

October 17, 2014

VIA EDGAR & OVERNIGHT MAIL

Securities and Exchange Commission
Division of Corporation Finance
100 F Street, N.E.
Washington, D.C. 20549

Attention: Russell Mancuso, Branch Chief

**Re: MELA Sciences, Inc.
Amendment No. 2 to Registration Statement on Form S-3
Filed October 9, 2014
File No. 333-198249**

Ladies and Gentlemen:

We are submitting this letter on behalf of MELA Sciences, Inc. (the “**Company**”) in response to a verbal comment received from Jay Mumford of the Securities and Exchange Commission (the “**Commission**”) on October 17, 2014, relating to the above-referenced registration statement on Form S-3 of the Company, filed with the Commission on August 19, 2014 (the “**Registration Statement**”), as amended on September 22, 2014 and October 9, 2014. In response to Mr. Mumford’s verbal comment, the Company confirms, based on the information provided in selling stockholder questionnaires delivered to the Company by each of the selling stockholders named in the Registration Statement, that other than H.C. Wainwright, LLC, none of the selling stockholders is a broker-dealer registered with the Commission.

We hope that the above response will be acceptable to the Staff. Please do not hesitate to call me or Garrett M. Winslow of this firm at (617) 542-6000 with any comments or questions regarding this letter. We thank you for your time and attention.

Sincerely,

/s/ Megan N. Gates

Megan N. Gates

cc: Securities and Exchange Commission
Jay Mumford, Esq.

October 17, 2014

Page 2

MELA Sciences, Inc.

Ms. Rose Crane, Chief Executive Officer

Mr. Robert W. Cook, Chief Financial Officer

Ellenoff, Grossman & Schole, LLP

Robert F. Charron, Esq.

Mintz, Levin, Cohn, Ferris, Glovsky and Popeo, P.C.

Garrett M. Winslow, Esq.