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PLEASE DELIVER AS SOON AS POSSIBLE TO:

RECIPIENT	COMPANY	FAX NO.	PHONE NO.
Zafar Hasan	SEC	(202) 772-9217	

From: Justin P. Klein
Phone: (215) 864-8606
Fax: (215) 864-9166
E-mail: kleinj@ballardspahr.com

Date: July 10, 2006
Matter: 075593

Total number of pages including this page: 26
If you do not receive all the pages, please call 215-864-8388.

MESSAGE:

"Per our conversation today, attached please find (1) a draft of our response to the SEC comment letter dated June 28, 2006, and (2) changed pages of the Registration Statement as filed on June 20, 2006. Please contact me with any questions or comments."

DRAFT

July __, 2006

VIA EDGAR AND HAND DELIVERY

United States Securities and Exchange Commission
Division of Corporation Finance
100 F Street, N.E.
Washington, D.C. 20549

ATTN: Jeffrey Riedler
Assistant Director
Mail Stop 6010

Re: Osiris Therapeutics, Inc.
Registration Statement on Form S-1
Amendment No. 1 filed on June 20, 2006
File No. 333-134037

Dear Mr. Riedler:

On behalf of Osiris Therapeutics, Inc. (the "Company"), this letter responds to the Staff's comment letter dated June 28, 2006 regarding Amendment No. 1 to the Company's Form S-1 Registration Statement filed with the Securities and Exchange Commission on June 20, 2006. A marked copy of Amendment No. 2 showing the changes from Amendment No. 1 is attached for your reference. For your convenience and as requested by comment number two in the Staff's comment letter dated June 8, 2006, each of the Staff's comments has been reproduced below, followed by the Company's response to such comment.

DRAFT

Amendment 1 to Form S-1

Management's Discussion and Analysis of Financial Condition and Results of Operations, page 37

Research and Development Costs, pages 38 - 39

1. *Refer to your response to comment 17. We acknowledge your disclosure that the company cannot quantify precisely the internal research and development costs incurred on a project-by-project basis. Please provide as much quantitative and qualitative information as possible on another basis instead. Alternative presentations could show a breakdown of internal vs. external costs incurred and could detail these costs further by some other category. For example, including the costs incurred for preclinical, clinical and non-clinical trials would be informative. Please note that the comment only presents a suggested format that is intended to allow investors to better understand the composition of these expenses. If you do not feel this proposed format is applicable to your business, then please provide us similar disclosure in another format that will allow an investor the desired insights into your research and development costs.*

RESPONSE: The Company respectfully acknowledges the Staff's comment and has revised the disclosure on [pages 39, 44 and 45] to provide additional information helpful to investors in understanding the Company's research and development expenses during fiscal years 2005 and 2004, and during the first quarter of fiscal 2006. This includes a statement as to aggregate research and development expenses from inception, and a breakdown into specific categories of research and development expenses for the most recent two complete fiscal years and the first quarter of fiscal year 2006.

Stock Compensation, page 43

2. *We acknowledge your response to comment 31. When you have determined the IPO price, please disclose the intrinsic value of outstanding vested and unvested options based on the estimated IPO price and the options outstanding as of the most recent balance sheet date presented.*

RESPONSE: The Company respectfully acknowledges the Staff's comment.

3. *Clarify the date you hired the valuation specialist. If the date was subsequent to December 31, 2005, a retrospective valuation may have been performed, which should be clarified in the filing. In addition, valuations done by the board of directors are not considered performed by a third party. Also, it is not clear why you believe those valuations were done contemporaneously given that the board of directors only meets periodically. Please revise accordingly.*

RESPONSE: In response to the Staff's comment, the Company has revised the disclosure on [pages 40 and 41] of the Registration Statement to clarify that the third party valuation was retrospective because the valuation specialist was hired on February 9, 2006, and that the periodic valuations prepared by the Board of Directors during 2005 were in many cases not contemporaneous with grants of stock-based compensation.

DRAFT

4. *With respect to your stock valuations, please provide the following:*

- *Disclose the significant assumptions and methodologies used in determining your valuation at each issuance date of an equity instrument.*
- *Discuss each significant factor contributing to the difference between the fair value as of the date of each grant and the estimated IPO price or if a contemporaneous valuation by an unrelated valuation specialist was obtained subsequent to the grants but prior to the IPO, the fair value as determined by that valuation.*
- *The valuation alternative selected and the reason management chose not to obtain a contemporaneous valuation by an unrelated valuation specialist.*
- *Tell us why your valuations do not consider the fact that sales began in July 2005. Although the amounts were small, it would appear that the introduction of sales would be a significant event that should be considered in determining the valuation of your stock.*
- *Tell us how the Series E convertible preferred stock issued for $2.50 per share, the convertible promissory notes issued, and the conversion of the convertible promissory notes to Series D convertible preferred stock at $2.00 per share compare to the valuation of your common stock and why the valuations differ.*
- *Clarify if the Series E convertible preferred stock and the convertible promissory notes were issued to third parties and how that factor was considered in determining your valuation for your common stock.*
- *Please evaluate all significant events during the year and provide us an analysis with a timeline justifying your valuations for each period considering each event.*

RESPONSE: In response to the Staff's comment, and particularly in response to the first four and the final bullet points included therein, the Company has revised its disclosure on [pages 40 and 41] of the Registration Statement to more fully explain the basis for its stock valuations.

Responding to the 5th bullet point included in the Staff's comment, the Company respectfully submits that there is no direct and clearly quantifiable correlation between the per share price for the Series E preferred stock, the convertible promissory notes issued, and the conversion of the convertible promissory notes to Series D preferred stock and the valuation of the Company common stock, except to say that the preferences and special rights associated with the preferred stock and convertible promissory notes generally justify conversion at a higher per common share value, as compared to the underlying common stock at the time of issue. For example, the Series E preferred stock has special preferences and is senior in liquidation preference to the common stock. The Company submits that the conversion price applicable to the Series E preferred stock, as compared to the Board determined value of its common stock, is reflective of those

preferences. The Company further submits that the timing of the issuance of the Series E preferred stock at $2.50 per share – more than 75% of which was issued after October 15, 2005 – may have been reflective of the investors' appreciation for the successful fundraising efforts of the Company through October 2005, and increased prospects for success in the fourth quarter, as further described in the disclosure on [pages 40 and 41] of the Registration Statement. Moreover, the Company submits that the conversion rate for the preferred stock and convertible promissory notes may not be an appropriate proxy for the value of the common stock because conversion is typically optional and becomes mandatory only upon the occurrence of a significant event, such as an IPO or change in control.

The conversion of the promissory notes for Series D convertible preferred stock was at par, that is, these promissory notes were demand notes delivered as payment for Series D preferred stock at the same $2.00 per share price as was paid by other purchasers. Accordingly, the Company submits that there was no direct and clearly quantifiable correlation between the terms of those notes and the per share value of the common stock on the date of issue of the notes. Similar to the Series E preferred stock, the Series D preferred stock has special preferences and is senior in liquidation preference to the common stock. The Company submits that, even though there is no direct and clearly quantifiable correlation, the conversion prices applicable to the Series D preferred stock, as compared to the Board determined value of its common stock, is reflective of those preferences, and the higher conversion price of the Series D preferred stock, as compared to the then board established fair market value for the common stock, is consistent.

The outstanding convertible promissory notes, although convertible into common stock, are primarily debt instruments. In the event that an IPO does not occur prior to the dates stated in the respective convertible promissory notes, the notes provide that holders are entitled to the repayment of the face amount of the Notes, together with accrued interest and a premium. The Company advises that the effective interest rate on the outstanding notes is approximately 15% and that the redemption provisions could increase the future effective interest rate significantly. The Company submits, therefore, that even though there is no direct and clearly quantifiable correlation, the common stock conversion prices applicable to these notes, which were appreciably greater than the then board established fair market value for the common stock, are consistent.

Responding to the 6th bullet point of the Staff's comment, the Company notes that almost half of the number of shares of Series E preferred stock issued, and all of the convertible promissory notes issued in calendar year 2005, were issued to unrelated third parties. The Company advises that the status of these investors as unrelated third parties, however, was not considered in determining the valuation of the common stock.

DRAFT

Registration Rights, page 92

5. *Refer to your response to comment 24. Please include the registration rights agreement for the $20.6 million convertible note as an exhibit. Your response to comment 24 did not address the other registration rights agreements that you discuss on pages 92 and 93. Please reevaluate your accounting for the other agreements and provide us your analysis as previously requested. Tell us and disclose in the filing your obligations under all the registration rights agreements. Discuss any liquidating penalties or other significant terms.*

RESPONSE: In response to the Staff's comment, the Company has filed the registration rights agreement for the $20.6 million convertible note, and forms of the other convertible notes containing registration rights, as Exhibits 10.32 through 10.35 to the Registration Statement. The Company respectfully notes that its disclosure on page [93] of the Registration Statement includes all significant terms of the registration rights agreement for the $20.6 million convertible note. Additional discussion has been provided on page [93] to disclose that (1) none of the registration rights agreements to which the Company is subject provide for any liquidating damages as contemplated in EITF 05-4 "The Effect of a Liquidating Damages Clause on a Freestanding Financial Instrument Subject to Issue No. 00-19," and (2) although the Company is subject to certain obligations under the registration rights agreements, there is no cash or other form of liquidating damages associated with the Company's failure to successfully register the shares.

6. *Prior to going effective, please revise the filing to account for the reverse stock split that will occur prior to the consummation of the offering. In addition, please clarify how a reverse stock split will result in additional authorized and issued shares to satisfy the company's obligations under the registration rights agreements and other commitments. Please revise or advise.*

RESPONSE: The Company respectfully acknowledges the Staff's comment and will revise the filing to account for the reverse stock split prior to going effective. The Company has not yet finally determined the ratio of the planned reverse stock split, but currently anticipates a one-for-four reverse split. Such a reverse split will result in approximately 24,895,698 shares of common stock issued and outstanding, taking into account additional shares to be issued upon mandatory conversion resulting from an initial public offering and potential shares to be issued upon elective conversion, but excluding an as yet undetermined number of shares to be issued in the offering. The Company's Certificate of Incorporation currently authorizes, and following completion of the offering will continue to authorize, 90,000,000 shares, resulting in approximately 65,104,302 authorized and unissued shares available for issuance in the offering. The Company does not anticipate issuing more than approximately 4,000,000 shares in the offering. Based upon this analysis, the Company anticipates that there will be a sufficient number of shares authorized and unissued following the offering to satisfy all registration rights and other commitments for the issuance of common stock.

DRAFT

Financial Statements

Revenue Recognition, page F-10

7. *Refer to comment 29 and your response. Please tell us if the incidental assignment of technology rights is from a related party. If so, the amount recorded for the technology rights should be based on the GAAP basis of the related party and should be recorded as contributed capital in the financial statements. In addition, please tell us the basis for capitalizing the amount and any consideration given to recording the amount as in-process research and development. Refer to paragraph 11c of SFAS 2.*

RESPONSE: In response to the Staff's comment, the Company has revised its disclosure on page [F-11] to clarify that the Company did not receive any revenue from related parties. Additionally the Company respectfully refers the Staff to the disclosure on page [F-11], which indicates that all research and development costs are expensed as incurred and therefore the Company has no capitalized in-process research and development costs.

Stock Compensation, page F-12

8. *Refer to comment 30 and the additional disclosure provided. Please address the following comments:*

- *Provide a consent from the valuation expert that you reference.*
- *Provide us with an analysis of all equity issuances from the date of the latest balance sheet through the date of your response. For each grant date, the number of options or shares granted, the exercise price, the fair value of the common stock, and the intrinsic value, if any, per option.*

RESPONSE: The Company acknowledges the Staff's comment, and respectfully submits that a consent from its valuation expert is not required. The expert was retained prior to the initiation of this offering and for a purpose unrelated to the offering. In addition, the valuation report was not prepared for use in connection with this Registration Statement, and the valuation expert did not prepare or certify any part of the Registration Statement.

In response to the Staff's comment, the Company has provided an analysis of all equity issuances from the beginning of the 2005 fiscal year until March 31, 2006. This analysis is set forth on Exhibit A to this response letter.

DRAFT

Notes Payable and Capital Lease Obligations, pages F-16 - F-17

9. *Refer to comment 33 and your response. It is unclear from your additional disclosure how the conversion rate of the loans from related parties to Series D mandatorily redeemable convertible preferred stock was determined. Please clarify.*

RESPONSE: In response to the Staff's comment, the Company has revised the disclosure on page [F-18] of the Registration Statement to disclose that the conversion rate of the convertible notes was the same as the rate paid by other purchasers of the Series D mandatorily redeemable convertible preferred stock.

10. *Refer to comment 34. When the price range of the IPO has been established, please disclose in Management's Discussion and Analysis the expected effect on your results of operations of recording the beneficial conversion feature for the convertible promissory notes of $19.8 million, $20.6 million and $2 million and provide us a calculation based on the estimated IPO price per share.*

RESPONSE: The Company respectfully acknowledges the Staff's comment.

DRAFT

Any questions or comments should be addressed to the undersigned at (215) 864-8606 or Douglas Fox at (410) 528-5505.

Sincerely,

Justin P. Klein

cc: C. Randal Mills, Ph.D.
President and Chief Executive Officer
Osiris Therapeutics, Inc.
2001 Aliceanna Street
Baltimore, MD 21231

Donald J. Murray, Esq.
Dewey Ballantine LLP
1301 Avenue of the Americas
New York, New York 10019

EXHIBIT A

Schedule of Equity Instrument Grants for the Period from January 1, 2005 to March 31, 2006

Date	Transaction	Stock Grants	Option Grants	Exercise Price	Estimated Fair Value	Intrinsic Value Per Share	Total Value (thousands)
January 11, 2006	Stock Grant	50,000		$ -	$ 1.71	$ 1.71	$ 86
January 11, 2006	Option Grant		560,000	0.10	1.71	1.61	902
February 16, 2006	Option Grant		6,000	0.10	1.71	1.61	10
February 27, 2006	Option Grant		1,000	0.10	1.71	1.61	2
March 27, 2006	Option Grant		5,000	0.10	1.71	1.61	8
March 29, 2006	Option Grant		2,000	0.10	1.71	1.61	3
Activity for the three months ended March 31, 2006		50,000	574,000				1,011
April 3, 2006	Option Grant		5,000	$ 0.10	$ 1.71	$ 1.61	$ 8
April 6, 2006	Option Grant		5,000	1.71	1.71	-	-
April 17, 2006	Option Grant		2,000	1.71	1.71	-	-
April 17, 2006	Stock Grant	40,000		-	1.71	1.71	68
April 19, 2006	Option Grant		3,000	1.71	1.71	-	-
April 20, 2006	Restricted Stock Grant	25,000		-	1.71	1.71	43
May 1, 2006	Option Grant		15,000	1.71	1.71	-	-
June 1, 2006	Stock Grant	1,229		-	1.71	1.71	2
June 12, 2006	Option Grant		300,000	1.71	1.71	-	-
Activity for the period from April 1, 2006 through July 10, 2006		66,229	330,000				$ 121

(1) Restricted Stock Units granted in September 2004

(2) Options granted pursuant to employment agreements entered into in 2004.

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and related expenses for personnel, fees paid to professional service providers for independent monitoring and analysis of our clinical trials, costs of contract research and manufacturing, costs of facilities, and the costs of manufacturing clinical batches of biologic drug candidates, quality control supplies and material to expand biologic drug candidates.

Consistent with our focus on the development of biologic drug candidates with potential uses in multiple indications, many of our costs are not attributable to a specifically identified product. We use our employee and infrastructure resources across several projects. Accordingly, we do not account for internal research and development costs on a project-by-project basis. As a result, we cannot state precisely the total costs incurred for each of our clinical and preclinical projects on a project-by-project basis.

Rider 39

We expect our research and development expenses to increase substantially following the completion of this offering 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. Clinical trials and preclinical studies are time-consuming and expensive. Our expenditures on current and future preclinical and clinical development programs are subject to many uncertainties. We test our products in several preclinical studies, and we then conduct clinical trials for those biologic drug candidates that we determine to be the most promising. As we obtain results from clinical trials, we may elect to discontinue or delay trials for some biologic drug candidates in order to focus our resources on more promising biologic drug candidates. Completion of clinical trials may take several years or more, but the length of time generally varies substantially according to the type, size of trial and intended use of a biologic drug candidate. The cost of clinical trials may vary significantly over the life of a project as a result of a variety of factors, including:

- the number of patients who participate in the trials;
- the number of sites included in the trials;
- the length of time required to enroll trial participants;
- the duration of patient treatment and follow-up;
- the costs of producing supplies of the biologic drug candidates needed for clinical trials and regulatory submissions;
- the efficacy and safety profile of the biologic drug candidate; and
- the costs and timing of, and the ability to secure, regulatory approvals.

As a result of the uncertainties discussed above, we are unable to determine with any significant degree of certainty the duration and completion costs of our research and development projects or when and to what extent we will generate revenues from the commercialization and sale of any of our biologic drug candidates. However, while we do not have specific estimates for the costs of all of our projects, we currently estimate that we will spend approximately $17 million for conducting a Phase III clinical trial for Prochymal to treat steroid refractory GvHD; approximately $6 million for initiating a Phase III clinical trial for Chondrogen; and approximately $18 million for completing separate Phase II clinical trials for Prochymal to treat acute GvHD and Crohn's disease, a Phase I/II clinical trial for Chondrogen and a Phase I clinical trial for Provacel.

15 3

General and Administrative Expenses

General and administrative expenses consist primarily of the costs associated with our general management, including salaries, allocations of facilities and related costs, and

Rider 39

From inception through March 31, 2006, we incurred aggregate research and development costs of approximately $148 million.

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professional fees such as legal and accounting expenses. Following this offering, we anticipate increases in our general and administrative expense for legal and accounting compliance costs, investor relations and other activities associated with operating as a publicly traded company. These increases will also likely include the hiring of additional operational, financial, accounting, facilities engineering and information systems personnel.

Stock-Based Compensation Expenses

We grant stock options to our employees, on the date of their employment and periodically thereafter, as incentives and to align our employees' interests with our success. We endeavor to grant these options with the exercise price equal to the estimated fair value of our common stock.

Prior to April 4, 2006, the fair value of our common stock was estimated by our Board of Directors based upon several factors, including our financial condition, our cash burn rate and our informal analysis of the possible sources and costs of raising additional capital. Based on the specific factors listed further below, during 2005 the Board determined that the fair value of our common stock was $0.10 per share.

We commissioned an independent valuation of our common stock as of December 31, 2005 and received this report on April 4, 2006. The valuation report estimates the fair value of our common stock at December 31, 2005 was $1.71 per share. Prior to this report we did not obtain an independent valuation of our common stock because we did not have the capital resources to invest in a valuation.

Upon receipt of the valuation report, we retrospectively analyzed our Board's past valuations of our equity instruments, and we determined that the estimated fair value of our common stock from January 1, 2005 through September 30, 2005 should remain at $0.10 based on the factors listed below. In October 2005, when we began to achieve success raising additional capital, we determined that the fair value of our common stock should be adjusted to $0.84 per share. Finally, in the middle of December 2005 when a foreign investor invested $20.6 million in exchange for a 6% convertible promissory note, and the enrollments in our clinical trials started to meet our expectations, we adjusted the fair value of our common stock to $1.71 per share. From the middle of December 2005 through March 31, 2006, we have not experienced significant changes in operations which would increase share value.

Based on the independent valuation and our review, we subsequently determined, for financial reporting purposes, to adjust the fair market value of the equity instruments granted during the first quarter of 2006 and we recorded $924,000 of additional deferred compensation relating to stock option grants made during the first quarter of 2006. We are amortizing this deferred compensation into compensation expense over the four-year vesting period. We recognized $60,000 of compensation expense related to deferred compensation in the first quarter of 2006.

The following factors were analyzed by our Board in determining the fair value of our common stock during 2005 and the first quarter of 2006:

- At January 1, 2005, our cash and short-term investments were $488,000, or approximately six weeks' payroll, and we had no demonstrable ability to raise additional capital.
- During the first six months of 2005, we did not realize any commercial sales. Sales of our only currently offered commercial product, Osteocel, did not begin until July 2005. Of the $957,000 in sales recorded by us in 2005, $673,000 or 70% occurred in the fourth quarter of 2005.

Rider 40

We grant stock options to our employees, on the date of their employment and periodically thereafter, as incentives and to align our employees' interests with our success. We endeavor to grant these options with the exercise price equal to the estimated fair value of our common stock.

Prior to April 4, 2006, the fair value of our common stock was estimated by our Board of Directors based upon several factors, including our financial condition, our cash burn rate and our informal analysis of the possible sources and costs of raising additional capital. The following factors were analyzed by our Board in determining the fair value of our common stock during 2005 and the first quarter of 2006:

- At January 1, 2005, our cash and short-term investments were $488,000, or approximately six weeks' payroll.

- During the first six months of 2005, we did not realize any commercial sales. Sales of our only currently offered commercial product, Osteocel, did not begin until July 2005. Of the $957,000 in sales recorded by us in 2005, $673,000 or 70% occurred in the fourth quarter of 2005.

- From January 2005 through the end of the year, we obtained $40.4 million through the issuance of convertible promissory notes. However, of this amount, $32.9 million was not obtained until after June 2005 and $20.6 million was not obtained until December 20, 2005. The effective interest rate on these notes is 15%, with redemption premiums that could increase the future effective interest rate significantly.

- During the first six months of 2005, we offered our Series D Mandatorily Redeemable Convertible Preferred Stock to third parties for $2.00 per share. This Series has a conversion ratio of one share for ten shares of our common stock, or $0.20 per common stock equivalent. As an inducement for investors, the Series D included an $18 per share redemption premium, which becomes due on June 30, 2007 if a successful initial public offering is not consummated prior to that date. In the first quarter of 2005, a number of the Series D shares were issued at $2.00 per share to related parties in exchange for termination of our 10% Convertible Demand Notes held by such parties. As a result, the amount of new cash raised by the Series D offering was approximately $3.3 million.

- Beginning in July 2005, and continuing through year-end, we offered our Series E Convertible Preferred Stock for $2.50 per share and raised $17.5 million of additional equity, $13.3 million, or 76%, of which was received after October 15, 2005.

- The Company's stockholders' deficit increased from $(51.1) million at the end of the first quarter of 2005 to $(78.6) million at the end of the first quarter of 2006.

During the same period, the negative book value or deficit per common share increased from $(1.43) to $(2.15).

Based on the specific factors listed above, during 2005 the Board determined that the fair value of our common stock was $0.10 per share. The Board's periodic determinations of the value of our common stock were typically not made contemporaneously with grants of stock-based compensation, although in some instances those determinations were made contemporaneously with decisions by the Board to grant stock options. Because there was no market for our common stock during 2005, the approval by the Board of option grants at the consistent exercise price of $0.10 per share is indicative of the Board's conclusion that its periodic value determinations were sufficient for stock-based compensation purposes throughout the period.

On February 9, 2006, we commissioned an independent valuation of our common stock as of December 31, 2005. We received this report on April 4, 2006. The report is a retrospective valuation and estimates that the fair value of our common stock at December 31, 2005 was $1.71 per share. Prior to this report we did not obtain an independent valuation of our common stock because we did not have the capital resources to invest in a valuation.

Upon receipt of the valuation report, we retrospectively analyzed our Board's past valuations of our equity instruments, and we determined that the estimated fair value of our common stock from January 1, 2005 through September 30, 2005 should remain at $0.10 per share because of the factors discussed above.

We believe that the value of our common stock did not start to increase above $0.10 per share until the fourth quarter of 2005. First, in October 2005 we began to achieve success raising additional capital, as discussed above. Second, in the fourth quarter of 2005, we began to demonstrate the ability to consistently enroll the patients necessary to advance our clinical trials. Overall, from January through September 30, 2005, we had enrolled only 7% of the total number of patients required to complete enrollment in our clinical trials and there was significant risk that patient enrollment would not meet our business plan. By the end of 2005, as a result of enrolling 35 patients in the fourth quarter versus four patients in the third quarter, the percentage had increased four-fold to 28%. Third, sales of Osteocel, our only marketed product, did not become meaningful until after we executed our distribution agreement with Blackstone Medical, Inc., on November 10, 2005. The execution of this agreement, we believe, provided third party validation of the viability of Osteocel as a commercial product. Sales of Osteocel were $284,000 in the third quarter of 2005, but increased substantially to $673,000 in the fourth quarter. Therefore, we have since determined that the fair value of our common stock should be adjusted for financial reporting purposes to $0.84 per share as of October 1, 2005.

In the middle of December 2005, a foreign investor invested $20.6 million in exchange for a 6% convertible promissory note. In addition, approximately $340,000 of the fourth quarter Osteocel sales, representing more than one third of all Osteocel sales for the year, occurred in December 2005. Finally, enrollments in our clinical trials started to meet our expectations in the first quarter of 2006, as 84 additional patients were enrolled,

increasing our enrollment percentage to 79%. Therefore, we have since determined that the fair value of our common stock should be adjusted for financial reporting purposes to $1.71 per share as of December 20, 2005. From the middle of December 2005 through March 31, 2006, we have not experienced significant changes in operations which we believe would increase share value.

Based on the independent valuation and our review, we subsequently determined, for financial reporting purposes, to adjust the fair market value of the equity instruments granted during the fourth quarter of 2005 and the first quarter of 2006. We recorded $283,000 of additional deferred compensation relating to stock option grants made during the fourth quarter of 2005, and $924,000 of additional deferred compensation relating to stock option grants made during the first quarter of 2006. We are amortizing this deferred compensation into compensation expense over the four-year vesting period. We recognized $6,000 of compensation expense related to deferred compensation in the fourth quarter of 2005, and $60,000 of compensation expense related to deferred compensation in the first quarter of 2006.

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- During the first six months of 2005, we offered our Series D Mandatorily Redeemable Convertible Preferred Stock to third parties for $2.00 per share. This Series has a conversion ratio of one share for ten shares of our common stock, or $0.20 per common stock equivalent. As an inducement for investors, the Series D included an $18 per share redemption premium, which becomes due on June 30, 2007 if a successful IPO is not consummated prior to that date. In the first quarter of 2005, a number of the Series D shares were issued to related parties in exchange for termination of our 10% Convertible Demand Notes held by such parties. As a result, the amount of new cash raised by the Series D offering was less than $3.0 million.
- Beginning in June 2005, and continuing through year-end, we obtained $19.8 million through the issuance of convertible promissory notes that included beneficial conversion features.
- Beginning in July 2005, and continuing through year-end, we offered our Series E Convertible Preferred Stock for $2.50 per share and raised $17.5 million of additional equity, $13.3 million, or 76%, of which was received after October 15, 2005.
- On December 20, 2005, we obtained $20.6 million through the issuance of a convertible promissory note. The effective interest rate on this note is 15%, with redemption premiums that could increase the future effective interest rate significantly.

Interest Expense

Interest expense consists of interest incurred on our debt. We pay interest on our bank loan and capital leases and accrue non-cash interest on some of our convertible long-term debt. At December 31, 2005, we had debt of approximately $47.5 million that bears interest at stated rates between 5% and 8% per year and the majority of which is expected to be converted into equity or repaid upon successful completion of an initial public offering. Certain redemption of premiums result in an effective yield of 15% on certain issues. Upon conversion we expect that the majority of the $4.8 million of interest expense we incurred in 2005 will eventually be paid through the issuance of common stock, and not in cash. At December 31, 2004, we had debt of approximately $9.9 million that bears interest at between 5% and 10% per year resulting in interest expense of approximately $0.9 million in 2004.

Income Taxes

We have not recognized any deferred tax assets or liabilities in our financial statements since we cannot assure their future realization. Because realization of deferred tax assets is dependent upon future earnings, a full valuation allowance has been recorded on the net deferred tax assets, which relate primarily to net operating loss carryforwards. In the event that we become profitable within the next several years, we have net deferred tax assets of approximately $57.3 million that may be utilized prior to us having to recognize any income tax expense or make payments to the taxing authorities. Utilization of our net operating loss carryforwards in any one year may be limited however, and we could be subject to the alternative minimum tax.

Critical Accounting Policies

General

Our discussion and analysis of our financial condition and results of operations are based on our financial statements, which we have prepared in accordance with accounting principles generally accepted in the United States. The preparation of these financial statements requires us to make estimates and judgments that affect the reported amounts of assets, liabilities,

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royalties. In the quarter ended March 31, 2005, we recognized $0.4 million in licensing fees and royalties. We did not have any revenue from our Osteocel product in the prior year, as the product had not been launched.

Cost of Goods Sold

Cost of goods sold were $0.5 million for the quarter ended March 31, 2006 compared to $0.0 in the prior year. The cost of goods sold associated with sales of Osteocel was comprised of payments to tissue banks, direct labor costs and the costs of processing, testing and preserving Osteocel. We did not have any cost of goods sold from our Osteocel product in the prior year, as the product had not been launched.

Research and Development Expenses

Research and development costs were approximately $4.4 million for the quarter ended March 31, 2006 compared to $2.7 million in the prior year. The increase in research and development costs in 2006 reflects the increased number of clinical trials in process versus the prior year. In 2006, we incurred costs associated with the enrollment of a Phase II trial for Prochymal as an add-on therapy to steroids for the first-line treatment of acute GvHD, a Phase II trial for Prochymal for treatment of steroid refractory GvHD, a Phase II trial for Prochymal for treatment of Crohn's Disease, a Phase I/II clinical trial for Chondrogen, and a Phase I clinical trial for Provacel. In the first quarter of 2006, we conducted a total of five trials enrolling patients versus two such trials in the prior year.

Rider 44a

General and Administrative Expenses

General and administrative expenses were $1.1 million for the quarter ended March 31, 2006 compared to $0.8 million in the prior year. The increase was primarily attributable to the payment of expense reimbursement relating to the fundraising efforts of Mr. Friedli.

Interest Expense, Net

Interest expense, net was $0.5 million for the quarter ended March 31, 2006 compared to $0.8 million in the prior year.

Rider 44b

Comparison of Years ended December 31, 2005 and 2004

Revenue

Total revenues were $4.0 million for the year ended December 31, 2005, compared to $3.9 million in the prior year. Our revenues in 2005 resulted primarily from $1.0 million generated from the sale of Osteocel, the recognition of $0.9 million in licensing fees resulting from our agreement with Boston Scientific for our cardiac technology, royalty fees of $0.5 million recognized upon completion of the transfer of technology to JCR Pharmaceuticals, and $1.4 million in revenues recognized upon completion of work in furtherance of governmental grants. In 2004, we recognized $2.0 million in license fees from JCR Pharmaceuticals for the future distribution of our products in Japan, $0.9 million in licensing fees from Boston Scientific, and $0.8 million relating to completion of work in furtherance of our grants from the U.S. government. These grants were completed during the second quarter of 2005. We do not expect that future grant revenue will be material.

Cost of Goods Sold

Cost of goods sold were $0.4 million for the year ended December 31, 2005 compared to $0.0 in the prior year. We launched Osteocel in July 2005. The cost of goods sold associated

Rider 44a

Of this $4.4 million, approximately $1.9 million is attributable to external research and clinical trials, $1.3 million to the cost of science supplies including research materials for cell manufacture, media and testing supplies, $0.8 million to payroll and related expenses for personnel, and $0.3 million to facilities and equipment costs.

Rider 44b

The decrease was attributable to a lower average level of debt in 2006 than in the prior year, due to the conversion of 10% Convertible Demand Notes into shares of Series D mandatorily redeemable convertible preferred stock in the first quarter of 2005.

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with sales of Osteocel was comprised of payments to tissue banks and the costs of processing, testing and preserving Osteocel.

Research and Development Expenses

Research and development costs were approximately $16.9 million for the year ended December 31, 2005 compared to $11.9 million in the prior year. The increase in research and development expenses in 2005 reflects the costs we incurred in the initiation of a Phase II trial for Prochymal as an add-on therapy to steroids for the first-line treatment of acute GvHD, a Phase II trial for Prochymal for treatment of steroid refractory GvHD, a Phase I/II clinical trial for Chondrogen, and a Phase I clinical trial for Provacel during the year.

Rider 45a

General and Administrative Expenses

General and administrative expenses were $2.3 million for the year ended December 31, 2005 compared to $1.7 million in the prior year. The increase in general and administrative expenses in 2005 compared to 2004 primarily reflects the costs of our new management team. In the third quarter of 2004, our Chief Executive Officer and Chief Operating Officer joined us and, in the fourth quarter of 2004, our Chief Financial Officer was hired. These three positions were previously vacant.

Interest Expense, Net

Interest expense, net was $4.3 million for the year ended December 31, 2005 compared to $0.8 million in the prior year. The increase was attributable to a higher average level of debt in 2005 than in the prior year. The non-cash portion of our interest expense was $3.5 million in 2005 compared to $0.5 in 2004.

million

Comparison of Years ended December 31, 2004 and 2003

Revenues

We had no product sales in 2004 or 2003. Revenues for the year ended December 31, 2004 were $3.9 million compared to $4.0 million in the prior year. Our revenues in 2004 resulted primarily from the recognition of license fees of $0.9 million, resulting from our agreement with Boston Scientific for our cardiac technology, license fees of $2.0 million from JCR Pharmaceuticals for the future distribution of our products in Japan, and $0.8 million in revenues recognized upon completion of work in furtherance of grants from the U.S. government. In 2003, we recognized $1.4 million relating to work on two grants with the U.S. Defense Advanced Research Projects Agency, DARPA, for research, license fees of $1.0 million from JCR Pharmaceuticals for the future distribution of our products in Japan, license fees of $0.8 million, resulting from our agreement with Boston Scientific for our cardiac technology, and $0.7 million in revenues recognized upon completion of work in furtherance of grants from the U.S. government.

Research and Development Expenses

Research and development costs were approximately $11.9 million for the year ended December 31, 2004 compared to $18.6 million in the prior year. The decrease in research and development expenses in 2004 was driven by lower employee headcount and a reduction in research costs as we transitioned to a company centered on the development and commercialization of stem cell products. Additionally, in 2004 we began outsourcing the management of our clinical trials to third parties who we believe can achieve better results at a lower cost to us. This change helped further reduce our 2004 research and development expenses as compared to 2003.

Rider 45b

Rider 45a

Of this $16.9 million in 2005 research and development costs, , approximately $7.4 million is attributable to external research and clinical trials, $3.9 million to the cost of science supplies including research materials for cell manufacture, media and testing supplies, $3.4 million to payroll and related expenses for personnel, and $2.2 million to facilities and equipment costs.

Rider 45b

Of this $11.9 million in 2004 research and development costs, approximately $3.6 million is attributable to external research and clinical trials, $1.3 million to the cost of science supplies including research materials for cell manufacture, media and testing supplies, $4.8 million to payroll and related expenses for personnel, and $2.1 million to facilities and equipment costs.

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Series 2003 Convertible Preferred Stock so request, we are required to file a registration statement on Form S-3 provided that the reasonably anticipated aggregate price to the public of the registered shares would be $15 million or more. We will not be eligible to seek effectiveness of a Registration Statement covering these shares on Form S-3 until at least one year after the date of this prospectus. We are responsible for all expenses incurred in connection with any registration under either of these investor rights agreements, other than underwriting discounts and commissions. The registration rights are assignable by JCR and Boston Scientific, respectively, only to an affiliate of JCR and Boston Scientific, as defined in the respective agreements. The registration rights of any holder under either agreement terminate four years after this offering or at such earlier time as all securities held by such holder may be sold under Rule 144 of the Securities Act. Both Boston Scientific and JCR have waived any registration rights with respect to this offering.

The November 28, 2005 Registration Rights Agreement with the holder of our $20.6 million convertible promissory note requires us, upon the exercise of the holder's option to convert in the event of an initial public offering, to register all securities issuable upon the conversion of the note. We are responsible for all expenses incurred in connection with any such registration, other than underwriters' commissions and fees. However, the holder's option to convert under the $20.6 million note arises only if an initial public offering of our common stock occurs after December 20, 2006 and will terminate upon consummation of this offering.

Rider 93

Equity Plan

We intend to file, shortly after the effectiveness of this offering, a registration statement on Form S-8 under the Securities Act covering all shares of common stock reserved for issuance under our amended and restated 1994 stock incentive plan and 2006 Omnibus Plan. Shares of common stock issued upon exercise of options under the Form S-8 will be available for sale in the public market, subject to limitations under Rule 144 applicable to our affiliates and subject to the lock-up agreements described above.

Rider 93

None of the registration rights agreements discussed above provide for any liquidating damages as contemplated in EITF 05-4 "The Effect of a Liquidating Damages Clause on a Freestanding Financial Instrument Subject to Issue No. 00-19." Although we are subject to certain obligations under the registration rights agreements, there is no cash or other form of liquidating damages associated with our failure to successfully register the shares.

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OSIRIS THERAPEUTICS, INC.
NOTES TO FINANCIAL STATEMENTS (Continued)
YEARS ENDED DECEMBER 31, 2005, 2004 AND 2003
AND THE THREE MONTHS ENDED MARCH 31, 2006 AND 2005 (UNAUDITED)
(amounts in thousands, except for share and per share data)

1. Description of Business and Significant Accounting Policies (Continued)

we entered into such an agreement with Boston Scientific Corporation pertaining to our cardiac drug development and we received a $5 million fee for licensing the use of our technology. This fee is being recognized as revenue over a 63-month period, $952 of which was recognized in each of 2005 and 2004, and $794 was recognized in 2003. Also in 2003, we entered into a similar agreement with JCR Pharmaceuticals Co., Ltd. ("JCR") pertaining to our hematologic malignancies drugs for distribution in Japan. We recognized $500 of revenue in 2005 and $2 million in 2004 and $1 million in 2003 from the JCR agreement.

Revenues from collaborative research licenses and grants are recognized as earned upon either the incurring of reimbursable expenses directly related to the particular research plan or the completion of certain development milestones as defined within the terms of the collaborative agreement. Payments received in advance of research performed are designated as deferred revenue. We recognize non-refundable upfront license fees and certain other related fees on a straight-line basis over the development period. Fees associated with substantive at risk, performance based milestones are recognized as revenue upon their completion, as defined in the respective agreements. Incidental assignment of technology rights is recognized as revenue as earned.

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Historically, we have also recognized revenue from governmental grants for research products and in 2005 we recorded $1.4 million in grant revenue as we completed work on three separate grants. In 2004, we earned $844 from governmental research grants. Revenue from research grants is recognized as the related research expenditures are incurred. The Company no longer solicits governmental grants.

Cost of Goods Sold

In July 2005, we launched Osteocel. Costs of goods sold consists primarily of the costs to obtain the tissue and other chemicals and supplies. Our manufacturing processes are still being refined and, therefore, we expense manufacturing labor costs as incurred. These labor costs are reported as research and development costs.

Research and development costs

Research and development costs are expensed as incurred.

Income taxes

Deferred tax liabilities and assets are recognized for the estimated future tax consequences of temporary differences, income tax credits and net operating loss carryforwards. Temporary differences are primarily the result of the differences between the tax bases of assets and liabilities and their financial reporting values. Deferred tax liabilities and assets are measured by applying the enacted statutory tax rates applicable to the future years in which deferred tax liabilities or assets are expected to be settled or realized. Valuation allowances are established when necessary to reduce deferred tax assets to the amount

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and was received from an unrelated third party.

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This conversion price is the same price as was paid by other purchasers of the Series D Mandatorily Redeemable Preferred Stock.

3. Notes Payable and Capital Lease Obligations (Continued)

Demand Notes, plus the 10% premium of $235 and accrued interest of $120 were converted into 1,352,325 shares of our Series D Mandatorily Redeemable Convertible Preferred Stock, representing a conversion price of $2.00 per share.

As of December 31, 2005, we have issued convertible promissory notes to twenty-six stockholders for a total of $19.8 million. These notes will pay interest at 6% per annum, payable after 12 months, 24 months, and at maturity. These notes are due and payable in June 2008, unless earlier converted into common stock. If we successfully close an underwritten initial public offering ("IPO") of common stock of $25 million or more, the holders of the notes will have the option of a) converting the note into common shares of the Company or b) demand redemption of the principal and any accrued but unpaid interest. The notes provide for discounted conversion features providing the holder to convert to common stock at prices between 75% and 85% of the IPO price based upon specified dates. The notes are not convertible on the commitment date. In accordance with EITF 98-5 "Accounting for Convertible Securities with Beneficial Conversion Features or Contingently Adjustable Conversion Ratios" the intrinsic value of the conversion feature will be recorded upon completion of an IPO.

In November 2005, we issued a $20.6 million convertible promissory note to a foreign investment bank. The note matures on November 28, 2008 and bears interest, payable annually at 6%. This note also provides for redemption premiums starting at 9% and escalating up to 27%, depending upon the date of redemption. This note is convertible into common stock at the sole discretion of the holder if an IPO occurs after December 20, 2006. The conversion rate is based on the offering price of the IPO. Upon the noteholder's election to convert, we must take all necessary steps to register the resulting shares pursuant to a separate registration rights agreement with the holder. We have accrued the redemption premium that we are presently obligated for as long-term interest payable with a corresponding charge to interest expense resulting in an effective yield of 15% for the year ended December 31, 2005. The accrued premium at December 31, 2005 was $1,854.

In September 2004, we issued a convertible promissory note to a foreign investor for $2.0 million. This loan bears interest at 5% and the principal and accrued interest is convertible into our common stock at the conversion rate of $1.50 per share. If not converted, this loan becomes due on September 20, 2008. This note also provides for redemption premiums starting at 5% and escalating up to 20% depending upon the date of redemption. We have accrued the redemption premium we are presently obligated for as long-term interest payable with a corresponding charge to interest expense resulting in an effective yield of 15% for the year ended December 31, 2005. The accrued premium at December 31, 2005 was $200.

In February 2003, all of our then outstanding convertible debentures totaling $23.8 million and related accrued interest totaling $3.2 million were converted into 26.2 million shares of common stock. This represents a conversion rate of $1.03 per share of common stock.