

February 6, 1961

Dr. Frank Mayo
Stanford Research Institute
Menlo Park, California

Dear Frank:

It was a pleasure to talk to you the other day and hope we can continue to get together about this problem of specific polymer synthesis. One point I should have pressed you further on was the possibility of improving the sensitivity of analysis to allow the detection of very small proportions of the specific product. If you did this along the lines that would be routine in the Biochemistry Department here, you would use C^{14} -labeled acrylate in the precursor mix and look for radioactivity in the tricarboxylic acid fraction of the product on a paper chromatogram. If necessary of course, you could add cold tricarboxylate as carrier. How sensitive is your present technique, that is, what proportion of the monomer would have to be specifically converted for you to pick it up.

May I ask you a slightly different question? Whipple thinks that comets are composed mainly of frozen "ices" of methane and some other hydrides. How efficiently would such an ice be polymerized when exposed to very short wavelength solar UV at temperatures of between 10 and 50° K.

Yours cordially,

Joshua Lederberg
Professor of Genetics

MAYO, F.R.