arie S. Belldegrun, M.D.	62	Director
Pedro Granadillo	64	Director
Peter M. Kash, Ed.D.	50	Director
Frank Litvack, M.D.	56	Director
Paul A. Mieyal, Ph.D.	42	Director
Gregory W. Schafer	47	Director

Richard B. Brewer was appointed to serve as our Executive Chairman in July 2010. Mr. Brewer also currently serves as Chairman of the Boards of Dendreon Corporation, a publicly-held biotechnology company based in Seattle, and Arca Biopharma, Inc., a publicly-held biotechnology company developing genetically targeted therapies for patients with heart failure and other cardiovascular diseases. Mr. Brewer was President and Chief Executive Officer of Arca Biopharma from November 2006 to December 2009. Prior to joining Arca Biopharma, from January 2003, Mr. Brewer was Managing Partner of Crest Asset Management, where he provided guidance to and invested in biotechnology opportunities. Before that, Mr. Brewer was President and Chief Executive Officer of Scios, Inc., a biopharmaceutical company that was acquired by Johnson & Johnson in 2004. Additionally, Mr. Brewer is a member of the Board of Directors of SRI (Stanford Research Institute), as well as a Member of the Board of Advisors for Northwestern University, Kellogg School of Business, Biotechnology Section. Mr. Brewer possesses deep knowledge of the natriuretic peptide space having served as CEO and President of Scios Inc., where he led the company in achieving FDA approval for Natrecor® (nesiritide). Previous to Scios, Mr. Brewer served as Chief Operating Officer of Heartport, a cardiovascular device company developing minimally invasive approaches to major heart surgery. Before Heartport, he spent over a decade at Genentech, ultimately serving as Senior Vice President of U.S. Marketing and Senior Vice President of Genentech Europe and Canada. Mr. Brewer holds an M.B.A. from Northwestern University and a B.S. from Virginia Polytechnic Institute & State University.

Joshua A. Kazam has served as our non-employee President and Chief Executive Officer since June 2009, and has served as a director of the Company since inception in August 2005. In September 2004, Mr. Kazam co-founded Two River Group Holdings, LLC (“Two River”), and currently serves as Vice President and Director of Two River’s

managing member, Two River Group Management, LLC. Mr. Kazam also serves as an officer of the managing member of Two River Consulting, LLC, an organization that provides management, consulting and operational services for development stage biotechnology companies, including Nile. Mr. Kazam also serves as an Officer and Director of Riverbank Capital Securities, Inc. From 1999 to 2004, Mr. Kazam was a Managing Director of Paramount BioCapital, Inc. where he was responsible for ongoing operations of venture investments, and as the Director of Investment for the Orion Biomedical Fund, LP. Mr. Kazam also co-founded and served as a director of Arno Therapeutics, Inc., a publicly-held, New Jersey-based biopharmaceutical company focused on the treatment of cancer patients, from its inception in August 2005 until September 2010. Mr. Kazam currently serves as a director of Kirax Corporation (formerly Tigris Pharmaceuticals, Inc.) and Kite Pharma, Inc., both privately-held biotechnology companies, and Velcera, Inc., a privately-held specialty pharmaceutical company. Mr. Kazam is a graduate of the Wharton School of the University of Pennsylvania.

Daron Evans has been our Chief Financial Officer since September 2007 and was our Chief Operating Officer from February 2007 to September 2007. Mr. Evans has over fifteen years of professional experience in drug development, corporate strategy and financial management. From 2006 to 2007, Mr. Evans served as Director of Business Assessment at Vistakon, a Johnson & Johnson company, where he led efforts to improve R&D efficiency and speed to market. From 2004 to 2006, he was a Director of Portfolio & Business Analytics for Scios R&D, a Johnson & Johnson company, where he was responsible for financial controls and reporting for portfolio of six clinical stage programs and five preclinical stage programs. While at Scios, Mr. Evans also served as Project Manager for the European Registration Trial of NATRECOR[®] (nesiritide), a peptide indicated for the treatment of acute decompensated heart failure. Mr. Evans also has experience as co-founder of a biotechnology diagnostic company, and has worked as a Management Consultant in the pharmaceutical industry with Booz Allen Hamilton. Mr. Evans received his M.B.A. from The Fuqua School of Business at Duke University, his M.S. in Biomedical Engineering from Southwestern Medical School and University of Texas at Arlington and his B.S. in Chemical Engineering from Rice University.

Hsiao D. Lieu, M.D., F.A.C.C. has been our Executive VP of Clinical Development since November 2011 and was our Vice President of Clinical Research from March 2008 to November 2011. Dr. Lieu has over fifteen years of experience in the biopharmaceutical/biotech industry including academic medicine (cardiology), molecular cardiology research, translational and clinical drug development including execution of large multinational Phase III clinical trials and responsibility for interactions with regulatory authorities and key opinion leaders in the U.S., Canada, and Europe. From 2006 to 2008, Dr. Lieu was Director of Clinical Development for Portola Pharmaceuticals, Inc. From 2003 to 2006 Dr. Lieu worked at CV Therapeutics, Inc., where he served as Director, Clinical Research and Development. Dr. Lieu also worked as a researcher at the J. David Gladstone Institute of Cardiovascular Disease at the University of California at San Francisco (“UCSF”) from 2001 to 2003 where he conducted molecular cardiology research. Dr. Lieu currently serves as an Adjunct Assistant Clinical Professor of Medicine, Cardiology Division at UCSF. Dr. Lieu completed his clinical cardiology fellowship at UCSF and his residency in internal medicine at Columbia University. He received his M.D. from the Albert Einstein College of Medicine with distinction in molecular biology research, and his B.A. from New York University. Dr. Lieu is a Fellow of the American College of Cardiology.

Arie S. Belldgrun, M.D., FACS has been a director of Nile since September 2009. Dr. Belldgrun is Director of the Institute of Urologic Oncology at UCLA, Professor of Urology and Chief of the Division of Urologic Oncology. He holds the Roy and Carol Doumani Chair in Urologic Oncology at the David Geffen School of Medicine at the University of California, Los Angeles (UCLA). In 1997, Dr. Belldgrun founded Agensys, Inc., an early-stage privately-held biotechnology company based in Los Angeles, California, that is focused on the development of fully human monoclonal antibodies to treat solid tumor cancers in a variety of cancer targets. Dr. Belldgrun served as founding Chairman of Agensys from 1997 to 2002 and then as a director until December 2007, when the company was acquired by Astellas Pharma. Dr. Belldgrun served as Vice Chairman of the Board and Chairman of the Scientific Advisory Board of Cougar Biotechnology, Inc., a Los Angeles-based biopharmaceutical company, from December 2003 until its acquisition by Johnson & Johnson in July 2009. Since March 2008, Dr. Belldgrun has served as a director of Arno Therapeutics, Inc., a publicly-held, New Jersey-based biopharmaceutical company focused on the treatment of cancer patients. Dr. Belldgrun has also served as Executive Chairman of the Board of Directors of Kite Pharma, Inc., a privately-held, California-based biotechnology company dedicated to the development of pioneering immune-based cancer therapies, since its inception in 2009. From February 2004 to December 2009, Dr. Belldgrun also served on the Board of Directors of Hana Biosciences, Inc., a publicly-held biopharmaceutical company. He is also Chairman and Partner of Two River Group Holdings LLC, a New York based venture capital firm. Dr. Belldgrun also serves as an officer of the managing member of Two River Consulting, LLC, an organization that provides management, consulting and operational services for development stage biotechnology companies, including Nile. Dr. Belldgrun’s prior experience also includes serving as principal investigator of more than 50 clinical trials of anti-cancer drug candidates and therapies. Dr. Belldgrun completed his M.D. at the Hebrew University Hadassah Medical School in Jerusalem, his post graduate fellowship at the Weizmann Institute of Science and his residency in Urological Oncology at Harvard Medical School. Prior to UCLA, Dr. Belldgrun was at the National Cancer Institute/NIH as a research fellow in surgical oncology under Steven A. Rosenberg, M.D., Ph.D. He is certified by the American Board of Urology and is a Fellow of the American College of Surgeons and the American Association of Genitourinary Surgeons.

Pedro Granadillo has served as a director of the Company since October 2007, and also serves as Chairman of the Compensation Committee and as a member of the Audit Committee. Mr. Granadillo served as Senior Vice President for Eli Lilly and Company, or Lilly, until 2004 when he retired after 34 years of service. He was a member of Lilly’s Executive Committee. As Lilly’s top human resources, manufacturing and quality executive, he was responsible for

policies affecting a global workforce of more than 45,000 employees, as well as a broad network of manufacturing facilities for its extensive line of products. He also oversaw more than 20 sites and 13,000 employees involved in the manufacturing of Lilly's conventional "small-molecule" pharmaceuticals and "large-molecule" biotech therapies. Mr. Granadillo currently serves as a director of Dendreon Corp., Noven Pharmaceuticals, Inc., and Haemonetics Corporation, all of which are publicly-held biopharmaceutical companies, and First Indiana Bank. Mr. Granadillo received his B.S. in Industrial Engineering from Purdue University.

Peter M. Kash has served as a director of the Company since its inception in August 2005, and also currently serves as the Chairman of the Nominating & Corporate Governance Committee and as a member of the Compensation Committee. Dr. Kash has also served as a director of Arno Therapeutics, Inc., a publicly-held, New Jersey-based biopharmaceutical company focused on the treatment of cancer patients, since its inception in August 2005. From December 2004 to December 2006, Dr. Kash served as a director of Javelin Pharmaceuticals, Inc., a publicly-held biopharmaceutical company focused on pain management. In September 2004, Dr. Kash co-founded Two River Group Holdings, LLC, a venture capital firm that specializes in the creation of new companies to acquire rights to commercially develop early stage biotechnology products. He serves as President of Two River Group Management, LLC, the managing member of Two River Group Holdings, LLC. Dr. Kash is also the President and Chairman of Riverbank Capital Securities, Inc., a broker-dealer registered with the Financial Industry Regulatory Authority, or FINRA. From 1992 until 2004, Dr. Kash was a Senior Managing Director of Paramount BioCapital, Inc., a FINRA member broker-dealer, specializing in conducting private financings for public and private development stage biotechnology companies as well as Paramount BioCapital Investments, LLC, a venture capital company. Dr. Kash also served as Director of Paramount Capital Asset Management, Inc., the general partner of several biotechnology-related hedge funds and as member of the General Partner of the Orion Biomedical Fund, LP, a private equity fund. Dr. Kash received his B.S. in Management Science from SUNY Binghamton, his M.B.A. in Banking and International Finance from Pace University, and his doctorate in education at Yeshiva University.

Frank Litvack, M.D. has been a director of the Company since September 2009. Dr. Litvack served as Chairman (from 2002) and CEO (from 2003) of Conor MedSystems, Inc., a publicly-held company focused on the development of vascular drug delivery systems, until its acquisition by Johnson & Johnson in February 2007. From 2000 to 2005, Dr. Litvack was Chairman of Savacor, Inc., a medical device company that was acquired by St. Jude Medical, Inc. in late 2005. Since 2000, Dr. Litvack has been a Professor of Medicine at University of California, Los Angeles. From 1989 until 1997, Dr. Litvack was a founder and director of Progressive Angioplasty Systems Inc., which was acquired by United States Surgical Corporation. Since 1996, Dr. Litvack has been a member of Calmedica, LLC. Since 1985, Dr. Litvack has been an attending cardiologist at Cedars-Sinai Medical Center. Dr. Litvack co-directed the Cardiovascular Intervention Center at Cedars-Sinai Medical Center from 1986 to 2000. Dr. Litvack currently serves as a director of several privately-held corporations. Dr. Litvack holds an M.D. from McGill University.

Paul Mieyal, Ph.D., CFA has served as a director of the Company since September 2007, and also serves as a member of the Audit Committee and the Compensation Committee. Since 2006, Dr. Mieyal has served as a Vice President of Wexford Capital LP, an SEC registered investment advisor located in Greenwich, CT. Prior to that, from 2000 to 2006, he was Vice President in charge of healthcare investments for Wechsler & Co., Inc., a private investment firm and registered broker-dealer. Dr. Mieyal serves as a director of Nephros, Inc., a publicly held company, and as chairman of its compensation committee. Dr. Mieyal received his Ph.D. in Pharmacology from New York Medical College, a B.A. in chemistry and psychology from Case Western Reserve University, and is a Chartered Financial Analyst.

Gregory W. Schafer has served as a director of the Company since January 2008, and also serves as Chairman of the Audit Committee. Mr. Schafer has served as Chief Financial Officer Jennerex, a biotherapeutics company focused in oncology, since June 2010. From April 2009 to June 2010, Mr. Schafer served as an independent consultant to private and public biotechnology companies. From April 2006 to January 2009, Mr. Schafer served as the Vice President and

Chief Financial Officer of Onyx Pharmaceuticals, Inc., a publicly-held, California-based biopharmaceutical company dedicated to developing innovative therapies that target the molecular mechanisms that cause cancer. Prior to Onyx, from 2004 to 2006, Mr. Schafer served as a consultant to several private and public biotechnology companies. From 1997 to 2004, Mr. Schafer held various executive positions at Cerus Corporation, a public biotechnology company, including Vice President and Chief Financial Officer. Prior to joining Cerus, Mr. Schafer worked as a management consultant for Deloitte & Touche LLP. Mr. Schafer holds an M.B.A from the Anderson Graduate School of Management at UCLA and a BSE in Mechanical Engineering from the University of Pennsylvania.

Experience, Qualifications, Attributes and Skills of Directors

We look to our directors to lead us through our continued growth as an early-stage public biopharmaceutical company. Our directors bring their leadership experience from a variety of life science companies and professional backgrounds which we require to continue to grow and bring value to our stockholders. With over 35 years of biotechnology and pharmaceutical industry experience, Mr. Brewer, our Executive Chairman, brings a wealth of operational, financial, and business development expertise to us, including a deep knowledge of the heart failure space in particular. Dr. Litvack's clinical expertise in cardiology offers a unique perspective into the development and practical application of our product candidates. Mr. Brewer, Dr. Kash, Mr. Kazam and Dr. Mieyal have venture capital or investment banking backgrounds and offer expertise in financing and growing small biopharmaceutical companies. Each of Mr. Brewer, Dr. Belldgrun, Dr. Kash, Mr. Kazam, Dr. Litvack, Dr. Mieyal and Mr. Schafer have significant experience with early stage private and public companies and bring depth of knowledge in building stockholder value, growing a company from inception and navigating significant corporate transactions and the public company process. Mr. Granadillo has extensive experience in the pharmaceutical industry, allowing him to contribute his significant operational experience. Mr. Kazam's current position as our CEO also allows him to provide a unique insight into our development and growth. As a result of his experience in the role of chief financial officer of public companies, Mr. Schafer also bring extensive finance, accounting and risk management knowledge to us.

Section 16(a) Beneficial Ownership Reporting Compliance

Section 16(a) of the Securities Exchange Act of 1934, as amended, requires the Company's directors and officers and persons who own more than ten percent of a registered class of the Company's equity securities to file reports of ownership and reports of changes in the ownership with the SEC. Such persons are required by SEC regulations to furnish the Company with copies of all Section 16(a) forms they file. Based solely on its review of the copies of the forms submitted to it during the last fiscal year, the Company believes that, during the last fiscal year, all such reports were timely filed, except for the reporting of the November 21, 2011 determination that certain performance criteria had been met with respect to a stock option granted to Hsiao D. Lieu on March 10, 2008. The satisfaction of the performance condition was not reported on a Form 4 but was later reported by Dr. Lieu on a timely filed Form 5.

Code of Business Conduct and Ethics

The Board of Directors has adopted a Code of Business Conduct and Ethics, or the Code, that applies to all directors, officers, employees, consultants, contractors and agents, wherever they are located and whether they work for us on a full- or part-time basis. The Code was designed to help such directors, employees and other agents to resolve ethical issues encountered in the business environment. The Code covers topics such as conflicts of interest, compliance with laws, confidentiality of Company information, encouraging the reporting of any illegal or unethical behavior, fair dealing and use of Company assets.

A copy of the Code, as adopted by the Board of Directors, is available at the Corporate Governance page of our website at www.nilethera.com. Please note that information contained on our website is not incorporated by reference in, or considered to be a part of, this prospectus. We may post amendments to or waivers of the provisions of the Code, if any, made with respect to any directors and employees on that website.

Audit Committee

The current members of our Audit Committee are Mr. Schafer (Chair), Mr. Granadillo and Dr. Mieyal. Our Board of Directors has determined that Mr. Schafer qualifies as an "audit committee financial expert," as defined by applicable rules of the SEC. The Board has further determined that Mr. Schafer is "independent" within the meaning of the applicable listing standard of the NASDAQ Stock Market.

ITEM 11. EXECUTIVE COMPENSATION

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The following summary compensation table reflects cash and non-cash compensation for the 2010 and 2011 fiscal years awarded to or earned by (i) each individual serving as our principal executive officer during the fiscal year ended December 31, 2011; and (ii) each individual that served as an executive officer at the end of the fiscal year ended December 31, 2011 and who received in excess of \$100,000 in total compensation during such fiscal year. We refer to these individuals as our “named executive officers.”

Summary Compensation Table

Name and Principal Position	Year	Salary (\$)	Bonus (\$)	Option Awards\$(1)	All Other Compensation (\$)	Total (\$)
Richard B. Brewer (2) Executive Chairman	2011	\$240,000	\$ –	\$ 82,626	\$ –	\$322,626
	2010	107,384	–	271,899	–	379,283
Joshua A. Kazam (3) President & CEO	2011	\$–	\$ –	\$ 35,321	\$ –	\$35,321
	2010	–	–	16,876	–	16,876
Daron Evans Chief Financial Officer	2011	\$252,083	\$ 87,500	\$ 20,893	\$ 530	(4) \$361,006
	2010	226,522	75,000	89,170	530	(4) 391,222

Amounts reflect the grant date fair value of awards granted under the Company's Amended and Restated Stock Option Plan, computed pursuant to Financial Accounting Standards Board's Accounting Standards Codification 718 "Compensation – Stock Compensation". Assumptions used in the calculation of these amounts are included in Note (1) 10 of the Notes to Audited Financial Statements included in this prospectus. For awards that are subject to performance conditions, amounts reflect the assumption that the highest level of performance conditions will be achieved. See the "Outstanding Equity Awards at Fiscal Year-End" table, below, for information regarding all option awards outstanding as of December 31, 2010.

(2) Mr. Brewer was appointed Executive Chairman on July 21, 2010. Mr. Brewer does not receive additional compensation for his service as a director of the Company.

Mr. Kazam has served as our non-employee President and Chief Executive Officer since June 2009 pursuant to the terms of our services agreement with Two River Consulting, LLC, or TRC. Mr. Kazam receives no direct compensation for his services as President and Chief Executive Officer, though, as a principal owner of TRC, he (3) indirectly receives a portion of the monthly cash fees paid to TRC under the services agreement. See "Transactions with Related Persons, Promoters and Certain Control Persons." Mr. Kazam also serves as a director of Nile, and amounts reflected in the summary compensation table represent compensation received solely for his services as a director in accordance with the standard compensation applicable to our other non-employee directors.

(4) Represents premiums paid for life insurance.

Employment Agreements and Post-Termination Benefits

Richard B. Brewer — Executive Chairman

Mr. Brewer's employment as our Executive Chairman is subject to the terms of a letter agreement dated July 15, 2010. In accordance with the agreement, Mr. Brewer is entitled to an annual salary of \$240,000. In addition, upon Mr. Brewer's appointment, we issued to him a 10-year stock option to purchase 450,000 shares of our common stock at an exercise price of \$0.32 per share and which was immediately exercisable. In addition, following the effective date of the amendment of our 2005 Stock Option Plan, we issued to Mr. Brewer a second 10-year option to purchase 900,000 shares of our common stock at an exercise price of \$0.37 per share, which vests and becomes exercisable in eight equal quarterly installments commencing September 30, 2011, provided that the vesting of this option will accelerate in the event of a "change of control" (as defined under our 2005 Stock Option Plan) of the Company. Both stock options were awarded pursuant to our 2005 Stock Option Plan. Mr. Brewer is not entitled to any severance or other post-termination benefits in the event his employment with us is terminated by either him or us.

Daron Evans — Chief Financial Officer

Mr. Evans' employment with us was initially governed by an employment agreement dated January 19, 2007, as amended on August 19, 2007 and March 4, 2008, respectively. The employment agreement, which initially provided for Mr. Evans's employment as Chief Operating Officer of our predecessor entity, a privately-held Delaware corporation, or Old Nile, provides for a term that expired on February 13, 2010. Despite the expiration of the employment agreement, Mr. Evans employment with us continues on an indefinite basis on substantially the same compensation terms. Under his former employment agreement, Mr. Evans was initially entitled to an annual base salary of \$175,000. Mr. Evans' annual base salary was increased to \$200,000 as of January 1, 2009, and to \$250,000 as of July 15, 2010. In addition, Mr. Evans is eligible to receive an annual performance bonus of up to 30% of his annual base salary upon the successful completion of annual corporate and individual milestones.

Mr. Evans' former employment agreement also provided for the awarding of certain stock options, referred to as Employment Options, Performance Options, and Technology Options. On September 17, 2007, Mr. Evans was granted Employment Options to purchase 239,896 shares of our common stock at an exercise price of \$2.71, vesting in three equal installments on the day before each anniversary of his employment agreement. Mr. Evans was also granted Performance Options to purchase 288,458 shares of our common stock at an exercise price of \$2.71, vesting up to one-third in each calendar year, or a pro-rata portion thereof for a period less than a full year, based on the successful completion of annual corporate and individual milestones as determined by our Board of Directors or its Compensation Committee. To the extent our Board or Compensation Committee declines to vest the maximum amount of Performance Options in any given calendar year, or a pro-rata portion thereof for a period less than a full year, such unvested amount are deemed forfeited by Mr. Evans. On March 4, 2008, the Compensation Committee determined that, for the pro-rated period ending December 31, 2007, Mr. Evans' Performance Options would vest in the amount of 76,528 shares out of a possible 84,562 shares, resulting in the forfeiture of Performance Options to purchase 8,034 shares. On January 16, 2009, the Compensation Committee determined that, for the calendar year ending December 31, 2008, Mr. Evans' Performance Options would vest in the amount of 43,269 shares out of a possible 96,153 shares, resulting in the forfeiture of Performance Options to purchase 52,884 shares. On January 19, 2010, the Compensation Committee determined that, for the calendar year ending December 31, 2009, Mr. Evans' Performance Options would vest in the amount of 50,000 shares out of a possible 96,153 shares, resulting in the forfeiture of Performance Options to purchase 46,153 shares. On July 8, 2010, Mr. Evans was granted a 10-year option to purchase 200,000 shares of our common stock at an exercise price of \$0.301 per share, which vests and becomes exercisable in twelve equal quarterly installments commencing September 30, 2010. On July 26, 2010, Mr. Evans was granted a 10-year option to purchase 250,000 shares of our common stock at an exercise price of \$0.37 per share, which vests and becomes exercisable in twelve equal quarterly installments commencing September 30, 2010. On April 18, 2011, Mr. Evans was granted a 10-year option to purchase 50,000 shares of our common stock at an exercise price of \$0.69 per share, which option was fully-vested and immediately-exercisable upon the date of grant.

Pursuant to a Severance Benefits Agreement dated July 24, 2010, if Mr. Evans' employment is terminated by us other than for "cause" (as defined below), Mr. Evans shall be entitled, upon execution of a customary release, to continued payment of his then-current base salary for a period of six months. For this purpose, "cause" means the following conduct or actions taken by Mr. Evans: (i) willful failure to perform his duties to the Company or willful misconduct in the performance of such duties; (ii) any willful, intentional or grossly negligent act causing material harm to the business or reputation of the Company; (iii) any material violation of the confidentiality, invention assignment, or non-solicitation obligations set forth in the agreement; (iv) indictment of any felony or a misdemeanor involving moral turpitude; or (v) any misappropriation or embezzlement of the Company's property.

Outstanding Equity Awards at Fiscal Year-End

The following table sets forth information concerning stock options held by the named executive officers at December 31, 2011:

Name	Number of Securities	Number of Securities	Equity Incentive Plan Awards:	Option Exercise	Option Expiration Date
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	Underlying Unexercised Options Exercisable	Underlying Unexercised Options Unexercisable	Number of Securities Underlying Unexercised Unearned Options	Price (\$)		
Richard B. Brewer	450,000	—	—	0.32	07/21/2020	
	225,000	675,000	—	0.37	07/26/2020	(1)
Joshua A. Kazam (2)	50,000	—	—	4.50	01/25/2018	
	25,000	—	—	0.93	12/22/2018	
	65,000	—	—	1.77	07/21/2019	
	80,000	—	—	0.37	07/26/2020	
	—	80,000	—	0.73	05/10/2021	(3)
Daron G. Evans	409,696	—	—	2.71	09/17/2017	
	49,020	—	—	0.88	01/15/2019	
	85,628	—	—	0.89	06/24/2019	(4)
	100,000	100,000	—	0.30	07/08/2020	(5)
	125,000	125,000	—	0.37	07/26/2020	(5)
	50,000	—	—	0.69	04/18/2021	

(1) Option granted on July 26, 2010 and which vests in 8 quarterly installments of 112,500 shares commencing on September 30, 2011.

(2) All stock options held by Mr. Kazam were awarded as compensation for his services as a director.

- (3) Option granted May 10, 2011 and which vests in its entirety on May 10, 2012.
- Option granted on June 24, 2009 to purchase up to a maximum of 100,000 shares, of which the right to purchase 25,000 vested immediately and the right to purchase remaining shares vested subject to the performance of specified clinical development milestones in two installments of up to 50,000 shares and up to 25,000 shares. On (4) February 15, 2010, Mr. Evans' right to purchase 42,500 of such 50,000-share installment vested and the remaining 7,500 shares of such installment were forfeited. On January 3, 2011, Mr. Evans' right to purchase 18,128 shares of the final 25,000-share installment vested and the remaining 6,872 shares were forfeited.
- (5) Options vests in 12 equal quarterly installments commencing September 30, 2010.

Compensation of Directors

On July 8, 2010, the Compensation Committee of our Board of Directors amended the compensation plan applicable to our non-employee directors. As amended, our non-employee directors receive an annual stock option grant pursuant to our 2005 Stock Option Plan relating to 80,000 shares of common stock, and the chairs of the Board's Audit and Compensation Committees each receive an additional annual stock option grant relating to 20,000 shares. All of such stock options are awarded upon each director's re-election by our stockholders and vest in their entirety on the first anniversary of the grant date. Newly-appointed non-employee directors are entitled to receive a stock option to purchase 130,000 shares of our common stock, which option vests in three equal annual installments commencing on the first anniversary of the grant date.

Prior to the adoption of this plan, our non-employee directors did not receive any cash fees for their service, but were periodically awarded stock options. The following table sets forth the compensation received by our directors for their service in 2011. Mr. Brewer is not listed below since he is an employee of Nile Therapeutics and receives no additional compensation for serving on our Board of Directors or its committees. Mr. Kazam, who is also currently serving as our President and Chief Executive Officer, does not receive any compensation for his services as our President and Chief Executive Officer and his compensation reflected below represents compensation received solely for his services as a director in accordance with the standard compensation applicable to our other non-employee directors.

Name	Fees Earned or Paid in Cash	Option Awards (1)	Total
Arie S. Belldegrun, M.D.	\$ —	\$ 35,321	\$35,321
Pedro Granadillo	—	44,152	44,152
Peter M. Kash, Ed.D.	—	35,321	35,321
Joshua A. Kazam (2)	—	35,321	35,321
Frank Litvack, M.D.	—	35,321	35,321
Paul A. Mieyal, Ph.D.	—	35,321	35,321
Gregory W. Schafer	—	44,152	44,152

Amounts reflect the grant date fair value of awards granted under the Company's Amended and Restated Stock Option Plan, computed pursuant to Financial Accounting Standards Board's Accounting Standards Codification 718 (1) "*Compensation – Stock Compensation*". Assumptions used in the calculation of these amounts are included in Note 10 of the Notes to Audited Financial Statements included in this prospectus.

As a principal owner of TRC, Mr. Kazam is indirectly compensated for his services as our President and Chief Executive Officer pursuant to our services agreement with TRC. See "Transactions with Related Persons, Promoters and Certain Control Persons."

SECURITY OWNERSHIP OF

CERTAIN BENEFICIAL OWNERS AND MANAGEMENT

The following table sets forth certain information known to us regarding the beneficial ownership of our common stock as of April 20, 2012 by:

- each of our directors,
- each named executive officer as defined and named in the Summary Compensation Table appearing herein,
- all of our directors and executive officers as a group, and,

each person known by us to beneficially own more than five percent of our common stock (based on information supplied in Schedules 13D and 13G filed with the Securities and Exchange Commission).

Except as indicated by footnote, and subject to applicable community property laws, each person identified in the table possesses sole voting and investment power with respect to all capital stock shown to be held by that person. The address of each named executive officer and director, unless indicated otherwise, is c/o Nile Therapeutics, Inc., 4 West 4th Ave., Suite 400, San Mateo, California 94402.

Name of Beneficial Owner	Shares of Common Stock Beneficially Owned (1)	Percentage of Common Stock Beneficially Owned (1)
Named Executive Officers and Directors:		
Richard B. Brewer (2)	1,006,250	2.3
Joshua A. Kazam (3)	3,036,157	7.0
Daron Evans (4)	906,423	2.1
Arie S. Belldegrun (5)	1,518,963	3.5
Pedro Granadillo (6)	402,588	*
Peter M. Kash (7)	2,837,693	6.5
Frank Litvack (8)	603,333	1.4
Paul A. Mieyal	—	—
Gregory W. Schafer (9)	375,100	*
Directors and executive officers as a group (10 individuals)	11,149,120	22.9

5% Stockholders:

Wexford Capital LP (10) 411 West Putnam Avenue Greenwich, CT 06830	2,923,619	6.7
Stonepine Capital, L.P. (11) 475 Gate Five Road, Suite 320 Sausalito CA 94965	5,837,500	9.9

* Represents less than 1%.

Based on 43,062,231 shares of our common stock outstanding as of April 20, 2012. Beneficial ownership is determined in accordance with Rule 13d-3 under the Exchange Act, and includes any shares as to which the security or stockholder has sole or shared voting power or investment power, and also any shares which the (1) security or stockholder has the right to acquire within 60 days of April 20, 2012, whether through the exercise or conversion of any stock option, convertible security, warrant or other right. The indication herein that shares are beneficially owned is not an admission on the part of the security or stockholder that he, she or it is a direct or indirect beneficial owner of those shares.

(2) Includes (i) 787,500 shares issuable upon the exercise of stock options; and (ii) 93,750 shares issuable upon the exercise of warrants.

(3) Includes (i) 300,000 shares issuable upon the exercise of stock options held by Mr. Kazam; (ii) 338,028 shares issuable upon the exercise of outstanding warrants held by Mr. Kazam; (iii) 613,841 shares held by the Kazam Family Trust, of which Mr. Kazam's spouse is the trustee and his children are beneficiaries, and as to which Mr. Kazam's disclaims beneficial ownership except to the extent of any pecuniary interest therein; (iv) 165,530 shares held by Mr. Kazam's spouse as custodian for the benefit of their minor children, to which Mr. Kazam disclaims beneficial ownership except to the extent of his pecuniary interest therein; and (v) 165,530 shares held by the Kash Family Foundation, of which Mr. Kazam is trustee but as to which he has no pecuniary interest.

(4) Includes (i) 856,844 shares issuable upon the exercise of stock options held by Mr. Evans; (ii) 13,327 shares issuable upon the exercise of warrants held by Mr. Evans; and (iii) a total of 10,600 shares held by Mr. Evans' spouse and minor children.

(5) Includes (i) 203,333 shares issuable upon the exercise of stock options held by Dr. Beldegrun, (ii) 604,210 shares issuable upon the exercise of warrants held by Dr. Beldegrun, (iii) 81,145 shares held by Leumi Overseas Trust Corp. Ltd. as Trustee of the BTL Trust, of which 4,210 shares are issuable upon the exercise of warrants, (iv) 129,600 shares held by the Beldegrun Family Trust, of which 64,800 shares are issuable upon the exercise of warrants, (v) 486,400 shares held by the Arie S. Beldegrun M.D. Inc. Profit Sharing Plan, including 243,200 shares issuable upon the exercise of warrants, (vi) 584,000 shares held by Leumi Overseas Trust Corp. Ltd. as Trustee of the Tampere Trust, of which 292,000 shares are issuable upon the exercise of warrants, and (vii) 34,485 shares held by Bellco Capital, LLC. Dr. Beldegrun disclaims beneficial ownership of the shares and warrants held by Leumi Overseas Trust Corp. Ltd. as Trustee of each of the BTL Trust and the Tampere Trust, except to the extent of his beneficiary interest therein.

(6) Includes 375,000 shares issuable upon the exercise of stock options.

(7) Includes (i) 335,000 shares issuable upon the exercise of stock options held by Dr. Kash, (ii) 244,366 shares issuable upon the exercise of warrants held by Dr. Kash, (iii) 496,589 shares held by Dr. Kash's spouse as custodian for the benefit of their minor children under the UGMA, to which Dr. Kash disclaims beneficial ownership except to the extent of his pecuniary interest therein, and (iv) 165,530 shares held by the Kash Family Foundation.

(8) Includes: (i) 203,333 shares issuable upon the exercise of stock options held by Dr. Litvack, and (ii) 400,000 shares held by Calmedica Capital L.P. ("Calmedica"), a limited partnership of which Dr. Litvack is a limited partner, including 200,000 shares issuable upon the exercise of warrants held by Calmedica. Dr. Litvack disclaims beneficial ownership of the shares and warrants held by Calmedica except to the extent of his pecuniary interest therein.

(9) Includes 375,000 shares issuable upon the exercise of stock options.

(10) Includes (i) 1,910,103 shares held by Iota Investors LLC, a Delaware limited liability company ("Iota Investors"), (ii) five year warrants to purchase 16,841 shares at an exercise price of \$2.71 per share held by Iota Investors, and (iii) 696,675 shares held by Wexford Spectrum Investors LLC, a Delaware limited liability company ("Wexford Spectrum"). Wexford Capital LP, a Delaware limited partnership ("Wexford Capital"), is a registered Investment Advisor and also serves as an investment advisor or sub-advisor to the members of Iota Investors and Wexford Spectrum. Wexford GP LLC, a Delaware limited liability company ("Wexford GP"), is the general partner of Wexford Capital. Mr. Charles E. Davidson is chairman, a managing member and a controlling member of Wexford GP and Mr. Joseph M. Jacobs is president, a managing member and a controlling member of Wexford GP. Beneficial ownership also includes 300,000 shares issuable upon the exercise of stock options that have been assigned to Wexford Capital by Dr. Mieryl, a director of Nile and vice president of Wexford Capital.

(11) Represents 3,850,000 shares of common stock held by Stonepine Capital, L.P., warrants to purchase 1,800,000 shares of common stock at a per share price of \$0.60, and warrants to purchase 187,500 shares of common stock at a per share price of \$0.50; provided, however, that such warrants provide that Stonepine Capital, L.P. may not exercise the warrants to the extent that it would beneficially own in excess of 9.99% of our outstanding common stock immediately after giving effect to such exercise. Stonepine Capital Management is the general partner of Stonepine Capital, L.P.

**TRANSACTIONS WITH RELATED PERSONS, PROMOTERS
AND CERTAIN CONTROL PERSONS**

Two River Consulting, LLC

On June 24, 2009, we entered into a services agreement with Two River Consulting, LLC, or TRC, to provide us with various clinical development, operational and administrative services, including the services of Joshua A. Kazam as our President and Chief Executive Officer, for a period of one year. As compensation for such services, we paid to TRC a monthly cash fee of \$65,000 and we issued stock options to purchase up to an aggregate of 750,000 shares of our common stock at a price per share equal to \$0.89, the closing sale price of our common stock on June 24, 2009. Shares relating to 25% of this option vested immediately and the remaining shares were scheduled to vest pursuant to the achievement of certain milestones relating to the development of CD-NP. In February 2010, an additional 318,750 shares subject to this option vested and 56,250 shares subject to the option were forfeited. On January 3, 2011, an additional 135,957 shares vested and the remaining 51,543 shares lapsed and were forfeited. Instead of issuing the stock option to TRC, at TRC's direction, the options were issued to designated employees of TRC who are engaged in performing the services under the services agreement. On August 12, 2010, we and TRC entered into an amendment to the services agreement to extend the term of the agreement and provide that it will continue on a month-to-month basis until otherwise terminated by one of the parties upon 30 days' notice. We also agreed to issue to designees of TRC a 5-year stock option to purchase 250,000 shares of our common stock at a price per share of \$0.38, the closing sale price of the common stock on August 12, 2010. The stock option was fully vested and immediately exercisable at the time of grant. On March 17, 2011, we and TRC entered into a second amendment to the services agreement, pursuant to which the level of services to be provided by TRC was reduced and the monthly cash fee payable to TRC was reduced to \$31,702. The monthly cash fee was further reduced to \$30,082 in July 2011 when certain services were eliminated. Additional operational and clinical development services may be provided by TRC, and billed to us, on an hourly basis. Of the monthly cash fee payable to TRC, we estimate that approximately 66% is attributable to the services rendered by Mr. Kazam as our President and Chief Executive Officer.

Mr. Kazam, our President & Chief Executive Officer and director, Arie S. Beldegrun, a current director, and David M. Tanen, a director of the Company until September 2009, are the principal owners of TRC. None of Messrs. Kazam and Tanen and Dr. Beldegrun received any of the stock options issued by us pursuant to the services agreement. The terms of the services agreement with TRC, including the August 12, 2010 amendment, were reviewed and approved by a special committee of our Board of Directors consisting of Pedro Granadillo, Paul Mieyal and Greg Schafer. None of the members of the special committee has any interest in TRC or the services agreement.

Riverbank Capital Securities, Inc.

In connection with our June 2011 private placement, we engaged Riverbank Capital Securities, Inc., or Riverbank, to serve as our placement agent, and Riverbank subsequently engaged Ladenburg Thalmann & Co. Inc. as a sub-placement agent. We agreed to pay Riverbank a cash fee equal to 7% of the gross proceeds resulting from the private placement, plus issue a five-year warrant to purchase a number of shares equal to 5% of the shares of our common stock sold in the private placement. Pursuant to such terms, we paid the placement agents a cash fee of \$175,000 and issued five-year warrants to purchase 250,000 shares of common stock at an exercise price of \$0.60 per share.

Peter M. Kash, a director of our Company, and Joshua A. Kazam, our President and Chief Executive Officer and a director, are each officers of Riverbank. Dr. Kash and Mr. Kazam may be allocated a portion of the warrants issuable to Riverbank. In light of our relationships with Dr. Kash and Mr. Kazam, the selection of the Riverbank as a placement agent and the terms of the engagement were reviewed and approved by a special committee of the our Board of Directors consisting of disinterested directors with no affiliation to Riverbank or its affiliates.

WHERE YOU CAN FIND MORE INFORMATION

Federal securities laws require us to file information with the SEC concerning our business and operations. Accordingly, we file annual, quarterly, and special reports, proxy statements and other information with the SEC. You can inspect and copy this information at the Public Reference Facility maintained by the SEC at Judiciary Plaza, 100 F Street, N.E., Washington, D.C. 20549. You can receive additional information about the operation of the SEC's Public Reference Facilities by calling the SEC at 1-800-SEC-0330. The SEC also maintains a web site at <http://www.sec.gov> that contains reports, proxy and information statements and other information regarding companies that, like us, file information electronically with the SEC.

LEGAL MATTERS

Legal matters in connection with the validity of the shares offered by this prospectus will be passed upon by Fredrikson & Byron, P.A., Minneapolis, Minnesota.

EXPERTS

The financial statements as of December 31, 2011 and 2010, and for the years then ended, and for the period from August 1, 2005 (inception) through December 31, 2011, included in this prospectus, have been so included in reliance on the report of Crowe Horwath LLP, independent registered public accounting firm, given on the authority of said firm as experts in accounting and auditing.

TRANSFER AGENT

The transfer agent for our common stock is American Stock Transfer & Trust Company, and its address is 40 Wall Street, New York, New York, 10005.

DISCLOSURE OF COMMISSION POSITION ON

INDEMNIFICATION FOR SECURITIES ACT LIABILITIES

Insofar as indemnification for liabilities arising under the Securities Act of may be permitted to directors, officers or persons controlling the registrant pursuant to the foregoing provisions, the registrant has been informed that in the opinion of the Securities and Exchange Commission such indemnification is against public policy as expressed in the Securities Act and is therefore unenforceable.

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REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Board of Directors and stockholders

Nile Therapeutics, Inc.

San Mateo, California

We have audited the accompanying balance sheets of Nile Therapeutics, Inc. (a development stage company) as of December 31, 2011 and 2010, and the related statements of operations and deficit accumulated during the development stage, stockholders' equity, and cash flows for the years then ended and for the period from August 1, 2005 (inception) through December 31, 2011. These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these financial statements based on our audits.

We conducted our audits in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. The Company is not required to have, nor were we engaged to perform, an audit of its internal control over financial reporting. Our audit included consideration of internal control over financial reporting as a basis for designing audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Company's internal control over financial reporting. Accordingly, we express no such opinion. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of Nile Therapeutics, Inc. (a development stage company) as of December 31, 2011 and 2010, and the results of its operations and its cash flows for the years then ended and the period from August 1, 2005 (inception) through December 31, 2011, in conformity with U.S. generally accepted accounting principles.

The accompanying financial statements have been prepared assuming that the Company will continue as a going concern. As discussed in Note 2 to the financial statements, the Company is in the development stage, has not generated any revenues and has recurring net losses from operations. These events raise substantial doubt about the Company's ability to continue as a going concern. Management's plans in regard to these matters are also described in Note 2. The financial statements do not include any adjustments that might result from the outcome of this uncertainty.

/s/ Crowe Horwath LLP

New York, New York

April 2, 2012

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NILE THERAPEUTICS, INC.**(A DEVELOPMENT STAGE COMPANY)****BALANCE SHEETS**

	December 31, 2011	December 31, 2010
ASSETS		
Current assets		
Cash and cash equivalents	\$ 1,039,190	\$ 3,378,155
Prepaid expenses and other current assets	271,298	219,095
Total current assets	1,310,488	3,597,250
Property and equipment, net	9,744	16,765
Other noncurrent assets	51,938	51,938
Total assets	\$ 1,372,170	\$ 3,665,953
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities		
Accounts payable	\$ 437,837	\$ 332,380
Accrued expenses and other current liabilities	64,718	652,275
Due to related party	38,892	84,430
Total current liabilities	541,447	1,069,085
Commitments and contingencies		
Stockholders' equity		
Preferred stock, \$0.001 par value, 10,000,000 shares authorized, none issued and outstanding	-	-
Common stock, \$0.001 par value, 100,000,000 shares authorized, 39,712,231 and 34,629,794 shares issued and outstanding	39,712	34,630
Additional paid-in capital	45,605,991	42,492,432
Deficit accumulated during the development stage	(44,814,980)	(39,930,194)
Total stockholders' equity	830,723	2,596,868
Total liabilities and stockholders' equity	\$ 1,372,170	\$ 3,665,953

See accompanying notes to financial statements

NILE THERAPEUTICS, INC.**(A DEVELOPMENT STAGE COMPANY)****STATEMENTS OF OPERATIONS**

	Year ended December 31,		Period from August 1,
	2011	2010	2005 (inception) through December 31, 2011
Income			
Grant income	\$-	\$-	\$ 482,235
Collaboration income	1,354,500	-	1,354,500
Total income	1,354,500	-	1,836,735
Operating expenses:			
Research and development	4,136,951	4,080,884	29,995,891
General and administrative	2,116,729	2,212,669	16,326,160
Total operating expenses	6,253,680	6,293,553	46,322,051
Loss from operations	(4,899,180)	(6,293,553)	(44,485,316)
Other income (expense):			
Interest income	6,006	20,377	793,965
Interest expense	-	-	(1,273,734)
Other income (expense)	8,388	241,685	150,105
Total other income (expense)	14,394	262,062	(329,664)
Net loss	\$(4,884,786)	\$(6,031,491)	\$ (44,814,980)
Basic and diluted loss per share	\$(0.13)	\$(0.19)	
Weighted-average common shares outstanding	37,328,519	32,168,433	

See accompanying notes to financial statements

NILE THERAPEUTICS, INC.**(A DEVELOPMENT STAGE COMPANY)****STATEMENT OF STOCKHOLDERS' EQUITY (DEFICIT)****Period from****August 1, 2005 (inception) through December 31, 2011**

	COMMON STOCK SHARES	COMMON STOCK AMOUNT	ADDITIONAL PAID-IN CAPITAL	DEFICIT DURING THE DEVELOPMENT STAGE	DEFICIT ACCUMULATED TOTAL STOCKHOLDERS' EQUITY (DEFICIT)
Issuance of common shares to founders	13,794,132	\$ 13,794	\$ (8,794) \$ -	\$ 5,000
Founders shares returned to treasury	(1,379,419)	-	-	-	-
Net loss	-	-	-	(10,043) (10,043)
Balance at December 31, 2005	12,414,713	13,794	(8,794) (10,043) (5,043)
Issuance of common shares pursuant to licensing agreement	1,379,419	-	500	-	500
Issuance of stock options for services	-	-	10,000	-	10,000
Net loss	-	-	-	(2,581,972) (2,581,972)
Balance at December 31, 2006	13,794,132	13,794	1,706	(2,592,015) (2,576,515)
Issuance of common shares pursuant to licensing agreement	63,478	64	182,172	-	182,236
Issuance of common shares pursuant to licensing agreement	350,107	350	999,650	-	1,000,000
Common shares sold in private placement, net of issuance costs of \$102,000	6,957,914	6,958	19,865,789	-	19,872,747
	-	-	288,000	-	288,000

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Warrants issued in connection with
note conversion

Conversion of notes payable upon event of merger	1,684,085	1,684	4,349,481	-	4,351,165
Note discount arising from beneficial conversion feature	-	-	483,463	-	483,463
Reverse merger transaction					
Elimination of accumulated deficit	-	-	(234,218) -	(234,218)
Previously issued SMI stock	1,250,000	1,250	232,968	-	234,218
Employee stock-based compensation	-	-	1,902,298	-	1,902,298
Non-employee stock-based compensation	-	-	(667) -	(667)
Net loss	-	-	-	(10,302,795)	(10,302,795)
Balance at December 31, 2007	24,099,716	24,100	28,070,642	(12,894,810)	15,199,932
Warrants issued in satisfaction of accrued liabilities	-	-	334,992	-	334,992
Employee stock-based compensation	-	-	2,436,603	-	2,436,603
Non-employee stock-based compensation	-	-	13,687	-	13,687
Issuance of common shares pursuant to licensing agreement	49,689	50	249,950	-	250,000
Net loss	-	-	-	(13,131,596)	(13,131,596)
Balance at December 31, 2008	24,149,405	24,150	31,105,874	(26,026,406)	\$ 5,103,618
Employee stock-based compensation	-	-	1,772,597	-	1,772,597
Non-employee stock-based compensation	-	-	473,584	-	473,584
Units sold in private placement, net of issuance costs of \$282,773	2,691,394	2,691	3,284,484	-	3,287,175
Stock option and warrant exercises	245,025	245	217,228	-	217,473
Net loss	-	-	-	(7,872,297)	(7,872,297)

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Balance at December 31, 2009	27,085,824	27,086	36,853,767	(33,898,703)	2,982,150
Employee stock-based compensation			1,142,552	-	1,142,552
Non-employee stock-based compensation	-	-	(19,249)	-	(19,249)
Units sold in private placement, net of issuance costs of \$715,801	7,475,000	7,475	4,509,224	-	4,516,699
Stock option and warrant exercises	68,970	69	6,138	-	6,207
Net loss	-	-	-	(6,031,491)	(6,031,491)
Balance at December 31, 2010	34,629,794	34,630	42,492,432	(39,930,194)	2,596,868
Employee stock-based compensation			785,587	-	785,587
Non-employee stock-based compensation	-	-	20,740	-	20,740
Stock option and warrant exercises	82,437	82	13,666	-	13,748
Units sold in private placement, net of issuance costs of \$201,434	5,000,000	5,000	2,293,566	-	2,298,566
Net loss	-	-	-	(4,884,786)	(4,884,786)
Balance at December 31, 2011	39,712,231	\$ 39,712	\$ 45,605,991	\$ (44,814,980)	\$ 830,723

See accompanying notes to financial statements

NILE THERAPEUTICS, INC.**(A DEVELOPMENT STAGE COMPANY)****STATEMENTS OF CASH FLOWS**

	Year ended December 31,		Period from
	2011	2010	August 1, 2005
			(inception)
			through December 31,
			2011
Cash flows from operating activities			
Net loss	\$ (4,884,786)	\$ (6,031,491)	\$ (44,814,980)
Adjustment to reconcile net loss to net cash used in operating activities			
Depreciation and amortization	7,507	12,926	320,648
Stock-based compensation	806,327	1,123,303	10,305,460
Write-off of intangible assets	-	106,830	106,830
Warrants issued in connection with note conversion	-	-	288,000
Note discount arising from beneficial conversion feature	-	-	483,463
Loss on disposal of assets	1,501	-	36,724
Noncash interest expense	-	-	351,165
Changes in operating assets and liabilities			
Prepaid expenses and other current assets	(52,203)	38,637	(271,298)
Other non-current assets	-	-	(51,938)
Accounts payable	105,457	181,752	437,837
Accrued expenses and other current liabilities	(587,557)	249,503	64,718
Due to related party	(45,538)	276	38,892
Net cash used in operating activities	(4,649,292)	(4,318,264)	(32,704,479)
Cash flows from investing activities			
Purchase of property and equipment	(1,987)	(2,205)	(130,855)
Proceeds from sale of assets	-	-	2,500
Cash paid for intangible assets	-	-	(345,591)
Net cash used in investing activities	(1,987)	(2,205)	(473,946)
Cash flows from financing activities			
Proceeds from issuance of notes payable	-	-	5,500,000
Repayment of notes payable	-	-	(1,500,000)
Proceeds from exercise of stock options and warrants	13,748	6,207	237,428
Proceeds from sale of common stock to founders	-	-	5,000
Proceeds from sale of common stock in private placement	2,298,566	4,516,699	29,975,187

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Net cash provided by financing activities	2,312,314	4,522,906	34,217,615
Net (decrease) increase in cash and cash equivalents	(2,338,965)	202,437	1,039,190
Cash and cash equivalents at beginning of period	3,378,155	3,175,718	-
Cash and cash equivalents at end of period	\$ 1,039,190	\$ 3,378,155	\$ 1,039,190

Supplemental schedule of cash flows information:

Cash paid for interest	\$-	\$-	\$ 150,000
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Supplemental schedule of non-cash investing and financing activities:

Warrants issued in satisfaction of accrued liability	\$-	\$-	\$ 334,992
Warrants issued to placement agent and investors, in connection with private placement	\$ 1,083,700	\$ 1,765,300	\$ 5,721,000
Conversion of notes payable and interest to common stock	\$-	\$-	\$ 4,351,165
Common shares of SMI issued in reverse merger transaction	\$-	\$-	\$ 1,250

See accompanying notes to financial statements

Nile Therapeutics, Inc

(A Development Stage Company)

Notes to Financial Statements

1. DESCRIPTION OF BUSINESS

Nile Therapeutics, Inc. (“Nile” or the “Company”) develops innovative products for the treatment of cardiovascular diseases. Nile’s lead compound is cenderitide (formerly CD-NP), a chimeric natriuretic peptide currently in clinical studies for the treatment of heart failure. The Company is also developing CU-NP, 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 (“CNP”) and the N- and C-termini of Urodilatin (“URO”).

The Company was originally incorporated in the State of Nevada on June 17, 1996, and reincorporated in Delaware on February 9, 2007, at which time its name was SMI Products, Inc. (“SMI”). On September 17, 2007, the Company completed a merger transaction whereby Nile Merger Sub, Inc., a Delaware corporation and a wholly-owned subsidiary of SMI, merged with and into Nile Therapeutics, Inc., a privately held Delaware corporation (“Old Nile”), with Old Nile becoming a wholly-owned subsidiary of SMI. Immediately following the merger described above, Old Nile was merged with and into the Company, with the Company remaining as the surviving corporation to that merger. In connection with that short-form merger, the Company changed its name to “Nile Therapeutics, Inc.” These two merger transactions are hereinafter collectively referred to as the “Merger.” All costs incurred in connection with the Merger have been expensed. Upon completion of the Merger, the Company adopted Old Nile’s business plan.

2. BASIS OF PRESENTATION, CAPITAL RESOURCES AND MANAGEMENT’S PLANS

The Company is a development stage enterprise since it has not yet generated any revenue from the sale of products and, through December 31, 2011, its efforts have been principally devoted to developing its licensed technologies, recruiting personnel, establishing office facilities, and raising capital. Accordingly, the accompanying financial statements have been prepared in accordance with the provisions of Accounting Standards Codification (“ASC”) 915, “*Development Stage Entities*.” The Company’s financial statements have been prepared on a going concern basis, which contemplates the realization of assets and the settlement of liabilities and commitments in the normal course of business. The Company has experienced net losses since its inception and has an accumulated deficit of approximately \$44.8 million at December 31, 2011. The Company expects to incur substantial and increasing losses and have negative net cash flows from operating activities as it expands its technology portfolio and engages in further research and development activities, particularly the conducting of pre-clinical and clinical trials.

Cash resources as of December 31, 2011 were approximately \$1.0 million, compared to \$3.4 million as of December 31, 2010. Based on its resources at December 31, 2011, together with the expected net proceeds of the Company's March 2012 offering of common stock and warrants (See Note 15), and the current plan of expenditure of \$2.0 to \$2.5 million on the continuing development of current products which includes activities related to designing and planning the Company's planned Phase 2 clinical trial of cenderitide, its lead product candidate, the Company believes that it has sufficient capital to fund its operations into the fourth quarter of 2012. However, the Company will need substantial additional capital in order to fund the costs of conducting such Phase 2 study. The Company will need to raise additional capital to fund such study and to otherwise continue operations through the fourth quarter of 2012. Additionally, the Company will need substantial additional financing in the future until it can achieve profitability, if ever. The Company's continued operations will depend on its ability to raise additional funds through various potential sources, such as equity and debt financing, or to license its compounds to another pharmaceutical company. The Company will continue to fund operations from cash on hand and through sources of capital similar to those previously described. The Company cannot assure that it will be able to secure such additional financing, or if available, that it will be sufficient to meet its needs.

The success of the Company depends on its ability to discover and develop new products to the point of FDA approval and subsequent revenue generation and, accordingly, to raise enough capital to finance these developmental efforts. Management plans to raise additional equity capital or license one or more of its products to finance the continued operating and capital requirements of the Company. Amounts raised will be used to further develop the Company's products, acquire additional product licenses and for other working capital purposes. While the Company will extend its best efforts to raise additional capital to fund all operations for the next 12 to 24 months, management can provide no assurances that the Company will be able to raise such sufficient funds.

In addition, to the extent that the Company raises additional funds by issuing shares of its common stock or other securities convertible or exchangeable for shares of common stock, stockholders may experience significant additional dilution. In the event the Company raises additional capital through debt financings, the Company may incur significant interest expense and become subject to covenants in the related transaction documentation that may affect the manner in which the Company conducts its business. To the extent that the Company raises additional funds through collaboration and licensing arrangements, it may be necessary to relinquish some rights to its technologies or product candidates, or grant licenses on terms that may not be favorable to the Company.

Nile Therapeutics, Inc

(A Development Stage Company)

Notes to Financial Statements

These factors raise substantial doubt about the Company's ability to continue as a going concern. The Company's financial statements have been prepared on a going concern basis, which contemplates the realization of assets and the settlement of liabilities and commitments in the normal course of business. The financial statements do not include any adjustments that might result from the inability of the Company to continue as a going concern.

3. THE MERGER

(a) Description of the Merger and Private Placement Offering

On September 17, 2007, the Company completed the Merger. In accordance with the terms of the Merger, each share of common stock of Old Nile that was outstanding immediately prior to the Merger was exchanged for 2.758838 shares of the Company's common stock, and one share of Old Nile common stock was issued to SMI. In addition, all securities convertible into or exercisable for shares of Old Nile common stock outstanding immediately prior to the Merger were cancelled, and the holders thereof received similar securities convertible into or exercisable for the purchase of an aggregate of 3,572,350 shares of the Company's common stock. In consideration for their shares of the Company's pre-merger common stock, the Company's shareholders received an aggregate of 22,849,716 shares of SMI common stock. Immediately prior to the effective time of the Merger, 755,100 shares of SMI's common stock were issued and outstanding. In addition, prior to the effective time of the Merger, 56,364 shares of SMI's common stock were issued to Fountainhead Capital Partners Limited and 438,536 shares of SMI's common stock were issued to Ko Zen Asset Management, Inc. pursuant to the conversion of convertible promissory notes and accrued interest. Upon completion of the Merger, the Old Nile shareholders owned approximately 95% of the Company's issued and outstanding common stock, assuming the exercise of all of the issued and outstanding common stock options and warrants.

Following the Merger, the business conducted by the Company is the business conducted by Old Nile prior to the Merger. In addition, the director and officer of SMI was replaced by the directors and officers of Old Nile.

As a condition to the closing of the Merger, on September 11, 2007, Old Nile completed a financing whereby it received gross proceeds of \$19,974,747 through the sale of 6,957,914 shares of common stock in a private placement to certain qualified investors (the "Financing"). Contemporaneously with the Financing, the Company converted

\$4,351,165 of convertible debt and interest into 1,684,085 shares of common stock, and issued five-year warrants to purchase an aggregate of 168,337 shares of common stock at an exercise price of \$2.71 per share.

All references to share and per share amounts in these financial statements have been restated to retroactively reflect the number of common shares of Nile common stock issued pursuant to the Merger.

(b) Accounting Treatment of the Merger; Financial Statement Presentation

The Merger was accounted for as a reverse acquisition, which provides that the “merger of a private operating company into a non-operating public shell corporation with nominal net assets typically results in the owners and management of the private company having actual or effective operating control of the combined company after the transaction, with the shareholders of the former public shell continuing only as passive investors. These transactions are considered by the Securities and Exchange Commission to be capital transactions in substance, rather than business combinations. That is, the transaction is equivalent to the issuance of stock by the private company for the net monetary assets of the shell corporation, accompanied by a recapitalization.” Accordingly, the Merger has been accounted for as a recapitalization, and, for accounting purposes, Old Nile is considered the acquirer in a reverse acquisition.

SMI’s historical accumulated deficit for periods prior to September 17, 2007, in the amount of \$234,218, was eliminated against additional-paid-in-capital, and the accompanying financial statements present the previously issued shares of SMI common stock as having been issued pursuant to the Merger on September 17, 2007. The shares of common stock of the Company issued to the Old Nile stockholders in the Merger are presented as having been outstanding since August 2005 (the month when Old Nile first sold its equity securities).

Because the Merger was accounted for as a reverse acquisition under U.S. generally accepted accounting principles (“GAAP”), the financial statements for periods prior to September 17, 2007 reflect only the operations of Old Nile.

4. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

(a) Use of Estimates

The preparation of financial statements in conformity with GAAP requires that management make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Estimates and assumptions principally relate to services performed by third parties but not yet invoiced, estimates of

the fair value of stock options issued to employees, directors and consultants, and estimates of the probability and potential magnitude of contingent liabilities. Actual results could differ from those estimates.

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(b) Cash and Cash Equivalents

The Company considers all highly liquid investments with a remaining maturity of three months or less at the time of acquisition to be cash equivalents.

(c) Property and Equipment

Property and equipment are stated at cost. Repairs and maintenance costs are expensed in the period incurred. Depreciation is computed using the straight-line method over the related estimated useful lives, except for leasehold improvements, which are depreciated over the shorter of the useful life of the asset or the lease term.

Description	Estimated Useful Life
Office equipment & furniture	5 – 7 years
Leasehold improvements	3 years
Computer equipment	3 years

(d) Intangible Assets and Intellectual Property

Intangible assets consist of costs related to acquiring patents and to prosecuting and maintaining intellectual property rights, and are amortized using the straight-line method over the estimated useful lives. Beginning in 2008, the Company changed its estimate of the expected useful life of its recorded intangibles from twenty years to three years. The Company believes that a three year useful life better reflects the uncertainty of the future benefit of the patent assets. The change in the useful life of the Company's patent assets did not have a material effect on the Company's financial position or results of operations. Certain costs of acquiring intellectual property rights to be used in the research and development process, including licensing fees and milestone payments, are charged to research and development expense as incurred.

During the first quarter of 2010, the Company revised its estimate for the useful lives of its patent and patent applications to zero. As a result of this change in estimates, the Company recorded an impairment of \$106,830 to research and development expense, which was the net book value of its intangible assets as of December 31, 2009. Management believes this revised estimate better reflects the uncertainty surrounding drug product development. Management does not believe that the change in this estimate will have a material impact on its financial statements.

(e) Concentration of Credit Risk

Financial instruments which potentially subject the Company to concentrations of credit risk consist principally of cash and cash equivalents. The Company deposits cash and cash equivalents with high credit quality financial institutions and is insured to the maximum limitations. Balances in these accounts may exceed federally insured limits at times, which expose the Company to institutional risk.

(f) Research and Development

Research and development costs are charged to expense as incurred. Research and development includes employee costs, fees associated with operational consultants, contract clinical research organizations, contract manufacturing organizations, clinical site fees, contract laboratory research organizations, contract central testing laboratories, licensing activities, and allocated office, insurance, depreciation, and facilities expenses. The Company accrues for costs incurred as the services are being provided by monitoring the status of the trial and the invoices received from its external service providers. As actual costs become known, the Company adjusts its accruals in the period when actual costs become known. Costs related to the acquisition of technology rights for which development work is still in process are charged to operations as incurred and considered a component of research and development costs.

(g) Grant and Collaboration Income

The Company has entered into a collaboration agreement under which the Company is reimbursed for development work performed on behalf of the collaborator and upon the achievement of certain milestones. The Company records all of these expenses as research and development expenses and the reimbursements upon the achievement of the milestones as income.

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The Company recognizes milestone payments as income upon achievement of the milestone only if (1) the milestone payment is non-refundable, (2) substantive effort is involved in achieving the milestone, (3) the amount of the milestone is reasonable in relation to the effort expended or the risk associated with achievement of the milestone, and (4) the milestone is at risk for both parties. If any of these conditions are not met, the Company defers the milestone payment and recognizes it as income over the remaining estimated period of performance under the contract as the Company completes its performance obligations.

(h) Stock-Based Compensation

Stock-based compensation cost is measured at the grant date based on the value of the award and is recognized as expense over the required service period, which is generally equal to the vesting period. Share-based compensation is recognized only for those awards that are ultimately expected to vest; therefore, the Company has applied an estimated forfeiture rate to unvested awards for the purpose of calculating compensation cost. These estimates will be revised, if necessary, in future periods if actual forfeitures differ from estimates. Changes in forfeiture estimates impact compensation cost in the period in which the change in estimate occurs.

Common stock, stock options or other equity instruments issued to non-employees (including consultants and all members of the Company's Scientific Advisory Board) as consideration for goods or services received by the Company are accounted for based on the fair value of the equity instruments issued (unless the fair value of the consideration received can be more reliably measured). The fair value of stock options is determined using the Black-Scholes option-pricing model. The fair value of any options issued to non-employees is recorded as expense over the applicable service periods.

(i) Loss per Common Share

Basic loss per share is computed by dividing the loss available to common shareholders by the weighted-average number of common shares outstanding. Diluted loss per share is computed similarly to basic loss per share except that the denominator is increased to include the number of additional common shares that would have been outstanding if the potential common shares had been issued and if the additional common shares were dilutive.

For all periods presented, potentially dilutive securities are excluded from the computation of fully diluted loss per share as their effect is anti-dilutive.

Potentially dilutive securities include:

	December 31, 2011	December 31, 2010
Warrants to purchase common stock	-	-
Options to purchase common stock	2,750,000	2,818,970
Total potentially dilutive securities	2,750,000	2,818,970

For the years ending December 31, 2011 and 2010, 14,396,818 and 10,610,418 warrants and options have been excluded from the computation of the dilutive earnings per share, respectively, as their exercise prices are greater than the 100 day moving average market price per common share as of March 1, 2011, and February 1, 2010, respectively.

(j) Comprehensive Loss

The Company has no components of other comprehensive loss other than its net loss, and accordingly, comprehensive loss is equal to net loss for all periods presented.

(k) Income Taxes

The Company recognizes deferred tax assets and liabilities for the expected future tax consequences of events that have been included in the financial statements or tax returns. Under this method, deferred income taxes are recognized for the tax consequences in future years of differences between the tax bases of assets and liabilities and their financial reporting amounts at each year-end based on enacted tax laws and statutory tax rates applicable to the period in which the differences are expected to affect taxable income. The Company provides a valuation allowance when it appears more likely than not that some or all of the net deferred tax assets will not be realized.

A tax position is recognized as a benefit only if it is “more likely than not” that the tax position would be sustained in a tax examination, with a tax examination being presumed to occur. The amount recognized is the largest amount of tax benefit that is greater than 50% likely of being realized on examination. For tax positions not meeting the “more likely than not” test, no tax benefit is recorded.

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The Company's policy is to include interest and penalties related to unrecognized tax benefits within the Company's provision for (benefit from) income taxes. The Company recognized no amounts for interest and penalties related to unrecognized tax benefits in 2011 and 2010 respectively. In addition, the Company had no amounts accrued for interest and penalties as of December 31, 2011 and 2010, respectively.

(m) Recently Issued Accounting Pronouncements

In May 2011, the Financial Accounting Standards Board ("FASB") issued additional guidance relating to fair value measurement and disclosure requirements. For fair value measurements categorized in Level 3 of the fair value hierarchy, the new guidance requires (1) disclosure of quantitative information about unobservable inputs; (2) a description of the valuation processes used by the entity; and (3) a qualitative discussion about the sensitivity of the fair value measurements to changes in unobservable inputs and interrelationships between those unobservable inputs, if any. Entities must report the level in the fair value hierarchy of assets and liabilities that are not recorded at fair value in the statement of financial position but for which fair value is disclosed. The new requirements clarify that the concepts of highest and best use and valuation premise only apply to measuring fair value of nonfinancial assets. The new requirements also specify that in the absence of a Level 1 input, a reporting entity should incorporate a premium or discount in a fair value measurement if a market participant would take into account such an input in pricing an asset or liability. Additionally, the new guidance introduces an option to measure certain financial assets and financial liabilities with offsetting positions on a net basis if certain criteria are met. For public entities, these new requirements become effective for interim and annual periods beginning on or after December 15, 2011. These requirements are applicable to our fiscal year end beginning January 1, 2012. Management does not expect this new guidance to have a material effect on the Company's financial statements.

5. PROPERTY AND EQUIPMENT

Property and equipment as of December 31, 2011 and 2010 consist of the following:

	2011	2010
Computer equipment	\$ 11,834	\$ 30,340

Office furniture and equipment	38,521	38,521
Total property and equipment	50,355	68,861
Accumulated depreciation	(40,611)	(52,096)
Total property and equipment, net	\$9,744	\$16,765

Depreciation expense related to property and equipment for the years ended December 31, 2011 and 2010 totaled \$7,507 and \$12,926, respectively, and \$68,961 for the period from August 1, 2005 (inception) to December 31, 2011.

6. INTANGIBLE ASSETS AND INTELLECTUAL PROPERTY

Patents

During the first quarter of 2010, the Company revised its estimate for the useful lives of its patent and patent applications to zero. As a result of this change in estimates, the Company recorded an impairment of \$106,830 to research and development expense, which was the net book value of its intangible assets as of December 31, 2009. Management believes this revised estimate better reflects the uncertainty surrounding drug product development. Management does not believe that the change in this estimate will have a material impact on its financial statements.

License Agreements

Cenderitide (formerly CD-NP)

On January 20, 2006, the Company entered into an exclusive, worldwide, royalty-bearing license agreement, or the Cenderitide License Agreement, with Mayo Foundation for Medical Education and Research (“Mayo”) for the rights to issued patents, patent applications and know-how relating to the use of cenderitide in all therapeutic indications. The Company was also entitled to rights to improvements to cenderitide that arose out of the laboratory of Dr. John Burnett, the co-inventor of cenderitide, until January 19, 2009.

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Under the terms of the Cenderitide License Agreement, the Company paid Mayo an up-front cash payment, reimbursed it for past patent expenses and issued to Mayo 1,379,419 shares of common stock. Additionally, the Company agreed to make contingent cash payments up to an aggregate of \$31.9 million upon successful completion of specified clinical and regulatory milestones relating to cenderitide. This aggregate amount is subject to increase upon the receipt of regulatory approval for each additional indication of cenderitide as well as for additional compounds or analogues contained in the intellectual property. In July 2008, the Company made a milestone payment of \$400,000 to Mayo upon the dosing of the first patient in a Phase II trial. Based on the current stage of research the Company does not expect to make any milestone payments for the year ending December 31, 2012. Pursuant to the Cenderitide License Agreement, the Company will pay Mayo an annual maintenance fee and a percentage of net sales of licensed products, as well as \$50,000 per year for the consulting services of Dr. Burnett while serving as chairman of the Company's Scientific Advisory Board.

In addition to the potential milestone payments discussed above, the Cenderitide License Agreement requires the Company to issue shares of common stock to Mayo for an equivalent dollar amount of grants received in excess of \$300,000, but not to exceed \$575,000. For the period from August 1, 2005 (inception) through December 31, 2011, the Company received \$482,235 in grant income for which it has issued to Mayo 63,478 shares (representing \$182,235) of common stock. No such shares have been issued since the year ended December 31, 2008.

The Cenderitide License Agreement, unless earlier terminated, will continue in full force and effect until January 20, 2026. However, to the extent any patent covered by the license is issued with an expiration date beyond January 20, 2026, the term of the agreement will continue until such expiration date. Mayo may terminate the agreement earlier (i) for the Company's material breach of the agreement that remains uncured after 90 days' written notice, (ii) the Company's insolvency or bankruptcy, or (iii) if the Company challenges the validity or enforceability of any of the patents in any manner. The Company may terminate the agreement without cause upon 90 days' written notice.

CU-NP

On June 13, 2008, the Company entered into an exclusive, worldwide, royalty-bearing license agreement, or the CU-NP License Agreement, with Mayo for the rights to intellectual property and to develop commercially CU-NP for all therapeutic indications. The Company was also entitled to rights to improvements to CU-NP that arise out of the laboratory of Dr. John Burnett and Dr. Candace Lee, the inventors of CU-NP, until June 12, 2011.

Under the terms of the CU-NP License Agreement, the Company made an up-front cash payment to Mayo and agreed to make future contingent cash payments up to an aggregate of \$24.3 million upon achievement of specific clinical and regulatory milestones relating to CU-NP, including a milestone payment due in connection with the initiation of the first Phase II clinical trial of the licensed product. This aggregate amount of \$24.3 million is subject to increase upon the receipt of regulatory approval for each additional indication of CU-NP, as well as for additional compounds or analogues contained in the intellectual property. Based on the current stage of research the Company does not expect to make any milestone payments for the year ending December 31, 2012. Pursuant to the agreement, the Company must also pay Mayo an annual maintenance fee and a percentage of net sales of licensed products.

In addition to these cash payments payable with respect to the CU-NP License Agreement, the Company also agreed to issue shares of its common stock and warrants to Mayo. In June 2008, the Company issued 49,689 shares of common stock to Mayo having a fair market value as of June 13, 2008 equal to \$250,000. This amount has been recorded in research and development expenses in the accompanying Statements of Operations. Additionally, Dr. Burnett has applied for funding through Mayo's Discovery-Translation Program. In the event Dr. Burnett is awarded funding through this program, and the funding is used for the development of the licensed product based on the patent applications, the Company agreed to grant to Mayo an equivalent dollar value in warrants to purchase shares of the Company's common stock. The number of shares purchasable under these warrants will be calculated using the Black-Scholes option-pricing model and the warrants will include a cashless exercise provision with language to be negotiated in good faith between the parties.

The CU-NP License Agreement, unless earlier terminated, will continue in full force and effect until June 13, 2028. However, to the extent any patent covered by the license is issued with an expiration date beyond June 13, 2028, the term of the agreement will continue until such expiration date. Mayo may terminate the agreement earlier (i) for the Company's material breach of the agreement that remains uncured after 90 days written notice, (ii) the Company's insolvency or bankruptcy, (iii) if the Company challenges the validity or enforceability of any of the patents in any manner, or (iv) or upon receipt of notice from the Company that it has terminated all development efforts under the agreement. The Company may terminate the agreement without cause upon 90 days' written notice.

7. ACCRUED LIABILITIES

Accrued liabilities as of December 31, 2011 and 2010 consist of the following:

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	2011	2010
Accrued compensation and related benefits	\$39,718	\$23,775
Accrued research and development expense	25,000	623,500
Accrued other expense	-	5,000
Total accrued liabilities	\$64,718	\$652,275

8. CONVERTIBLE AND OTHER NOTES PAYABLE

During March 2006, the Company completed a private placement offering for an aggregate \$4,000,000 principal amount of 6% convertible promissory notes, or the Notes, due on March 28, 2008. The aggregate principal amount and accrued but unpaid interest on the Notes, which totaled \$4,351,165, automatically converted upon the closing of the September 2007 equity financing into 1,684,085 shares of common stock at a conversion price of \$2.58, which was equal to 90% of the per share price of the shares sold in the Financing. Due to the beneficial conversion feature resulting from the discounted conversion price, a discount of \$483,463 was recorded as interest expense with a corresponding credit to additional paid-in capital. In addition, in conjunction with the conversion of the convertible debt, the Company issued fully vested warrants to the note holders to purchase 168,337 shares of common stock to the holders of the Notes. The warrants were valued at \$288,000 using the Black-Scholes option-pricing model and the following assumptions: exercise price \$2.71, a 3.98% risk-free interest rate, a 5 year contractual term, a dividend rate of 0%, and 68% expected volatility. The cost of the warrants was included in interest expense in the accompanying Statements of Operations, and as an increase in additional paid-in capital.

On July 24, 2007, the Company issued an 8% promissory note to an existing stockholder in the amount of \$1,500,000. The note was due and payable on November 24, 2007. An upfront fee of \$30,000 was netted against the gross proceeds. The note was paid in full on September 11, 2007, along with an additional fee of \$120,000. The upfront and additional fees were charged to interest expense in the period ended September 30, 2007.

9. STOCKHOLDERS' EQUITY

(a) Common Stock

In August 2005, the Company issued an aggregate of 13,794,132 shares of common stock to its founders for \$5,000. The founders subsequently returned 1,379,419 of these shares to the Company for issuance to Mayo in connection with the Cenderitide License Agreement in January 2006. The fair value of these shares of \$500 was recorded as stock-based compensation and is included in research and development expense in the accompanying Statements of Operations.

In August 2007, pursuant to the terms of the 2NTX-99 License Agreement, the Company issued 350,107 shares of common stock to Dr. Casagrande. The fair value of the shares was \$1,000,000 and was recorded as research and development expense in the accompanying Statements of Operations.

In September 2007, also pursuant to the terms of the CD-NP License Agreement, the Company issued 63,478 shares of common stock to Mayo. The fair value of the shares, \$182,236, was recorded as research and development expense in the accompanying Statements of Operations.

As a condition to the closing of the Merger, on September 11, 2007, Old Nile completed a financing whereby it received gross proceeds of \$19,974,747 through the sale of 6,957,914 shares of common stock in a private placement to certain qualified investors. Issuance costs related to the financing were \$102,000. Contemporaneously with the financing, the Company converted \$4,351,165 of convertible debt and interest into 1,684,085 shares of common stock.

In June 2008, pursuant to the CU-NP License Agreement, the Company issued 49,689 shares of common stock to Mayo. The fair value of the shares on June 13, 2008 was \$250,000 and was recorded as research and development expense in the accompanying Statements of Operations.

A total of 1,250,000 shares of common stock that were held by the original stockholders of SMI prior to the Merger are reflected in the Company's common stock outstanding in the accompanying Balance Sheets.

Pursuant to the terms of a Securities Purchase Agreement dated July 7, 2009, among the Company and certain investors, on July 15, 2009, the Company issued and sold to such investors 2,691,394 units of its securities in a private placement in exchange for an aggregate gross purchase price of \$3,368,748. Each unit included one share of common stock and one warrant to purchase a share of common stock. See Note 9(b). Issuance costs related to the financing were \$282,773, including the issuance of warrants to purchase 218,300 shares of common stock to designees of Riverbank Capital Securities, Inc. ("Riverbank"), a FINRA member broker dealer that acted as placement agent for the Company in connection with the private placement. See Note 13.

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On April 21, 2010, the Company entered into an underwriting agreement (the “Underwriting Agreement”), providing for the offer and sale in a firm commitment underwritten public offering of 6,500,000 units of its securities at a public offering price of \$0.70 per unit (less an underwriting discount of \$0.063 per unit). The offering closed on April 27, 2010. Pursuant to the Underwriting Agreement, the Company granted the underwriters an option for a period of 45 days to purchase up to an additional 975,000 units to cover over-allotments. On May 6, 2010, the underwriters exercised their option to purchase the maximum amount of 975,000 over-allotment units. The sale of the over-allotment units closed on May 10, 2010. Each unit sold in the Offering consisted of one share of the Company’s common stock and 0.30 warrants to purchase common stock (the “Unit Warrants”). Each whole Unit Warrant has a term of five years and represents the right to purchase one share of the Company’s common stock at an exercise price of \$0.94 per share. The units separated immediately and the common stock and Unit Warrants were issued separately. Among other terms and conditions of the Unit Warrants, the agreement provides that, in the event the closing sale price of the Company’s common stock is at least \$3.00 per share for any 20 trading days within a period of 30 consecutive trading days, the Company may call the Unit Warrants for redemption, at a redemption price of \$0.01 per Unit Warrant, by providing at least 30 days’ notice to each Unit Warrant holder. In total, the Company sold 7,475,000 units under the terms of the Underwriting Agreement, consisting of an aggregate of 7,475,000 shares of common stock and 2,242,500 Unit Warrants. In addition, the Company issued the underwriters a five-year warrant to purchase 390,000 shares of the Company’s common stock at an exercise price of \$0.94 per share, which had a fair value of \$271,900 and was accounted for as a cost of the offering and charged to stock holder’s equity. The net proceeds to the Company from the sale of all units, after deducting underwriting discounts, commissions and professional fees of \$715,801, was \$4,516,699.

On June 20, 2011, the Company entered into a securities purchase agreement (the “2011 Purchase Agreement”) with certain investors pursuant to which it sold 5,000,000 units of its securities, each unit consisting of (i) one share of common stock and (ii) a five-year warrant to purchase one-half share of common stock at an exercise price of \$0.60 per share, for a purchase price of \$0.50 per Unit (the “2011 Offering”). The warrants issued to investors may be exercised immediately and are redeemable by the Company, at a redemption price of \$0.001 per warrant share, upon 30 days’ notice, if at any time, the volume weighted average price of the common stock for any 20 consecutive business days is equal to or greater than 250% of the then applicable exercise price of the warrants. The gross proceeds from the 2011 Offering, which closed on June 23, 2011, were \$2.5 million, before deducting selling commissions and expenses, which were approximately \$0.2 million.

In connection with the 2011 Offering, the Company engaged Riverbank to serve as placement agent, and Ladenburg Thalmann & Co. Inc. served as a sub-placement agent (together with Riverbank, the “Placement Agents”). The Company agreed to pay the Placement Agents a cash fee equal to 7% of the gross proceeds resulting from the private placement, plus issue a five-year warrant to purchase a number of shares equal to 5% of the shares sold to investors in the private placement. Pursuant to such terms, the Company paid the Placement Agents a cash fee of \$175,000 and

issued to the Placement Agents warrants to purchase 250,000 shares of common stock valued at \$99,100. The warrants issued to the Placement Agents are in substantially the same form as the warrants issued to the investors in the 2011 Offering, except that the Placement Agents' warrants include provisions allowing for cashless (net) exercise.

Peter M. Kash, Ed.D., a director of the Company, and Joshua A. Kazam, the Company's President and Chief Executive Officer and a director of the Company, are each officers of Riverbank. Dr. Kash was allocated a portion of the Agent Warrants. In light of the relationship between Dr. Kash, Mr. Kazam and Riverbank, the selection of Riverbank as a placement agent and the terms of the engagement were reviewed and approved by a special committee of the Company's Board consisting of disinterested directors with no affiliation to Riverbank or its affiliates.

(b) Warrants

In conjunction with the conversion of \$4,351,165 of convertible debt prior to the Merger, the Company issued fully vested warrants to purchase 168,337 shares of common stock to the holders of such debt. The warrants were issued with an exercise price of \$2.71 and expire in September 2012. The fair value of the warrants was determined to be \$288,000. None of these warrants have been exercised to date.

In 2007, as consideration for the performance of consulting and due diligence efforts related to the licensing of 2NTX-99, the Company granted and accrued for fully vested warrants to purchase 206,912 shares of its common stock. The warrants were valued at \$334,992 using the Black-Scholes option-pricing model and the following assumptions: an exercise price of \$2.71, a 4.02% risk-free interest rate, a 5 year contractual term, a dividend rate of 0%, and 68% expected volatility. Of the total warrants granted, 137,567 warrants with an aggregate value of \$222,770 were granted to employees of Two River Group Holdings, LLC ("Two River"), a related party, and its affiliates. See Note 13. The remaining warrants were granted to outside consultants. The warrants were recorded as an expense and a liability during the year ended December 31, 2007. In March 2008, these warrants were issued in satisfaction of the accrued liability.

In connection with its July 2009 private placement, as discussed above, the Company issued 2,691,394 shares of common stock and five-year warrants to purchase an additional 2,691,394 shares of common stock. The warrants were issued in three separate tranches, as follows:

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Warrants to purchase 672,849 shares, representing 25% of the total warrant shares issued to investors, have an exercise price equal to \$1.25, which represents 110% of the \$1.14 consolidated closing bid price of the Company's common stock on July 7, 2009 (the "Closing Bid Price");

Warrants to purchase 672,848 shares, representing 25% of the total warrant shares issued to investors, have an exercise price equal to \$1.71, which represents 150% of the Closing Bid Price; and

Warrants to purchase 1,345,697 shares, representing 50% of the total warrant shares issued to investors, have an exercise price equal to \$2.28, which represents 200% of the Closing Bid Price.

The warrants issued to investors in the July 2009 private placement are redeemable by the Company upon 30 days' notice, if at any time, the volume weighted average price of the common shares for any 20 consecutive business days is equal to or greater than 200% of the applicable exercise price of each warrant.

As consideration for its services as placement agent in connection with the July 2009 private placement, the Company also issued to designees of Riverbank five-year warrants to purchase 218,300 shares of common stock at a price of \$1.375 per share. These warrants have an aggregate fair-value of \$201,200.

In connection with the April 2010 Offering discussed above, the Company issued a total of 2,242,500 Unit Warrants, each of which has a term of five years and represents the right to purchase one share of the Company's common stock at an exercise price of \$0.94 per share. In addition, the Company issued the underwriters a five-year warrant to purchase 390,000 shares of the Company's common stock at an exercise price of \$0.94 per share.

In connection with the 2011 Offering discussed above, the Company issued a total of 2,500,000 warrants, each of which has a term of five years and represents the right to purchase one share of the Company's common stock at an exercise price of \$0.60 per share. In addition, the Company issued to the Placement Agents a five-year warrant to purchase 250,000 shares of the Company's common stock at an exercise price of \$0.60 per share.

The table below summarizes all outstanding warrants to purchase shares of the Company's common stock as of December 31, 2011.

Grant Date	Warrants Issued	Exercise Price Range	Weighted Average Exercise Price	Expiration Date	Exercised	Warrants Outstanding
9/11/2007	168,377	\$ 2.71	\$ 2.71	9/11/2012	-	168,377
3/26/2008	206,912	\$ 2.71	\$ 2.71	9/11/2012	-	206,912
7/15/2009	2,909,695	\$ 1.25-2.28	\$ 1.84	7/14/2014	5,000	2,904,695
4/21/2010	2,632,500	\$ 0.94	\$ 0.94	4/20/2015	-	2,632,500
6/20/2011	2,750,000	\$ 0.60	\$ 0.60	6/19/2016	-	2,750,000
	8,667,484		\$ 1.21		5,000	8,662,484

10. STOCK-BASED COMPENSATION

The Company's Amended and Restated 2005 Stock Option Plan (the "Plan") was initially adopted by the Board of Directors on August 10, 2005. The Plan authorized a total of 2,000,000 shares of common stock for issuance. On September 17, 2007, pursuant to the Merger, the Plan was amended and each share of common stock then subject to the Plan was substituted with 2.758838 shares of common stock, resulting in an aggregate of 5,517,676 shares available under the Plan. On July 26, 2010, the Company's stockholders approved an amendment to the Plan increasing the total number of shares authorized for issuance thereunder to 9,500,000, which was an increase of 3,982,324 shares to the Plan. Under the Plan, incentives may be granted to officers, employees, directors, consultants, and advisors. Incentives under the Plan may be granted in any one or a combination of the following forms: (a) incentive stock options and non-statutory stock options, (b) stock appreciation rights, (c) stock awards, (d) restricted stock and (e) performance shares.

The Plan is administered by the Board of Directors, or a committee appointed by the Board, which determines the recipients and types of awards to be granted, as well as the number of shares subject to the awards, the exercise price and the vesting schedule. The term of stock options granted under the Plan cannot exceed ten years. Currently, stock options are granted with an exercise price equal to closing price of the Company's common stock on the date of grant, and generally vest over a period of one to four years.

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A summary of the status of the options issued under the Plan at December 31, 2011, and information with respect to the changes in options outstanding is as follows:

	Shares Available for Grant	Options Outstanding Stock	Options Outstanding Weighted-Average Exercise Price	Aggregate Intrinsic Value
Balance at January 1, 2010	836,249	4,441,402	\$ 2.22	
Shares authorized for issuance	3,982,324			
Options granted under the Plan	(2,800,000)	2,800,000	\$ 0.35	
Options exercised	-	(68,970)	\$ 0.09	
Options forfeited	249,278	(249,278)	\$ 1.62	
Balance at December 31, 2010	2,267,851	6,923,154	\$ 1.52	
Options granted under the Plan	(1,110,000)	1,110,000	\$ 0.68	
Options exercised	-	(82,437)	\$ 0.17	
Options forfeited	60,133	(60,133)	\$ 0.93	
Balance at December 31, 2011	1,217,984	7,890,584	\$ 1.42	\$ 398,200
Exercisable at December 31, 2011		6,226,690	\$ 1.64	\$ 274,300

The Company estimated the fair value of each option award granted to employees using the Black-Scholes option-pricing model and the following assumptions for the year ended December 31, 2011 and 2010:

	December 31, 2011	December 31, 2010
Stock price	\$0.56 to \$0.78	\$0.301 to \$0.37
Expected volatility	97%	90% to 98%
Expected term	3-5 years	3 years
Dividend yield	0%	0%
Risk-free interest rates	1-2%	1%

The valuation assumptions were determined as follows:

Expected volatility – Management calculated the 200 day volatility from historical NLTX.QB stock prices.

Expected term – The expected term of the awards represents the period of time that the awards are expected to be outstanding. Management considered historical data and expectations for the future to estimate employee exercise and post-vest termination behavior.

Dividend yield – The estimate for annual dividends is zero, because the Company has not historically paid dividends and does not intend to in the foreseeable future.

Risk-free interest rates - The yield on zero-coupon U.S. Treasury securities for a period that is commensurate with the expected term of the awards.

Share-based compensation is recognized only for those awards that are ultimately expected to vest. Only 4,276 performance options are scheduled to vest in 2012. The Company has applied an estimated forfeiture rate of 0% for those remaining performance options. These estimates will be revised, if necessary, in future periods if actual forfeitures differ from estimates. Changes in forfeiture estimates impact compensation cost in the period in which the change in estimate occurs.

Employee stock-based compensation costs for the year ended December 31, 2011 and 2010 and for the cumulative period from August 1, 2005 (inception) through December 31, 2011, are as follows:

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	Year ended December 31,		Period from
	2011	2010	August 1, 2005 (inception) through December 31, 2011
General and administrative	\$ 375,518	\$ 826,040	\$ 6,562,546
Research and development	410,070	316,512	1,483,917
Total	\$ 785,588	\$ 1,142,552	\$ 8,046,463

The following table summarizes information about stock options outstanding at December 31, 2011:

Range of Exercise Prices	Outstanding			Exercisable	
	Shares	Weighted- Average Remaining Contractual Life	Weighted-Average Exercise Price	Total Shares	Weighted- Average Exercise Price
\$0.09 to \$0.93	4,777,456	7.26	\$ 0.53	3,217,456	\$ 0.54
\$1.14 to \$2.71	2,476,779	4.59	\$ 2.33	2,390,111	\$ 2.36
\$4.45 to \$5.75	636,349	5.61	\$ 4.54	619,123	\$ 4.54
Total	7,890,584	6.29	\$ 1.42	6,226,690	\$ 1.64

The fair value of shares vested under the Plan for the year ended December 31, 2011 and 2010 and for the period from August 1, 2005 (inception) through December 31, 2011 were \$864,844, \$1,546,869, and \$6,031,026 respectively.

Certain employees have been granted performance-based stock options that are subject to forfeiture based on the failure to achieve specified goals. The Company analyzed two years of annual performance measurements, and, based on that analysis, estimated forfeiture rates on performance-based stock options for future periods. For the cumulative period from August 1, 2005 (inception) through December 31, 2011, employees forfeited 396,797 shares related to performance-based options, which had a fair value of \$655,532.

At December 31, 2011, total unrecognized estimated employee (including directors) compensation cost related to stock options granted prior to that date was \$330,965, which is expected to be recognized over a weighted-average vesting period of 1 year.

Common stock, stock options or other equity instruments issued to non-employees (including consultants and all members of the Company's Scientific Advisory Board) as consideration for goods or services received by the Company are accounted for based on the fair value of the equity instruments issued (unless the fair value of the consideration received can be more reliably measured). The fair value of stock options is determined using the Black-Scholes option-pricing model and is periodically re-measured as the underlying options vest. The fair value of any options issued to non-employees is recorded as expense over the applicable vesting periods.

On June 24, 2009, in conjunction with a services agreement, the Company issued to named employees of Two River Consulting, LLC ("TRC") stock options to purchase 187,500 shares of common stock that vested on issuance and have a fair-value of \$116,309; and stock options to purchase 562,500 shares that vest based on the achievement of certain milestones and have an estimated fair-value of \$363,028. TRC is an entity controlled by two of the Company's officers and directors. For the year ended December 31, 2009, the Company recorded an expense of \$326,563 related to these options. For the year ended December 31, 2010, the Company recorded an expense of (\$9,792) related to these options. In total, options to purchase 535,172 shares vest in conjunction with the services agreement. No options to purchase shares of common stock were issued to TRC in 2010 or 2011.

On August 12, 2010, in conjunction with an amended services agreement, the Company issued to named employees of TRC stock options to purchase 250,000 shares of the Company's common stock that were fully vested on issuance and had an estimated fair value of \$82,200 that was expensed on the date of grant.

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Notes to Financial Statements

Stock-based compensation costs incurred for services by non-employees for the year ended December 31, 2011 and 2010, and for the cumulative period from August 1, 2005 (inception) through December 31, 2011 totaled \$20,740, (\$19,249), and \$ 498,095, respectively. These amounts were included in research and development expense in the accompanying Statements of Operations.

11. 401(k) SAVINGS PLAN

On April 1, 2007, the Company adopted a 401(k) savings plan (the “401(k) Plan”) for the benefit of its employees. Under the 401(k) Plan the Company is required to make contributions equal to 3% of eligible compensation for each eligible employee whether or not the employee contributes to the 401(k) Plan. The Company recorded compensation expenses of \$0, \$0 and \$21,947 for the years ended December 31, 2011 and 2010 and for the cumulative period from August 1, 2005 (inception) through December 31, 2011, respectively. As of December 31, 2011, the Company has fully funded the 401(k) Plan.

12. INCOME TAXES

The Company accounts for income taxes using the liability method, which requires the determination of deferred tax assets and liabilities, based on the differences between the financial statement and tax bases of assets and liabilities, using enacted tax rates in effect for the year in which differences are expected to reverse. The net deferred tax asset is adjusted by a valuation allowance, if, based on the weight of available evidence, it is more likely than not that some portion or all of the net deferred tax asset will not be realized. The income tax returns of the Company are subject to examination by federal and state taxing authorities. Such examination could result in adjustments to net income or loss, which changes could affect the income tax liabilities of the Company. The Company’s tax returns are open for inspection for the five years ended December 31, 2011.

The Company’s policy is to include interest and penalties related to unrecognized tax benefits within the Company’s provision for (benefit from) income taxes. The Company recognized no amounts for interest and penalties related to unrecognized tax benefits in 2011, 2010 and the period from August 1, 2005 (inception) through December 31, 2011 and as of December 31, 2011 and 2010, had no amounts accrued for interest and penalties.

At December 31, 2011, the Company had no federal income tax expense or benefit but did have federal tax net operating loss carry-forwards of approximately \$31,915,348, and an R&D credit carry-forward of \$1,388,835. The federal net operating loss carry-forwards will begin to expire in 2026, unless previously utilized.

Deferred income taxes reflect the net effect of temporary difference between the carrying amounts of assets and liabilities for financial reporting purposes and the amounts used for income tax purposes. Significant components of the Company's net deferred tax assets at December 31, 2011 and 2010 are shown below. A valuation allowance of \$17,344,561 has been established to offset the net deferred tax assets at December 31, 2011, as realization of such assets is uncertain.

	For Years Ended December 31,	
	2011	2010
Deferred tax assets		
Research tax credit	\$ 1,388,835	\$ 1,120,864
Net operating loss carry forwards	12,766,139	11,237,988
Others	3,189,587	2,913,311
Total deferred tax asset	17,344,561	15,272,163
Deferred tax liability	-	-
Total net deferred tax asset	17,344,561	15,272,163
Valuation allowance	(17,344,561)	(15,272,163)
Net deferred tax asset	\$-	\$-

The Company files income tax returns in the U.S. federal and California state jurisdictions, which returns are generally subject to examination by federal authorities for all tax years from 2008 to present and by California authorities from 2007 to present.

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A reconciliation of the statutory tax rates and the effective tax rates for the years ended December 31, 2011 and 2010.

	Year ended December 31, 2011		Year ended December 31, 2010	
	Amount	Rate	Amount	Rate
Federal Tax	\$ (1,660,827)	34.0 %	\$ (2,050,707)	34.0 %
State Tax	(284,998)	5.8 %	(351,901)	5.8 %
R&D Credit	(14,700)	5.5 %	(308,000)	3.1 %
Incentive Stock Options	(20,360)	6.5 %	-	0.0 %
Valuation Allowance	1,980,886	-51.8 %	2,710,608	-42.9 %
Net	\$ -	\$ -	\$ -	\$ -

13. RELATED PARTIES

On June 24, 2009, the Company entered into a services agreement with TRC to provide various clinical development, operational and administrative services to the Company for a period of one year. Joshua A. Kazam, the Company's President and Chief Executive Officer and director, and Arie S. Belldegrun, who was appointed to serve as a member of the Company's Board of Directors on September 24, 2009, are each partners of TRC. David M. Tanen, who served as the Company's Secretary and director until his resignation from both positions on September 24, 2009, is also a partner of TRC. The terms of the services agreement were reviewed and approved by a special committee of the Company's Board of Directors consisting of independent directors. None of the members of the special committee has any interest in TRC or the services agreement. As compensation for the services contemplated by the services agreement, the Company paid TRC a monthly cash fee of \$65,000 and issued stock options to purchase up to an aggregate of 750,000 shares of the Company's common stock at a price per share equal to \$0.89, the closing sale price of the Company's common stock on June 24, 2009. 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 original stock options issued, 535,172 stock options vested with a total fair value of \$353,976. On August 12, 2010, the special committee of the Company's Board of Directors consisting of independent directors approved an extension of the services agreement with TRC and the issuance of fully-vested and immediately-exercisable stock options to purchase 250,000 shares of the Company's common stock at an exercise price of \$0.38 per share, which had an estimated fair value of \$82,200 that was expensed on the date of grant. On March 17, 2011, the Special Committee approved an amendment of the services agreement, pursuant to which the level of services to be provided by TRC was reduced and the monthly cash fee payable to TRC was reduced to \$31,702 and then to \$30,082 starting in July 2011 when certain

services were eliminated. Additional operational and clinical development services may be provided by TRC, and billed to the Company, on an hourly basis.

On occasion, some of the Company's expenses are paid by TRC. No interest is charged by TRC on any outstanding balance owed by the Company. For the years ended December 31, 2011 and 2010 and for the period from August 1, 2005 (inception) through December 31, 2011, total cash services and reimbursed expenses totaled \$529,218, \$834,032 and \$1,846,090, respectively. As of December 31, 2011 the Company has a payable to TRC of \$38,892, all of which was paid during January 2012.

As discussed in Notes 9(a) and 9(b), pursuant to a Securities Purchase Agreement dated July 7, 2009 between the Company and certain qualified investors identified therein, the Company sold 2,691,394 units of its securities resulting in gross proceeds of \$3,368,748. The sale of the units was completed on July 15, 2009. The Company engaged Riverbank to serve as its placement agent. Riverbank was not paid a cash commission for its services, however, the Company issued Riverbank (or its designees) five-year warrants to purchase 218,300 shares of the Company's common stock. The warrants are exercisable at a price of \$1.375 per share, which is equal to 110% of the per unit purchase price paid by investors, and have a cashless (net) exercise provision. The Company also paid Riverbank an expense allowance of \$50,000 to cover expenses incurred during the financing. These costs were incurred in connection with the private placement of units and therefore, have been deducted from the capital raised on the statement of changes in stockholders' equity.

Joshua A. Kazam, the Company's President and Chief Executive Officer and director, Peter M. Kash, a director of the Company, and David M. Tanen, a director of the Company until September 24, 2009, are each officers of and collectively control Riverbank. In light of the relationship between Dr. Kash, Messrs. Kazam and Tanen and Riverbank, the selection and terms of the engagement were reviewed and approved by a special committee of the Company's Board consisting of independent directors, none of whom had any interest or other relationship in Riverbank or its affiliates.

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Notes to Financial Statements

14. COMMITMENTS AND CONTINGENCIES

On August 15, 2009, the Company relocated its primary office space to San Mateo, California. Under the terms of an open-ended lease, cancellable upon 60 days' notice, the base rent is \$2,000 per month. The office space is approximately 1,200 square feet. In connection with this lease, the Company made a \$2,000 cash security deposit.

15. SUBSEQUENT EVENTS

On March 30, 2012, the Company entered into subscription agreements with certain purchasers pursuant to which it agreed to sell an aggregate of 3,350,000 shares of the Company's common stock to such purchasers for a purchase price of \$0.40 per share. In addition, for each share purchased, each purchaser will also receive three-fourths of a five-year warrant to purchase an additional share of common stock at an exercise price of \$0.50 per share, which will result in the issuance of warrants to purchase an aggregate of 2,512,500 shares of the Company's common stock. The total gross proceeds from the offering will be \$1.34 million, before deducting anticipated selling commissions and other offering expenses of approximately \$0.2 million. The closing of the offering is expected to occur on or around April 4, 2012, subject to customary closing conditions. In connection with the offering, the Company engaged Roth Capital Partners, LLC, or Roth, to serve as placement agent. Pursuant to the terms of the placement agent agreement, the Company agreed to pay Roth a cash fee equal to seven percent of the gross proceeds received by the Company, or approximately \$0.1 million, plus a non-accountable expense allowance of \$35,000. Richard B. Brewer, the Company's Executive Chairman, Joshua A. Kazam, the Company's President and Chief Executive Officer and a director, Daron Evans, the Company's Chief Financial Officer, and Hsiao Lieu, M.D., the Company's Executive VP of Clinical Development, are participating in the offering on the same terms as the unaffiliated purchasers, and have collectively subscribed to purchase 275,000 shares of common stock and warrants to purchase 206,250 shares of common stock for an aggregate purchase price of \$110,000.

2,512,500 Shares of Common Stock Issuable Upon Exercise of Warrants

Resale of up to 5,262,500 Shares Common Stock

PROSPECTUS

, 2012

PART II**INFORMATION NOT REQUIRED IN PROSPECTUS****ITEM 13. OTHER EXPENSES OF ISSUANCE AND DISTRIBUTION.**

The following table sets forth all costs and expenses, other than underwriting discounts and commissions, payable by us in connection with the sale of the common stock being registered. All amounts shown are estimates.

	Amount to be Paid
SEC registration fee	\$
Legal fees and expenses	
Accounting fees and expenses	15,000
Printing and engraving and miscellaneous expenses	5,000
Total	\$

ITEM 14. INDEMNIFICATION OF DIRECTORS AND OFFICERS.

Under provisions of the amended and restated certificate of incorporation and bylaws of the Registrant, directors and officers will be indemnified for any and all judgments, fines, amounts paid in settlement and reasonable expenses, including attorneys fees, in connection with threatened, pending or completed actions, suits or proceedings, whether civil, or criminal, administrative or investigative (other than an action arising by or in the right of the Registrant), if such director or officer has been wholly successful on the merits or otherwise, or is found to have acted in good faith and in a manner he or she reasonably believes to be in or not opposed to the best interests of the Registrant, and, with respect to any criminal action or proceeding, had no reasonable cause to believe his or her conduct was unlawful. In addition, directors and officers will be indemnified for reasonable expenses in connection with threatened, pending or completed actions or suits by or in the right of Registrant if such director or officer has been wholly successful on the merits or otherwise, or is found to have acted in good faith and in a manner he or she reasonably believed to be in or not opposed to the best interests of the Registrant, except in the case of certain findings by a court that such person is liable for negligence or misconduct in his or her duty to the Registrant unless such court or the Delaware Court of Chancery also finds that such person is nevertheless fairly and reasonably entitled to indemnity. The Registrant's certificate of incorporation also eliminates the liability of directors of the Registrant for monetary damages to the fullest extent permissible under Delaware law.

Section 145 of the Delaware General Corporation Law states:

(a) A corporation shall have the power to indemnify any person who was or is a party or is threatened to be made a party to any threatened, pending or completed action, suit or proceeding, whether civil, criminal, administrative or investigative (other than an action arising by or in the right of the corporation) by reason of the fact that he is or was a director, officer, employee or agent of the corporation, or is or was serving at the request of the corporation as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise, against expenses (including attorneys' fees), judgments, fines and amounts paid in settlement actually and reasonably incurred by him in connection with such action, suit or proceeding if he acted in good faith and in a manner he reasonably believed to be in or not opposed to the best interests of the corporation, and, with respect to any criminal action or proceeding, had no reasonable cause to believe his conduct was unlawful. The termination of any action, suit or proceeding by judgment, order, settlement, conviction, or upon a plea of nolo contendere or its equivalent, shall not, of itself, create a presumption that the person did not act in good faith and in a manner which he reasonably believed to be in or not opposed to the best interests of the corporation, and, with respect to any criminal action or proceeding, had reasonable cause to believe that his conduct was unlawful.

(b) A corporation shall have power to indemnify any person who was or is a party or is threatened to be made a party to any threatened, pending or completed action or suit by or in the right of the corporation to procure a judgment in its favor by reason of the fact that he is or was a director, officer, employee or agent of the corporation, or is or was serving at the request of the corporation as a director, officer, employee or agent of another corporation, partnership, joint venture, trust, or other enterprise against expenses (including attorneys' fees) actually and reasonably incurred by him in connection with the defense or settlement of such action or suit if he acted in good faith and in a manner he reasonably believed to be in or not opposed to the best interests of the corporation and except that no indemnification shall be made in respect to any claim, issue or matter as to which such person shall have been adjudged to be liable to the corporation unless and only to the extent that the Court of Chancery or the court in which such action or suit was brought shall determine upon application that, despite the adjudication of liability but in view of all the circumstances of the case, such person is fairly and reasonably entitled to indemnity for such expense which the Court of Chancery or such other court shall deem proper.

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The above discussion of the Registrant's Certificate of Incorporation and Section 145 of the DGCL is not intended to be exhaustive and is respectively qualified in its entirety by such Certificate of Incorporation and statute.

Reference is made to Item 17 for our undertakings with respect to indemnification for liabilities arising under the Securities Act of 1933.

ITEM 15. RECENT SALES OF UNREGISTERED SECURITIES.

June 2011 Private Placement

On June 20, 2011, the Company entered into a securities purchase agreement with certain investors pursuant to which it agreed to sell a total of 5,000,000 units of its securities, each unit consisting of (i) one share of common stock and (ii) a five-year warrant to purchase one-half share of common stock at an exercise price of \$0.60 per share, for a purchase price of \$0.50 per unit (the "2011 Offering"). The warrants may be exercised immediately and are redeemable by the Company, at a redemption price of \$0.001 per warrant share, upon 30 days' notice, if at any time, the volume weighted average price of the common stock for any 20 consecutive business days is equal to or greater than 250% of the then applicable exercise price of the warrants. The total gross proceeds from the 2011 Offering were \$2.5 million, before deducting selling commissions and expenses. The closing of the private placement occurred on June 23, 2011.

In connection with the 2011 Offering, the Company engaged Riverbank Capital Securities, Inc. to serve as placement agent ("Riverbank"), and Ladenburg Thalmann & Co. Inc. served as a sub-placement agent (together with Riverbank, the "Placement Agents"). The Company agreed to pay the Placement Agents a cash fee equal to 7% of the gross proceeds resulting from the private placement, plus issue a five-year warrant to purchase a number of shares equal to 5% of the shares sold in the 2011 Offering. Pursuant to such terms, the Company paid the placement agents a cash fee of \$175,000 and issued warrants to purchase 250,000 shares of common stock. The agent warrants are in substantially the same form as the warrants issued to the purchasers in the 2011 Offering, except that the agent warrants include a provisions allowing for cashless (net) exercise.

The shares and warrants, including the placement agent warrants, sold and issued in connection with the 2011 Offering were done so in reliance on the exemption from federal registration under Section 4(2) of the Securities Act and/or Rule 506 promulgated thereunder, based on the Company's belief that the offer and sale of such securities did not involve a public offering, as each purchaser of such securities was an "accredited investor" and no general solicitation has been involved in connection with the 2011 Offering.

July 2009 Private Placement

On July 7, 2009, the Company entered into a securities purchase agreement with various accredited investors pursuant to which the Company agreed to sell in a private placement (the "2009 Offering") an aggregate of 2,691,394 shares of its common stock and five-year warrants to purchase an equal number of additional shares of common stock. The purchase price for each unit of one share and one warrant was \$1.25, resulting in aggregate gross proceeds of approximately \$3.4 million, before deducting expenses.

The warrants were evidenced by three separate certificates, which collectively will represent the right to purchase a number of warrant shares equal to the number of shares of common stock purchased in the 2009 Offering, as follows:

A warrant representing the right to purchase 25% of the warrant shares at an exercise price equal to \$1.25, which represents 110% of the \$1.14 consolidated closing bid price of the Company's common stock on July 7, 2009 (the "Closing Bid Price");

A warrant representing the right to purchase 25% of the warrant shares at an exercise price equal to \$1.71, which represents 150% of the Closing Bid Price; and

A warrant representing the right to purchase 50% of the warrant shares at an exercise price equal to \$2.28, which represents 200% of the Closing Bid Price.

The warrants are redeemable by the Company, at a redemption price of \$0.001 per warrant share, upon 30 days' notice, if at any time, the volume weighted average price of the common stock for any 20 consecutive business days is equal to or greater than 200% of the then applicable exercise price of the warrants.

In connection with the 2009 Offering, the Company engaged Riverbank to serve as placement agent. Riverbank did not receive a cash commission for its services in connection with the 2009 Offering. However, the Company issued to Riverbank and its designees warrants to purchase 218,300 shares of the Company's common stock, which represented 10% of the shares sold in the 2009 Offering, but excluding shares sold to (i) the Company's directors and executive officers, (ii) employees of Riverbank, or (iii) investors referred to the Company by one of the Company's executive officers. The Riverbank warrants were in substantially the same form as the warrants issued to the purchasers in the 2009 Offering, except that they have an exercise price equal to 110% of the Closing Bid Price and provide for cashless (net) exercise. The Company also paid Riverbank a non-accountable expense allowance equal to \$50,000 to cover its expenses incurred in providing the services related to the 2009 Offering.

The shares and warrants, including the warrants issued to Riverbank, issued and sold in connection with the 2009 Offering in reliance on the exemption from federal registration under Section 4(2) of the Securities Act and/or Rule 506 promulgated thereunder, based on the Company's belief that the offer and sale of such securities did not involve a public offering, as each purchaser of such securities was an "accredited investor" and no general solicitation has been involved in connection with the 2009 Offering.

ITEM 16. EXHIBITS AND FINANCIAL STATEMENT SCHEDULES.

(a) Exhibits.

Exhibit No. Description

- | | |
|-----|---|
| 2.1 | Agreement and Plan of Merger, by and among SMI Products, Inc., Nile Merger Sub, Inc., and Nile Therapeutics, Inc. dated as of August 15, 2007 (incorporated by reference to Exhibit 2.1 to the Company's Current Report on Form 8-K filed August 17, 2007). |
| 3.1 | Certificate of Incorporation of Nile Therapeutics, Inc. (incorporated by reference to Exhibit 3.1 to the Company's Current Report on Form 8-K filed February 9, 2007). |
| 3.2 | Bylaws of Nile Therapeutics, Inc. (incorporated by reference to Exhibit 3.2 to the Company's Current Report on Form 8-K filed February 9, 2007). |
| 4.1 | Specimen Common Stock Certificate (incorporated by reference to Exhibit 4.1 to the Company's Current Report on Form 8-K filed September 21, 2007). |
| 4.2 | Form of Nile Therapeutics, Inc. Common Stock Purchase Warrant (incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed September 21, 2007). |
| 4.3 | Form of Warrant issued to investors in July 2009 private placement (incorporated by reference to Exhibit 4.1 to the Company's Registration Statement on Form S-3 filed August 13, 2009). |
| 4.4 | Form of Warrant issued to placement agent in July 2009 private placement (incorporated by reference to Exhibit 4.2 to the Company's Registration Statement on Form S-3 filed August 13, 2009). |
| 4.5 | Warrant Agreement between Nile Therapeutics, Inc. and American Stock Transfer & Trust Company, LLC, as Warrant Agent, dated April 21, 2010 (incorporated by reference to Exhibit 4.1 to the Company's Current Report on Form 8-K filed April 22, 2010). |

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- 4.6 Form of Unit Warrant issued to investors in April 2010 public offering (included as part of Exhibit 4.5 hereof).
- 4.7 Form of Representative's Warrant issued to Maxim Group, LLC in connection with April 2010 public offering (incorporated by reference to Exhibit 4.3 to the Company's Current Report on Form 8-K filed April 22, 2010).
- 4.8 Form of Warrant issued to investors in June 2011 private placement (incorporated by reference to Exhibit 4.1 to the Company's Form 8-K filed June 24, 2011).
- 4.9 Form of Warrant issued to investors in April 2012 offering (incorporated by reference to Exhibit 4.1 to the Company's Form 8-K filed April 2, 2012).
- 5.1 Opinion of Fredrikson & Byron, P.A. dated July 22, 2011 (incorporated by reference to Exhibit 5.1 of the Registrant's Registration Statement on Form S-1 filed on July 22, 2011 (File No. 333-175726)).
- 5.2 Opinion of Fredrikson & Byron, P.A. dated April 25, 2012.
- 10.1 Employment Agreement between Nile Therapeutics, Inc. and Daron Evans dated January 19, 2007 (incorporated by reference to Exhibit 10.3 to the Company's Current Report on Form 8-K filed September 21, 2007).
- 10.2 Amendment No. 1 to Employment Agreement between Nile Therapeutics, Inc. and Daron Evans dated August 19, 2007 (incorporated by reference to Exhibit 10.4 to the Company's Current Report on Form 8-K filed September 21, 2007).
- 10.3 Amendment of Employment Agreement, by and between Nile Therapeutics, Inc. and Daron Evans, dated March 4, 2008 (incorporated by reference to Exhibit 10.3 to the Company's Current Report on Form 8-K filed March 5, 2008).
- 10.4 Amendment of Incentive Stock Option Agreement, by and between Nile Therapeutics, Inc. and Daron Evans, dated March 4, 2008 (incorporated by reference to Exhibit 10.5 to the Company's Current Report on Form 8-K filed March 5, 2008).
- 10.5 Offer Letter between the Company and Hsiao Dee Lieu, M.D., F.A.C.C. entered into on February 22, 2008 (incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed February 27, 2008).

- 10.6 License Agreement between the Company and Mayo Foundation for Medical Education and Research, dated January 20, 2006 (incorporated by reference to Exhibit 10.6 to the Company's Current Report on Form 8-K filed September 21, 2007).+
- 10.7 Amended and Restated 2005 Stock Option Plan (incorporated by reference to Exhibit 10.9 to the Company's Current Report on Form 8-K filed September 21, 2007).
- 10.8 Form of Stock Option Agreement (incorporated by reference to Exhibit 10.10 to the Company's Current Report on Form 8-K filed September 21, 2007).
- 10.9 Form of Incentive Stock Option Agreement (incorporated by reference to Exhibit 10.11 to the Company's Current Report on Form 8-K filed September 21, 2007).
- 10.10 Amendment to Offer Letter, dated as of March 10, 2009, by and between Nile Therapeutics, Inc. and Hsiao D. Lieu, M.D., F.A.C.C. (incorporated by reference to Exhibit 10.19 to the Company's Annual Report on Form 10-K filed March 12, 2009).
- 10.11 Technology License Agreement between the Company and Mayo Foundation for Medical Education and Research, effective as of June 17, 2008 (incorporated by reference to Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q filed August 14, 2008).+
- 10.12 Form of Indemnification Agreement entered into between the Company and each of its executive officers and directors (incorporated by reference to Exhibit 10.14 to the Company's Annual Report on Form 10-K filed March 3, 2010).
- 10.13 Form of Securities Purchase Agreement entered into among the Company and various accredited investors on July 7, 2009 (incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed July 13, 2009).
- 10.14 Services Agreement dated June 24, 2009 between Nile Therapeutics, Inc. and Two River Consulting, LLC (incorporated by reference to Exhibit 10.2 to the Company's Quarterly Report on Form 10-Q filed August 13, 2009).
- 10.15 Underwriting Agreement between the Company and Maxim Group LLC, as representative of the underwriters named on Schedule A thereto, dated April 21, 2010 (incorporated by reference to Exhibit 1.1 to the Company's Current Report on Form 8-K filed April 22, 2010).
- 10.16 Letter Agreement between Nile Therapeutics, Inc. and Richard Brewer, dated July 15, 2010 (incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed July 27, 2010).
- 10.17 Severance Benefits Agreement between Nile Therapeutics, Inc. and Daron Evans, dated July 24, 2010 (incorporated by reference to Exhibit 10.2 to the Company's Current Report on Form 8-K filed July 27, 2010).
- 10.18 Summary terms of compensation plan for directors of Nile Therapeutics, Inc., as amended July 26, 2010 (incorporated by reference to Exhibit 10.3 to the Company's Current Report on Form 8-K filed July 27, 2010).
- 10.19 Amendment No. 1 to Services Agreement between Nile Therapeutics, Inc. and Two River Consulting, LLC, dated August 12, 2010 (incorporated by reference to Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q filed August 16, 2010).
- 10.20 Clinical Trial Funding Agreement between Nile Therapeutics, Inc. and Medtronic, Inc., dated February 25, 2011 (incorporated by reference to Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q filed May 16, 2011).+
- 10.21 Amendment No. 2 to Services Agreement between Nile Therapeutics, Inc. and Two River Consulting, LLC, dated March 17, 2011 (incorporated by reference to Exhibit 10.2 to the Company's Quarterly Report on Form 10-Q filed May 16, 2011).
- 10.22 Form of Securities Purchase Agreement dated June 20, 2011 among Nile Therapeutics, Inc. and the purchasers in the 2011 private placement ((incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed June 24, 2011).
- 10.23 Placement Agent Agreement dated March 30, 2012, between Nile Therapeutics, Inc. and Roth Capital Partners, LLC (incorporated by reference to Exhibit 1.1 to the Company's Current Report on Form 8-K filed April 2, 2012).

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10.24 Form of Subscription Agreement dated March 30, 2012 between Nile Therapeutics, Inc. and the purchasers in the April 2012 offering (incorporated by reference to Exhibit 1.1 to the Company's Current Report on Form 8-K filed April 2, 2012).

23.1 Consent of Crowe Horwath LLP.

23.2 Consent of Fredrikson & Byron, P.A. dated July 22, 2011 (included in Exhibit 5.1).

23.3 Consent of Fredrikson & Byron, P.A. dated April 25, 2012 (included in Exhibit 5.2).

24.1 Power of Attorney (included on signature page hereof).

101 The following financial information from Nile Therapeutics, Inc.'s Registration Statement on Form S-1, formatted in eXtensible Business Reporting Language (XBRL): (i) Balance Sheets as of December 31, 2011 and 2010, (ii) Statements of Operations for the years ended December 31, 2011 and 2010, and for the period from August 1, 2005 (inception) through December 31, 2011, (iii) Statement of Stockholders' Equity (Deficit) for the period from August 1, 2005 (inception) through December 31, 2011, (iv) Statements of Cash Flows for the years ended December 31, 2011 and 2010, and for the period from August 1, 2005 (inception) through December 31, 2011, and (v) Notes to Financial Statements.

+ Confidential treatment has been granted as to certain omitted portions of this exhibit pursuant to Rule 406 of the Securities Act or Rule 24b-2 of the Exchange Act.

ITEM 17. UNDERTAKINGS.

The undersigned registrant hereby undertakes:

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

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

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

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

That, for the purpose of determining any liability under the Securities Act, each post-effective amendment shall be

(2) deemed to be a new registration statement relating to the securities offered therein, and the offering of the securities at that time shall be deemed to be the initial bona fide offering thereof.

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

That, for the purpose of determining liability under the Securities Act to any purchaser, if the registrant is subject to Rule 430C, each prospectus filed pursuant to Rule 424(b) as part of a registration statement relating to an offering, other than registration statements relying on Rule 430B or other than prospectuses filed in reliance on Rule 430A, shall be deemed to be part of and included in the registration statement as of the date it is first used after effectiveness. *Provided, however*, that no statement made in a registration statement or prospectus that is part of the registration statement or made in a document incorporated or deemed incorporated by reference into the registration statement or prospectus that is part of the registration statement will, as to a purchaser with a time of contract of sale prior to such first use, supersede or modify any statement that was made in the registration statement or prospectus that was part of the registration statement or made in any such document immediately prior to such date of first use.

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

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SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, the registrant has duly caused this Registration Statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of San Mateo, State of California, on April 25, 2012.

NILE THERAPEUTICS,
INC.

By: /s/ Joshua A. Kazam
Joshua A. Kazam
Chief Executive Officer

KNOW ALL MEN BY THESE PRESENTS, that each person whose signature appears below hereby constitutes and appoints Joshua A. Kazam and Daron Evans, and each of them, his true and lawful attorneys-in-fact and agents, with full power of substitution and resubstitution, for him in his name, place and stead, in any and all capacities, to sign any or all amendments to this registration statement and additional registration statements relating to the same offering, and to file the same, with all exhibits thereto, and all other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys-in-fact and agents, and each of them, full power and authority to do and perform each and every act and thing requisite and necessary to be done in and about the premises, as fully to all intents and purposes as he might or could do in person, hereby ratifying and confirming all that said attorneys-in-fact and agents, or any of them, or their substitutes, may lawfully do or cause to be done by virtue thereof.

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

Signature	Title	Date
/s/ Joshua A. Kazam Joshua A. Kazam	President, Chief Executive Officer and Director (Principal Executive Officer)	April 25, 2012
/s/ Daron Evans Daron Evans	Chief Financial Officer (Principal Financial and Accounting Officer)	April 25, 2012
/s/ Arie S. Belldegrun Arie S. Belldegrun, M.D.	Director	April 25, 2012
/s/ Richard B. Brewer	Chairman of the Board	April 25, 2012

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Richard B. Brewer

/s/ Peter M. Kash Director April 25, 2012
Peter M. Kash

/s/ Pedro Granadillo Director April 25, 2012
Pedro Granadillo

/s/ Frank Litvack Director April 25, 2012
Frank Litvack, M.D.

/s/ Paul A. Mieyal Director April 25, 2012
Paul A. Mieyal, Ph.D.

/s/ Gregory W. Schafer Director April 25, 2012
Gregory W. Schafer

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INDEX TO EXHIBITS FILED WITH THIS REGISTRATION STATEMENT

Exhibit Number	Description of Document
5.2	Opinion of Fredrikson & Byron, P.A. dated April 25, 2012.
23.1	Consent of Independent Registered Public Accounting Firm
101	The following financial information from Nile Therapeutics, Inc.'s Registration Statement on Form S-1, formatted in eXtensible Business Reporting Language (XBRL): (i) Balance Sheets as of December 31, 2011 and 2010, (ii) Statements of Operations for the years ended December 31, 2011 and 2010, and for the period from August 1, 2005 (inception) through December 31, 2011, (iii) Statement of Stockholders' Equity (Deficit) for the period from August 1, 2005 (inception) through December 31, 2011, (iv) Statements of Cash Flows for the years ended December 31, 2011 and 2010, and for the period from August 1, 2005 (inception) through December 31, 2011, and (v) Notes to Financial Statements.
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