

PIPEX PHARMACEUTICALS, INC.  
Form 424B3  
February 14, 2007

Filed pursuant to Rule 424(b)(3)  
Registration No. 333-139354

**PROSPECTUS**

**30,958,113 shares of common stock**

This prospectus relates to the resale or other disposition of up to 30,958,113 shares of our common stock, \$0.001 par value per share, by the persons who are, or will become, our shareholders. These persons, together with their transferees, are referred to throughout this prospectus as "selling shareholders." Of these shares, up to 10,206,037 shares are issuable on the exercise of certain warrants.

All of the shares and warrants described above were previously issued in a merger and a private placement transaction completed prior to the filing of this registration statement.

We are not selling any shares of our common stock in this offering and therefore will not receive any proceeds from this offering. We may receive proceeds on exercise of outstanding warrants for shares of common stock covered by this prospectus if the warrants are exercised for cash. We will bear all costs associated with this registration. The selling shareholders may offer the shares covered by this prospectus at fixed prices, at prevailing market prices at the time of sale, at varying prices or negotiated prices, in negotiated transactions, or in trading markets for our common stock.

Our common stock trades on the OTC Bulletin Board under the symbol "PPXP." The closing price of our common stock on the OTC Bulletin Board on February 6, 2007, was \$5.68 per share.

*You should consider carefully the risk factors beginning on page 5 of this prospectus.*

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

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

The date of this prospectus is February 14, 2007

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**PROSPECTUS SUMMARY**

This summary highlights selected information contained elsewhere in this prospectus. It is not complete and may not contain all of the information that is important to you. To understand this offering fully, you should read the entire prospectus carefully. Investors should carefully consider the information set forth under the heading "Risk Factors." In this prospectus, the terms "Pipex Pharmaceuticals," "we," "us," and "our" refer to Pipex Pharmaceuticals, Inc. and its subsidiaries Pipex Therapeutics, Inc., Effective Pharmaceuticals, Inc., Solovax, Inc., CD4 Biosciences, Inc., and Putney Drug Corp.

***Our Company***

We are a development-stage, specialty pharmaceutical company that is developing proprietary, late-stage drug candidates for the treatment of neurologic and fibrotic diseases. Our strategy is to exclusively in-license proprietary, clinical-stage drug candidates that have demonstrated preliminary efficacy in human clinical trials and to complete the further clinical testing, manufacturing and other regulatory requirements sufficient to seek marketing authorizations via the filing of New Drug Applications (NDA) with the FDA and potential Marketing Application Authorizations (MAA) with the European Medicines Evaluation Agency (EMA).

Our lead drug candidate, COPREXA™ (oral tetrathiomolybdate), is a novel, oral, anticopper therapeutic that has completed two pivotal clinical trials in neurologically-presenting Wilson's disease that we believe have demonstrated sufficient safety and efficacy to support the filing of an NDA with the FDA as well as a MAA with the European Medicines Evaluation Agency. In order to expand the therapeutic utility of COPREXA™ beyond the indication of initially-presenting neurological Wilson's disease, our investigators have recently completed an initial 12 month, 16 patient, open label phase II clinical trial for the treatment of refractory idiopathic pulmonary fibrosis (IPF), a progressive fibrotic lung disease associated with high rates of mortality and for which there is no currently approved therapy. IPF is estimated to affect 124,000 patients in the U.S., resulting in approximately 30,000 deaths annually, exceeding the annual number of deaths attributable to breast and prostate cancer.

We are also developing TRIMESTA™ (oral estriol), for the treatment of multiple sclerosis (MS), a life threatening autoimmune disease that affects the central nervous system (CNS). MS is characterized by a progressive loss of motor function, leading to paralysis and death. Estriol has been approved for the treatment of post-menopausal hot flashes in Europe and Asia for approximately 40 years but has never been approved in the U.S. TRIMESTA™ has completed a phase IIa clinical trial in the U.S. for the treatment of MS and demonstrated statistically significant benefits in relapsing-remitting MS patients. We plan to initiate a phase II/III clinical trial using TRIMESTA™ for the treatment of relapsing-remitting MS.

We are also developing a series of small molecule and peptide based inhibitors of the CD4 co-receptor of T-cells, an important pathway for the treatment and prevention of autoimmune diseases. Our lead anti-CD4 molecule, Anti-CD4 802-2, is a cyclic, seven amino acid peptide that has demonstrated efficacy in a number of animal models of autoimmune diseases, including MS, and is currently nearing completion of a dose ranging phase I/II clinical trial for the prevention of graft-versus-host disease.

We have eight employees. Our management team includes experienced senior level professionals with a combined 50 years of experience at leading companies in the pharmaceutical industry, including Pfizer, Pharmacia, and Warner-Lambert.

Our corporate headquarters is located at 3985 Research Park Drive, Ann Arbor MI 48108. Our telephone number is (734) 332-7800 and our website is located at [www.pipexpharma.com](http://www.pipexpharma.com). The information on our website is not part of this prospectus.

***Recent Transactions***

On October 31, 2006, our wholly owned subsidiary completed a merger with Pipex Therapeutics, Inc. ("Pipex Therapeutics") whereby Pipex Therapeutics' shareholders were issued 34 million of our shares and we assumed the then outstanding options and warrants of Pipex Therapeutics.

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Prior to the merger, Pipex Therapeutics completed a private placement to institutional and accredited investors resulting in approximately \$4.5 million in gross proceeds to us.

During November 2006, we completed a separate private placement to institutional and accredited investors resulting in approximately \$9.3 million in gross proceeds. As a result of these two placements (the "Placements") we received approximately \$13.9 million in gross proceeds.

In connection with these transactions, we agreed to file, within 45 days of the closing date of the merger, a registration statement registering for resale the shares exchanged by the Registrant and have it declared effective within 150 days of the closing of the merger. The registration statement of which this prospectus forms a part is being filed to fulfill the obligations to the investors of the Placements.

### ***The Offering***

*Common stock outstanding* 50,979,171 shares as of February 7, 2007.

*Common stock that may be offered by selling shareholders* Up to 30,958,113 shares, representing 20,752,076 shares of our common stock that were issued to the selling shareholders and 10,206,037 shares of our common stock underlying warrants that were issued to the selling shareholders.

*Total proceeds raised by offering* We will not receive any proceeds from the resale or other disposition of the shares covered by this prospectus by any selling shareholder. We may receive proceeds from the exercise of the warrants whose underlying shares of common stock are covered by this prospectus.

*Risk factors* There are significant risks involved in investing in our company. For a discussion of risk factors you should consider before buying our common stock, see "Risk Factors" beginning on page 5.

## RISK FACTORS

An investment in our securities is highly speculative and involves a high degree of risk. Therefore, in evaluating us and our business you should carefully consider the risks set forth below, which are only a few of the risks associated with investing in our common stock. You should be in a position to risk the loss of your entire investment.

### RISKS RELATING TO OUR BUSINESS

***We are a development stage company. We currently have no product revenues and will need to raise additional capital to operate our business.***

We are a development stage company that has experienced significant losses since inception and has a significant accumulated deficit. We expect to incur additional operating losses in the future and expect our cumulative losses to increase. To date, we have generated no product revenues. As of September 30, 2006, we have expended approximately \$6 million on a consolidated basis acquiring and developing our current product candidates. Until such time as we receive approval from the FDA and other regulatory authorities for our product candidates, we will not be permitted to sell our drugs and will not have product revenues. Therefore, for the foreseeable future we will have to fund all of our operations and capital expenditures from equity and debt offerings, cash on hand, licensing fees, and grants. We will need to seek additional sources of financing and such additional financing may not be available on favorable terms, if at all. If we do not succeed in raising additional funds on acceptable terms, we may be unable to complete planned pre-clinical and clinical trials or obtain approval of our product candidates from the FDA and other regulatory authorities. In addition, we could be forced to discontinue product development, reduce or forego sales and marketing efforts, and forego attractive business opportunities. Any additional sources of financing will likely involve the issuance of our equity or debt securities, which will have a dilutive effect on our stockholders.

***We are not currently profitable and may never become profitable.***

We have a history of losses and expect to incur substantial losses and negative operating cash flow for the foreseeable future. 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 and may never become profitable. We also expect to continue to incur significant operating and capital expenditures and anticipate that our expenses will increase substantially in the foreseeable future as we do the following:

- continue to undertake pre-clinical development and clinical trials for our product candidates;
- seek regulatory approvals for our product candidates;
- implement additional internal systems and infrastructure;
- lease additional or alternative office facilities; and
- hire additional personnel, including members of our management team.

We also expect to experience negative cash flow for the foreseeable future as we fund our technology development with capital expenditures. As a result, we will need to generate significant revenues in order to achieve and maintain profitability. We may not be able to generate these revenues or achieve profitability in the future. Our failure to achieve or maintain profitability could negatively impact the value of our common stock and underlying securities.

***We have a limited operating history on which investors can base an investment decision.***

We are a development-stage company and have not demonstrated our ability to perform the functions necessary for the successful commercialization of any of our product candidates. The successful commercialization of our product candidates will require us to perform a variety of functions, including:

- continuing to undertake pre-clinical development and clinical trials;
- participating in regulatory approval processes;
- formulating and manufacturing products; and
- conducting sales and marketing activities.

Our operations have been limited to organizing and staffing our company, acquiring, developing, and securing our proprietary technology, and undertaking pre-clinical trials and Phase I/II and Phase II clinical trials of our principal product candidates. These operations provide a limited basis for you to assess our ability to commercialize our product candidates and the advisability of investing in our securities.

***We may not obtain the necessary U.S. or worldwide regulatory approvals to commercialize our product(s).***

We will need FDA approval to commercialize our product candidates in the U.S. and approvals from equivalent regulatory authorities in foreign jurisdictions to commercialize our product candidates in those jurisdictions. In order to obtain FDA approval for 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.” We will also need to file additional investigative new drug applications and protocols in order to initiate clinical testing of our drug candidates in new therapeutic indications and delays in obtaining required FDA and institutional review board approvals to commence such studies may delay our initiation of such planned additional studies.

Satisfying the FDA’s regulatory requirements typically takes many years, depending on 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. Delays in obtaining regulatory approvals may do the following:

- delay commercialization of, and our ability to derive product revenues from, our product candidates;
- impose costly procedures on us; and
- diminish any competitive advantages that we may otherwise enjoy.

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.

In foreign jurisdictions, we must receive approval from the appropriate regulatory authorities before we can commercialize our drugs. Foreign regulatory approval processes generally include all of the risks associated with the FDA approval procedures described above. We cannot assure you that we will receive the approvals necessary to commercialize our product candidate for sale outside the United States.

***We may not be able to retain rights licensed to us by others to commercialize key products and may not be able to establish or maintain the relationships we need to develop, manufacture, and market our products.***

We currently rely on an exclusive worldwide license agreement with the University of Michigan relating to various uses of COPREXA™. We also have an exclusive license agreement with the McLean Hospital relating to the use of EFFIRMA™ to treat fibromyalgia syndrome; an exclusive license agreement with Thomas Jefferson University relating to our anti-CD4 inhibitors; an exclusive license agreement with the Regents of the University of California relating to our TRIMESTA™ technology; an exclusive license agreement with the Children's Hospital-Boston relating to our CORRECTA™ technology and an exclusive option agreement to license our T-cell vaccine program from the University of Southern California (USC). Each of these agreements requires us to use our best efforts to commercialize each of the technologies as well as meet certain diligence requirements and timelines in order to keep the license agreement in effect. In the event we are not able to meet our diligence requirements, we may not be able to retain the rights granted under our agreements or renegotiate our arrangement with these institutions on reasonable terms, or at all.

Furthermore, we currently have very limited product development capabilities and no manufacturing, marketing or sales capabilities. For us to research, develop, and test our product candidates, we would need to contract with outside researchers, in most cases those parties that did the original research and from whom we have licensed the technologies.

We can give no assurances that any of our issued patents licensed to us or any of our other patent applications will provide us with significant proprietary protection or be of commercial benefit to us. Furthermore, the issuance of a patent is not conclusive as to its validity or enforceability, nor does the issuance of a patent provide the patent holder with freedom to operate without infringing the patent rights of others.

***Developments by competitors may render our products or technologies obsolete or non-competitive.***

Companies that currently sell or are developing both generic and proprietary pharmaceutical compounds to treat central-nervous-system, inflammatory, autoimmune and fibrotic diseases include: Pfizer, Inc., GlaxoSmithKline Pharmaceuticals, Shire Pharmaceuticals, Plc., Merck & Co., Eli Lilly & Co., Serono, SA, Biogen Idec, Inc., Achillion, Ltd., Active Biotech, Inc., Panteri Biosciences, Meda, Merrimack Pharmaceuticals, Inc., Schering AG, Forest Laboratories, Inc., Attenuon, LLC, Cypress Biosciences, Inc., Axcen Pharma, Inc., Teva Pharmaceuticals, Inc., Intermune, Inc. Fibrogen, Inc., Rare Disease Therapeutics, Inc., Prana Biotechnology, Inc., Merz & Co., AstraZeneca Pharmaceuticals, Inc., Chiesi Pharmaceuticals, Inc., Targacept, Inc., and Johnson & Johnson, Inc. Alternative technologies are being developed to treat autoimmune inflammatory, fibrotic, Alzheimer's and Wilson's diseases, several of which are in early and advanced clinical trials, such as, pifendone, milnacipram, Actimmune™ and other interferon preparations. Unlike us, many of our competitors have significant financial and human resources. In addition, academic research centers may develop technologies that compete with our CORRECTA™, TRIMESTA™, anti-CD4 inhibitors, flupirtine and COPREXA™ technologies. We are aware that other companies are developing competitive anti-copper therapies that are in various stages of clinical trial.

***We may not succeed in enforcing our orphan drug designations.***

COPREXA™ has been designated by the FDA as an "orphan drug" for the treatment of Wilson's disease patients presenting with neurologic complications. CORRECTA™ has also been designated by the FDA as an "orphan drug" for the treatment of pouchitis patients. We intend to file for "orphan drug" designations in the EMEA (the European equivalent of the FDA) for both COPREXA™ and CORRECTA™ for similar uses. Pursuant to our agreements with our scientific inventors and universities, we have acquired these designations. Orphan drug designation is an important element of our competitive strategy because there are no composition of matter patents for COPREXA™, TRIMESTA™ or CORRECTA™. Any company that obtains the first FDA approval for a designated

orphan drug for a rare disease generally receives marketing exclusivity for use of that drug for the designated condition for a period of seven years in the United States and ten years in the European Union.

To be successful in enforcing this designation, our new drug application would need to be the first NDA approved to use COPREXA™ to treat Wilson's disease. While we are not aware of any other companies that have sought orphan drug designation for COPREXA™ or its active ingredient, tetrathiomolybdate, for this indication, other companies may in the future seek it and may obtain FDA marketing approval before we do. In addition, the FDA may permit other companies to market a form of tetrathiomolybdate to treat Wilson's disease patients with neurologic complication if their product demonstrates clinical superiority. This could create a more competitive market for us.

***Competitors could develop and gain FDA approval of our products for a different indication.***

A competitor could develop our products in a similar format, but for a different indication. For example, other companies could manufacture and develop COPREXA™ and its active ingredient, tetrathiomolybdate, and secure approvals for different indications. We are aware that a potential competitor has an exclusive license from the University of Michigan (UM) to an issued U.S. patent that relates to the use of tetrathiomolybdate to treat angiogenic diseases (the "Angiogenic Patent") and is currently in phase I and phase II clinical trials for the treatment of various forms of cancer. To our knowledge, this competitor and UM have filed additional patent applications claiming various analog structures and formulations of tetrathiomolybdate to treat various diseases. While our use of COPREXA™ and its active ingredient, tetrathiomolybdate, is in a more advanced state of clinical development, having completed two pivotal clinical trials, we cannot predict whether or not one or more patent applications corresponding to the Angiogenic Patent will be filed or if any U.S. patents will be issued which might prevent us from expanding the commercial applications of COPREXA™. Further, we cannot predict whether our competitor might seek to develop their version of tetrathiomolybdate for Wilson's disease and file for FDA or EMEA approval before us and saturate the market. We also cannot predict whether, if issued, any patent corresponding to the Angiogenic Patent may prevent us from conducting our business or result in lengthy and costly litigation or the need for a license. Furthermore, if we need to obtain a license to these or other patents in order to conduct our business, we may find that it is not available to us on commercially reasonable terms, or is not available to us at all.

If the FDA approves other tetrathiomolybdate products to treat indications other than those covered by our issued or pending patent applications, physicians may elect to prescribe a competitor's tetrathiomolybdate to treat Wilson's disease—this is commonly referred to as "off-label" use. While under FDA regulations a competitor is not allowed to promote off-label uses of its product, the FDA does not regulate the practice of medicine and, as a result, cannot direct physicians as to which source it should use for the tetrathiomolybdate they prescribe to their patients. Consequently, we might be limited in our ability to prevent off-label use of a competitor's tetrathiomolybdate to treat Wilson's disease or inflammatory or fibrotic disease, even if we have orphan drug exclusivity. Our competitor might seek FDA or EMEA approval to market tetrathiomolybdate for any therapeutic indication, including Wilson's disease or idiopathic pulmonary fibrosis (IPF). If we are not able to obtain and enforce these patents, a competitor could use tetrathiomolybdate for a treatment or use not covered by any of our patents.

***We rely primarily on method patents and patent applications and various regulatory exclusivities to protect the development of our technologies, and our ability to compete may decrease or be eliminated if we are not able to protect our proprietary technology.***

Our competitiveness may be adversely affected if we are unable to protect our proprietary technologies. Currently, there are no composition of matter patents for TRIMESTA™, EFFIRMA™, CORRECTA™, COPREXA™ or their respective active ingredients estriol, flupirtine, clotrimazole and tetrathiomolybdate. Additionally, we do not have an issued patent for COPREXA™'s use to treat Wilson's disease, although we do have Orphan Drug Designation for this indication. Orphan Drug



Designation provides protection for seven years of marketing exclusivity for that product in that disease indication in the U.S. We also expect to rely on patent protection from an issued U.S. Patent for the use of COPREXA™ and related compounds to treat inflammatory and fibrotic diseases (U.S. Patent No 6,855,340) and we have received a notice of allowance for the use of COPREXA™ and related compounds to treat Alzheimer's disease. Both of these patents have been exclusively licensed to us. We have also filed various pending patent applications which cover various formulations, packaging, distribution & monitoring methods for COPREXA™. We rely on issued patent and pending patent applications for use of TRIMESTA™ to treat MS (issued U.S. Patent No. 6,936,599) and various other therapeutic indications which have been exclusively licensed to us. We have also exclusively licensed an issued patent for the treatment of fibromyalgia with EFFIRMA™ and have pending patent applications for our uses of CORRECTA™.

We also expect to rely on regulatory exclusivities, such as the Orphan Drug Designation with the FDA and EMEA ("Orphan Drug") to protect COPREXA™ and CORRECTA™ for certain therapeutic indications and our other future products. Orphan Drug protection provides for seven years of marketing exclusivity for that disease indication in the U.S. and ten years of marketing exclusivity for that disease indication in Europe. We have received an Orphan Drug Designation for the use of CORRECTA™ to treat pouchitis as well as an Orphan Drug Designation for the use of COPREXA™ to treat neurologically presenting Wilson's disease and are in the process of filing similar designations in Europe. Orphan Drug Designation is an important element of our competitive strategy for COPREXA™ and CORRECTA™. To be successful in enforcing this designation, our NDA would need to be the first NDA approved to use COPREXA™ and CORRECTA™ for that indication. While we are not aware of any other companies that have sought orphan drug designation for COPREXA™ and CORRECTA™ for any indication, other companies may in the future seek it and may obtain FDA marketing approval before we do.

After the Orphan Drug exclusivity period expires, assuming our patents are validly issued, we still expect to rely on our issued and pending method of use patent applications to protect our proprietary technology with respect to the development of COPREXA™, TRIMESTA™ and CORRECTA™. The patent positions of pharmaceutical companies are uncertain and may involve complex legal and factual questions. We may incur significant expense in protecting our intellectual property and defending or assessing claims with respect to intellectual property owned by others. Any patent or other infringement litigation by or against us could cause us to incur significant expense and divert the attention of our management.

We may also rely on the United States Drug Price Competition and Patent Term Restoration Act, commonly known as the "Hatch-Waxman Amendments," to protect some of our current product candidates, specifically COPREXA™, TRIMESTA™, Anti-CD4 802-2, EFFIRMA™ and other future product candidates we may develop. Once a drug containing a new molecule is approved by the FDA, the FDA cannot accept an abbreviated NDA for a generic drug containing that molecule for five years, although the FDA may accept and approve a drug containing the molecule pursuant to an NDA supported by independent clinical data. Recent amendments have been proposed that would narrow the scope of Hatch-Waxman exclusivity and permit generic drugs to compete with our drug.

Others may file patent applications or obtain patents on similar technologies or compounds that compete with our products. We cannot predict how broad the claims in any such patents or applications will be, and whether they will be allowed. Once claims have been issued, we cannot predict how they will be construed or enforced. We may infringe intellectual property rights of others without being aware of it. If another party claims we are infringing their technology, we could have to defend an expensive and time consuming lawsuit, pay a large sum if we are found to be infringing, or be prohibited from selling or licensing our products unless we obtain a license or redesign our product, which may not be possible.

We also rely on trade secrets and proprietary know-how to develop and maintain our competitive position. Some of our current or former employees, consultants, or scientific advisors, or current or prospective corporate collaborators, may unintentionally or willfully disclose our confidential

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information to competitors or use our proprietary technology for their own benefit. Furthermore, enforcing a claim alleging the infringement of our trade secrets would be expensive and difficult to prove, making the outcome uncertain. Our competitors may also independently develop similar knowledge, methods, and know-how or gain access to our proprietary information through some other means.

***We may fail to retain or recruit necessary personnel, and we may be unable to secure the services of consultants.***

We currently have eight full-time employees, including Steve H. Kanzer, our co-founder, Chairman and CEO and Dr. Charles Bisgaier, our President. We have also engaged regulatory consultants to advise us on our dealings with the FDA. We intend to recruit certain key executive officers, including a vice president of finance, a vice president of regulatory affairs, and other key executive officers. Our future performance will depend in part on our ability to successfully integrate newly hired executive officers into our management team and our ability to develop an effective working relationship among senior management.

Certain of our officers, directors, (including Mr. Stergis, our Chief Operating Officer and Dr. Rudick, our Chief Medical Officer) scientific advisors, and consultants serve as officers, directors, scientific advisors, or consultants of other biopharmaceutical or biotechnology companies. We can expect this to also be the case with personnel that we engage in the future. We can give no assurances that any such other companies will not have interests that are in conflict with our interests.

Losing key personnel or failing to recruit necessary additional personnel would impede our ability to attain our development objectives. There is intense competition for qualified personnel in the drug-development field, and we may not be able to attract and retain the qualified personnel we would need to develop our business.

We rely on independent organizations, advisors, and consultants to perform certain services for us, including handling substantially all aspects of regulatory approval, clinical management, manufacturing, marketing, and sales. We expect that this will continue to be the case. Such services may not always be available to us on a timely basis when we need them.

***We may experience difficulties in obtaining sufficient quantities of our products or other compounds.***

In order to successfully commercialize our product candidates, we must be able to manufacture our products in commercial quantities, in compliance with regulatory requirements, at acceptable costs, and in a timely manner. Manufacture of the types of biopharmaceutical products that we propose to develop present various risks. For example, manufacture of the active ingredient in COPREXA™ is a complex process that can be difficult to scale up for purposes of producing large quantities. This process can also be subject to delays, inefficiencies, and poor or low yields of quality products. Furthermore, the active ingredient of COPREXA™ is known to be subject to a loss of potency as a result of prolonged exposure to moisture and other normal atmospheric conditions. We are developing proprietary formulations and specialty packaging solutions to overcome this stability issue, but we can give no assurances that we will be successful in meeting the stability requirements required for approval by regulatory authorities such as the FDA. Additionally, our SOLOVAX T-cell vaccine technology is complex to manufacture. The vaccine is manufactured through the procurement of a patient's own T-cells derived from the patient's plasma. This manufacturing process involves incubation of T-cells, irradiation and refrigeration of the cells. We plan to develop a revised manufacturing procedure which will streamline quality control of the vaccine.

Historically, our manufacturing has been handled by contract manufacturers and compounding pharmacies. We can give no assurances that we will be able to continue to use our current manufacturer or be able to establish another relationship with a manufacturer quickly enough so as not to disrupt commercialization of any of our products, or that commercial quantities of any of our products, if approved for marketing, will be available from contract manufacturers at acceptable costs.

In addition, any contract manufacturer that we select to manufacture our product candidates might fail to maintain a current “good manufacturing practices” (cGMP) manufacturing facility.

If we decide to establish a full-scale commercial manufacturing facility, we would require substantial additional funds, we would need to hire and train significant numbers of employees and comply with the extensive regulations applicable to such a facility. We might find that we are unable to develop a cGMP manufacturing facility that is able to manufacture quantities of products required for all clinical trials, as well as commercial-scale manufacturing.

The cost of manufacturing certain products may make them prohibitively expensive. In order to successfully commercialize our product candidates we may be required to reduce the costs of production, and we may find that we are unable to do so. We may be unable to obtain, or may be required to pay high prices for compounds manufactured or sold by others that we need for comparison purposes in clinical trials and studies for our products.

***Clinical trials are very expensive, time-consuming, and difficult to design and implement.***

Human clinical trials are very expensive and difficult to design and implement, in part because they are subject to rigorous regulatory requirements. The clinical trial process is also time-consuming. We estimate that clinical trials of our product candidates would take at least several years to complete. Furthermore, failure can occur at any stage of the trials, and we could encounter problems that cause us to abandon or repeat clinical trials. Commencement and completion of clinical trials may be delayed by several factors, including:

- unforeseen safety issues;
- determination of dosing;
- lack of effectiveness during clinical trials;
- slower than expected rates of patient recruitment;
- inability to monitor patients adequately during or after treatment; and
- inability or unwillingness of medical investigators to follow our clinical protocols.

In addition, we or the FDA may suspend our clinical trials at any time if it appears that we are exposing participants to unacceptable health risks or if the FDA finds deficiencies in our submissions or conduct of our trials.

***The results of our clinical trials may not support our product candidate claims.***

Even if our clinical trials are completed as planned, we cannot be certain that the results will support our product-candidate claims. Success in pre-clinical testing and phase II clinical trials does not ensure that later clinical trials will be successful. We cannot be sure that the results of later clinical trials would replicate the results of prior clinical trials and pre-clinical testing. Clinical trials may fail to demonstrate that our product candidates are safe for humans and effective for indicated uses. Any such failure could cause us to abandon a product candidate and might delay development of other product candidates. Any delay in, or termination of, our clinical trials would delay our obtaining FDA approval for the affected product candidate and, ultimately, our ability to commercialize that product candidate.

***Physicians and patients may not accept and use our technologies.***

Even if the FDA approves our product candidates, physicians and patients may not accept and use them. Acceptance and use of our product will depend upon a number of factors, including the following:

- the perception of members of the health care community, including physicians, regarding the safety and effectiveness of our drugs;

- the cost-effectiveness of our product relative to competing products;
- availability of reimbursement for our products from government or other healthcare payers; and
- the effectiveness of marketing and distribution efforts by us and our licensees and distributors, if any.

Because we expect sales of our current product candidates, if approved, to generate substantially all of our product revenues for the foreseeable future, the failure of any of these drugs to find market acceptance would harm our business and could require us to seek additional financing.

***We depend on researchers who are not under our control.***

We depend upon independent investigators and scientific 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 or the timing of their procurement of clinical-trial data. They may not assign as great a priority to our programs or pursue them as diligently as we would if we were undertaking those programs ourselves. Failing to devote sufficient time and resources to our drug-development programs, or substandard performance, could result in delay of any FDA applications and our commercialization of the drug candidate involved.

These collaborators may also have relationships with other commercial entities, some of which may compete with us. Our collaborators assisting our competitors at our expense, could harm our competitive position. For example, we depend on scientific collaborators for our TRIMESTA™, SOLOVAX™, CORRECTA™, anti-CD4 802-2, EFFIRMA™ and COPREXA™ development programs. Specifically, all of the clinical trials have been conducted under physician-sponsored investigational new drug applications (INDs), not corporate-sponsored INDs. We are also dependent on government and private grants to fund certain of our clinical trials for our product candidates. If we are unable to maintain these grants, we might be forced to scale back development of these product candidates. We have experienced difficulty in collecting the data or transferring these programs to corporate-sponsored INDs. Additionally, we are aware that all of our scientific collaborators also act as advisors to our competitors.

***We have no experience selling, marketing, or distributing products and do not have the capability to do so.***

We currently have no sales, marketing, or distribution capabilities. We do not anticipate having resources in the foreseeable future to allocate to selling and marketing our proposed products. Our success will depend, in part, on whether we are able to enter into and maintain collaborative relationships with a pharmaceutical or a biotechnology company charged with marketing one or more of our products. We may not be able to establish or maintain such collaborative arrangements or to commercialize our products in foreign territories, and even if we do, our collaborators may not have effective sales forces.

If we do not, or are unable to, enter into collaborative arrangements to sell and market our proposed products, we will need to devote significant capital, management resources, and time to establishing and developing an in-house marketing and sales force with technical expertise. We may be unsuccessful in doing so.

***If we fail to maintain positive relationships with particular individuals, we may be unable to successfully develop our product candidates, conduct clinical trials, and obtain financing.***

If we fail to maintain positive relationships with members of our management team or if these individuals decrease their contributions to our company, our business could be adversely impacted. We do not carry key employee insurance policies for any of our key employees.

We also rely greatly on employing and retaining other highly trained and experienced senior management and scientific personnel. The competition for these and other qualified personnel in the biotechnology field is intense. If we are not able to attract and retain qualified scientific, technical, and managerial personnel, we probably will be unable to achieve our business objectives.

***We may not be able to compete successfully for market share against other drug companies.***

The markets for our product candidates are characterized by intense competition and rapid technological advances. If our product candidates receive FDA approval, they will compete with existing and future drugs and therapies developed, manufactured, and marketed by others. Competing products may provide greater therapeutic convenience or clinical or other benefits for a specific indication than our products, or may offer comparable performance at a lower cost. If our products fail to capture and maintain market share, we may not achieve sufficient product revenues and our business will suffer.

We will compete against fully integrated pharmaceutical companies and smaller companies that are collaborating with larger pharmaceutical companies, academic institutions, government agencies, or other public and private research organizations. Many of these competitors have therapies to treat autoimmune fibrotic and central nervous system diseases already approved or in development. In addition, many of these competitors, either alone or together with their collaborative partners, operate larger research-and-development programs than we do, have substantially greater financial resources than we do, and have significantly greater experience in the following areas:

- developing drugs;
- undertaking pre-clinical testing and human clinical trials;
- obtaining FDA and other regulatory approvals of drugs;
- formulating and manufacturing drugs; and
- launching, marketing and selling drugs.

***We may incur substantial costs as a result of litigation or other proceedings relating to patent and other intellectual property rights, as well as costs associated with frivolous lawsuits.***

If any other person files patent applications, or is issued patents, claiming technology also claimed by us in pending applications, we may be required to participate in interference proceedings in the U.S. Patent and Trademark Office to determine priority of invention. We, or our licensors, may also need to participate in interference proceedings involving our issued patents and pending applications of another entity.

We cannot guarantee that the practice of our technologies will not conflict with the rights of others. In some foreign jurisdictions, we could become involved in opposition proceedings, either by opposing the validity of another's foreign patent or by persons opposing the validity of our foreign patents.

We may also face frivolous litigation or lawsuits from various competitors or from litigious securities attorneys. The cost to us of any litigation or other proceeding relating to these areas, even if resolved in our favor, could be substantial and could distract management from our business. Uncertainties resulting from initiation and continuation of any litigation could have a material adverse effect on our ability to continue our operations.

***If we infringe the rights of others we could be prevented from selling products or forced to pay damages.***

If our products, methods, processes, and other technologies are found to infringe the proprietary rights of other parties, we could be required to pay damages, or we may be required to cease using the technology or to license rights from the prevailing party. Any prevailing party may be unwilling to offer us a license on commercially acceptable terms.

***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 commercialize our drugs, alone or with collaborators, will depend in part on the extent to which reimbursement is available from government and health administration authorities, private health maintenance organizations, health insurers, and other healthcare payers.

Significant uncertainty exists as to the reimbursement status of newly approved healthcare products. Healthcare payers, including Medicare, are challenging the prices charged for medical products and services. Government and other healthcare payers 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, or may be inadequate, to cover the cost of our drugs. This could affect our ability to commercialize our products.

***We may not be able to obtain adequate insurance coverage against product liability claims.***

Our business exposes us to the product liability risks inherent in the testing, manufacturing, marketing, and sale of human therapeutic technologies and products. Even if it is available, product liability insurance for the pharmaceutical and biotechnology industry generally is expensive. Adequate insurance coverage may not be available at a reasonable cost.

### **RISKS RELATING TO OUR STOCK**

***We will seek to raise additional funds in the future, which may be dilutive to shareholders or impose operational restrictions.***

We expect to seek to raise additional capital in the future to help fund development of our proposed products. If we raise additional capital through the issuance of equity or debt securities, the percentage ownership of our current shareholders will be reduced. We may also enter into strategic transactions that may be dilutive. Our shareholders may experience additional dilution in net book value per share and any additional equity securities may have rights, preferences and privileges senior to those of the holders of our common stock. If we cannot raise additional funds, we will have to delay development activities of our products candidates.

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

Currently, our directors, executive officers, and principal stockholders beneficially own a majority of our common stock. As a result, they will be able to exert substantial influence over the election of our board of directors and the vote on issues submitted to our stockholders.

***Our common stock may be thinly traded and its price volatile. This may make it difficult for shareholders to sell their shares of our common stock.***

There may be significant volatility in the market price for our common stock. The stock market has from time to time experienced significant price and volume fluctuations that have particularly affected the market prices of pharmaceuticals companies and that may be unrelated to our operating performance. General market conditions could materially affect the market price of our common stock. The market price of our shares could also be subject to significant fluctuations in response to, and may be adversely effected by, among other factors, government regulatory actions, variations in our quarterly operating results, developments in the global pharmaceuticals industry, and general stock market conditions.

***Because we will be subject to the “penny stock” rules, broker-dealers may find it harder to sell the shares of our common stock.***

Our common stock is quoted on the OTCBB (as opposed to NASDAQ or AMEX) and the price of the common stock is below \$5.00 per share, we are therefore subject to “penny stock” regulation. The

penny stock rules impose additional sales practice requirements on broker-dealers who sell such securities to persons other than established customers and accredited investors (generally those with assets in excess of \$1,000,000 or annual income exceeding \$200,000 or \$300,000 together with a spouse). For transactions covered by these rules, the broker-dealer must make a special suitability determination for the purchase of such securities and have received the purchaser's written consent to the transaction prior to the purchase. Additionally, for any transaction involving a penny stock, unless exempt, the rules require the delivery, prior to the transaction, of a disclosure schedule prescribed by the Securities and Exchange Commission relating to the penny stock market. The broker-dealer also must disclose the commissions payable to both the broker-dealer and the registered representative and current quotations for the securities. Finally, monthly statements must be sent disclosing recent price information on the limited market in penny stocks. Consequently, the "penny stock" rules may restrict the ability of broker-dealers to sell shares of our common stock. The market price of our common stock would likely suffer as a result.

***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." Securities analysts of major brokerage firms may not provide coverage of us since there is little 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.

***Our compliance with the Sarbanes-Oxley Act and SEC rules concerning internal controls may be time consuming, difficult and costly.***

Although individual members of our management team have experience as officers of publicly traded companies, much of that experience came prior to the adoption of the Sarbanes-Oxley Act of 2002. It may be time consuming, difficult and costly for us to develop and implement the internal controls and reporting procedures required by Sarbanes-Oxley. We may need to hire additional financial reporting, internal controls and other finance staff in order to develop and implement appropriate internal controls and reporting procedures. If we are unable to comply with Sarbanes-Oxley's internal controls requirements, we may not be able to obtain the independent accountant certifications that Sarbanes-Oxley Act requires publicly-traded companies to obtain.

***When this Registration Statement becomes effective, there will be a significant number of shares of common stock eligible for sale, which could depress the market price of such stock.***

Following the effective date of this Registration Statement, a large number of shares of common stock will become available for sale in the public market, which could harm the market price of our stock. Further, shares may be offered from time to time in the open market pursuant to Rule 144, and these sales may have a depressive effect as well. In general, a person who has held restricted shares for a period of one year may, upon filing a notification with the SEC on Form 144, sell common stock into the market in an amount equal to the greater of one percent of the outstanding shares or the average weekly trading volume during the last four weeks prior to such sale.

***There is not now, and there may not ever be, an active market for our common stock.***

There currently is no market for our common stock. Further, although our common stock may be quoted on the OTC Bulletin Board, trading of our common stock may be extremely sporadic. For example, several days may pass before any shares may be traded. There can be no assurance that a more active market for the common stock will develop.

*We cannot assure you that the common stock will become liquid or that it will be listed on a securities exchange.*

We cannot assure you that we will be able to meet the listing standards of any stock exchange, such as the American Stock Exchange or the Nasdaq National Market, or that we will be able to maintain any such listing. Such exchanges require companies to meet certain initial listing criteria including certain minimum bid prices per share. We may not be able to achieve or maintain such minimum bid prices or may be required to effect a reverse stock split to achieve such minimum bid prices. Until the common stock is listed on an exchange, we expect that it would be eligible to be quoted on the OTC Bulletin Board, another over-the-counter quotation system, or in the "pink sheets." In those venues, however, an investor may find it difficult to obtain accurate quotations as to the market value of the common stock. In addition, if we failed to meet the criteria set forth in SEC regulations, various requirements would be imposed by law on broker-dealers who sell our securities to persons other than established customers and accredited investors. Consequently, such regulations may deter broker-dealers from recommending or selling the common stock, which may further affect its liquidity. This would also make it more difficult for us to raise additional capital.

*There may be issuances of shares of preferred stock in the future.*

Although we currently do not have preferred shares outstanding, the board of directors could authorize the issuance of a series of preferred stock that would grant holders preferred rights to our assets upon liquidation, the right to receive dividends before dividends would be declared to common stockholders, and the right to the redemption of such shares, possibly together with a premium, prior to the redemption of the common stock. To the extent that we do issue preferred stock, the rights of holders of common stock could be impaired thereby, including without limitation, with respect to liquidation.

*We have never paid dividends.*

We have never paid cash dividends on our common stock and do not anticipate paying any for the foreseeable future.

## **RISKS RELATED TO OUR INDUSTRY**

### ***Government Regulation***

The FDA, comparable foreign regulators and state and local pharmacy regulators impose substantial requirements upon clinical development, manufacture and marketing of pharmaceutical products. These and other entities regulate research and development and the testing, manufacture, quality control, safety, effectiveness, labeling, storage, record keeping, approval, advertising, and promotion of our products. The drug approval process required by the FDA under the Food, Drug, and Cosmetic Act generally involves:

- Preclinical laboratory and animal tests;
- Submission of an IND, prior to commencing human clinical trials;
- Adequate and well-controlled human clinical trials to establish safety and efficacy for intended use;
- Submission to the FDA of a NDA; and
- FDA review and approval of a NDA.

The testing and approval process requires substantial time, effort, and financial resources, and we cannot be certain that any approval will be granted on a timely basis, if at all.

Preclinical tests include laboratory evaluation of the product candidate, its chemistry, formulation and stability, and animal studies to assess potential safety and efficacy. Certain preclinical tests must be



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conducted in compliance with good laboratory practice regulations. Violations of these regulations can, in some cases, lead to invalidation of the studies, requiring them to be replicated. In some cases, long-term preclinical studies are conducted concurrently with clinical studies.

We will submit the preclinical test results, together with manufacturing information and analytical data, to the FDA as part of an IND, which must become effective before we begin human clinical trials. The IND automatically becomes effective 30 days after filing, unless the FDA raises questions about conduct of the trials outlined in the IND and imposes a clinical hold, in which case, the IND sponsor and FDA must resolve the matters before clinical trials can begin. It is possible that our submission may not result in FDA authorization to commence clinical trials.

Clinical trials must be supervised by a qualified investigator in accordance with good clinical practice regulations, which include informed consent requirements. An independent Institutional Review Board (“IRB”) at each medical center reviews and approves and monitors the study, and is periodically informed of the study’s progress, adverse events and changes in research. Progress reports are submitted annually to the FDA and more frequently if adverse events occur.

Human clinical trials typically have three sequential phases that may overlap:

Phase I: The drug is initially tested in healthy human subjects or patients for safety, dosage tolerance, absorption, metabolism, distribution, and excretion.

Phase II: The drug is studied in a limited patient population to identify possible adverse effects and safety risks, determine efficacy for specific diseases and establish dosage tolerance and optimal dosage.

Phase III: When phase II evaluations demonstrate that a dosage range is effective with an acceptable safety profile, phase III trials to further evaluate dosage, clinical efficacy and safety, are undertaken in an expanded patient population, often at geographically dispersed sites.

We cannot be certain that we will successfully complete phase I, phase II, or phase III testing of our product candidates within any specific time period, if at all. Furthermore, the FDA, an IRB or the IND sponsor may suspend clinical trials at any time on various grounds, including a finding that subjects or patients are exposed to unacceptable health risk.

Concurrent with these trials and studies, we also develop chemistry and physical characteristics data and finalize a manufacturing process in accordance with good manufacturing practice (“GMP”) requirements. The manufacturing process must conform to consistency and quality standards, and we must develop methods for testing the quality, purity, and potency of the final products. Appropriate packaging is selected and tested, and chemistry stability studies are conducted to demonstrate that the product does not undergo unacceptable deterioration over its shelf-life.

Results of the foregoing are submitted to the FDA as part of a NDA for marketing and commercial shipment approval. The FDA reviews each NDA submitted and may request additional information. Once the FDA accepts the NDA for filing, it begins its in-depth review. The FDA has substantial discretion in the approval process and may disagree with our interpretation of the data submitted. The process may be significantly extended by requests for additional information or clarification regarding information already provided. As part of this review, the FDA may refer the application to an appropriate advisory committee, typically a panel of clinicians. Manufacturing establishments often are inspected prior to NDA approval to assure compliance with GMPs and with manufacturing commitments made in the application.

Submission of a NDA with clinical data requires payment of a fee (for fiscal year 2004, \$573,500). In return, the FDA assigns a goal of ten months for issuing its “complete response,” in which the FDA may approve or deny the NDA, or require additional clinical data. Even if these data are submitted, the FDA may ultimately decide the NDA does not satisfy approval criteria. If the FDA approves the NDA, the product becomes available for physicians prescription. Product approval may be withdrawn if regulatory compliance is not maintained or safety problems occur. The FDA may require post-marketing studies, also known as phase IV studies, as a condition of approval, and requires

surveillance programs to monitor approved products that have been commercialized. The agency has the power to require changes in labeling or prohibit further marketing based on the results of post-marketing surveillance.

Satisfaction of these and other regulatory requirements typically takes several years, and the actual time required may vary substantially based upon the type, complexity and novelty of the product. Government regulation may delay or prevent marketing of potential products for a considerable period of time and impose costly procedures on our activities. We cannot be certain that the FDA or other regulatory agencies will approve any of our products on a timely basis, if at all. Success in preclinical or early-stage clinical trials does not assure success in later-stage clinical trials. Data obtained from pre-clinical and clinical activities are not always conclusive and may be susceptible to varying interpretations that could delay, limit or prevent regulatory approval. Even if a product receives regulatory approval, the approval may be significantly limited to specific indications or uses. Even after regulatory approval is obtained, later discovery of previously unknown problems with a product may result in restrictions on the product or even complete withdrawal of the product from the market. Delays in obtaining, or failures to obtain regulatory approvals would have a material adverse effect on our business.

Any products manufactured or distributed by us pursuant to FDA approvals are subject to pervasive and continuing FDA regulation, including record-keeping requirements, reporting of adverse experiences, submitting periodic reports, drug sampling and distribution requirements, manufacturing or labeling changes, record-keeping requirements, and compliance with FDA promotion and advertising requirements. Drug manufacturers and their subcontractors are required to register their facilities with the FDA and state agencies, and are subject to periodic unannounced inspections for GMP compliance, imposing procedural and documentation requirements upon us and third-party manufacturers. Failure to comply with these regulations could result, among other things, in suspension of regulatory approval, recalls, suspension of production or injunctions, seizures, or civil or criminal sanctions. We cannot be certain that we or our present or future subcontractors will be able to comply with these regulations.

The FDA regulates drug labeling and promotion activities. The FDA has actively enforced regulations prohibiting the marketing of products for unapproved uses. The FDA permits the promotion of drugs for unapproved uses in certain circumstances, subject to stringent requirements. We and our product candidates are subject to a variety of state laws and regulations which may hinder our ability to market our products. Whether or not FDA approval has been obtained, approval by foreign regulatory authorities must be obtained prior to commencing clinical trials, and sales and marketing efforts in those countries. These approval procedures vary in complexity from country to country, and the processes may be longer or shorter than that required for FDA approval. We may incur significant costs to comply with these laws and regulations now or in the future.

The FDA's policies may change, and additional government regulations may be enacted which could prevent or delay regulatory approval of our potential products. Increased attention to the containment of health care costs worldwide could result in new government regulations materially adverse to our business. We cannot predict the likelihood, nature or extent of adverse governmental regulation that might arise from future legislative or administrative action, either in the U.S. or abroad.

#### ***Other Regulatory Requirements***

The U.S. Federal Trade Commission and the Office of the Inspector General of the U.S. Department of Health and Human Services ("HHS") also regulate certain pharmaceutical marketing practices. Government reimbursement practices and policies with respect to our products are important to our success.

We are subject to numerous federal, state and local laws relating to safe working conditions, manufacturing practices, environmental protection, fire hazard control, and disposal of hazardous or potentially hazardous substances. We may incur significant costs to comply with these laws and regulations. The regulatory framework under which we operate will inevitably change in light of

scientific, economic, demographic and policy developments, and such changes may have a material adverse effect on our business.

### ***European Product Approval***

Prior regulatory approval for human healthy volunteer studies (phase I studies) is required in member states of the European Union (E.U.). Summary data from successful phase I studies are submitted to regulatory authorities in member states to support applications for phase II studies. E.U. authorities typically have one to three months (which often may be extended in their discretion) to raise objections to the proposed study. One or more independent ethics committees (similar to U.S. IRBs) review relevant ethical issues.

For E.U. marketing approval, we submit to the relevant authority for review a dossier, or MAA (Market Authorization Application), providing information on the quality of the chemistry, manufacturing and pharmaceutical aspects of the product as well as non-clinical and clinical data.

The E.U. provides two different, elective authorization routes: centralized and decentralized. For NB S101 we have selected the centralized route, leading in one marketing authorization the entire E.U, in which our application will be reviewed by members of the Committee for Proprietary Medicinal Products ("CPMP"), on behalf of EMEA. Based on that review, EMEA will provide an opinion on safety, quality and efficacy to the European Commission, which makes the decision to grant or refuse authorization.

Approval can take several months to several years, and can be denied, depending on whether additional studies or clinical trials are requested (which may delay marketing approval and involve unbudgeted costs) or regulatory authorities conduct facilities (including clinical investigation site) inspections and review manufacturing procedures, operating systems and personnel qualifications. In many cases, each drug manufacturing facility must be approved, and further inspections may occur over the product's life. The regulatory agency may require post-marketing surveillance to monitor for adverse effects or other studies. Further clinical studies are usually necessary for approval of additional indications. The terms of any approval, including labeling content, may be more restrictive than expected and could affect the marketability of a product.

Failure to comply with these ongoing requirements can result in suspension of regulatory approval and civil and criminal sanctions. European renewals may require additional data, resulting in a license being withdrawn. E.U. regulators have the authority to revoke, suspend or withdraw approvals, prevent companies and individuals from participating in the drug approval process, request recalls, seize violative products, obtain injunctions to close non-compliant manufacturing plants and stop shipments of violative products.

### ***Pricing Controls***

Pricing for products under approval applications is also subject to regulation. Requirements vary widely between countries and can be implemented disparately intra-nationally.

The E.U. generally provides options for member states to control pricing of medicinal products for human use, ranging from specific price-setting to systems of direct or indirect controls on the producer's profitability. U.K. regulation, for example, generally provides controls on overall profits derived from sales to the U.K. National Health Service that are based on profitability targets or a function of capital employed in servicing the National Health Service market. Italy generally utilizes a price monitoring system based on the European average price over the reference markets of France, Spain, Germany and the U.K. Italy typically establishes price within a therapeutic class based on the lowest price for a medicine belonging to that category. Spain generally establishes selling price based on prime cost plus a profit margin within a range established yearly by the Spanish Commission for Economic Affairs.

There can be no assurance that price controls or reimbursement limitations will result in favorable arrangements for our products.

***Third-Party Reimbursements***

In the U.S., the E.U. and elsewhere, pharmaceutical sales are dependent in part on the availability and adequacy of reimbursement from third party payers such as governments and private insurance plans. Third party payers are increasingly challenging established prices, and new products that are more expensive than existing treatments may have difficulty finding ready acceptance unless there is a clear therapeutic benefit.

In the U.S., consumer willingness to choose a self-administered outpatient prescription drug over a different drug or other form of treatment often depends on the manufacturer's success in placing the product on a health plan formulary or drug list, which results in lower out-of-pocket costs. Favorable formulary placement typically requires the product to be less expensive than what the health plan determines to be therapeutically equivalent products, and often requires manufacturers to offer rebates. Federal law also requires manufacturers to pay rebates to state Medicaid programs in order to have their products reimbursed by Medicaid. Medicare, which covers most Americans over age 65 and the disabled, has adopted a new insurance regime that will offer eligible beneficiaries limited coverage for outpatient prescription drugs effective January 1, 2006. The prescription drugs that will be covered under this insurance will be specified on a formulary published by Medicare. As part of these changes, Medicare is adopting new payment formulas for prescription drugs administered by providers, such as hospitals or physicians, that are generally expected to lower reimbursement.

The E.U. generally provides options for member states to restrict the range of medicinal products for which their national health insurance systems provide reimbursement. Member states can opt for a "positive" or "negative" list, with the former listing all covered medicinal products and the latter designating those excluded from coverage. The E.U., the U.K. and Spain have negative lists, while France uses a positive list. Canadian provinces establish their own reimbursement measures. In some countries, products may also be subject to clinical and cost effectiveness reviews by health technology assessment bodies. Negative determinations in relation to our products could affect prescribing practices. In the U.K., the National Institute for Clinical Excellence ("NICE") provides such guidance to the National Health Service, and doctors are expected to take it into account when choosing drugs to prescribe. Health authorities may withhold funding from drugs not given a positive recommendation by NICE. A negative determination by NICE may mean fewer prescriptions. Although NICE considers drugs with orphan status, there is a degree of tension on the application of standard cost assessment for orphan drugs, which are often priced higher to compensate for a limited market. It is unclear whether NICE will adopt a more relaxed approach toward the assessment of orphan drugs.

We cannot assure you that any of our products will be considered cost effective, or that reimbursement will be available or sufficient to allow us to sell them competitively and profitably.

***Fraud and Abuse Laws***

The U.S. federal Medicare/Medicaid anti-kickback law and similar state laws prohibit remuneration intended to induce physicians or others either to refer patients, or to acquire or arrange for or recommend the acquisition of health care products or services. While the federal law applies only to referrals, products or services receiving federal reimbursement, state laws often apply regardless of whether federal funds are involved. Other federal and state laws prohibit anyone from presenting or causing to be presented false or fraudulent payment claims. Recent federal and state enforcement actions under these statutes have targeted sales and marketing activities of prescription drug manufacturers. As we begin to market our products to health care providers, the relationships we form, such as compensating physicians for speaking or consulting services, providing financial support for continuing medical education or research programs, and assisting customers with third-party reimbursement claims, could be challenged under these laws and lead to civil or criminal penalties, including the exclusion of our products from federally-funded reimbursement. Even an unsuccessful challenge could cause adverse publicity and be costly to respond to, and thus could have a material adverse effect on our business, results of operations and financial condition. We intend to consult

counsel concerning the potential application of these and other laws to our business and to our sales, marketing and other activities to comply with them. Given their broad reach and the increasing attention given them by law enforcement authorities, however, we cannot assure you that some of our activities will not be challenged.

***Patent Restoration and Marketing Exclusivity***

The U.S. Drug Price Competition and Patent Term Restoration Act of 1984 (Hatch-Waxman) permits the FDA to approve Abbreviated New Drug Applications (“ANDAs”) for generic versions of innovator drugs, as well as NDAs with less original clinical data, and provides patent restoration and exclusivity protections to innovator drug manufacturers.

The ANDA process permits competitor companies to obtain marketing approval for drugs with the same active ingredient and for the same uses as innovator drugs, but does not require the conduct and submission of clinical studies demonstrating safety and efficacy. As a result, a competitor could copy any of our drugs and only need to submit data demonstrating that the copy is bioequivalent to gain marketing approval from the FDA.

Hatch-Waxman requires a competitor that submits an ANDA, or otherwise relies on safety and efficacy data for one of our drugs, to notify us and/or our business partners of potential infringement of our patent rights. We and/or our business partners may sue the company for patent infringement, which would result in a 30-month stay of approval of the competitor’s application. The discovery, trial and appeals process in such suits can take several years. If the litigation is resolved in favor of the generic applicant or the challenged patent expires during the 30-month period, the stay is lifted and the FDA may approve the application.

Hatch-Waxman also allows competitors to market copies of innovator products by submitting significantly less clinical data outside the ANDA context. Such applications, known as “505(b)(2) NDAs” or “paper NDAs,” may rely on clinical investigations not conducted by or for the applicant and for which the applicant has not obtained a right of reference or use and are subject to the ANDA notification procedures described above.

The law also restores a portion of a product’s patent term that is lost during clinical development and NDA review, and provides statutory protection, known as exclusivity, against FDA approval or acceptance of certain competitor applications. Restoration can return up to five years of patent term for a patent covering a new product or its use to compensate for time lost during product development and regulatory review. The restoration period is generally one-half the time between the effective date of an IND and submission of an NDA, plus the time between NDA submission and its approval (subject to the five-year limit), and no extension can extend total patent life beyond 14 years after the drug approval date. Applications for patent term extension are subject to U.S. Patent and Trademark Office (“USPTO”) approval, in conjunction with FDA. Approval of these applications takes at least six months, and there can be no guarantee that it will be given at all.

Hatch-Waxman also provides for differing periods of statutory protection for new drugs approved under an NDA. Among the types of exclusivity are those for a “new molecular entity” and those for a new formulation or indication for a previously-approved drug. If granted, marketing exclusivity for the types of products that we are developing, which include only drugs with innovative changes to previously-approved products using the same active ingredient, would prohibit the FDA from approving an ANDA or 505(b)(2) NDA relying on safety and efficacy data for three years. This three-year exclusivity, however, covers only the innovation associated with the original NDA. It does not prohibit the FDA from approving applications for drugs with the same active ingredient but without our new innovative change. These marketing exclusivity protections do not prohibit FDA from approving a full NDA, even if it contains the innovative change.

### **FORWARD-LOOKING STATEMENTS**

Most of the matters discussed within this registration statement include forward-looking statements on our current expectations and projections about future events. In some cases you can identify forward-looking statements by terminology such as “may,” “should,” “potential,” “continue,” “expects,” “anticipates,” “intends,” “plans,” “believes,” “estimates,” and similar expressions. These statements are based on our current beliefs, expectations and assumptions and are subject to a number of risks and uncertainties. Actual results and events may vary significantly from those discussed in the forward-looking statements.

These forward-looking statements are made as of the date of this prospectus, and we assume no obligation to explain the reason why actual results may differ. In light of these assumptions, risks, and uncertainties, the forward-looking events discussed in this prospectus might not occur.

### **AVAILABLE INFORMATION**

In accordance with the Securities Act of 1933, we filed with the SEC a registration statement on Form SB-2 covering the securities in this offering. As permitted by rules and regulations of the SEC, this prospectus does not contain all of the information in the registration statement. For further information regarding both our company and the securities in this offering, we refer you to the registration statement, including all exhibits and schedules, which you may inspect without charge at the public reference facilities of the SEC’s Washington, D.C. office, 450 Fifth Street, N.W., Washington, D.C. 20549. Copies may be obtained upon request and payment of prescribed fees.

We are subject to the information and periodic reporting requirements of the Securities Exchange Act of 1934, and in accordance with the Securities Exchange Act of 1934, we file annual, quarterly and special reports, and other information with the SEC. These periodic reports and other information are available for inspection and copying at the regional offices, public reference facilities and website of the SEC referred to above.

### **USE OF PROCEEDS**

We will not receive any proceeds from sale of the shares of common stock covered by this prospectus by the selling shareholders. We may, however, receive proceeds on the exercise of outstanding warrants for shares of common stock covered by this prospectus. We intend to use for general working capital and other corporate purposes any such proceeds we receive. Furthermore, the warrants may expire without having been exercised. Even if some or all of these warrants are exercised, we cannot predict when they will be exercised and when we would receive the proceeds.

### **MARKET FOR COMMON STOCK AND RELATED SHAREHOLDER MATTERS**

Our common stock currently trades on the OTC Bulletin Board under the symbol “PPXP.” The following table states the range of the high and low bid-prices per share of our common stock for each of the calendar quarters during the last two fiscal years, as reported by the National Quotation Bureau Incorporated and the OTC Bulletin Board. These quotations represent inter-dealer prices, without retail mark-up, markdown, or commission, and may not represent actual transactions. The last price of our common stock as reported on the OTC Bulletin Board on February 6, 2007 was \$5.68 per share. As of December 14, 2006, there were 350 shareholders of record of our common stock, and approximately 3,200 shareholders held in street name.

	<b>High</b>	<b>Low</b>
<b>YEAR ENDED DECEMBER 31, 2006</b>		
Fourth quarter	\$ 5.75	\$ 3.00
Third quarter	\$ 1.10	\$ 1.00
Second quarter	\$ 1.60	\$ 1.25
First quarter	\$ 1.02	\$ 0.01
<b>YEAR ENDED DECEMBER 31, 2005</b>		
Fourth quarter	\$ 3.00	\$ 0.00
Third quarter	\$ 2.50	\$ 0.03
Second quarter	\$ 0.03	\$ 0.02
First quarter	\$ 0.01	\$ 0.00

#### **DIVIDEND POLICY**

We have not paid any cash dividends on our common stock to date, and we have no intention of paying cash dividends in the foreseeable future. Whether we declare and pay dividends is determined by our board of directors at their discretion, subject to certain limitations imposed under Delaware corporate law. The timing, amount and form of dividends, if any, will depend on, among other things, our results of operations, financial condition, cash requirements and other factors deemed relevant by our board of directors.

#### **PLAN OF OPERATION**

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 elsewhere in this prospectus. This discussion includes forward-looking statements that involve risks and uncertainties. As a result of many factors, such as those set forth under "Risk Factors" and elsewhere in this prospectus, our actual results may differ materially from those anticipated in these forward-looking statements.

#### **Overview**

Since our inception during January 2001, our efforts and resources have been focused primarily on acquiring and developing our pharmaceutical technologies, raising capital and recruiting personnel. We are a development stage company and have no product sales to date and we will not receive any product sales until we receive approval from the FDA or receive approval from equivalent foreign regulatory bodies to begin selling our pharmaceutical candidates. Our major sources of working capital have been proceeds from advances from our Chairman and Chief Executive Officer and various private financings, primarily involving private sales of our common stock and other equity securities.

Our company resulted from the October 2006 merger of a newly-created wholly owned subsidiary of Sheffield Pharmaceuticals, Inc. ("Sheffield"), a Delaware corporation incorporated in September 1993, and Pipex Therapeutics, Inc., a Delaware corporation ("Pipex Therapeutics"). In connection with that transaction, a wholly owned subsidiary of Sheffield merged with and into Pipex Therapeutics, with Pipex Therapeutics remaining as the surviving corporation and a wholly-owned subsidiary of Sheffield. On December 11, 2006, Sheffield changed its name to "Pipex Pharmaceuticals, Inc.". In exchange for their shares of capital stock in Pipex Therapeutics, the former stockholders of Pipex Therapeutics received shares of capital stock of Sheffield representing approximately 98 percent of the outstanding equity of Sheffield on a primary diluted basis after giving effect to the transaction, with Sheffield assuming Pipex's outstanding options and warrants. In addition, the board of directors of Sheffield was

reconstituted shortly following the effective time of the transaction such that the directors of Sheffield were replaced by our current directors, all of whom were previously directors of Pipex Therapeutics. Further, upon the effective time of the merger, the business of Sheffield was abandoned and the business plan of Pipex Therapeutics was adopted. The transaction was therefore accounted for as a reverse acquisition with Pipex Therapeutics, Inc. as the acquiring party and Sheffield as the acquired party. Accordingly, when we refer to our business and financial information relating to periods prior to the merger, we are referring to the business and financial information of Pipex Therapeutics, Inc., unless the context indicates otherwise.

Research and development expenses consist primarily of manufacturing costs, salaries and related personnel costs, fees paid to consultants and outside service providers for laboratory development, legal expenses resulting from intellectual property prosecution and organizational affairs and other expenses relating to the design, development, testing, and enhancement of our product candidates. We expense our research and development costs as they are incurred.

General and administrative expenses consist primarily of salaries and related expenses for executive, finance and other administrative personnel, recruitment expenses, professional fees and other corporate expenses, including business development and general legal activities.

Our results include non-cash compensation expense as a result of the issuance of stock and stock option grants. Compensation expense for options granted to employees represents the difference between the fair value of our common stock and the exercise price of the options at the date of grant. We account for stock-based employee compensation arrangements in accordance with the provisions of Accounting Principles Board Opinion No. 25, "Accounting for Stock Issued to Employees" and comply with the disclosure provisions of Statement of Financial Accounting Standards No. 123, "Accounting for Stock- Based Compensation." Compensation for options granted to consultants has been determined in accordance with SFAS No. 123 as the fair value of the equity instruments issued. APB Opinion No. 25 has been applied in accounting for fixed and milestone-based stock options to employees and directors as allowed by SFAS No. 123. This amount is being recorded over the respective vesting periods of the individual stock options. The expense is included in the respective categories of expense in the statement of operations. We expect to record additional non-cash compensation expense in the future, which may be significant. However, because some of the options are milestone-based, the total expense is uncertain.

## Results of Operations

### *Nine Months Ended September 30, 2006; Compared to Nine Months Ended September 30, 2005.*

*General and administrative expenses.* For the nine months ended September 30, 2006, general and administrative expense was \$409,875 as compared to \$88,024 for the nine months ended September 30, 2005. The increase of \$321,851 is due primarily to an increase in payroll expenses of approximately \$62,645, an increase in rent and utilities expense of approximately \$85,692 and increases to professional fees/accounting fees of \$103,408, travel expense of approximately \$58,270, and depreciation of \$22,410. There was also a decrease in internet charges and insurance expenses of \$3,730 and \$8,464 respectively.

*Research and development expenses.* For the nine months ended September 30, 2006, research and development expense was \$1,277,722 as compared to \$589,738 for the nine months ended September 30, 2005. The increase of \$687,984 is due primarily to an increase in salaries of \$199,044, an increase of \$493,461 associated with milestone payments related to advancements in our licensed compounds, and an increase in patent expenses of \$70,088. For the nine months ended September 30, 2006 the Company also incurred stock based compensation expense for options issued to employees totaling approximately \$124,340, as compared to \$99,360 for the nine months ended September 30, 2005.

*Other income (expense), net.* For the nine months ended September 30, 2006, other expense was \$0 as compared to (\$1,600) for the nine months ended September 30, 2005.



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*Interest income.* For the nine months ended September 30, 2006, interest income was \$1 as compared to \$867 for the corresponding period of 2005. This decrease is because the Company no longer maintained an interest bearing cash account in 2006. The increase is attributed to the Company's interest bearing cash account not present in 2006.

*Net loss.* Net loss for the nine months ended September 30, 2006, was \$1,989,288 as compared to \$880,061 for the nine months ended September 30, 2005. This increase in net loss is attributable primarily to an increase in research and development expenses of \$687,984 and an increase in general and administrative expenses of \$321,851.

*Merger costs expense.* In the nine months ended September 30, 2006 merger cost expense was \$12,500 as compare