Filed Pursuant to Rule 424(b)(3)
Registration No. 333-204905

Prospectus Supplement No. 17
(To Prospectus dated October 14, 2015)

4,000,000 shares of common stock issuable upon the exercise of the 4,000,000 outstanding Class A warrants

and

2,000,000 shares of common stock issuable upon the exercise of the 4,000,000 outstanding Class B warrants

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This prospectus supplement No. 17 supplements the prospectus dated October 14, 2015 filed pursuant to Rule 424(b)(4) by Cerecor Inc. (the "Company" or "we"), as supplemented by the prospectus supplement No. 1 dated October 20, 2015, the prospectus supplement No. 2 dated November 13, 2015, the prospectus supplement No. 3 dated November 23, 2015, the prospectus supplement No. 4 dated December 17, 2015, the prospectus supplement No. 5 dated December 21, 2015, the prospectus supplement No. 6 dated December 29, 2015, the prospectus supplement No. 7 dated January 5, 2016, the prospectus supplement No. 8 dated January 12, 2016, the prospectus supplement No. 9 dated January 19, 2016, the prospectus supplement No. 10 dated February 2, 2016, the prospectus supplement No. 11 dated April 11, 2016, the prospectus supplement No. 12 dated May 25, 2016, the prospectus supplement No. 13 dated May 26, 2016, the prospectus supplement No. 14 dated May 26, 2016, the prospectus supplement No. 15 dated July 20, 2016 and the prospectus supplement No. 16 dated August 15, 2016, each filed pursuant to Rule 424(b)(3) by the Company (collectively, the "Prospectus"). Pursuant to the Prospectus, this prospectus supplement relates to the continuous offering of 4,000,000 shares of common stock underlying our Class A warrants and 2,000,000 shares of our common stock underlying Class B warrants. Each warrant was a component of a unit that we issued in our initial public offering, which closed on October 20, 2015. The components of the units began to trade separately on November 13, 2015. Each Class A warrant became exercisable on the date when the units detached and the components began to trade separately and will expire on October 20, 2018, or earlier upon redemption. Each Class B warrant became exercisable on the date the units detached and the components began to trade separately and will expire on April 20, 2017.

This prospectus supplement incorporates into our Prospectus the information contained in Item 8.01 of our attached Current Report on Form 8-K, which was filed with the Securities and Exchange Commission on August 29, 2016.

You should read this prospectus supplement in conjunction with the Prospectus, including any supplements and amendments thereto. This prospectus supplement is qualified by reference to the Prospectus except to the extent that the information in this prospectus supplement supersedes the information contained in the Prospectus.

This prospectus supplement is not complete without, and may not be delivered or utilized except in connection with, the Prospectus, including any supplements and amendments thereto.

Our common stock, the Class A warrants and the Class B warrants are traded on The NASDAQ Capital Market under the symbols "CERC," "CERCW," and "CERCZ," respectively.

AN INVESTMENT IN OUR SECURITIES INVOLVES A HIGH DEGREE OF RISK. SEE THE SECTION ENTITLED "RISK FACTORS" BEGINNING ON PAGE 16 OF THE PROSPECTUS FOR A DISCUSSION OF INFORMATION THAT SHOULD BE CAREFULLY CONSIDERED IN CONNECTION WITH AN INVESTMENT IN OUR SECURITIES

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 supplement is August 29, 2016

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

FORM 8-K

CURRENT REPORT

Pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934

Date of Report (Date of earliest event reported): **August 29, 2016**

Cerecor Inc.

(Exact name of Registrant as Specified in Its Charter)

Delaware	**001-37590**	**45-0705648**
(State or Other Jurisdiction of Incorporation)	(Commission File Number)	(IRS Employer Identification No.)

400 E. Pratt Street **Suite 606** **Baltimore, Maryland**	**21202**
(Address of Principal Executive Offices)	(Zip Code)

Registrant's Telephone Number, Including Area Code: **(410) 522-8707**

Not Applicable
(Former Name or Former Address, if Changed Since Last Report)

Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation of the registrant under any of the following provisions (see General Instructions A.2. below):

☐ Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425)

☐ Soliciting material pursuant to Rule 14a-12 under the Exchange Act (17 CFR 240.14a-12)

☐ Pre-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b))

☐ Pre-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c))

Item 7.01. Regulation FD Disclosure.

On August 29, 2016, Cerecor Inc. (the "***Company***") issued a press release, further described in Item 8.01 below, in connection with the initiation of a second Phase 2 clinical trial for CERC-501. A copy of the press release is attached hereto as Exhibit 99.1 and incorporated herein by reference.

The information in this Item 7.01 of this Current Report on Form 8-K (including Exhibit 99.1) is being furnished and shall not be deemed "filed" for purposes of Section 18 of the Securities Exchange Act of 1934, as amended (the "***Exchange Act***"), or otherwise subject to the liabilities of that Section. The information in this Current Report shall not be deemed incorporated by reference in any filing under the Securities Act of 1933, as amended, or the Exchange Act, except as expressly set forth by specific reference in such a filing.

Item 8.01. Other Events.

Initiation of Second CERC-501 Phase 2 Clinical Trial in Smokers

On August 29, 2016, the Company announced that the first subject had been enrolled in a new Phase 2 clinical trial for CERC-501, *"Does CERC-501 Attenuate Stress-Related Smoking Lapse?"* The study is a collaborative effort between the Company and Dr. Sherry McKee from Yale University and is supported by funding from the National Institutes of Health. The primary objective of the double-blind, placebo-controlled, crossover study is to evaluate whether CERC-501, compared to placebo, will increase the ability to resist smoking, and reduce subsequent smoking following overnight nicotine deprivation and personalized stress imagery in subjects who are heavy smokers.

Item 9.01. Financial Statements and Exhibits.

Exhibit No.	Description
99.1	Press Release, dated August 29, 2016, entitled "Cerecor Inc. Announces Initiation of Second CERC-501 Phase 2 Clinical Trial in Smokers."

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned thereunto duly authorized.

Cerecor Inc.

By: /s/ Mariam Morris
Mariam Morris
Chief Financial Officer

Date: August 29, 2016

EXHIBIT INDEX

Exhibit No.	Description
99.1	Press Release, dated August 29, 2016, entitled "Cerecor Inc. Announces Initiation of Second CERC-501 Phase 2 Clinical Trial in Smokers."

Exhibit 99.1

Cerecor Inc. Announces Initiation of Second CERC-501 Phase 2 Clinical Trial in Smokers

Study to evaluate the effect of CERC-501 on stress-related smoking lapse

BALTIMORE--(BUSINESS WIRE)—**August 29, 2016**-- Cerecor Inc. (NASDAQ: CERC), a biopharmaceutical company developing innovative drugs that have the potential to make a difference in the lives of patients with neurological and psychiatric disorders, today announced that Dr. Sherry McKee from Yale University has enrolled the first subject in the Phase 2 clinical trial for CERC-501, *"Does CERC-501 Attenuate Stress-Related Smoking Lapse?"* The study is a collaborative effort between Cerecor and Dr. McKee and is supported by funding from the National Institutes of Health (NIH). "Stress is a primary contributor to the maintenance of, and relapse to, smoking, and targeting stress-related relapse as a medication development strategy is a critical, yet relatively unexplored area of research," says Dr. McKee. "Preclinical findings suggest that the kappa opioid receptor system is involved in stress-induced relapse to tobacco and we anticipate that a receptor antagonist, such as CERC-501, has the potential to be of therapeutic benefit."

The primary objective of the double-blind, placebo-controlled, crossover study is to evaluate whether CERC-501, compared to placebo, will increase the ability to resist smoking, and reduce subsequent smoking following overnight nicotine deprivation and personalized stress imagery in subjects who are heavy smokers. "We are enthusiastic about the potential use of CERC-501 for addictive disorders, including smoking cessation," said Dr. Ronald N. Marcus, Chief Medical Officer and Head of Regulatory Affairs at Cerecor.

About CERC-501
CERC-501 is a potent and selective oral kappa opioid receptor (KOR) antagonist being developed to treat substance use disorders and as an adjunctive treatment of major depressive disorder (MDD). KORs have been shown to play an important role in stress, mood and addiction in animal models. CERC-501 has been observed to have positive preclinical activity in models of depression, nicotine withdrawal and alcohol dependence, and it has been generally well tolerated in three human clinical trials. Cerecor is currently studying the effect of CERC-501 on nicotine withdrawal in a Phase 2 study that is anticipated to provide top-line data in the fourth quarter of 2016 (the study is being supported by a grant from the National Institute on Drug Abuse at the NIH). In addition, the National Institute on Alcohol Abuse and Alcoholism at the NIH is funding an ongoing clinical trial for CERC-501 on depressive symptoms across mood and anxiety spectrum disorders. A private foundation is providing support for the ongoing clinical study of CERC-501 in cocaine addiction conducted at the Rockefeller University Hospital. Cerecor is planning to initiate a Phase 2 study with CERC-501 as an adjunctive treatment of MDD in the first half of 2017.

About Cerecor
Cerecor is a biopharmaceutical company that is developing innovative drugs that make a difference in the lives of patients with neurological and psychiatric diseases. Cerecor is currently pursuing the development of two clinical Phase 2-stage product candidates: CERC-501 and CERC-301, an oral, NR2B-specific, NMDA receptor antagonist. Cerecor is currently conducting a Phase 2 study of CERC-301 as an adjunctive treatment of MDD and expects to announce results from that study in the first half of 2017. In addition, Cerecor is conducting preclinical testing of CERC-406, a brain penetrant COMT inhibitor with potential procognitive activity. For more information about the company and its products, please visit www.cerecor.com or contact Mariam E. Morris, Chief Financial Officer, at (443) 304-8002.

Forward-Looking Statements
This press release may include forward-looking statements made pursuant to the Private Securities Litigation Reform Act of 1995. Forward-looking statements are statements that are not historical facts. Such forward-looking statements are subject to significant risks and uncertainties that are subject to change based on various factors (many of which are beyond Cerecor's control), which could cause actual results to differ from the forward-looking statements. Such statements include statements regarding potential benefits and uses of Cerecor's product candidates, statements about the timing of expected trial results and other statements with respect to Cerecor's plans, objectives, projections, expectations and intentions, including statements identified by words such as "projects," "may," "will," "could," "would," "should," "believes," "expects," "anticipates," "estimates," "intends," "plans," "potential" or similar expressions. These statements are based upon the current beliefs and expectations of Cerecor's management but are subject to significant risks and uncertainties, including those detailed in Cerecor's filings with the Securities and Exchange Commission. Actual results may differ from those set forth in the forward-looking statements. Except as required by applicable law, Cerecor expressly disclaims any obligations or undertaking to release publicly any updates or revisions to any forward-looking statements contained herein to reflect any change in Cerecor's expectations with respect thereto or any change in events, conditions or circumstances on which any statement is based.

MacDougall Biomedical Communications
Doug MacDougall or Joe Rayne, 781-235-3060
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