

**PROSPECTUS SUPPLEMENT NO. 10  
TO THE PROSPECTUS DATED AUGUST 14, 2013  
AS SUPPLEMENTED BY PROSPECTUS SUPPLEMENT NOS. 1, 2, 3, 4, 5, 6, 7, 8 AND 9  
DATED MARCH 21, APRIL 25, MAY 5, MAY 12, MAY 16, MAY 19, JUNE 16, AUGUST 15, 2014 AND SEPTEMBER 3, 2014**

**Aastrom Biosciences, Inc.**

This Prospectus Supplement No. 10 updates, amends and supplements our Prospectus dated August 14, 2013, as amended and supplemented by Prospectus Supplement No. 1 dated March 21, 2014, Prospectus Supplement No.2 dated April 25, 2014, Prospectus Supplement No. 3 dated May 5, 2014, Prospectus Supplement No. 4 dated May 12, 2014, Prospectus Supplement No. 5 dated May 16, 2014, Prospectus Supplement No. 6 dated May 19, 2014, Prospectus Supplement No. 7 dated June 16, 2014, Prospectus Supplement No. 8 dated August 15, 2014 and Prospectus Supplement No. 9 dated September 3, 2014 (collectively, the "Prospectus"), which forms a part of our Registration Statement on Form S-1 (Registration No. 333-188186).

We incorporate by reference into this Prospectus Supplement No. 10 the Current Reports on Form 8-K of Aastrom Biosciences, Inc. (the "Company"), filed with the Securities and Exchange Commission ("SEC") on September 11, 2014 and September 17, 2014.

This Prospectus Supplement No. 10 should be read in conjunction with the Prospectus. To the extent information in this Prospectus Supplement No. 10 differs from, updates or conflicts with information contained in the Prospectus, the information in this Prospectus Supplement No. 10 is the more current information.

**Investing in our common stock involves a high degree of risk. You should review carefully the "Risk Factors" beginning on page 10 of the Prospectus dated August 14, 2013 for a discussion of certain risks that you should consider, noting that the information there has been amended and updated to include the risk factors that have been incorporated by reference into the Prospectus and this Prospectus Supplement No. 10, before you make your investment decision. Without limiting the generality of such incorporation by reference, we note that, with respect to risk factors, you should consider the information contained in Item 1A. Risk Factors of each of our Annual Report on Form 10-K for the fiscal year ended December 31, 2013 filed with the SEC on March 13, 2014 and subsequent quarterly reports on Form 10-Q.**

**Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or passed upon the adequacy or accuracy of this prospectus supplement. Any representation to the contrary is a criminal offense.**

The date of this prospectus supplement is September 17, 2014.

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**INCORPORATION BY REFERENCE**

This prospectus incorporates by reference important business and financial information that we file with the SEC and that we are not including in or delivering with this prospectus. As the SEC allows, incorporated documents are considered part of this prospectus, and we can disclose important information to you by referring you to those documents. We incorporate by reference the documents listed below:

- our current reports on Form 8-K, filed with the SEC on September 11, 2014 and September 17, 2014 (excluding any information furnished in such report under Item 2.02, Item 7.01 or Item 9.01);
- the description of the rights to purchase shares of our Series A Junior Participating Cumulative Preferred Stock contained in the Registration Statement on Form 8-A, filed with the SEC on August 12, 2011, including any amendment or report for the purpose of updating such description; and
- the description of our common stock contained in our registration statements on Form S-1, filed with the SEC on November 1, 1996, filed with the SEC on including any amendment or report filed for the purpose of updating such description.

Pursuant to Rule 412 under the Securities Act, any statement contained in a document incorporated or deemed to be incorporated by reference into this prospectus will be deemed to be modified or superseded for purposes of this prospectus to the extent that a statement contained in this prospectus or any other subsequently filed document that is deemed to be incorporated by reference into this prospectus modifies or supersedes the statement. Any statement so modified or superseded will not be deemed, except as so modified or superseded, to constitute a part of this prospectus.

You may request a copy of any or all of these filings, at no cost, by writing to us at: Aastrom Biosciences, Inc., 24 Frank Lloyd Wright Drive, Lobby K, Ann Arbor, Michigan 48105, Attention: Investor Relations, or by telephoning us at (734) 418-4400. These filings may also be obtained through our website located at <http://www.aastrom.com>. The reference to our website is intended to be an inactive textual reference and, except for the documents incorporated by reference as noted above, the information on, or accessible through, our website is not intended to be part of this prospectus.

You should rely only on the information incorporated by reference or provided in this prospectus or any supplement. We have not authorized anyone else to provide you with different information. You should not assume that information in this prospectus or any supplement is accurate as of any date other than the date on the front of these documents.

We advise that there have been no material changes in our affairs that have occurred since the end of the latest fiscal period for which audited financial statements were included in the latest Form 10-K and that have not been described in a Form 8-K filed under the Exchange Act.

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