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OPEXA THERAPEUTICS, INC.

FORM S-3/A

(Securities Registration Statement (simplified form))

Filed 10/03/08

Address	2635 TECHNOLOGY FOREST BLVD. THE WOODLANDS, TX 77381
Telephone	(281) 272-9331
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As filed with the Securities and Exchange Commission on October 3, 2008 Registration No. 333- 153501

UNITED STATES SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

PRE-EFFECTIVE AMENDMENT NO. 2

FORM S-3/A

REGISTRATION STATEMENT
UNDER
THE SECURITIES ACT OF 1933

Opexa Therapeutics, Inc.

(Name of small business issuer on its charter)

Texas	**2834**	**76-0333165**
(State or Other Jurisdiction of Incorporation or Organization)	(Primary Standard Industrial Classification Code Number)	(I.R.S. Employer Identification Number)

2635 N. Crescent Ridge Drive
The Woodlands, Texas 77381
(281) 272-9331
(Address and telephone number
of principal executive offices and principal place of business)

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of agent for service)

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Houston, TX 77002
(713) 758-2222

Approximate date of commencement of proposed sale to the public: From time to time after the effective date of this Registration Statement.

If the only securities being registered on this form are being offered pursuant to dividend or interest reinvestment plans, please check the following box. ☐

If any of the securities being registered on this Form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933, other than securities offered only in connection with dividend or interest reinvestment plans, check the following box. ☑

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

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

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

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

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, or a non-accelerated filer. See definition of “accelerated filer and large accelerated filer” in Rule 12b-2 of the Exchange Act. (check one)

Large Accelerated Filer ☐ Accelerated Filer ☐ Non-Accelerated Filer ☐ Smaller Reporting Company ☑
(Do not check if smaller reporting company)

The information in this prospectus is not complete and may be changed. The selling stockholder may not sell these securities until the registration statement filed with the Securities and Exchange Commission is effective. This prospectus is not an offer to sell these securities and it is not soliciting an offer to buy these securities in any state where the offer or sale is not permitted. The Registrant hereby amends this Registration Statement on such date or dates as may be necessary to delay its effectiveness 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 the Registration Statement shall become effective on such date as the Securities and Exchange Commission, acting pursuant to Section 8(a), may determine.

SUBJECT TO COMPLETION DATED October 3, 2008

Opexa Therapeutics, Inc.

4,408,523 Shares of Common Stock

This prospectus relates to the sale or disposition from time to time by the selling stockholders named herein and their transferees of up to 4,408,523 shares of our common stock, or interests therein, including 2,003,874 shares of common stock previously issued and 2,404,649 shares of common stock issuable upon the exercise of Series F Warrants issued on August 11, 2008.

Shares of our common stock are traded on Nasdaq Capital Market under the symbol "OPXA". On October 1, 2008, the last reported sales price for our common stock was $0.16 per share.

We will not receive any proceeds from the sale of the shares of our common stock covered by this prospectus. We will, however, receive the proceeds of any cash exercise of Series F Warrants.

Investing in our common stock involves a high degree of risk. You should read carefully this entire prospectus, including the section captioned "Risk Factors" beginning on page 2, before making a decision to purchase our stock.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or passed upon the accuracy or adequacy of this prospectus. Any representation to the contrary is a criminal offense.

The date of this prospectus is _____, 2008.

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You should rely only on the information contained or incorporated by reference in this prospectus. We have not authorized any other person to provide you with different information. You should not assume that the information incorporated by reference or provided in this prospectus is accurate as of any date other than the date on the front of this prospectus.

GUIDE TO READING THIS PROSPECTUS

This prospectus is part of a registration statement that we filed with the Securities and Exchange Commission (the "SEC") for a continuous offering. Under this prospectus, the selling stockholders may, from time to time, sell shares of our common stock described in this prospectus in one or more offerings. This prospectus may be supplemented from time to time to add, update or change information in this prospectus. Any statement contained in this prospectus will be deemed to be modified or superseded for the purposes of this prospectus to the extent that a statement contained in a prospectus supplement modifies such statement. Any statement so modified will be deemed to constitute a part of this prospectus only as so modified, and any statement so modified will be deemed to constitute a part of this prospectus.

In this prospectus, "Opexa Therapeutics, Inc.," "we," "us" or "our" refer to Opexa Therapeutics, Inc., a Texas corporation, and its subsidiaries, except where otherwise indicated or required by context.

WHERE YOU CAN FIND MORE INFORMATION

We "incorporate by reference" information into this prospectus, which means that we disclose important information to you by referring you to another document filed separately with the SEC. The information incorporated by reference is deemed to be part of this prospectus, except for any information superseded by information contained expressly in this prospectus, and the information we file later with the SEC will automatically supersede this information. You should not assume that the information in this prospectus is current as of any date other than the date on the front page of this prospectus.

Any information that we file under Sections 13(a), 13(c), 14 or 15(d) of the Securities Exchange Act of 1934 after the date of the initial filing of the registration statement of which this prospectus is a part, and that is deemed "filed," with the SEC will automatically update and supersede this information. We incorporate by reference:

- Our Annual Report on Form 10-K for the fiscal year ended December 31, 2007;
- Our Quarterly Reports on Form 10-Q for the fiscal quarters ended March 31, 2008 and June 30, 2008;
- Our Current Reports on Form 8-K filed with the Commission on February 14, 2008, February 19, 2008, March 11, 2008, March 18, 2008, March 21, 2008, March 27, 2008, May 13, 2008, June 12, 2008, June 18, 2008, July 23, 2008, August 13, 2008, August 14, 2008 and September 24, 2008;
- The description of our shares of common stock contained in our Registration Statement on Form 8-A filed with the SEC on August 30, 2006.

You may request a copy of any document incorporated by reference in this prospectus and any exhibit specifically incorporated by reference in those documents, at no cost, by writing or telephoning us at the following address or phone number:

Opexa Therapeutics, Inc.
Investor Relations/CFO
2635 N. Crescent Ridge Drive
The Woodlands, Texas 77381
(281) 272-9331

Additionally, you may read and copy any documents filed by us at the SEC's public reference room at 100 F Street, N.E., Washington, D.C. 20549. Please call the SEC at 1-800-SEC-0330 for further information on the public reference room. Our filings with the SEC are also available to the public from commercial document retrieval services and at the SEC's web site *at http://www.sec.gov.*

We also make available free of charge on our internet website at *http://www.opexatherapeutics.com* our annual reports on Form 10-K and our quarterly reports on Form 10-Q, and any amendments to those reports, as soon as reasonably practicable after we electronically file such material with the SEC. Information contained on our website is not incorporated by reference into this prospectus and you should not consider information contained on our website as part of this prospectus.

PROSPECTUS SUMMARY

The following summary highlights selected information from this prospectus and does not contain all of the information that you should consider before investing in our common stock. This prospectus contains information regarding our businesses and detailed financial information. You should carefully read this entire prospectus, together with the additional information about us described in the sections entitled "Information Incorporated by Reference" and "Where You Can Find More Information", before making an investment decision.

Our Business

We are a biopharmaceutical company developing autologous (using one's own cells) cellular therapies to treat several major illnesses, including multiple sclerosis (MS) and diabetes. These therapies are based on our proprietary T-cell and adult stem cell technologies.

Our lead product, Tovaxin ®, is a T-cell based therapeutic vaccine for MS licensed from the Baylor College of Medicine, which offers a unique and personalized approach to treating the disease by inducing an immune response against the autoimmune myelin peptide-reactive T-cells (MRTCs), which are believed to be responsible for the initiation of the disease process.

T-Cell Therapy

We have an exclusive worldwide license from Baylor College of Medicine to an individualized T-cell therapeutic vaccine, Tovaxin, which has recently been studied in a United States (U.S.) Phase IIb human clinical trial to evaluate its safety and effectiveness in treating MS.

MS is the result of a person's own T-cells attacking the myelin sheath that coats the nerve cells of the central nervous system. Tovaxin consists of attenuated patient-specific myelin reactive T-cells (MRTCs) against peptides from one or more of the primary proteins on the surface of the myelin sheath (myelin basic protein, proteolipid protein, and myelin oligodendrocyte glycoprotein). Patient-specific MRTCs are expanded in culture with specific peptides identified by our proprietary test of the patient's peripheral blood. The cells are then attenuated by gamma irradiation, and returned to the patient as a subcutaneous injection. Although further testing is necessary, results from our initial human trials appear to indicate that these attenuated T-cells cause an immune response directed at the autoreactive T-cells in the patient's body, resulting in a reduction in the level of harmful T-cells.

We believe that our initial human trials suggest that Tovaxin safely induces the depletion and regulation of MRTCs, possibly stabilizing the disease, reducing the annualized relapse rate, and potentially improving the disability scores of patients. Patients treated in a 10-subject, open-label Phase I/II dose escalation clinical trial with Tovaxin have experienced minimal side effects and the "per protocol" analysis of patients treated with Tovaxin achieved a 90% reduction (p=0.0039) in annualized relapse rate (ARR). The group treated with the mid dose (30-45 x 10^6 attenuated T-cells) achieved a 100% reduction in ARR. The Phase IIb trial was conducted with the mid dose.

In a one-year, 8-subject extension clinical trial of relapsing remitting and secondary progressive multiple sclerosis subjects, the "per-protocol" analysis of Tovaxin therapy achieved a 92% (p=0.0078) reduction ARR in subjects who received two treatment doses of 30-45 x 10^6 attenuated T-cells eight weeks apart and were monitored for an additional 44 weeks. Subjects in the extension study had previously been treated an average of approximately 5 years earlier at Baylor College of Medicine under the direction of the inventor of Tovaxin Jingwu Zhang, M.D., Ph.D with an early version of the T-cell vaccine.

An analysis of the second year open-label clinical retreatment studies of the "intent to treat" population of 22 patients who participated in the Phase I/II studies showed that, as a group, 73% remained relapse free after two years and 86% demonstrated no worsening of disease (27% of these showed sustained improvement). Additionally, there was an overall decrease in the ARR of 82% (from 1.38 to 0.21 relapses/patient/year). Each of these endpoints was compared to the patient's own baseline reading, taken prior to enrolment in the trials.

We recently completed a larger Phase IIb study in 150 patients in a multi-center, randomized, double blind, and placebo-controlled study in patients with relapsing remitting multiple sclerosis or clinically isolated syndrome. Top-line results from the study demonstrated a positive trend in the reduction in annualized relapse rate (ARR) for patients treated with Tovaxin as compared to placebo. However, this finding did not achieve statistical significance. In addition, the study did not achieve statistical significance with its primary endpoint, the cumulative number of gadolinium-enhanced brain lesions.

Top-line results from the study showed that Tovaxin-treated patients experienced an ARR of 0.214 as compared to 0.339 for placebo-treated patients. Despite the low relapse rate in the placebo arm, this still represented a 37% decrease in ARR for Tovaxin as compared to placebo in the general population. Additionally, in the group of patients who had an ARR > 1 in the one year prior to study entry, Tovaxin demonstrated a 55% reduction in ARR compared to placebo.

The study also demonstrated that Tovaxin was safe and well tolerated with no serious adverse events related to treatment. The most common adverse event related to Tovaxin was mild injection site reaction. We believe that this favorable safety profile may be an important advantage as patient compliance represents a significant challenge due to serious side effects associated with many currently available MS treatments.

Stem Cell Therapy

We have developed a proprietary adult stem cell technology to produce monocyte-derived stem cells (MDSCs) from blood. These MDSCs can be derived from a patient's monocytes, expanded in our laboratories, and then administered to the same patient. We believe that because this is an autologous therapy, there should be no immunological problems. Normally, allogenic cells trigger host immune responses and require the use of anti-rejection drugs.

Our multi-potent stem cell is derived from peripheral blood monocytes which when cultured under defined conditions are able to further differentiate into several cellular lineages. Molecular biology and cellular analysis studies have shown that these MDSCs have specific markers that distinguish them from other stem cells. In addition these studies have also shown a time-dependence for the expression of these markers during the growth and differentiation of MDSCs. *In vitro* experiments with MDSCs have shown their capacity to differentiate as hematopoietic, epithelial, endothelial, endocrine and neuronal cells. Our main focus is the further development of this monocyte-derived stem cell technology as a platform for the *in vitro* generation of highly specialized cells for potential application in autologous cell therapy for patients with diseases such diabetes mellitus and cardiovascular disease.

RISK FACTORS

The shares offered hereby have not been approved or disapproved by the SEC or the securities regulatory authority of any state, nor has any such regulatory body reviewed this prospectus for accuracy or completeness. Investing in our common stock involves an unusually high degree of risk and our common stock should only be purchased by those who can afford to lose their entire investment. Before you invest in our securities, you should carefully consider the following risk factors as well as those contained in our most recent Annual Report on Form 10-K and our Quarterly Reports on Form 10-Q, each of which is incorporated by reference herein, and those that may be included in any applicable prospectus supplement, together with all of the other information included in this prospectus, any prospectus supplement and any other documents we incorporate by reference.

Risks Related to Our Business

The following factors affect our business and the industry in which we operate. The risks and uncertainties described below are not the only ones we face. Additional risks and uncertainties not presently known or which we currently consider immaterial may also have an adverse effect on our business. If any of the matters discussed in the following risk factors were to occur, our business, financial condition, results of operations, cash flows, or prospects could be materially adversely affected.

Our business is at an early stage of development.

Our business is at an early stage of development. We do not have any products in late-stage clinical trials or on the market. We are still in the early stages of identifying and conducting research on potential products. Only one of our products has progressed to the stage of being studied in human clinical trials in the U.S. Our potential products will require regulatory approval prior to marketing in the United States and other countries. Obtaining such approval will require significant research and development and preclinical and clinical testing. We may not be able to develop any products, to obtain regulatory approvals, to enter clinical trials for any of our product candidates, or to commercialize any products. Our product candidates may prove to have undesirable and unintended side effects or other characteristics adversely affecting their safety, efficacy or cost-effectiveness that could prevent or limit their use. Any product using any of our technology may fail to provide the intended therapeutic benefits, or achieve therapeutic benefits equal to or better than the standard of treatment at the time of testing or production.

We have a history of operating losses and do not expect to be profitable in the near future.

We have not generated any profits since our entry into the biotechnology business, have no source of revenues, and have incurred significant operating losses. We expect to incur additional operating losses for the foreseeable future and, as we increase our research and development activities, we expect our operating losses to increase significantly. We do not have any sources of revenues and may not have any in the foreseeable future.

We will need additional capital to conduct our operations and develop our products and our ability to obtain the necessary funding is uncertain.

We need to obtain significant additional capital resources from sources including equity and/or debt financings, license arrangements, grants and/or collaborative research arrangements in order to develop products and continue our business. As of June 30, 2008, we had cash and cash equivalents of approximately $3.5 million. Our current burn rate is approximately $900,000 per month. With the $3 million proceeds of the August 11, 2008 transaction, we will need to raise additional capital to fund our working capital needs beyond early first quarter of 2009. We must rely upon third-party debt or equity funding and we can provide no assurance that we will be successful in any funding effort. The failure to raise such funds will necessitate the curtailment or ceasing of operations and impact the completion of the clinical trials.

The timing and degree of any future capital requirements will depend on many factors, including:

- the accuracy of the assumptions underlying our estimates for capital needs in 2009 and beyond;
- scientific progress in our research and development programs;
- the magnitude and scope of our research and development programs;
- our ability to establish, enforce and maintain strategic arrangements for research, development, clinical testing, manufacturing and marketing;
- our progress with preclinical development and clinical trials;
- the time and costs involved in obtaining regulatory approvals;
- the costs involved in preparing, filing, prosecuting, maintaining, defending and enforcing patent claims; and
- the number and type of product candidates that we pursue.

We do not have any committed sources of capital, although we have issued and outstanding warrants that, if exercised, would result in an equity capital raising transaction. Additional financing through strategic collaborations, public or private equity financings, capital lease transactions or other financing sources may not be available on acceptable terms, or at all. Additional equity financings could result in significant dilution to our stockholders. Further, if additional funds are obtained through arrangements with collaborative partners, these arrangements may require us to relinquish rights to some of our technologies, product candidates or products that we would otherwise seek to develop and commercialize ourselves. If sufficient capital is not available, we may be required to delay, reduce the scope of or eliminate one or more of our programs, any of which could have a material adverse effect on our financial condition or business prospects.

We have a "going-concern qualification" in our certifying accountant's financial statement report, which may make capital raising more difficult and may require us to scale back or cease operations.

The report of our auditors includes a going concern qualification which indicates an absence of obvious or reasonably assured sources of future funding that will be required by us to maintain ongoing operations. To date we have successfully funded Opexa by attracting additional issues of equity. We believe that our ongoing efforts will continue to successfully fund operations until positive cash flow is attained. However, there is no guarantee that our efforts will be able to attract additional necessary equity and/or debt investors. If we are unable to obtain this additional funding, we may not be able to continue operations. To date we have been able to obtain funding and meet our obligations in a reasonably timely manner. However, if in the future we are unsuccessful in attracting new sources of funding then we will be unable to continue in business.

Clinical trials are subject to extensive regulatory requirements, very expensive, time-consuming and difficult to design and implement. Our products may fail to achieve necessary safety and efficacy endpoints during clinical trials.

Human clinical trials are very expensive and difficult to design and implement, in part because they are subject to rigorous Food and Drug Administration (FDA) requirements, and must otherwise comply with federal, state and local requirements and policies of the medical institutions where they are conducted. The clinical trial process is also time-consuming. We estimate that clinical trials of our product candidates will 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. The commencement and completion of clinical trials may be delayed by several factors, including:

- FDA or Institutional Review Board (IRB) objection to proposed protocols;
- discussions or disagreement with FDA over the adequacy of trial design to potentially demonstrate effectiveness, and subsequent design modifications;
- unforeseen safety issues;
- determination of dosing issues and related adjustments;
- lack of effectiveness during clinical trials;
- slower than expected rates of patient recruitment;
- product quality problems (e.g., sterility or purity)
- challenges to patient monitoring and data collection during or after treatment (for example, patients' failure to return for follow-up visits); and
- failure of medical investigators to follow our clinical protocols.

In addition we or the FDA (based on its authority over clinical studies) may delay a proposed investigation or suspend clinical trials in progress at any time if it appears that the study may pose significant risks to the study participants or other serious deficiencies are identified. Prior to approval of our product, the FDA must determine that the data demonstrate safety and effectiveness.

We are dependent upon our management team and a small number of employees.

Our business strategy is dependent upon the skills and knowledge of our management team. We believe that the special knowledge of these individuals gives us a competitive advantage. If any critical employee leaves, we may be unable on a timely basis to hire suitable replacements to effectively operate our business. We also operate with a very small number of employees and thus have little or no backup capability for their activities. The loss of the services of any member of our management team or the loss of a number of other employees could have a material adverse effect on our business.

We are dependent on contract research organizations and other contractors for clinical testing and for certain research and development activities, thus the timing and adequacy of our clinical trials and such research activities are, to a certain extent, beyond our control.

The nature of clinical trials and our business strategy requires us to rely on contract research organizations, independent clinical investigators and other third party service providers to assist us with clinical testing and certain research and development activities. For example, our current Phase IIb clinical study of Tovaxin for MS is being managed by the contract research organization PharmaNet, LLC. As a result, our success is dependent upon the success of these outside parties in performing their responsibilities. Although we believe our contractors are economically motivated to perform on their contractual obligations, we cannot directly control the adequacy and timeliness of the resources and expertise applied to these activities by our contractors. If our contractors do not perform their activities in an adequate or timely manner, the development and commercialization of our drug candidates could be delayed.

If we fail to meet our obligations under our license agreements, we may lose our rights to key technologies on which our business depends.

Our business depends on three licenses from third parties. These third party license agreements impose obligations on us, such as payment obligations and obligations to diligently pursue development of commercial products under the licensed patents. If a licensor believes that we have failed to meet our obligations under a license agreement, the licensor could seek to limit or terminate our license rights, which could lead to costly and time-consuming litigation and, potentially, a loss of the licensed rights. During the period of any such litigation, our ability to carry out the development and commercialization of potential products could be significantly and negatively affected. If our license rights were restricted or ultimately lost, our ability to continue our business based on the affected technology platform could be severely adversely affected.

Our current research and manufacturing facility is not large enough to manufacture future stem cell and T-cell therapies.

We conduct our research and development in a 10,200 square foot facility in The Woodlands, Texas, which includes an approximately 800 square foot suite of three rooms for the manufacture of stem cell and T-cell therapies through Phase III trials. Our current facility is not large enough to conduct commercial-scale manufacturing operations. We will need to expand further our manufacturing staff and facility, obtain a new facility or contract with corporate collaborators or other third parties to assist with future drug production.

In the event that we decide to establish a commercial-scale manufacturing facility, we will require substantial additional funds and will be required to hire and train significant numbers of employees and comply with applicable regulations, which are extensive. We do not have funds available for building a manufacturing facility, and we may not be able to build a manufacturing facility that both meets regulatory requirements and is sufficient for our commercial-scale manufacturing.

We may arrange with third parties for the manufacture of our future products. However, our third-party sourcing strategy may not result in a cost-effective means for manufacturing our future products. If we employ third-party manufacturers, we will not control many aspects of the manufacturing process, including compliance by these third parties with the FDA's current Good Manufacturing Practices and other regulatory requirements. We further may not be able to obtain adequate supplies from third-party manufacturers in a timely fashion for development or commercialization purposes, and commercial quantities of products may not be available from contract manufacturers at acceptable costs.

Patents obtained by other persons may result in infringement claims against us that are costly to defend and which may limit our ability to use the disputed technologies and prevent us from pursuing research and development or commercialization of potential products.

A number of pharmaceutical, biotechnology and other companies, universities and research institutions have filed patent applications or have been issued patents relating to cell therapy, stem cells, T-cells, and other technologies potentially relevant to or required by our expected products. We cannot predict which, if any, of such applications will issue as patents or the claims that might be allowed. We are aware that a number of companies have filed applications relating to stem cells. We are also aware of a number of patent applications and patents claiming use of stem cells and other modified cells to treat disease, disorder or injury.

If third party patents or patent applications contain claims infringed by either our licensed technology or other technology required to make and use our potential products and such claims are ultimately determined to be valid, there can be no assurance that we would be able to obtain licenses to these patents at a reasonable cost, if at all, or be able to develop or obtain alternative technology. If we are unable to obtain such licenses at a reasonable cost, we may not be able to develop some products commercially. There can be no assurance that we will not be obliged to defend ourselves in court against allegations of infringement of third party patents. Patent litigation is very expensive and could consume substantial resources and create significant uncertainties. An adverse outcome in such a suit could subject us to significant liabilities to third parties, require disputed rights to be licensed from third parties, or require us to cease using such technology.

If we are unable to obtain future patents and other proprietary rights our operations will be significantly harmed.

Our ability to compete effectively is dependent in part upon obtaining patent protection relating to our technologies. The patent positions of pharmaceutical and biotechnology companies, including ours, are uncertain and involve complex and evolving legal and factual questions. The coverage sought in a patent application can be denied or significantly reduced before or after the patent is issued. Consequently, we do not know whether the patent applications for our technology will result in the issuance of patents, or if any future patents will provide significant protection or commercial advantage or will be circumvented by others. Since patent applications are secret until the applications are published (usually eighteen months after the earliest effective filing date), and since publication of discoveries in the scientific or patent literature often lags behind actual discoveries, we cannot be certain that the inventors of our licensed patents were the first to make the inventions covered by the patent applications or that the licensed patent applications were the first to be filed for such inventions. There can be no assurance that patents will issue from the patent applications or, if issued, that such patents will be of commercial benefit to us, afford us adequate protection from competing products, or not be challenged or declared invalid.

Our competition includes fully integrated biopharmaceutical and pharmaceutical companies that have significant advantages over us.

The markets for therapeutic stem cell products, multiple sclerosis products, and rheumatoid arthritis products are highly competitive. We expect that our most significant competitors are fully integrated pharmaceutical companies and more established biotechnology companies. These companies are developing stem cell-based products and they have significantly greater capital resources and expertise in research and development, manufacturing, testing, obtaining regulatory approvals, and marketing than we currently do. Many of these potential competitors are further along in the process of product development and also operate large, company-funded research and development programs. As a result, our competitors may develop more competitive or affordable products, or achieve earlier patent protection or product commercialization than we are able to achieve. Competitive products may render any products or product candidates that we develop obsolete.

Restrictive and extensive government regulation could slow or hinder our production of a cellular product.

The research and development of stem cell therapies is subject to and restricted by extensive regulation by governmental authorities in the United States and other countries. The process of obtaining FDA and other necessary regulatory approvals is lengthy, expensive and uncertain. We may fail to obtain the necessary approvals to continue our research and development, which would hinder our ability to manufacture or market any future product.

To be successful, our product candidates must be accepted by the health care community, which can be very slow to adopt or unreceptive to new technologies and products.

Our product candidates, if approved for marketing, may not achieve market acceptance since hospitals, physicians, patients or the medical community in general may decide to not accept and utilize these products. The product candidates that we are attempting to develop represent substantial departures from established treatment methods and will compete with a number of more conventional drugs and therapies manufactured and marketed by major pharmaceutical companies. The degree of market acceptance of any of our developed products will depend on a number of factors, including:

- our establishment and demonstration to the medical community of the clinical efficacy and safety of our product candidates;
- our ability to create products that are superior to alternatives currently on the market;
- our ability to establish in the medical community the potential advantage of our treatments over alternative treatment methods; and
- reimbursement policies of government and third-party payers.

If the health care community does not accept our products for any of the foregoing reasons, or for any other reason, our business would be materially harmed.

Risks Related to Our Common Stock

There is currently a limited market for our common stock, and any trading market that exists in our common stock may be highly illiquid and may not reflect the underlying value of the Company's net assets or business prospects.

Although our common stock is traded on the NASDAQ Capital Market, there is currently a limited market for our common stock and there can be no assurance that an improved market will ever develop. Investors are cautioned not to rely on the possibility that an active trading market may develop.

As our share price is volatile, we may be or become the target of securities litigation, which is costly and time-consuming to defend.

In the past, following periods of market volatility in the price of a company's securities or the reporting of unfavorable news, security holders have often instituted class action litigation. If the market value of our common stock experiences adverse fluctuations and we become involved in this type of litigation, regardless of the outcome, we could incur substantial legal costs and our management's attention could be diverted from the operation of our business, causing our business to suffer.

Our "blank check" preferred stock could be issued to prevent a business combination not desired by management or our current majority shareholders.

Our articles of incorporation authorize the issuance of "blank check" preferred stock with such designations, rights and preferences as may be determined by our board of directors without shareholder approval. Our preferred stock could be utilized as a method of discouraging, delaying, or preventing a change in our control and as a method of preventing shareholders from receiving a premium for their shares in connection with a change of control.

Future sales of our common stock in the public market could lower our stock price.

We may sell additional shares of common stock in subsequent public or private offerings. We may also issue additional shares of common stock to finance future acquisitions. We cannot predict the size of future issuances of our common stock or the effect, if any, that future issuances and sales of shares of our common stock will have on the market price of our common stock. Sales of substantial amounts of our common stock (including shares issued in connection with an acquisition), or the perception that such sales could occur, may adversely affect prevailing market prices for our common stock.

We presently do not intend to pay cash dividends on our common stock.

We currently anticipate that no cash dividends will be paid on the common stock in the foreseeable future. While our dividend policy will be based on the operating results and capital needs of the business, it is anticipated that all earnings, if any, will be retained to finance the future expansion of the our business.

There are a large number of shares underlying our warrants that may be available for future sale. Substantial sales of our common stock by our current holders or us could cause our stock price to decline and issuances by us may dilute your ownership interest in our company.

We are unable to predict whether significant amounts of our common stock will be sold by our current holders after this offering. Any sales of substantial amounts of our common stock in the public market by our current holders or us, or the perception that these sales might occur, such as might arise from exercise of outstanding warrants, could lower the market price of our common stock. Further, if we issue additional equity securities to raise additional capital, your ownership interest in our company may be diluted and the value of your investment may be reduced.

If we do not maintain an effective registration statement or comply with applicable state securities laws, you may not be able to exercise the warrants.

In order for you to be able to exercise the warrants offered hereby, the underlying shares must be covered by an effective registration statement and qualify for an exemption under the securities laws of the state in which you live. We cannot assure you that we will continue to maintain a current registration statement relating to the offer and sale of the warrants and the common stock underlying these warrants, or that an exemption from registration or qualification will be available throughout their term. This may have an adverse effect on the demand for the warrants and the prices that can be obtained from reselling them.

FORWARD LOOKING STATEMENTS

This prospectus and the other documents incorporated by reference in this prospectus contain forward-looking statements within the meaning of Section 27A of the Securities Act of 1933. These statements relate to future events and/or future financial performance and involve known and unknown risks, uncertainties and other factors that may cause the actual results, levels of our activity, performance or achievements or the industry in which we operate to be materially different from any future results, levels of activity, performance or achievements expressed or implied by the forward-looking statements. These risks and other factors include those listed under “Risk Factors” and those described elsewhere in this prospectus and incorporated documents.

In some cases, you can identify forward-looking statements by our use of terms such as “may,” “will,” “should,” “expects,” “plans,” “anticipates,” “believes,” “estimates,” “predicts,” “potential,” or the negative of these terms or other comparable terminology. These statements are only predictions. Actual events or results may differ materially. In evaluating these statements, you should specifically consider various factors, including the risks outlined under “Risk Factors.” These factors may cause our actual results to differ materially from any forward-looking statement.

Although we believe that the expectations reflected in the forward-looking statements are reasonable, we cannot guarantee future results, levels of activity, performance, or achievements. Moreover, we do not assume responsibility for the accuracy and completeness of these forward-looking statements. All forward-looking statements included in this prospectus are based on information available to us on the date of this prospectus. Except as required by law, we undertake no obligation to publicly update or revise any forward-looking statement, whether as a result of new information, future events or otherwise. All subsequent written and oral forward-looking statements attributable to us or persons acting on our behalf are expressly qualified in their entirety by the cautionary statements contained throughout this prospectus.

USE OF PROCEEDS

The selling stockholders will receive all of the proceeds from the sale of the shares of our common stock covered hereby, or interests therein. We will not receive any of the proceeds from any such sale by any selling stockholder. See “Selling Stockholders.”

SELLING STOCKHOLDERS

The shares of common stock covered by this prospectus is to be offered for the account of the selling stockholders in the following table. Each of the selling stockholders acquired its shares in connection with a private placement in August 2008. The selling stockholders may from time to time sell or otherwise dispose of all, some or none of the shares of common stock covered hereby, or interests therein. Please read "Plan of Distribution." We will bear all costs, fees and expenses incurred in connection with the registration of the common stock offered by this prospectus. Brokerage commissions and similar selling expenses, if any, attributable to the sale of common stock will be borne by the selling stockholders.

No such sales may occur unless this prospectus has been declared effective by the SEC, and remains effective at the time such selling stockholder offers or sells such shares of common stock. We are required to update this prospectus to reflect material developments in our business, financial position and results of operations.

The following table, which we have prepared based on information provided to us by the applicable selling stockholder, sets forth the name, the number of shares of common stock beneficially owned by the selling stockholders and the number of shares of common stock that may be sold or otherwise disposed of by the selling stockholders under this prospectus. Unless set forth below, none of the selling stockholders selling in connection with the prospectus has held any position or office with, been employed by, or otherwise has had a material relationship with us or any of our affiliates during the three years prior to the date of the prospectus.

The number of shares issuable upon exercise of the Series F Warrants is subject to adjustment as provided by the terms of the Series F Warrants. Because of the potential for adjustment, we have agreed to register a number of shares of our common stock that exceeds the number of shares of our common stock currently beneficially owned by the holders of the Series F Warrants. The number of shares of our common stock, listed in the table below and in its footnotes as being offered by each selling stockholder, includes 120% of the number of shares of our common stock that were issuable to it if the Series F Warrants were exercised at the time the Series F Warrants were issued.

Name of Selling Shareholder	Footnote No.	Number of Shares Beneficially Owned (1)	Number of Shares of Common Stock Offered Hereunder	Number and % of shares beneficially owned after completion of offering (2)	
Albert and Margaret Alkek Foundation	(3)	1,262,179	299,093	1,277,291	9.999%
Alkek & Williams Ventures Ltd.	(4)	759,760	116,314	706,890	5.607%
Charles E. Sheedy	(5)	952,354	668,918	648,300	5.202%
David E. Jorden	(6)	726,667	185,900	456,667	3.673%
David E. Jorden, Rollover IRA	(7)	726,667	408,100	456,667	3.673%
David Hung	(8)	77,505	33,231	62,400	*
Diker M&S Cap Master, Ltd. (9)	(10)	91,714	166,485	16,039	*
Diker Micro and Small Cap Fund, LP (9)	(11)	92,638	166,485	16,963	*
Diker Micro-Value Fund, LP (9)	(12)	228,116	322,566	81,495	*
Diker Micro-Value QP Fund, LP (9)	(13)	270,928	385,002	95,927	*
DLD Family Investments, LLC	(14)	620,233	130,066	561,112	4.492%
LB I Group Inc.	(15)	675,675	1,486,486	-	*
Neil K. Warma	(16)	69,688	6,646	66,667	*
Scott B. Seaman	(17)	881,249	33,231	813,274	6.411%

FOOTNOTES:

* Less than 1%.

(1) Beneficial ownership is determined in accordance with the rules of the Securities and Exchange Commission and generally includes voting or investment power with respect to securities. Shares of common stock subject to options or warrants currently exercisable or exercisable within 60 days of October 1, 2008 are deemed outstanding for computing the percentage of the person holding such option or warrant but are not deemed outstanding for computing the percentage of any other person. The number of shares beneficially owned prior to this offering does not include Series F Warrants because they were not exercisable within 60 days of September 29, 2008.

(2) Percentage is based on 12,263,558 shares of common stock outstanding.

(3) Number of shares of common stock offered includes 163,142 shares of common stock underlying Series F Warrants. The number of shares of common stock beneficially owned after completion of the offering includes (i) 22,222 shares of common stock underlying Series C warrants; (ii) 250,000 shares underlying Series E Warrants and (iii) 238,402 shares of common stock underlying an April 2006 warrant and excludes 11,598 shares of common stock underlying April 2006 warrants because the Foundation is contractually prohibited from exercising the warrant to the extent that the Foundation would beneficially own in excess of 9.999% of the total number of issued and outstanding shares of common stock after such exercise. The Foundation is a tax-exempt organization under Section 501(c)(3) of the Internal Revenue Code of 1986, as amended, and is classified as a private foundation by the Internal Revenue Service. Voting and dispositive power over all of the shares beneficially owned by the Foundation is exercised by its investment committee, which is a committee of its board of directors. Daniel C. Arnold, Joe M. Bailey, Scott B. Seaman and Randa Duncan Williams are members of the investment committee of the Foundation. Neither the executive director nor any member of the investment committee may act individually to vote or sell shares beneficially owned by the Foundation; therefore, no individual committee member is deemed to beneficially own, within the meaning of Rule 13d-3, any shares beneficially owned by the Foundation solely by virtue of the fact that he or she is a member of the investment committee.

(4) Number of shares of common stock offered includes 63,444 shares of common stock underlying Series F Warrants. Number of shares beneficially owned after completion of the offering includes (i) 18,223 shares of common stock underlying Series C warrants; (ii) 125,000 shares of common stock underlying an April 2006 warrant and (iii) 200,000 shares of common stock underlying Series E Warrants. Alkek & Williams Ventures ("Ventures") is a private investment fund. Chaswil Ltd. is the investment manager of Ventures and holds voting power and dispositive power with respect to all shares beneficially owned by Ventures pursuant to a written agreement. Mr. Seaman is a registered principal of Chaswil Ltd. and may be deemed to have or share voting power and/or dispositive power with respect to all shares beneficially owned by Ventures.

(5) Number of shares of common stock offered includes 364,864 shares of common stock underlying Series F Warrants. Number of shares beneficially owned after completion of the offering includes (i) 50,000 shares of common stock underlying an April 2006 warrant and (ii) 150,000 shares of common stock underlying Series E Warrants.

(6) Number of shares of common stock offered includes 101,400 shares of common stock underlying Series F Warrants. Number of shares beneficially owned after completion of the offering includes (i) 60,000 shares of common stock underlying an April 2006 warrant and (ii) 102,500 shares of common stock underlying Series E Warrants and (iii) 6,667 shares of common stock underlying stock options. David E. Jorden is a director of Opexa Therapeutics, Inc.

(7) Number of shares of common stock offered includes 222,600 shares of common stock underlying Series F Warrants. Number of shares beneficially owned after completion of the offering includes (i) 60,000 shares of common stock underlying an April 2006 warrant; (ii) 102,500 shares of common stock underlying Series E Warrants and (iii) 6,667 shares of common stock underlying stock options. David E. Jorden exercises voting and dispositive power over all of the shares beneficially owned by David E. Jorden, IRA, Morgan Stanley & Co, Inc., Custodian.

(8) Number of shares of common stock offered includes 18,126 shares of common stock underlying Series F Warrants. Number of shares beneficially owned after completion of the offering includes 50,000 shares of common stock underlying stock options. David Hung is a director of Opexa Therapeutics, Inc.

(9) Diker Management, LLC exercises voting and dispositive power over all of the shares of common stock beneficially owned by Diker M&S Cap Master, Ltd., Diker Micro and Small Cap Fund, LP, Diker Micro-Value Fund, LP and Diker Micro-Value QP Fund, LP. The information in this footnote is primarily based on information provided to us by Diker Management, LLC. The mailing address of Diker Management, LLC is 745 Fifth Avenue, Suite 1409, New York, New York 10151.

(10) Number of shares of common stock offered includes 90,810 shares of common stock underlying Series F Warrants.

(11) Number of shares of common stock offered includes 90,810 shares of common stock underlying Series F Warrants.

(12) Number of shares of common stock offered includes 175,945 shares of common stock underlying Series F Warrants.

(13) Number of shares of common stock offered includes 210,001 shares of common stock underlying Series F Warrants.

(14) Number of shares of common stock offered includes 70,945 shares of common stock underlying Series F Warrants. Number of shares beneficially owned after completion of the offering includes (i) 17,778 shares of common stock underlying Series C warrants (ii) 110,000 shares of common stock underlying an April 2006 warrant and (iii) 100,000 shares of common stock underlying Series E warrants. Laura Liang exercises voting and dispositive power over all of the shares beneficially owned by DLD Family Investments, LLC.

(15) Number of shares of common stock offered includes 810,810 shares of common stock underlying Series F Warrants held by LB I Group Inc. LB I Group Inc. is a wholly-owned subsidiary of Lehman Brothers Inc., which is a registered broker-dealer. LB I Group has represented to us that it is not acting as an underwriter in this offering, it purchased the shares it is offering under this prospectus in the ordinary course of business, and at the time of such purchase, it had no agreements or understandings, directly or indirectly, with any person to distribute the securities. Lehman Brothers Holdings Inc., a public reporting company, is the parent company of Lehman Brothers Inc. The information in this footnote is primarily based on information provided to us. The mailing address of LB I Group Inc. is 399 Park Avenue, 9th Floor, New York, NY 10022

(16) Number of shares of common stock offered includes 3,625 shares of common stock underlying Series F Warrants. Number of shares beneficially owned after completion of the offering includes 66,667 shares of common stock underlying stock options. Neil K. Warma is the chief executive officer of Opexa Therapeutics, Inc.

(17) Number of shares of common stock offered includes 18,126 shares of common stock underlying Series F Warrants. Number of shares beneficially owned after completion of the offering includes (i) 5,334 shares of common stock underlying Series C warrants, (ii) 7,500 shares of common stock underlying an April 2006 warrant, (iii) 10,000 shares underlying Series E warrants (iv) 55,000 shares of common stock underlying stock options; (v) 416,537 shares of common stock held byVentures; (vi) 18,223 shares of common stock underlying Series C warrants held by Ventures; (vii) 125,000 shares of common stock underlying the April 2006 warrants held by Ventures; and (viii) 200,000 shares of common stock underlying Series E warrants held by Ventures. Scott B. Seaman is a director of Opexa Therapeutics, Inc.

PLAN OF DISTRIBUTION

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.

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 effected after the date the registration statement of which this prospectus is a part is declared effective by the SEC;
- 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 by 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. The selling stockholders also may transfer the shares of common stock in other circumstances, in which case the transferees, pledgees or other successors in interest will be the selling beneficial owners for purposes of 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 the 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 the 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 stockholders and any underwriters, broker-dealers or agents that participate in the sale of the common stock or interests therein may be "underwriters" within the meaning of Section 2(11) of the Securities Act. Any discounts, commissions, concessions or profit they earn on any resale of the shares may be underwriting discounts and commissions under the Securities Act. Selling stockholders who are "underwriters" within the meaning of Section 2(11) of the Securities Act will be subject to the prospectus delivery requirements of 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, the common stock may be sold in these jurisdictions only through registered or licensed brokers or dealers. In addition, in some states the 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, to the extent applicable 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.

We have agreed with the selling stockholders to keep the registration statement of which this prospectus constitutes a part 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(k) of the Securities Act.

The anti-manipulation rules of Regulation M under the Securities Act of 1934 may apply to sales of our common stock and the activities of selling stockholders.

LEGAL MATTERS

The validity of the common stock offered by this prospectus was passed upon for us by Vinson & Elkins L.L.P., Houston, Texas.

EXPERTS

The consolidated financial statements for the years ended December 31, 2007 and December 31, 2006 and for the period from January 22, 2003 (date of inception) to December 31, 2007 included in this prospectus have been audited by Malone & Bailey PC, independent registered public accounting firm, as stated in their report appearing herein.

PART II

INFORMATION NOT REQUIRED IN PROSPECTUS

Item 14. Other Expenses of Issuance and Distribution.

The following table sets forth the costs and expenses, other than the underwriting discounts and commissions, payable by the registrant in connection with the sale of the securities being registered. All amounts are estimates except the Securities and Exchange Commission registration fee.

Securities and Exchange Commission Registration Fee	$	339.58
Legal Fees and Expenses		100,000.00
Accounting Fees and Expenses		5,000.00
Transfer Agent and Registrar Fees		3,000.00
Listing Fees		20,000.00
Total	$	128,339.58

Item 15. Indemnification of Directors and Officers.

Opexa Therapeutics, Inc. (the "Company") has the authority under Articles 2.02a(16) and 2.02-1 of the Texas Business Corporation Act ("TBCA") to indemnify its directors and officers to the extent provided for in such statute. The TBCA provides, in part, that a corporation may indemnify a director or officer or other person who was, is or is threatened to be made a named defendant or respondent in a proceeding because such person is or was a director, officer, employee or agent of the corporation, if it is determined that such person: (1) conducted himself in good faith; (2) reasonably believed, in the case of conduct in his official capacity as a director or officer of the corporation, that his conduct was in the corporation's best interest and, in all other cases, that his conduct was at least not opposed to the corporation's best interests; and (3) in the case of any criminal proceeding, had no reasonable cause to believe that his conduct was unlawful.

A corporation may indemnify a person under the TBCA against judgments, penalties, including excise and similar taxes, fines, settlement, unreasonable expenses actually incurred by the person in connection with the proceeding. If the person is found liable to the corporation or is found liable on the basis that personal benefit was improperly received by the person, the indemnification is limited to reasonable expenses actually incurred by the person in connection with the proceeding, and shall not be made in respect of any proceeding in which the person shall have been found liable for willful or intentional misconduct in the performance of his duty to the corporation. The corporation may also pay or reimburse expenses incurred by a person in connection with his appearance as a witness or other participation in a proceeding at a time when he is not a named defendant or respondent in the proceeding.

The Company's Articles of Incorporation provide that none of its directors shall be personally liable to the Company or its shareholders for monetary damages for an act or omission in such director's capacity as a director; provided, however, that the liability of such director is not limited to the extent that such director is found liable for (1) a breach of the director's duty of loyalty to the Company or its shareholders, (2) an act or omission not in good faith that constitutes a breach of duty of the director to the Company or an act or omission that involves intentional misconduct or a knowing violation of the law, (3) a transaction from which the director received an improper benefit, whether or not the benefit resulted from an action taken within the scope of the director's office, or (4) an act or omission for which the liability of the director is expressly provided by an applicable statute.

The Company believes that these provisions will assist it in attracting and retaining qualified individuals to serve as executive officers and directors. The inclusion of these provisions in the Company's Articles of Incorporation may have the effect of reducing the likelihood of derivative litigation against the Company's directors and may discourage or deter shareholders or management from bringing a lawsuit against directors for breach of their duty of care, even though such an action, if successful, might otherwise have benefited us or our shareholders.

The Company's Articles of Incorporation and By-laws provide that the Company may indemnify its officers, directors, agents and any other persons to the fullest extent permitted by the TBCA.

Additionally, under their employment agreements with Opexa Therapeutics Inc. Mr. Warma, Dr. Williams, Ms. Hohlfeld and Ms. Rill are entitled to indemnification in their capacity as officers of the Company to the fullest extent permitted by the TBCA.

Item 16. Exhibits

(a) **Exhibits** . The following exhibits of the Company are included herein.

Exhibit 4.1*	Purchase Agreement dated August 8, 2008 (incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed August 13, 2008)
Exhibit 4.2*	Registration Rights Agreement dated August 8, 2008 (incorporated by reference to Exhibit 10.2 to the Company's Current Report on Form 8-K filed August 13, 2008)
Exhibit 4.3*	Form of Series F Warrant (incorporated by reference to Exhibit 10.3 to the Company's Current Report on Form 8-K filed August 13,2008)
Exhibit 5.1*	Opinion of Vinson & Elkins, LLP
Exhibit 23.1*	Consent of Malone & Bailey, PC
Exhibit 23.2*	Consent of Vinson & Elkins L.L.P. (included in Exhibit 5.1)
Exhibit 24.1*	Power of Attorney (included on signature page of this Registration Statement)

* Previously Filed

Item 17. Undertakings.

(a) The undersigned registrant hereby undertakes:

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

(i) To include any prospectus required by Section 10(a)(3) of the Securities Act of 1933;

(ii) To reflect in the prospectus any facts or events arising after the effective date of the registration statement (or the most recent post-effective amendment thereof) which, individually or in the aggregate, represents 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 Securities and Exchange Commission pursuant to Rule424(b) if, in the aggregate, the changes in volume and price represent no more than a 20 percent change in the maximum aggregate offering price set forth in the "Calculation of Registration Fee" table in the effective registration statement; and

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

provided, however, that paragraphs (1)(i), (1)(ii) and (1)(iii) do not apply if the information required to be included in a post-effective amendment by those paragraphs is contained in reports filed with or furnished to the Commission by the registrant pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934 that are incorporated by reference in the registration statement, or is contained in a form of prospectus filed pursuant to Rule 424(b) that is part of the registration statement.

(2) That, for the purpose of determining any liability under the Securities Act of 1933, each such post-effective amendment shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

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

(4) That, for the purpose of determining liability under the Securities Act of 1933 to any purchaser:

(i) Each prospectus filed by the registrant pursuant to Rule 424(b)(3) shall be deemed to be part of the registration statement as of the date the filed prospectus was deemed part of and included in the registration statement; and

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

(5) That, for the purpose of determining liability of the registrant under the Securities Act of 1933 to any purchaser in the initial distribution of the securities, in a primary offering of securities of the undersigned registrant pursuant to this registration statement, regardless of the underwriting method used to sell the securities to the purchaser, if the securities are offered or sold to such purchaser by means of any of the following communications, the undersigned registrant will be a seller to the purchaser and will be considered to offer or sell such securities to such purchaser:

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

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

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

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

(b) The undersigned registrant hereby undertakes that, for purposes of determining any liability under the Securities Act of 1933, each filing of the registrant's annual report pursuant to Section 13(a) or Section 15(d) of the Securities Exchange Act of 1934 (and, where applicable, each filing of an employee benefit plan's annual report pursuant to section 15(d) of the Securities Exchange Act of 1934) that is incorporated by reference in the registration statement shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

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

(d) The undersigned registrant hereby undertakes that:

(1) For purposes of determining liability under the Act, the information omitted from the form of prospectus filed as part of this registration statement in reliance upon Rule 430A and contained in a form of prospectus filed by the registrant pursuant to Rule 424(b)(1) or (4) or 497(h) under the Securities Act shall be deemed to be part of this registration statement as of the time it was declared effective.

(2) For the purpose of determining any liability under the Securities Act of 1933, each post-effective amendment that contains a form of prospectus shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

SIGNATURES

In accordance with the requirements of the Securities Act of 1933, as amended, the Registrant certifies that it has reasonable grounds to believe that it meets all of the requirements of filing on Form S-3 and has duly caused this registration statement to be signed on its behalf by the undersigned, in the City of Houston, State of Texas, on the 2nd day of October, 2008.

OPEXA THERAPEUTICS, INC.

By: /s/ Neil K. Warma
Name: Neil K. Warma
Title: President and Chief Executive Officer

By: /s/ Lynne Hohlfeld
Name: Lynne Hohlfeld
Title: Chief Financial Officer and Principal Accounting Officer

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

Signature	Title	Date
/s/ Neil K. Warma Neil K. Warma	President, Chief Executive Officer (principal executive officer)	October 2, 2008
/s/ Lynne Hohlfeld Lynne Hohlfeld	Chief Financial Officer (principal financial and accounting officer)	October 2, 2008
* Gregory H. Bailey	Director	October 2, 2008
* David Hung	Director	October 2, 2008
* David E. Jorden	Director	October 2, 2008
* David B. McWilliams	Director	October 2, 2008
* Lorin J. Randall	Director	October 2, 2008
* Michael S. Richman	Director	October 2, 2008
* Scott B. Seaman	Director	October 2, 2008

*By: /s/ Neil K. Warma

Neil K. Warma

INDEX TO EXHIBITS

Exhibit 4.1*	Purchase Agreement dated August 8, 2008 (incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed August 13, 2008)
Exhibit 4.2*	Registration Rights Agreement dated August 8, 2008 (incorporated by reference to Exhibit 10.2 to the Company's Current Report on Form 8-K filed August 13, 2008)
Exhibit 4.3*	Form of Series F Warrant (incorporated by reference to Exhibit 10.3 to the Company's Current Report on Form 8-K filed August 13, 2008)
Exhibit 5.1*	Opinion of Vinson & Elkins, LLP
Exhibit 23.1*	Consent of Malone & Bailey, PC
Exhibit 23.2 *	Consent of Vinson & Elkins L.L.P. (included in Exhibit 5.1)
Exhibit 24.1*	Power of Attorney (included on signature page of this Registration Statement)

*Previously filed