

PROSPECTUS SUPPLEMENT NO. 2

DATED NOVEMBER 25, 2014

TO

PROSPECTUS DATED DECEMBER 17, 2013

SORRENTO THERAPEUTICS, INC.

This prospectus supplement no. 2 dated November 25, 2014 (the “Supplement”), supplements information contained in the prospectus dated December 17, 2013, as supplemented by prospectus supplement no. 1 dated February 14, 2014 (together, the “Prospectus”), relating to the resale by selling stockholders of Sorrento Therapeutics, Inc., a Delaware corporation, of up to 456,119 shares of our common stock, \$0.0001 par value per share. The shares offered by the Prospectus may be sold by the selling stockholders from time to time in the open market, through privately negotiated transactions or a combination of these methods, at market prices prevailing at the time of sale or at negotiated prices.

This Supplement is incorporated by reference into, and should be read in conjunction with, the Prospectus. This Supplement is not complete without, and may not be delivered or utilized except in connection with, the Prospectus, including any amendments or supplements thereto. Any statement contained in the Prospectus shall be deemed to be modified or superseded to the extent that information in this Prospectus Supplement modifies or supersedes such statement. Any statement that is modified or superseded shall not be deemed to constitute a part of the Prospectus except as modified or superseded by this Prospectus Supplement.

SELLING STOCKHOLDERS

The following updates the table under the section entitled “Selling Stockholders” of the Prospectus, to account for a transfer of shares listed in such table that the Company is aware of. On October 29, 2014, the 29,350 shares held by Aceras BioMedical LLC were transferred to certain individuals in a transaction exempt from the registration requirements of the Securities Act of 1933, as amended (the “Act”). The table, therefore, is amended as follows in order to (i) delete Aceras BioMedical LLC as a selling stockholder for an aggregate of 29,350 shares of common stock and (ii) to modify the shares held by Peter Barber, Daniel DiPietro, Matthew Wyckoff, John Liatos and Jeffrey Serbin.

| Name of Selling Stockholder | Beneficial Ownership of Common Stock Prior to the Offering | | Common Stock Saleable Pursuant to This Prospectus | Beneficial Ownership of Common Stock After the Offering (1) | |
|-----------------------------|--|----------------------|---|---|----------------------|
| | Number of Shares | Percent of Class (2) | | Number of Shares | Percent of Class (2) |
| Peter Barber | 47,832 | * | 47,832 | — | — |
| Daniel DiPietro | 47,832 | * | 47,832 | — | — |
| Matthew Wyckoff | 47,832 | * | 47,832 | — | — |
| John Liatos | 47,832 | * | 47,832 | — | — |
| Jeffrey Serbin | 4,336 | * | 4,336 | — | — |

* Less than 1%

- (1) Represents the amount of shares that will be held by the selling stockholders after completion of this offering based on the assumptions that: (a) all shares registered for sale by the registration statement of which this prospectus is part will be sold, and (b) that no other shares of our common stock beneficially owned by the selling stockholders are acquired or are sold prior to completion of this offering by the selling stockholders. However, the selling stockholders may sell all, some or none of the shares offered pursuant to this prospectus and may sell other shares of our common stock that they may own pursuant to another registration statement under the Act or sell some or all of their shares pursuant to an exemption from the registration provisions of the Act including under Rule 144. To our knowledge there are currently no agreements, arrangements or understanding with respect to the sale of any of the shares that may be held by the selling stockholders after completion of this offering or otherwise.
- (2) Each selling stockholders percentage of ownership is based on 28,932,850 shares of common stock outstanding as of November 24, 2014.

In addition, the selling stockholders listed in the Prospectus may have sold or transferred, in transactions exempt from the registration requirements of the Act some or all of their shares of common stock since the date on which the information in the Prospectus is presented. Information about the selling stockholders may change over time. Any changed information will be set forth in prospectus supplements.

Please insert this Supplement into your Prospectus and retain both this Supplement and the Prospectus for future reference. If you would like to receive a copy of the Prospectus, as supplemented, please write to Sorrento Therapeutics, Inc., 6042 Cornerstone Court West, Suite B, San Diego, CA 92121.