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

### POST-EFFECTIVE AMENDMENT NO. 1 TO FORM S-3 REGISTRATION STATEMENT UNDER THE SECURITIES ACT OF 1933

# **IDERA PHARMACEUTICALS, INC.**

(Exact name of registrant as specified in its charter)

**Delaware** (State or other jurisdiction of incorporation or organization) 91-1513032 (I.R.S. Employer Identification No.)

345 Vassar Street Cambridge, Massachusetts 02139 (617) 679-5500

(Address, including zip code, and telephone number, including area code, of registrant's principal executive offices)

Sudhir Agrawal, D. Phil. Chief Executive Officer Idera Pharmaceuticals, Inc. 345 Vassar Street Cambridge, Massachusetts 02139 (617) 679-5500

(Name, address, including zip code, and telephone number, including area code, of agent for service)

Copies to: Stuart M. Falber, Esq. Wilmer Cutler Pickering Hale and Dorr LLP 60 State Street Boston, Massachusetts 02109 Telephone: (617) 526-6000 Telecopy: (617) 526-5000

Approximate date of commencement of proposed sale to public: As soon as practicable after this Registration Statement becomes effective.

If the only securities being registered on this Form are being offered pursuant to dividend or interest reinvestment plans, please check the following box.

If any of the securities being registered on this Form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933, other than securities offered only in connection with dividend or interest reinvestment plans, check the following box.

If this Form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act, please check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.

If this Form is a post-effective amendment filed pursuant to Rule 462(c) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.  $\Box$  \_\_\_\_\_.

If this Form is a registration statement pursuant to General Instruction I.D. or a post-effective amendment thereto that shall become effective upon filing with the Commission pursuant to Rule 462(e) under the Securities Act, check the following box.

If this Form is a post-effective amendment to a registration statement filed pursuant to General Instruction I.D. filed to register additional securities or additional classes of securities pursuant to Rule 413(b) under the Securities Act, check the following box.

On August 9, 2006, the Securities and Exchange Commission declared effective the Registration Statement on Form S-3 (Registration No. 333-136115) (the "Registration Statement") filed by Idera Pharmaceuticals, Inc. ("Idera") with respect to the resale of an aggregate of 683,593 shares of common stock, par value \$.001 per share, of Idera (the "Shares"). This Post-Effective Amendment No. 1 to the Registration Statement is being filed in order to terminate the Registration Statement, as all of the Shares have been sold.

#### SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, the Registrant certifies that it has reasonable grounds to believe that it meets all of the requirements for filing this Post-Effective Amendment No. 1 to the Registration Statement on Form S-3 and has duly caused this Post-Effective Amendment No. 1 to the Registration Statement on Form S-3 to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Cambridge, Commonwealth of Massachusetts, on May 8, 2007.

### IDERA PHARMACEUTICALS, INC.

By: <u>/s/ Sudhir Agrawal</u> Sudhir Agrawal, D. Phil. Chief Executive Officer

Pursuant to the requirements of the Securities Act of 1933, this Post-Effective Amendment No. 1 to the Registration Statement on Form S-3 has been signed by the following persons in the capacities and on the dates indicated.

	Title	Date
*	Chairman of the Board of Directors	
James B. Wyngaarden, M.D.		
/s/ Sudhir Agrawal	Chief Executive Officer, Chief Scientific Officer and Director	May 8, 2007
Sudhir Agrawal, D. Phil.	(Principal Executive Officer)	
*	President and Director	
Robert W. Karr, M.D.		
/s/ Robert G. Andersen	Chief Financial Officer, Vice President of Operations,	May 8, 2007
Robert G. Andersen	Treasurer and Secretary (Principal Financial and Accounting Officer)	
*	Director	
Youssef El-Zein		
*	Director	
C. Keith Hartley		
*	Director	
William S. Reardon		
*	Director	
Alison Taunton-Rigby, Ph.D.		
*By:/s/Sudhir Agrawal		

Sudhir Agrawal, D.Phil, Attorney-in-fact