



DIVISION OF
CORPORATION FINANCE

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

July 22, 2014

Via E-mail

Ms. Jan A. Bertsch
Chief Financial Officer
Sigma-Aldrich Corporation
3050 Spruce Street
St. Louis, MO 63103

Re: Sigma-Aldrich Corporation
Form 10-K for the Fiscal Year Ended December 31, 2013
Filed February 6, 2014
File No. 0-8135

Dear Ms. Bertsch:

We have completed our review of your filing. We remind you that our comments or changes to disclosure in response to our comments do not foreclose the Commission from taking any action with respect to the company or the filing and the company may not assert staff comments as a defense in any proceeding initiated by the Commission or any person under the federal securities laws of the United States. We urge all persons who are responsible for the accuracy and adequacy of the disclosure in the filing to be certain that the filing includes the information the Securities Exchange Act of 1934 and all applicable rules require.

Sincerely,

/s/ John Cash

John Cash
Accounting Branch Chief