

WESTERN RESERVE UNIVERSITY  
CLEVELAND 6, OHIO

*Make separate file folder*

SCHOOL OF MEDICINE  
DEPARTMENT OF MICROBIOLOGY

June 17, 1958

Dr. Joshua Lederberg  
Department of Genetics  
University of Wisconsin  
Madison 6, Wisconsin

Dear Dr. Lederberg:

Dr. Spizizen has handed to me your prompt reply to his inquiry. I trust the following will provide you with the information you desire.

My research program is concerned with the metabolism of one-carbon units in nucleic acid synthesis in Escherichia coli and E. coli infected with T2 bacteriophage. Our studies are concerned with a wild type strain as well as a PABA-less mutant. We are employing  $\beta$  labeled  $C^{14}$  serine as a one-carbon precursor and measuring its incorporation into the purine and pyrimidine bases of phage infected and uninfected cells, under conditions of PABA deficiency and excess, in the presence and absence of various end products of one-carbon metabolism. In conjunction with these studies we are comparing the ability of such systems to accumulate a purine precursor, 4-amino-5-imidazole carboxamide riboside. We have observed that under appropriate conditions of excess PABA, uninfected cells apparently can synthesize a disproportionate amount of DNA as compared with RNA. Studies of net DNA synthesis indicate that as much DNA is synthesized in such uninfected cells as in phage infected cells.

These observations are being further investigated in order to obtain a rationale of one-carbon metabolism in these systems.

My interest in post-doctoral training is to obtain a first-hand knowledge of microbial genetics. Since my graduate training has been chiefly along microbiological and biochemical lines, I feel that I could profit greatly by working in close association with a geneticist on a problem involving a genetic rather than a biochemical approach. Accordingly, I would prefer to work on a microbial genetic problem which is of current interest in your laboratory, rather than one of my own choosing.

I am in the process of obtaining post-doctoral application forms from several agencies. If you would like any additional information, I would be happy to discuss the matter either through correspondence or directly with you in Madison.

Yours truly,

*Eugene W. Nester*

Eugene Nester