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

DIVISION OF
CORPORATION FINANCE

October 10, 2014

Via E-mail
George W. Mahaffey
President and Chief Executive Officer
Neothetics, Inc.
9191 Towne Centre Drive, Suite 400
San Diego, CA 92122

Re: Neothetics, Inc.
Confidential Draft Registration Statement on Form S-1
Submitted September 12, 2014
CIK No. 0001618835

Dear Mr. Mahaffey:

We have reviewed your confidential draft registration statement and have the following comments. In some of our comments, we may ask you to provide us with information so we may better understand your disclosure.

Please respond to this letter by providing the requested information and either submitting an amended confidential draft registration statement or publicly filing your registration statement on EDGAR. If you do not believe our comments apply to your facts and circumstances or do not believe an amendment is appropriate, please tell us why in your response.

After reviewing the information you provide in response to these comments and your amended confidential draft registration statement or filed registration statement, we may have additional comments.

General

1. Please submit all outstanding exhibits as soon as practicable. We may have further comments upon examination of these exhibits.

2. Please provide us proofs of all graphic, visual or photographic information you will provide in the printed prospectus prior to its use, for example in a preliminary prospectus. Please note that we may have comments regarding this material.

3. Please supplementally provide us with copies of all written communications, as defined in Rule 405 under the Securities Act, that you, or anyone authorized to do so on your behalf, present to potential investors in reliance on Section 5(d) of the Securities Act, whether or not they retain copies of the communications. Similarly, please

supplementally provide us with any research reports about you that are published or distributed in reliance upon Section 2(a)(3) of the Securities Act of 1933 added by Section 105(a) of the Jumpstart Our Business Startups Act by any broker or dealer that is participating or will participate in your offering.

4. We note that you have omitted portions of your exhibits pursuant to a request for confidential treatment under Rule 406 of the Securities Act. Any staff comments pertaining to you request will be sent under separate cover. Please be advised that our review of your registration statement will not be complete until all comments concerning your confidential treatment request have been cleared.

Prospectus Summary, page 1

5. Please briefly explain the operation of the Section 505(b)(2) pathway the first time you reference it in your prospectus summary. Please additionally include the specific risks to this product approval pathway where you reference the risks generally on page 6.

Use of Proceeds, page 61

6. We note that you plan to initiate 8 different clinical trials in the first half of 2015 in support of development of LIPO-202. Therefore, to the extent feasible, you should disclose the portion of proceeds you intend to allocate to each trial separately. Notwithstanding that management will have broad discretion over the use of the net proceeds from this offering, Item 504 of Regulation S-K requires disclosure of the approximate amount you anticipate allocating to each specific purpose identified.

7. If you do not expect the application of funds from this offering to enable you to complete a given trial, please disclose what you expect the application of proceeds to allow you to accomplish as to each partially funded trial.

Management's Discussion and Analysis of Financial Condition and Results of Operations
Critical Accounting Policies and Significant Judgments and Estimates
Valuations of Common Stock and Warrants to Purchase Convertible Preferred Stock, page 74

8. We may have additional comments on your accounting for stock compensation or beneficial conversion features once you have disclosed an estimated offering price. In this regard, we may ask you to explain the reasons for valuations of equity issuances that appear unusual (e.g., unusually steep increases in the fair value of the underlying shares leading up to the IPO).

Business
Our Product Candidate: LIPO-202, page 92

9. Please disclose whether you have filed an Investigational New Drug (IND) application with the FDA for LIPO-202 and, if so, the date you filed the application and for what specific indication. If you have not yet filed an IND application for FDA LIPO-202, please tell us why.

Clinical Endpoint Tool Development, page 96

10. With a view toward revised S-1 disclosure, please tell us why you have chosen to use the two-dimensional ultrasound as a potential secondary measure rather than as a primary endpoint in your Phase 3 trials. Specifically, you should discuss what consideration you gave to two-dimensional ultrasound as a primary endpoint, explain its potential advantages as a method of measurement of subcutaneous fat, and provide your rationale for using it as a secondary, rather than a primary, endpoint. In addition, please explain the FDA's concerns about the appropriateness of your endpoint tools and any other efficacy assessment tools that the FDA suggested might be more suitable.

Phase 2 Clinical Trial: RESET

11. Please briefly explain the concept of p-values and what they measure prior to discussing the p-values observed in this section.

Summary of Early Clinical Trials, page 101

12. Please provide more detail regarding how you measured test-retest reliability of the rating instruments referenced in your VAL-CL-15 and VAL-CL-20 studies. Please further define the terms "inter-rater reliability" and "intra-class correlation coefficients" and explain their significance to the reliability of your rating instruments.

Non-Employee Director Compensation, page 129

13. Please file as an exhibit to your registration statement the compensation plan approved in September 2014 for your non-employee directors to be effective after completion of this offering.

If you intend to respond to these comments with an amended draft registration statement, please submit it and any associated correspondence in accordance with the guidance we provide in the Division's October 11, 2012 announcement on the SEC website at http://www.sec.gov/divisions/corpfin/cfannouncements/drsfilingprocedures101512.htm.

Please keep in mind that we may publicly post filing review correspondence in accordance with our December 1, 2011 policy

(http://www.sec.gov/divisions/corpfin/cfannouncements/edgarcorrespondence.htm). If you intend to use Rule 83 (17 CFR 200.83) to request confidential treatment of information in the correspondence you submit on EDGAR, please properly mark that information in each of your confidential submissions to us so we do not repeat or refer to that information in our comment letters to you.

You may contact Christine Torney at (202) 551-3652 or Jim Rosenberg at (202) 551-3679 if you have questions regarding comments on the financial statements and related matters. Please contact Austin Stephenson at (202) 551-3192, Dan Greenspan at (202) 551-3623, or me at (202) 551-3715 with any other questions.

Sincerely,

/s/ Daniel Greenspan for

Jeffrey P. Riedler
Assistant Director

cc: Via E-mail
Patrick O'Malley, Esq.
DLA Piper LLP