

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 12b-25

NOTIFICATION OF LATE FILING

SEC File Number: 001-32966
CUSIP Number: 68827R 10 8

(Check one):

- Form 10-K Form 20-F Form 11-K Form 10-Q Form 10-D
 Form N-SAR Form N-CSR

For Period Ended: September 30, 2017

- Transition Report on Form 10-K
 Transition Report on Form 20-F
 Transition Report on Form 11-K
 Transition Report on Form 10-Q
 Transition Report on Form N-SAR
For the Transition Period Ended: _____

Read Instructions (on back page) Before Preparing Form. Please Print or Type.
Nothing in this form shall be construed to imply that the Commission has verified any information contained herein.

If the notification relates to a portion of the filing checked above, identify the Item(s) to which the notification relates:

PART I — REGISTRANT INFORMATION

OSIRIS THERAPEUTICS, INC.

Full Name of Registrant

Former Name if Applicable

7015 Albert Einstein Drive

Address of Principal Executive Office (Street and Number)

Columbia, Maryland 21046

City, State and Zip Code

PART II — RULES 12b-25(b) AND (c)

If the subject report could not be filed without unreasonable effort or expense and the registrant seeks relief pursuant to Rule 12b-25(b), the following should be completed. (Check box if appropriate)

- (a) The reason described in reasonable detail in Part III of this form could not be eliminated without unreasonable effort or expense
(b) The subject annual report, semi-annual report, transition report on Form 10-K, Form 20-F, Form 11-K, Form N-SAR or Form N-CSR, or portion thereof, will be filed on or before the fifteenth calendar day following the prescribed due date; or the subject quarterly report or transition report on Form 10-Q or subject distribution report on Form 10-D, or portion thereof, will be filed on or before the fifth calendar day following the prescribed due date; and
(c) The accountant's statement or other exhibit required by Rule 12b-25(c) has been attached if applicable.

PART III — NARRATIVE

State below in reasonable detail why Forms 10-K, 20-F, 11-K, 10-Q, 10-D, N-SAR, N-CSR, or the transition report or portion thereof, could not be filed within the prescribed time period.

Osiris Therapeutics, Inc. (the "Company") is unable to file its Quarterly Report on Form 10-Q for the quarter ended September 30, 2017 by the prescribed due date of November 9, 2017.

As previously disclosed, Ernst & Young LLP ("EY") was engaged as the Company's independent registered public accounting firm on May 16, 2017. Since that time, the Company has been diligently working with EY on the audits of the Company's 2015 and 2016 financial statements. While substantial progress has been made, the audits will take more time than previously anticipated. As a result, the Company does not expect the 2015 and 2016 audited financial statements to be completed prior to December 31, 2017.

In light of this updated timing for completing the audits for 2015 and 2016, the Audit Committee of the Board of Directors of the Company, in consultation with management and EY, has determined that the quickest and most efficient way for the Company to become current in its SEC reporting obligations is to file an Annual Report on Form 10-K that includes audited financial statements for the years ended December 31, 2015, 2016 and 2017. The Company intends to include 2017 quarterly financial information and related disclosures in this comprehensive Form 10-K filing in lieu of filing Quarterly Reports on Form 10-Q for the quarters ended March 31, 2017, June 30, 2017 and September 30, 2017. The Company currently believes that it will be able to make this comprehensive Form 10-K filing in the first quarter of 2018.



PART IV — OTHER INFORMATION

(1) Name and telephone number of person to contact in regard to this notification
Linda Chang 443 545-1800
(Name) (Area Code) (Telephone Number)

(2) Have all other periodic reports required under Section 13 or 15(d) of the Securities Exchange Act of 1934 or Section 30 of the Investment Company Act of 1940 during the preceding 12 months or for such shorter period that the registrant was required to file such report(s) been filed? If answer is no, identify report(s).

Yes No

Annual Report on Form 10-K for the period ended December 31, 2015
Quarterly Report on Form 10-Q for the period ended March 31, 2016
Quarterly Report on Form 10-Q for the period ended June 30, 2016
Quarterly Report on Form 10-Q for the period ended September 30, 2016
Annual Report on Form 10-K for the period ended December 31, 2016
Quarterly Report on Form 10-Q for the period ended March 31, 2017
Quarterly Report on Form 10-Q for the period ended June 30, 2017

(3) Is it anticipated that any significant change in results of operations from the corresponding period for the last fiscal year will be reflected by the earnings statements to be included in the subject report or portion thereof?

Yes No

If so, attach an explanation of the anticipated change, both narratively and quantitatively, and, if appropriate, state the reasons why a reasonable estimate of the results cannot be made.

Due to the ongoing work of the Company described above, the Company is unable to quantify or provide a reasonable estimate of the changes in results of operations for the quarter ended September 30, 2017 until such review is complete.

Forward-Looking Statements

Certain matters discussed in this Form 12b-25 constitute forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. These forward-looking statements are based on management's current beliefs, assumptions and expectations regarding future events, which in turn are based on information currently available to management. Such forward-looking statements include statements about the Company's ability to complete and audit its financial statements for the years ended December 31, 2015, 2016 and 2017, anticipated timing of the filing of its comprehensive Annual Report on Form 10-K for 2017, and its ability to quantify or provide estimates to changes in results of operations for the same period. We caution you not to place undue reliance on any such forward-looking statements. Several factors could cause actual results to differ materially from those expressed in or contemplated by the forward-looking statements. Such factors include, but are not limited to, the identification of additional accounting adjustments from the Company's ongoing work on the Company's financial statements, changes in the scope or focus of the accounting adjustments in the restatement of 2015 interim periods, the timing of completion of the audit of our 2015, 2016 and 2017 financial statements by our new independent registered public accounting firm, or delays in the preparation of our Annual Report on Form 10-K for the year ended December 31, 2017. Other risk factors affecting the Company are discussed in detail in the Company's filings with the SEC, including its Annual Report on Form 10-K/A for the year ended December 31, 2014. We undertake no obligation to publicly update or revise any forward-looking statement, whether as a result of new information, future events or otherwise, except as required by law.

OSIRIS THERAPEUTICS, INC.

(Name of Registrant as Specified in Charter)

has caused this notification to be signed on its behalf by the undersigned hereunto duly authorized.

Date: November 13, 2017

By: /s/ Linda Chang
Name: Linda Chang
Title: Chief Financial Officer

INSTRUCTION: The form may be signed by an executive officer of the registrant or by any other duly authorized representative. The name and title of the person signing the form shall be typed or printed beneath the signature. If the statement is signed on behalf of the registrant by an authorized representative (other than an executive officer), evidence of the representative's authority to sign on behalf of the registrant shall be filed with the form.

ATTENTION

Intentional misstatements or omissions of fact constitute Federal Criminal Violations (See 18 U.S.C. 1001).