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Filed pursuant to Rule 424(b)(5)  
Registration Statement No. 333-166481

**PROSPECTUS SUPPLEMENT**

To Prospectus dated November 8, 2011

**14,414,370 Shares of Common Stock**



**Arena Pharmaceuticals, Inc.  
Common Stock**

Pursuant to this prospectus supplement and the accompanying prospectus, we are offering 14,414,370 shares of our common stock to Azimuth Opportunity, L.P., or Azimuth, pursuant to a Common Stock Purchase Agreement, dated November 8, 2011, between us and Azimuth, at a price of approximately \$1.73 per share. The total purchase price for the shares is \$25.0 million. We will receive net proceeds from the sale of these shares of approximately \$24.7 million after deducting our estimated offering expenses of approximately \$0.3 million, including a placement agent fee of \$187,500 to be paid to Reedland Capital Partners, an Institutional Division of Financial West Group, in connection with this offering.

This prospectus supplement and the accompanying prospectus also cover the sale of these shares by Azimuth to the public. Azimuth is an “underwriter” within the meaning of Section 2(a)(11) of the Securities Act of 1933, as amended, and any profits on the sales of shares of our common stock by Azimuth and any discounts, commissions or concessions received by Azimuth may be deemed to be underwriting discounts and commissions under the Securities Act.

We expect to issue the shares to Azimuth on or about March 9, 2012. Our common stock is listed on the NASDAQ Global Select Market under the symbol “ARNA.” On March 7, 2012, the last reported sale price of our common stock on the NASDAQ Global Select Market was \$1.73 per share.

**This investment in our common stock involves a high degree of risks. Please read “[Risk Factors](#)” on page S-4 of this prospectus supplement and in the documents incorporated by reference into this prospectus supplement.**

**Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or determined if this prospectus supplement or the accompanying prospectus is truthful or complete. Any representation to the contrary is a criminal offense.**

The date of this prospectus supplement is March 8, 2012.