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

**FORM S-1
REGISTRATION STATEMENT**
*UNDER
THE SECURITIES ACT OF 1933*

Neothetics, Inc.

(Exact name of registrant as specified in its charter)

Delaware
(State or other jurisdiction of
incorporation or organization)

2834
(Primary Standard Industrial
Classification Code Number)

20-8527075
(I.R.S. Employer
Identification Number)

**9191 Towne Centre Drive, Suite 400
San Diego, CA 92122
(858) 750-1008**

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

**George W. Mahaffey
President and Chief Executive Officer
Neothetics, Inc.
9191 Towne Centre Drive, Suite 400
San Diego, CA 92122
(858) 750-1008**

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

Copies to:

**Michael S. Kagnoff, Esq.
Larry W. Nishnick, Esq.
DLA Piper LLP (US)
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Tel: (858) 677-1400
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**Cheston J. Larson, Esq.
Michael Sullivan, Esq.
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12670 High Bluff Drive
San Diego, CA 92130
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Approximate date of commencement of proposed sale to the public: As soon as practicable after the effective date of this registration statement.

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, 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. (File No. 333-199449)

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.

If this Form is a post-effective amendment filed pursuant to Rule 462(d) 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.

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company. See definitions of "large accelerated filer," "accelerated filer," and "smaller reporting company" in Rule 12b-2 of the Exchange Act (Check one):

Large accelerated filer
Non-accelerated filer (Do not check if a smaller reporting company)

Accelerated filer
Smaller reporting company

CALCULATION OF REGISTRATION FEE

Title of Each Class of Securities to be Registered	Proposed Maximum Aggregate Offering Price(1)	Amount of Registration Fee(2)
Common Stock, \$0.0001 par value per share	\$690,000	\$81

- (1) Represents only the additional amount being registered. Includes offering price of any additional shares that the underwriters have the over-allotment option to purchase. Does not include the securities that the Registrant previously registered on the Registration Statement on Form S-1 (File No. 333-199449).
- (2) Estimated solely for the purpose of calculating the amount of the registration fee in accordance with Rule 457(o) under the Securities Act of 1933, as amended.

This registration statement shall become effective upon filing with the Commission in accordance with Rule 462(b) of the Securities Act of 1933, as amended.

**EXPLANATORY NOTE AND
INCORPORATION OF CERTAIN INFORMATION BY REFERENCE**

This Registration Statement is being filed with the Securities and Exchange Commission (the "Commission") pursuant to Rule 462(b) under the Securities Act of 1933, as amended. This Registration Statement relates to the public offering of common stock of the Registrant contemplated by the Registration Statement on Form S-1, as amended (File No. 333-199449), originally filed by the Registrant on October 17, 2014 (the "Prior Registration Statement"), and is being filed for the sole purpose of registering additional securities of the same class as were included in the Prior Registration Statement.

The content of the Prior Registration Statement, including all exhibits thereto, which was declared effective by the Commission on November 19, 2014, are hereby incorporated by reference.

INDEX TO EXHIBITS

<u>Exhibit Number</u>	<u>Description of Exhibits</u>
5.1	Opinion of DLA Piper LLP (US) regarding the legality of the securities being registered.
23.1	Consent of Independent Registered Public Accounting Firm.
23.2	Consent of DLA Piper LLP (US) (included in Exhibit 5.1).
24.1*	Power of Attorney (included in the signature page of Registration Statement on Form S-1 (File 333-199449)).

* Incorporated by reference from the Prior Registration Statement

DLA Piper LLP (US)
4365 Executive Drive, Suite 1100
San Diego, California 92121-2133

November 19, 2014

Neothetics, Inc.
9191 Towne Centre Drive, Suite 400
San Diego, CA 92122

Re: Registration Statement on Form S-1 (File No. 333-199449)

Ladies and Gentlemen:

You have requested our opinion with respect to certain matters in connection with the filing by Neothetics, Inc., a Delaware corporation (the “**Company**”), of a Registration Statement on Form S-1 filed on November 19, 2014 (the “**462(b) Registration Statement**”) pursuant to 462(b) under the Securities Act of 1933, as amended (the “**Act**”). The 462(b) Registration Statement incorporates by reference in its entirety the Registration Statement on Form S-1 (File No. 333-199449) initially filed on October 17, 2014, as thereafter amended, and declared effective by the Securities and Exchange Commission on November 19, 2014 (the “**Registration Statement**”), including a related prospectus filed with the Registration Statement (the “**Prospectus**”), covering up to an aggregate of 402,500 shares of the Company’s common stock, \$0.0001 par value (“**Common Stock**”), including up to 52,500 shares offered pursuant to an overallotment option granted to the underwriters in the offering (the “**Shares**”).

This opinion is being furnished in accordance with the requirements of Item 16(a) of Form S-1 and Item 601(b)(5)(i) of Regulation S-K.

In connection with this opinion, we have reviewed and relied upon the 462(b) Registration Statement and Prospectus, the Company’s charter documents, as amended and restated to date, records of the Company’s corporate proceedings in connection with the offering, and such other documents, records, certificates, memoranda and other instruments as we deem necessary as a basis for this opinion. With respect to the foregoing documents, we have assumed the authenticity of all records, documents, and instruments submitted to us as originals, the genuineness of all signatures, the legal capacity of natural persons and the conformity to the originals of all records, documents, and instruments submitted to us as copies. We have also obtained from officers of the Company certificates as to certain factual matters and, insofar as this opinion is based on matters of fact, we have relied on such certificates without independent investigation.

We express no opinion concerning any law other than the Delaware General Corporation Law (including the statutory provisions, all applicable provisions of the Delaware Constitution and the reported judicial decisions interpreting the foregoing) and the federal law of the United States of America.

On the basis of the foregoing, we are of the opinion that when the Shares are issued and paid for as described in the 462(b) Registration Statement and the Prospectus, they will be validly issued, fully paid and nonassessable.

We consent to the filing of this opinion as Exhibit 5.1 to the 462(b) Registration Statement and to the reference to this firm under the caption “Legal Matters” in the Prospectus that is part of the 462(b) Registration Statement and to the reference to this firm under the caption “Legal Matters” in the Prospectus that is part of the Registration Statement. In giving this consent, we do not admit that we are within the category of persons whose consent is required under Section 7 of the Securities Act of 1933, as amended, the rules and regulations of the Securities and Exchange Commission promulgated thereunder, or Item 509 of Regulation S-K.

We disclaim any obligation to advise you of facts, circumstances, events or developments that hereafter may be brought to our attention and that may alter, affect or modify the opinion expressed herein after the effective date of the 462(b) Registration Statement. Our opinion is expressly limited to the matters set forth above, and we render no opinion, whether by implication or otherwise, as to any other matters relating to the Company, the Shares, or the Registration Statement.

Very truly yours,

/s/ DLA Piper LLP (US)

DLA Piper LLP (US)

Consent of Independent Registered Public Accounting Firm

We consent to the incorporation by reference in the Registration Statement on Form S-1 filed pursuant to Rule 462(b) of the Securities Act of 1933 of the reference to our firm under the caption "Experts" and to the incorporation by reference of our report dated June 20, 2014, except for the retroactive effect of the one for 6.10 reverse stock split as described in paragraph 3 of Note 10 as to which the date is November 7, 2014, with respect to the financial statements of Neothetics, Inc. included in Amendment No. 1 to the Registration Statement (Form S-1 No. 333-199449) and related Prospectus of Neothetics, Inc. for the registration of its common stock.

/s/ Ernst & Young LLP

San Diego, California
November 19, 2014