
**UNITED STATES
SECURITIES AND EXCHANGE COMMISSION**
Washington, D.C. 20549

FORM 8-A

**For Registration of Certain Classes of Securities
Pursuant to Section 12(b) or 12(g) of the
Securities Exchange Act of 1934**

ACCELERON PHARMA INC.

(Exact name of registrant as specified in its charter)

Delaware
(State of Incorporation)

27-0072226
(I.R.S. Employer Identification No.)

**128 Sidney Street
Cambridge, MA**
(Address of principal executive offices)

02139
(Zip Code)

Securities to be registered pursuant to Section 12(b) of the Act:

**Title of each class
to be so registered**

Common Stock, \$0.001 par value per share

**Name of each exchange on which
each class is to be registered**

The NASDAQ Stock Market LLC

If this form relates to the registration of a class of securities pursuant to Section 12(b) of the Exchange Act and is effective pursuant to General Instruction A.(c), check the following box.

If this form relates to the registration of a class of securities pursuant to Section 12(g) of the Exchange Act and is effective pursuant to General Instruction A.(d), check the following box.

Securities Act registration statement file number to which this form relates (if applicable): **333-190417**

Securities to be registered pursuant to Section 12(g) of the Act: **None**

Item 1. Description of Registrant's Securities to be Registered.

Acceleron Pharma Inc. (the "Registrant") hereby incorporates by reference the description of its Common Stock, \$0.001 par value per share (the "Common Stock"), to be registered hereunder, contained under the heading "Description of Capital Stock" in the Registrant's Registration Statement on Form S-1 (File No. 333-190417) filed with the Securities and Exchange Commission (the "Commission") under the Securities Act of 1933, as amended (the "Act"). Any form of prospectus subsequently filed by the Registrant with the Commission pursuant to Rule 424(b) under the Act that constitutes part of the Registration Statement shall also be deemed to be incorporated herein by reference.

Item 2. Exhibits.

Pursuant to the Instructions as to Exhibits, no exhibits are filed herewith or incorporated herein by reference.

Signature

Pursuant to the requirements of Section 12 of the Securities Exchange Act of 1934, the Registrant has duly caused this registration statement to be signed on its behalf by the undersigned, thereto duly authorized.

Dated: September 13, 2013

Accelaron Pharma Inc.

By: /s/ John Knopf
John Knopf
Chief Executive Officer