

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**

NILE THERAPEUTICS, INC.

(Exact name of registrant as specified in its charter)

Delaware
(State of incorporation
or organization)

88-0363465
(I.R.S. Employer
Identification No.)

115 Sansome Street, Suite #310
San Francisco, California
(Address of principal executive offices)

94104
(Zip code)

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

Title of each class
to be so registered
Common Stock, par value \$0.001 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), please 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), please check the following box.

Securities Act registration statement file number to which this form relates: 333-146843

Securities to be registered pursuant to Section 12(g) of the Act: Not Applicable

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

The description of the Common Stock of Nile Therapeutics, Inc. (the "Registrant") set forth under the caption "Description of Securities" in the Registrant's Registration Statement on Form SB-2 (File No. 333-146843) as originally filed with the Securities and Exchange Commission on October 22, 2007, and as subsequently amended on November 2, 2007 (the "Registration Statement"), and in the prospectus included in the Registration Statement, is hereby incorporated by reference in response to this item.

Item 2. Exhibits.

Because no other securities of the Registrant are registered on The NASDAQ Stock Market LLC, and the securities being registered by this Form 8-A are not being registered pursuant to Section 12(g) of the Securities Exchange Act of 1934, no exhibits are required to be filed with this Form 8-A.

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.

Date: May 9, 2008

NILE THERAPEUTICS, INC.

By: /s/ Peter M. Strumph

Name: Peter M. Strumph

Title: Chief Executive Officer