

OSIRIS THERAPEUTICS, INC.

Form 424B3

February 04, 2008

PROSPECTUS

**Filed pursuant to Rule 424(b)(3)
Registration No. 333-148750**

1,904,235 Shares

Common Stock

This prospectus relates to the offer and sale, from time to time, of up to 1,904,235 shares of our common stock, \$0.001 par value, held by the selling stockholders named on page 8 of this prospectus or in a prospectus supplement.

The shares of common stock to which this prospectus relates may be sold from time to time by the selling stockholders directly or through one or more broker-dealers, in one or more transactions on the NASDAQ Global Market, in the over-the-counter market, in negotiated transactions or otherwise, at prices related to the prevailing market prices or at negotiated prices, all as more fully described in the section entitled "Plan of Distribution" beginning on page 9 of this prospectus. We will not receive any proceeds from the sale of these shares of common stock offered by the selling stockholders. All costs and expenses incurred in connection with the registration of the offering made hereby under the Securities Act of 1933, as amended, or Securities Act, will be paid by us, other than any brokerage fees and commissions, fees and disbursements of legal counsel for the selling stockholders and stock transfer and other taxes attributable to the sale of the shares, which will be paid by the selling stockholders.

We are registering the offer and sale of these shares pursuant to certain registration rights granted to the selling stockholders. The registration of these shares of common stock does not necessarily mean that any of the shares will be offered or sold by the selling stockholders.

Our common stock is listed on the NASDAQ Global Market under the symbol "OSIR". The last reported sales price per share of our common stock on the NASDAQ Global Market on January 29, 2008 was \$11.85 per share. Prospective purchasers of our common stock are urged to obtain current information as to the market price of our common stock.

Investing in our common stock involves substantial risks. Accordingly, you should review carefully the risks and uncertainties described under the heading *Risk Factors* beginning on page 2 of this prospectus, and under any similar headings in the other documents that are filed with the United States Securities and Exchange Commission and incorporated by reference into this prospectus.

NEITHER THE SECURITIES AND EXCHANGE COMMISSION NOR ANY STATE SECURITIES COMMISSION HAS APPROVED OR DISAPPROVED OF THESE SECURITIES OR DETERMINED IF THIS PROSPECTUS IS TRUTHFUL OR COMPLETE. ANY REPRESENTATION TO THE CONTRARY IS A CRIMINAL OFFENSE.

THE DATE OF THIS PROSPECTUS IS JANUARY 31, 2008

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about this prospectus

Unless otherwise indicated or unless the context requires otherwise, all references in this prospectus or any accompanying prospectus supplement to we, us, our or our company refer to Osiris Therapeutics, Inc., a Delaware corporation.

This prospectus is part of a resale registration statement that we filed with the United States Securities and Exchange Commission, or Commission or SEC, utilizing a shelf registration process. The selling stockholders may offer and sell, from time to time, an aggregate of up to 1,904,235 shares of our common stock under this prospectus.

You should rely only upon the information contained in this prospectus and the registration statement of which this prospectus is a part. We have not authorized any other person to provide you with different information. If anyone provides you with different or inconsistent information, you should not rely on it. We are not making an offer to sell these securities in any jurisdiction where the offer or sale is not permitted. You should assume the information appearing in this prospectus is accurate only as of the date on the front cover of this prospectus. Our business, financial condition, results of operations and prospects may have changed since that date. This prospectus is based on information provided by us and other sources that we believe are reliable. We have summarized certain documents and other information in a manner we believe to be accurate, but we refer you to the actual documents for a more complete understanding of what we discuss in this prospectus. In making an investment decision, you must rely on your own examination of our business and the terms of the offering, including the merits and risks involved.

OSIRIS THERAPEUTICS, INC.

The following is only a summary. We urge you to read the entire prospectus, any accompanying prospectus supplement, and the more detailed financial statements, notes to the financial statements and other information either included therein or incorporated by reference from our other filings with the SEC. Investing in our common stock involves substantial risks. Accordingly, before investing in our common stock you should review carefully the risks and uncertainties described under the heading "Risk Factors" contained in this prospectus, any accompanying prospectus supplement, and under any similar headings in the other documents that are filed with the SEC and incorporated by reference into this prospectus. See "Risk Factors" on page 2 of this prospectus.

We are a leading stem cell therapeutic company focused on developing and marketing products to treat medical conditions in the inflammatory, orthopedic and cardiovascular areas. We were incorporated in Delaware in April 2002. Our predecessor company was organized in 1992. We currently market and sell OsteoCel[®] for regenerating bone in orthopedic indications. It is the only commercially available product in the United States containing viable stem cells. Our lead biologic drug candidate, Prochymal[®], for the treatment of a broad range of inflammatory diseases, is the only stem cell therapeutic for which patients are being enrolled in Phase III pivotal clinical trials and is the only stem cell therapeutic currently designated by the FDA as both an Orphan Drug and Fast Track product candidate. Our pipeline of internally developed biologic drug candidates also includes Chondrogen[®], for arthritis in the knee.

We are a fully integrated company, having developed stem cell capabilities in research and development, manufacturing, marketing and distribution. We have developed an extensive intellectual property portfolio in an effort to protect our technology in the United States and a number of foreign countries, including 47 U.S. and 215 foreign patents owned or licensed. OsteoCel and our two biologic drug candidates utilize human mesenchymal stem cells, or MSCs. MSCs are progenitor cells that differentiate into various connective tissues when they receive appropriate biochemical and biomechanical signals. In addition, MSCs have anti-inflammatory properties and can prevent fibrosis or scarring. These characteristics give MSCs the potential to treat a wide variety of medical conditions.

Beginning in the first quarter of 2007, we began to manage our business in two operating segments. Our reportable operating segments that are managed separately consist of our Biologic Drug Candidates segment and our Biologic Tissue Product segment.

In our Biologic Drug Candidates segment, we currently have five clinical trials ongoing. We are currently enrolling patients in three Phase III clinical trials for Prochymal, our lead biologic drug candidate: for the treatment of steroid refractory Graft versus Host Disease, or GvHD; for first line treatment of acute GvHD; and for the treatment of biologic refractory Crohn's disease. Prochymal is also being developed for the repair of heart tissue following a heart attack and for the protection of pancreatic islet cells in patients with type 1 diabetes. We also have an active program to develop Prochymal for Emergency Preparedness Indications such as the treatment of Acute Radiation Syndrome. In addition, we have one other clinical stage biologic drug candidate, Chondrogen for arthritis in the knee. We have developed stem cell capabilities in research and development, manufacturing, marketing and distribution. We manufacture clinical batches of our biologic drug candidates.

Our Biologic Tissue Product segment produces and markets OsteoCel, which was launched in July 2005, for regenerating bone in orthopedic indications. During the first quarter of 2007, we expanded our OsteoCel manufacturing facility. We manufacture OsteoCel in our Baltimore, Maryland clean-room facilities. Together with AlloSource, we distribute OsteoCel in orthopedic indications, and we jointly

distribute Osteocel with Blackstone Medical, Inc., a division of Orthofix International, N.V., for spinal procedures and orthopedic indications.

We were recently awarded a contract from the United States Department of Defense (DOD), to develop and stockpile Prochymal as an adult stem cell therapy for the repair of gastrointestinal injury resulting from radiation exposure. This is the first contract awarded to us under an agreement we previously entered into with Genzyme Corporation for collaboration in the preparation and execution of development and purchase agreements with U.S. and Allied governmental agencies.

We have incurred annual operating losses since inception and expect to incur substantial operating losses in the future in connection with the development of our core products. As of September 30, 2007, we had an accumulated deficit of \$219.9 million.

From inception in December 1992 through September 30, 2007, we incurred aggregate research and development costs of approximately \$216 million. We expect our research and development expenses to increase substantially in the future, as we expand our clinical trial activity, as our biologic drug candidates advance through the development cycle and as we invest in additional product opportunities and research programs.

Our principal executive offices are located at 7015 Albert Einstein Drive, Columbia, Maryland 21046. Our telephone number is (443) 545-1800. Our website is <http://www.osiris.com>. Our Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q and Current Reports on Form 8-K, which have been filed with the SEC, are available to you free of charge through a hyperlink on our website. The information on our website or any other website is not incorporated by reference into this prospectus or in any prospectus supplement and does not constitute a part of this prospectus or any prospectus supplement.

The name Osiris, our graphical logo, Osteocel, Chondrogen, and Prochymal are our trademarks. This prospectus, any accompanying prospectus supplement and the documents incorporated herein by reference may contain additional trademarks of ours and trademarks of other companies.

RISK FACTORS

Investing in our common stock involves substantial risks. In addition to other information contained in this prospectus and any accompanying prospectus supplement, before investing in our common stock, you should carefully consider the risks described under the heading Risk Factors, and under the same or similar headings in our most recent Annual Report on Form 10-K and subsequent Quarterly Reports on Form 10-Q, and in any other documents incorporated by reference into this prospectus, as updated by our future filings. These risks are not the only ones faced by us. Without limitation, you should carefully consider the risks associated with the contract recently awarded to us by the United States Department of Defense and referred to above, including those risks noted in Item 1.01 of the Current Report on Form 8-K that we filed with the SEC on January 4, 2008, and noted under the caption Forward-Looking Statements in this prospectus. Additional risks not known or that are presently deemed immaterial could also materially and adversely affect our financial condition, results of operations, our products, business and prospects. Any of these risks might cause you to lose all or a part of your investment.

FORWARD-LOOKING STATEMENTS

This prospectus, and any accompanying prospectus supplement, including the documents that we incorporate by reference, contain forward-looking statements within the meaning of the safe harbor from civil liability provided for such statements by the Private Securities Litigation Reform Act of 1995 (set forth in Section 27A of the Securities Act and Section 21E of the Securities Exchange Act of 1934, as amended, or Exchange Act). Also, documents we subsequently file with the SEC and incorporate by reference will contain forward-looking statements. In particular, statements pertaining to our capital resources, product performance and results of operations contain forward-looking statements. Forward-looking statements involve numerous risks and uncertainties and you should not rely on them as predictions of future events. Forward-looking statements depend on assumptions, data or methods which may be incorrect or imprecise and we may not be able to realize them. We do not guarantee that the transactions and events described will happen as described (or that they will happen at all). In some cases, you can identify forward-looking statements by the use of forward-looking terminology such as believes, expects, may, will, should, seeks, approximately, intends, pro forma, estimates, projects, plans, forecasts, potential, predicts or anticipates or the negative and phrases or similar words or phrases. You can also identify forward-looking statements by discussions of strategies, plans or intentions. The following factors, among others, could cause actual results and future events to differ materially from those set forth or contemplated in the forward-looking statements:

- results of our product development efforts;
- results of our clinical trials and anticipated regulatory requirements;
- the success of our product candidates in development;
- status of the regulatory process for our biologic drug candidates;
- implementation of our corporate strategy;
- our financial performance;
- our product research and development activities and projected expenditures, including our anticipated timeline and clinical strategy for MSCs and biologic drug candidates;
- our cash needs;

- patents and proprietary rights;
- ability of our potential products to treat disease;
- our ability to supply a sufficient amount of our products to meet regular and repeated demand;
- adverse changes to, or implementations of, income tax laws, governmental regulations or legislation;

- costs to comply with governmental regulations;
- our relationship with collaborating partners;
- our ability to benefit from government contracts notwithstanding the potential for adverse changes in government spending priorities;
- failure of contract performance and risks of contract termination either for default or, in the case of government contracts, for the convenience of the government;
- our ability to satisfy government audits of our government contracts and our ability to successfully manage the risks associated with complex government procurement laws and regulations;
- general economic conditions;
- future terrorist activity in the United States or war;
- types of regulatory frameworks we expect will be applicable to our potential products;
- results of our scientific research;
- our plans for sales and marketing; and
- our plans regarding facilities.

While forward-looking statements reflect our good faith beliefs, they are not guarantees of future performance. We disclaim any obligation to update publicly or revise any forward-looking statement to reflect changes in underlying assumptions or factors, new information, data or methods, future events or other changes. For a further discussion of these and other factors that could impact our future results, performance or transactions, see the section entitled "Risk Factors" contained in this prospectus and in any accompanying prospectus supplement, and the section

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under the same or similar headings in our most recent Annual Report on Form 10-K and subsequent Quarterly Reports on Form 10-Q, and in any other documents incorporated by reference into this prospectus, as updated by our future filings. There may be other factors that cause our actual results to differ materially from the forward-looking statements. All forward-looking statements attributable to us or persons acting on our behalf apply only as of the date of this prospectus and are expressly qualified in their entirety by the cautionary statements included herein.

WHERE YOU CAN FIND MORE INFORMATION

We are a public company and file annual, quarterly and current reports, proxy statements and other information with the SEC. You may read and copy any document we file with the SEC at the SEC's Public Reference Room at 100 F Street, N.E., Room 1580, Washington, D.C. 20549. Please call the SEC at 1-800-SEC-0330 for further information about the Public Reference Room. The SEC also maintains a website that contains reports, proxy and information statements and other information regarding registrants that file electronically with the SEC at <http://www.sec.gov>. In addition, we maintain a website that contains information about us at <http://www.osiris.com>. The information found on, or otherwise accessible through, our website is not incorporated into, and does not form a part of, this prospectus, any accompanying prospectus supplement or any other report or document we file with or furnish to the SEC.

We have filed with the SEC a registration statement on Form S-3, of which this prospectus is a part, including exhibits, schedules and amendments filed with, or incorporated by reference in, this registration statement, under the Securities Act with respect to the securities registered hereby. This

prospectus and any accompanying prospectus supplement do not contain all of the information set forth in the registration statement and exhibits and schedules to the registration statement. For further information with respect to our company and the securities registered hereby, reference is made to the registration statement, including the exhibits to the registration statement. Statements contained in this prospectus and any accompanying prospectus supplement as to the contents of any contract or other document referred to in, or incorporated by reference in, this prospectus and any accompanying prospectus supplement are not necessarily complete and, where that contract is an exhibit to or otherwise incorporated by reference into the registration statement, each statement is qualified in all respects by the exhibit, contract or document so incorporated by reference. Copies of the registration statement, including the exhibits and schedules to the registration statement, may be examined at the SEC's Public Reference Room. Copies of all or a portion of the registration statement can be obtained from the SEC's Public Reference Room upon payment of certain prescribed fees. This registration statement is also available to you on the SEC's website.

DOCUMENTS INCORPORATED BY REFERENCE

The SEC allows us to incorporate by reference the information we file with the SEC, which means that we can disclose important information to you by referring you to the documents we file with the SEC. The information incorporated by reference is an important part of this prospectus and any accompanying prospectus supplement. The incorporated documents contain significant information about us, our business, our products and our finances. Any statement contained in a document which is incorporated by reference in this prospectus and any accompanying prospectus supplement is automatically updated and superseded if information contained in this prospectus or any accompanying prospectus supplement, or information that we later file with the SEC, modifies or replaces this information. We incorporate by reference the following documents we have filed or will file with the SEC:

- our Annual Report on Form 10-K for the fiscal year ended December 31, 2006;
- our Quarterly Report on Form 10-Q for the quarterly period ended March 31, 2007;
- our Quarterly Report on Form 10-Q for the quarterly period ended June 30, 2007;
- our Quarterly Report on Form 10-Q for the quarterly period ended September 30, 2007;
- Items 1.01, 3.02 and 9.01 (but excluding Exhibit 99.1) of our Current Report on Form 8-K filed with the SEC on June 7, 2007;
- our Current Report on Form 8-K filed with the SEC on September 20, 2007;
- Item 1.01 of our Current Report on Form 8-K filed with the SEC on October 10, 2007;

- Items 5.02 and 9.01 of our Current Report on Form 8-K filed with the SEC on November 23, 2007;
- Items 1.01 and 3.02 of our Current Report on Form 8-K filed with the SEC on December 21, 2007;
- Item 1.01 of our Current Report on Form 8-K filed with the SEC on January 4, 2008;
- Item 1.01 of our Current Report on Form 8-K filed with the SEC on January 7, 2008;
- our Definitive Proxy Statement on Schedule 14A filed with the SEC on April 30, 2007;

- the description of our capital stock contained in our Registration Statement on Form 8-A, filed with the SEC on August 1, 2006, including any amendment or reports filed for the purpose of updating this description; and
- all reports and documents filed by us with the SEC pursuant to Section 13(a), 13(c), 14 or 15(d) of the Exchange Act, as amended, after the date of this prospectus and prior to the filing of a post-effective amendment which indicates that all of the securities covered by this prospectus have been sold or which deregisters all such securities remaining unsold (but excluding any documents or portions of any documents which are deemed furnished and not filed with the SEC).

Information included or incorporated by reference in this prospectus and any accompanying prospectus supplement shall be deemed automatically updated and superseded if information contained in any document we subsequently file with the SEC prior to the termination of this offering modifies or replaces the information included or incorporated by reference in this prospectus. Any such statement so modified or superseded shall not, except as so modified or superseded, constitute a part of this prospectus.

We will provide to each person to whom this prospectus is delivered a copy of any or all of the information that we have incorporated by reference into this prospectus but have not delivered with this prospectus. To receive a free copy of any of the documents incorporated by reference in this prospectus, other than exhibits, unless they are specifically incorporated by reference in those documents, call or write to Osiris Therapeutics, Inc., ATTN: Investor Relations, 7015 Albert Einstein Drive, Columbia, Maryland 21046; (443) 545-1800.

USE OF PROCEEDS

We will not receive any of the proceeds from the sale of the shares of our common stock by the selling stockholders. All costs and expenses incurred in connection with the registration under the Securities Act of the offering made hereby will be paid by us, other than any brokerage fees and commissions, fees and disbursements of legal counsel for the selling stockholders and stock transfer and other taxes attributable to the sale of the shares, which will be paid by the selling stockholders.

SELLING STOCKHOLDERS

On June 6, 2007, in a private placement intended to comply with Regulation S of the Securities Act to certain institutional and accredited investors primarily based in Switzerland, we sold an aggregate of 1,757,469 shares of our common stock pursuant to Subscription Agreements, each dated June 6, 2007, by and between us and each of the purchasers of the shares of our common stock in the private placement. Among other things, each Subscription Agreement afforded the named subscriber with certain registration rights.

On December 18, 2007, in a private placement intended to comply with Regulation S of the Securities Act to certain institutional and accredited investors in Switzerland, we sold an aggregate of 950,000 shares of our common stock pursuant to Subscription Agreements, each dated December 18, 2007, by and between us and each of the purchasers of the shares of our common stock in the private placement. Among other things, each Subscription Agreement afforded the named subscriber with certain registration rights.

The holders of an aggregate of \$20.0 million in Convertible Promissory Notes that we originally issued on October 30, 2006, recently each entered into an agreement with us pursuant to which, among

other things, they converted the principal balance of such Convertible Promissory Notes, together with accrued but unpaid interest, into an aggregate of 1,553,361 shares of our common stock. Among other things, the terms of the Convertible Promissory Notes provided the holders thereof with certain registration rights upon conversion of such Convertible Promissory Notes into shares of our common stock.

We are registering the shares of our common stock covered by this prospectus pursuant to the registration rights granted to the selling stockholders under the terms of the Subscription Agreements and the Convertible Promissory Notes referenced above, to permit these investors to resell or otherwise dispose of these shares of common stock from time to time.

Pursuant to this prospectus, the selling stockholders may offer an aggregate of 1,904,235 shares of our common stock for resale. The shares are being offered for the account of the selling stockholders identified in the table below.

The following table sets forth information as of January 29, 2008 and includes the number of shares of our common stock beneficially owned by the selling stockholders prior to the offering, the number of shares of common stock offered by the selling stockholders, and the number of shares of common stock that will be owned by the selling stockholders upon completion of the offering or offerings pursuant to this prospectus, assuming the selling stockholders sell all of the shares of common stock offered hereby. Only those selling stockholders listed below or their transferees, pledgees, donees, assignees, distributees, successors and others who later come to hold any of the selling stockholders' interest may offer and sell the common stock pursuant to this prospectus and any accompanying prospectus supplement. The selling stockholders may offer for sale pursuant to this prospectus and any accompanying prospectus supplement from time to time, any or all of the common stock listed below. Accordingly, no estimate can be given as to the shares of common stock that the selling stockholders will hold upon consummation of any such sales.

Beneficial ownership is determined in accordance with the rules of the Securities and Exchange Commission.

There are no material relationships between the selling stockholders and us other than as disclosed below.

NAME OF SELLING STOCKHOLDER (2)	NUMBER OF SHARES BENEFICIALLY OWNED	TOTAL NUMBER OF SHARES BEING OFFERED	SHARES BENEFICIALLY OWNED AFTER OFFERING (1)	
			NUMBER	PERCENTAGE OF CLASS (3)
NBAD US Venture, Inc.	263,620	263,620		
BIH SA (4)	2,408,944	905,940	1,503,004	4.7%
Mr. Thomas Schmidheiny (4)	2,804,098	155,940	1,742,218	5.5%
Lombard Odier Darier Hentsch & Cie	102,424	101,361	1,063	
Bank Julius Bar	194,925	194,925		
Mrs. Hortense Anda-Buhrle	194,925	194,925		
Rossier Mari & Associates Ltd.	160,024	87,524	72,500	
Total		1,904,235		

(1) Assumes that the selling stockholder sells all of the shares being offered.

(2) We believe that each of the selling stockholders named in this table has sole voting and dispositive power with respect to the shares indicated as beneficially owned except as otherwise indicated in the footnotes to this table.

(3) Applicable percentages are based on 31,649,999 shares of our common stock outstanding on January 29, 2008, adjusted as required by rules promulgated by the Securities and Exchange Commission.

(4) Thomas Schmidheiny beneficially owns 2,804,098 shares of our common stock, which includes: 395,154 shares owned directly by Mr. Schmidheiny and 2,408,944 shares owned by BIH SA, a company organized under the laws of Switzerland. Mr. Schmidheiny has sole voting and dispositive power with respect to 395,154 shares and shared voting and dispositive power with respect to 2,408,944 shares. Mr. Schmidheiny is the controlling shareholder and chairman of the board of BIH SA. In his capacity as controlling shareholder and chairman of the board of BIH SA, Mr. Schmidheiny has shared voting and shared dispositive power with respect to the common stock and other securities held by BIH SA. BIH SA beneficially owns 2,408,944 shares of our common stock.

PLAN OF DISTRIBUTION

The selling stockholders and any transferees, pledgees, donees, assignees, distributees or other successors in interest to a selling stockholder may, from time to time, sell, transfer or otherwise dispose of any or all of their shares of our common stock covered by this prospectus on the NASDAQ Global Market or any other 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. A selling stockholder may use any one (1) or more of the following methods when disposing of shares:

- 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;
- settlement of short sales entered into after the effective date of the registration statement of which this prospectus is a part;
- broker-dealers may agree with the selling stockholders to sell a specified number of such shares at a stipulated price per share;
- through the writing or settlement of options or other hedging transactions, whether through an options exchange or otherwise;
- a combination of any such methods of sale; or

- any other method permitted pursuant to applicable law (including underwritten transactions).

The selling stockholders may also sell shares under Rule 144 under the Securities Act, if available, rather than under this prospectus.

Broker-dealers, underwriters and agents engaged by the selling stockholders may arrange for other brokers dealers, underwriters or agents to participate in sales. Broker-dealers, underwriters or agents may receive commissions, discounts or concessions from the selling stockholders (or, if any broker-dealer acts as agent for the purchaser of shares, from the purchaser) in amounts to be negotiated, but, except as set forth in a supplement to this prospectus, in the case of an agency transaction not in excess of a customary brokerage commission in compliance with FINRA NASD Rule 2440; and in the case of a principal transaction a markup or markdown in compliance with NASD IM-2440.

In connection with the sale of the common stock or interests therein, certain of 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 the 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 (1) 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 selling stockholders and any broker-dealers, underwriters or agents that are involved in selling the shares may be deemed to be underwriters within the meaning of the Securities Act in connection with such sales. In such event, any commissions received by such broker-dealers, underwriters or agents and any profit on the resale of the shares purchased by them may be deemed to be underwriting commissions or discounts under the Securities Act.

All costs and expenses incurred in connection with the registration under the Securities Act of the offering made hereby will be paid by us, other than any brokerage fees and commissions, fees and disbursements of legal counsel for the selling stockholders and stock transfer and other taxes attributable to the sale of the shares, which will be paid by the selling stockholders

Because selling stockholders may be deemed to be underwriters within the meaning of the Securities Act, they will be subject to the prospectus delivery requirements of the Securities Act including Rule 172 thereunder. In addition, any securities covered by this prospectus which qualify for sale pursuant to Rule 144 under the Securities Act may be sold under Rule 144 rather than under this prospectus.

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, dealers or underwriters; and 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. The resale shares will be sold only through registered or licensed brokers or dealers if required under applicable state securities laws. In addition, in certain states, the resale shares may not be sold unless they have been registered or qualified for sale in the applicable state or an exemption from the registration or qualification requirement is available and is complied with.

Under applicable rules and regulations under the Exchange Act, any person engaged in the distribution of the resale shares may not simultaneously engage in market making activities with respect to the common stock for the applicable restricted period, as defined in Regulation M, prior to the commencement of the distribution. In addition, the selling stockholders will be subject to applicable provisions of the Exchange Act and the rules and regulations thereunder, including Regulation M, which may limit the timing of purchases and sales of shares of our common stock by the selling stockholders or any other person. We will make copies of this prospectus available to the selling stockholders and have informed them of the need to deliver a copy of this prospectus to each purchaser at or prior to the time of the sale (including by compliance with Rule 172 under the Securities Act).

LEGAL MATTERS

The validity of the shares of our common stock offered by this prospectus will be passed upon for us by Ballard Spahr Andrews & Ingersoll, LLP, Baltimore, Maryland.

EXPERTS

The financial statements of Osiris Therapeutics, Inc. incorporated in this prospectus by reference from the our Annual Report on Form 10-K for the year ended December 31, 2006, have been audited by Stegman & Company, an independent registered public accounting firm, as stated in their reports, which are incorporated herein by reference, and have been so incorporated in reliance upon the reports of such firm given upon their authority as experts in auditing and accounting.

PROSPECTUS

1,904,235 Shares

Common Stock
