Filed Pursuant to Rule 433 of the Securities Act of 1933, as amended Registration No. 333-191073 September 25, 2013



13,727,251 Shares of Common Stock and Pre-Funded Warrants to Purchase 4,175,975 Shares of Common Stock

| Common stock offered by us: |
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| Pre-funded warrants offered by us: |
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| Public offering price: |
| 81 |
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| Underwriting discounts and commissions: |
| Net proceeds: |
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| Common stock to be outstanding after this offering: |

Issuer:

Idera Pharmaceuticals, Inc.

13,727,251 shares of our common stock.

Pre-funded warrants to purchase up to an aggregate of 4,175,975 shares of our common stock. Each pre-funded warrant will have an exercise price of \$0.01 per share, will be exercisable upon issuance and will expire seven years from the date of issuance.

Pre-funded warrants are being offered to those purchasers whose purchase of shares of common stock in this offering would result in the purchaser, together with its affiliates and certain related parties, beneficially owning more than 9.9% of our outstanding common stock following the consummation of this offering. In lieu of the shares of our common stock that would result in ownership in excess of 9.9%, such purchasers are being offered pre-funded warrants to purchase such excess shares of our common stock.

\$1.55 per share of our common stock, and \$1.54 per pre-funded warrant (which equals the public offering price of the common stock less the \$0.01 per share exercise price of each pre-funded warrant).

6.5%

We estimate that we will receive net proceeds of approximately \$25.6 million from the sale of the common stock and pre-funded warrants, after deducting the underwriting discounts and commissions and estimated offering expenses payable by us and excluding the proceeds, if any, from the exercise of the pre-funded warrants issued pursuant to this offering.

58,892,411 shares of common stock, which is based on 45,165,160 shares outstanding as of June 30, 2013, and excludes:

 6,998,477 shares of common stock issuable upon exercise of stock options outstanding as of June 30, 2013, at a weighted-average exercise price of \$4.02 per share;

| Potential purchases by existing stockholders: |
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| Dilution: |
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| Listing: |
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| Trade Date: |
| Settlement Date: |
| Underwriter |
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- 1,000,391 shares of common stock reserved as of June 30, 2013 for future issuance under our equity incentive plans;
- 1,926 shares of common stock reserved as of June 30, 2013 for issuance upon any conversion of our outstanding Series A convertible preferred stock;
- 6,266,175 shares of common stock reserved as of June 30, 2013 for issuance upon any conversion of our outstanding Series D convertible preferred stock;
- 8,484,840 shares of common stock reserved as of June 30, 2013 for issuance upon any conversion of our outstanding Series E convertible preferred stock; and
- 64,056,546 shares of common stock issuable upon exercise of warrants outstanding as of June 30, 2013, at a weighted average exercise price of \$0.52 per share, including pre-funded warrants to purchase 15,816,327 shares at an exercise of \$0.01 per share outstanding as of June 30, 2013.

Pillar Pharmaceuticals I, L.P. and Pillar Pharmaceuticals II, L.P., each of which is a current stockholder, or certain of their affiliated funds have indicated an interest in purchasing an aggregate of 1,774,193 shares of our common stock in this offering at the public offering price. Although we anticipate that these stockholders will purchase, and that the underwriter will sell to these stockholders, all of these shares of common stock, indications of interest are not binding agreements or commitments to purchase, the underwriter could determine to sell more, less or no shares to any of these existing stockholders and any of these existing stockholders could determine to purchase more, less or no shares in this offering.

Our net tangible book value as of June 30, 2013 was approximately \$13.9 million, or \$0.31 per share. After giving effect to the issuance and sale in this offering of 13,727,251 shares of our common stock and pre-funded warrants to purchase up to 4,175,975 shares of our common stock, at the public offering price of \$1.55 per share of our common stock and \$1.54 per pre-funded warrant (which equals the public offering price of the common stock less the \$0.01 per share exercise price of each such prefunded warrant), after deducting the underwriting discounts and commissions and estimated offering expenses payable by us and excluding the proceeds, if any, from the exercise of the pre-funded warrants issued pursuant to this offering, our as adjusted net tangible book value as of June 30, 2013 would have been approximately \$39.6 million, or approximately \$0.67 per share of our common stock. This amount represents an immediate increase in net tangible book value of \$0.36 per share of our common stock to existing stockholders and an immediate dilution in net tangible book value of \$0.88 per share of our common stock to new investors purchasing securities in this offering.

The shares of common stock are listed on the Nasdaq Capital Market under the symbol "IDRA." We do not intend to list the pre-funded warrants on the Nasdaq Capital Market, any other nationally recognized securities exchange or any other nationally recognized trading system.

September 25, 2013 September 30, 2013 Piper Jaffray & Co.