

Prospectus Supplement No. 21  
(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. 21 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, the prospectus supplement No. 16 dated August 15, 2016, the prospectus supplement No. 17 dated August 29, 2016, the prospectus supplement No. 18 dated September 6, 2016, the prospectus supplement No. 19 dated September 12, 2016 and the prospectus supplement No. 20 dated September 21, 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 our attached Current Report on Form 8-K, which was filed with the Securities and Exchange Commission on September 26, 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.

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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

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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.

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The date of this prospectus supplement is September 26, 2016

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

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**FORM 8-K**

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**CURRENT REPORT**

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

Date of Report (Date of earliest event reported): **September 22, 2016**

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**Cerecor Inc.**

(Exact name of Registrant as Specified in Its Charter)

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**Delaware**  
(State or Other Jurisdiction  
of Incorporation)

**001-37590**  
(Commission  
File Number)

**45-0705648**  
(IRS Employer Identification No.)

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

**21202**  
(Zip Code)

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

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

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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))
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**Item 1.01. Entry into a Material Definitive Agreement.**

*Exclusive License, Development and Commercialization Agreement*

On September 22, 2016, the Company entered into an exclusive license, development and commercialization agreement (the “Exclusive License Agreement”) with Eli Lilly and Company (“Lilly”) pursuant to which the Company received exclusive, global rights to develop and commercialize LY3130481, now designated as CERC-611, a potent and selective Transmembrane AMPA Receptor Regulatory Proteins (“TARP”)- $\gamma$ 8-dependent AMPA receptor antagonist.

The Company’s rights under the Exclusive License Agreement are exclusive (even as to Lilly) for the term of the Exclusive License Agreement, with the right to grant sublicenses through multiple tiers. Lilly retains rights for internal, non-clinical research purposes. The Company is obligated under the Exclusive License Agreement to use commercially reasonable efforts to develop and commercialize CERC-611 at its expense. If Lilly obtains a license for any future patent rights or know-how necessary for the development, commercialization or manufacture under the Exclusive License Agreement, the Company has the right, but not the obligation, to consent to include such patent rights or know-how, as well as the right to terminate any such license in the Company’s discretion.

The terms of the Exclusive License Agreement provide for an upfront payment of \$2.0 million, of which \$750,000 is due within 30 days of the effective date of the Exclusive License Agreement, and the remaining balance of \$1.25 million is due after the first subject is dosed with CERC-611 in a multiple ascending dose study. The terms of the Exclusive License Agreement also require that the Company make one-time development, commercialization and sales milestone payments to Lilly of up to \$67.5 million. When and if commercial sales of CERC-611 begin, the Company will be obligated to pay Lilly a royalty in the mid-single digits to low double digits based on net sales.

The Exclusive License Agreement also includes customary representations, warranties and covenants. Subject to certain exceptions and limitations, each of the Company and Lilly has agreed to indemnify the other for breaches of representations, warranties and covenants and other specified matters. Unless terminated earlier, the Exclusive License Agreement will remain in effect, on a country-by-country basis and product-by-product basis, until the parties’ royalty obligations end. Both parties have a right to terminate the Exclusive License Agreement if the other party enters bankruptcy, upon an uncured breach by the other party or if the other party challenges its patents relating to the licensed technology. The Exclusive License Agreement will be filed as an exhibit to our Quarterly Report on Form 10-Q for the quarter ended September 30, 2016.

**Item 8.01. Other Events.**

The Company issued the press release attached hereto as Exhibit 99.1 regarding the license.

**Item 9.01. Financial Statements and Exhibits.**

<b>Exhibit No.</b>	<b>Description</b>
99.1	Press Release, dated September 26, 2016, entitled “Cerecor Announces Acquisition of TARP- $\gamma$ 8-AMPA Receptor Antagonist (CERC-611) from Lilly.”

**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/ Uli Hacksell  
Uli Hacksell  
President and Chief Executive  
Officer

Date: September 26, 2016

## EXHIBIT INDEX

<b>Exhibit No.</b>	<b>Description</b>
99.1	Press Release, dated September 26, 2016, entitled "Cerecor Announces Acquisition of TARP- $\gamma$ 8-AMPA Receptor Antagonist (CERC-611) from Lilly."



**Cerecor Announces Acquisition of TARP- $\gamma$ 8-AMPA Receptor Antagonist (CERC-611)  
from Lilly**

*Phase 1 development for epilepsy expected to commence in 2017*

**BALTIMORE--(BUSINESS WIRE)-- September 26, 2016--** Cerecor Inc. (NASDAQ: CERC), a clinical-stage biopharmaceutical company developing treatments to make a difference in the lives of patients with neurological and psychiatric disorders, today announced that it has acquired exclusive, worldwide rights from Eli Lilly and Company (“Lilly”) to develop and commercialize LY3130418 (now designated as CERC-611). CERC-611 is a potent and selective Transmembrane AMPA Receptor Regulatory Proteins (“TARP”)- $\gamma$ 8-dependent AMPA receptor antagonist. TARPs are a fairly recently discovered family of proteins that have been found to associate with and modulate the activity of AMPA receptors. TARP- $\gamma$ 8-dependent AMPA receptors are localized primarily in the hippocampus, a region of importance in complex partial seizures and particularly relevant to seizure origination and/or propagation. Research suggests that selectively targeting individual TARPs may enable selective modulation of specific brain circuits without globally affecting synaptic transmission which may lead to improved efficacy, safety and tolerability. Cerecor expects to submit an investigational new drug application (“IND”) to the United States Food and Drug Administration (“FDA”) and, upon acceptance of the IND by the FDA, commence Phase 1 development of CERC-611 in 2017.

CERC-611 was discovered and developed by Lilly for the treatment of epilepsy, a neurological disorder affecting over 50 million people worldwide. 150,000 new cases of epilepsy are diagnosed in the United States annually, and 30%-40% of treated patients are resistant to current pharmacotherapies, with only 8% of treated patients being maintained seizure free. The disorder, if not controlled, can lead to severe pathology and death. “There is a significant unmet need for new mechanisms that provide a new approach to treatment of epilepsy, with improved efficacy, safety, tolerability and ease-of-use,” said Ron Marcus, MD, Chief Medical Officer and Head, Regulatory Affairs at Cerecor.

AMPA receptor antagonists are known anticonvulsant agents, and their ability to down-modulate excitatory neurotransmission is key to their antiepileptic therapeutic potential. However, since AMPA receptor activity is so ubiquitous in the central nervous system (“CNS”), a non-selective AMPA antagonist approach affects many areas of the CNS, resulting in undesired effects, such as ataxia, sedation, falls, and/or dizziness, which are shared by all known general or broad-spectrum AMPA receptor antagonists. Typically, the doses of these medications needed to obtain anti-convulsant

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activity are close to, or overlap with, doses at which undesired effects are observed. “Because of the predominant hippocampal location of TARP- $\gamma$ 8-dependent AMPA receptors, we believe that the efficacy and side effect profile of CERC-611 may represent an improvement compared to current antiepileptics,” said Uli Hacksell, Ph.D., Cerecor’s CEO, President and Chairman. “We are excited to make CERC-611 a key addition to our pipeline and we expect to file an IND and commence Phase 1 development in 2017.”

Under the terms of the agreement, Cerecor will immediately assume full development and commercialization responsibilities of CERC-611. Lilly will receive an upfront licensing fee as well as milestone and tiered royalty payments.

#### **About CERC-611**

CERC-611 (formerly LY3130481) is a potent and selective TARP- $\gamma$ 8-dependent AMPA receptor antagonist that we believe is the first molecule to selectively target and functionally block regionally-specific AMPA receptors after oral dosing. This selectivity was engineered into CERC-611 using structure-activity relationship information to achieve selective blockade of the AMPA receptor regulator protein, or TARP- $\gamma$ 8 (high density expression in hippocampus, a region of importance in partial epilepsies), while sparing AMPA receptors thought to be associated with TARP- $\gamma$ 2 (high density expression in cerebellum regulating the ataxia and falling associated with broad spectrum AMPA receptor antagonists). CERC-611 has been observed to have positive preclinical activity in multiple models of epilepsy, neuropathic pain, and depression.

#### **About Cerecor**

Cerecor is a clinical-stage biopharmaceutical company developing innovative drug candidates to make a difference in the lives of patients with neurological and psychiatric disorders. We are committed to the development of drugs that improve lives by applying our extensive knowledge and experience in central nervous system disorders. Cerecor is currently pursuing the development of two clinical Phase 2-stage product candidates: CERC-301 and CERC-501.

CERC-301 is an oral, NR2B specific N-methyl-D-aspartate receptor antagonist that is currently in a Phase 2 clinical trial as an oral, rapidly acting adjunctive treatment for patients with severe major depressive disorder (“MDD”) who are failing to achieve an adequate response to their current antidepressant treatment. We expect top-line data from this trial in November 2016. Cerecor received fast track designation by the United States Food and Drug Administration in 2013 for CERC-301 for the treatment of MDD. We believe CERC-301 has the potential to be a first-in-class medication that may significantly reduce depressive symptoms in a matter of days.

CERC-501 is a potent and selective kappa opioid receptor antagonist that is currently in a Phase 2 clinical trial for smoking cessation that is expected to provide top-line data in December 2016. In addition to Cerecor’s Phase 2 trial, three externally-funded clinical trials are being conducted to evaluate the use of CERC-501 in treating depressive symptoms, stress related smoking relapse and cocaine addiction. One study is being conducted under the auspices of the National Institute of Mental Health, the second is a collaboration between Cerecor and Yale investigators with funding from the National Institutes of Health and the third is being conducted at Rockefeller University Hospital with funding from a private foundation.

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Cerecor has one preclinical stage asset, CERC-406, a brain penetrant catechol-O-methyltransferase inhibitor with potential procognitive activity.

For more information about the Company and its products, please visit [www.cerecor.com](http://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, without limitation, statements about the potential efficacy, safety and tolerability of Cerecor's product candidates as well as their potential therapeutic benefits, the timing of the expected IND submission and commencement of clinical development for CERC-611, the timing of the availability of data from clinical trials, and other statements with respect to Cerecor's plans, objectives, projections, expectations and intentions and other statements identified by words such as "projects," "may," "will," "could," "would," "should," "continue," "seeks," "aims," "predicts," "believes," "expects," "anticipates," "estimates," "intends," "plans," "potential" or similar expressions (including their use in the negative), or by discussions of future matters such as the development of product candidates or products, potential benefits of product candidates, the expected timing of data from clinical trials, technology enhancements and other statements that are not historical. 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.

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