

July 24, 1968

Professor Edoardo Scarano
International Laboratory of Genetics and Biophysics
Via Marconi, 10
Naples, Italy

My dear Scarano:

This is a somewhat belated answer to the discussion that we had last year about the possible use of high resolution spectrometry to corroborate the identification of trideuterio-thymine in your studies of DNA turnover in sea urchin embryos.

I really do apologize for this delay, but it was occasioned by my inability to get a crisp answer to your question. It appears that although there is a great deal of work on high resolution mass spectrometry going on here, we do not have exactly that equipment which would be most appropriate to your own requirements.

However, I am told that Dr. A. L. Burlingame, Department of Chemistry, University of California, Berkeley, has been operating a mass spectrometer which is designed for very high resolution analysis of small samples of material. I am told, but this is second hand, that 10 micrograms would be sufficient to obtain a scan that would give 1 per 50,000 resolution, which would be quite sufficient for the discrimination required in your experiment. Trideuterio-thymine has a calculated weight of 129.062. The most difficult discrimination is between this and the tri-C¹³- thymine at 129.053. So I don't think you should have very much difficulty in achieving the necessary resolution, if my information about Burlingame's instrument is correct.

If you are still interested in pursuing the matter I suggest that you contact Dr. Burlingame directly.

Sincerely yours,

Joshua Lederberg
Professor of Genetics