December 14, 1956.

Dr. Robert L. Sinsheimer
Department of Physics
Iowa State College
Ames, Iowa

Dear Bob:

We are about to grow some cells that Zamenhof sent me in order to make a DNA of high bromo-uracil content, and we want to do two things with it:

1. Is to isolate the nucleotide, convert it to the triphosphate and see if it will be incorporated by our enzyme system.

2. We would like to use such a DNA as primer in a reaction with $P^{32}$-triphosphates and then isolate from the DNAase digest of the product of such a reaction mixture a bromo-uracil containing dinucleotide. If the latter has $P^{32}$ in it, then we will have evidence for a direct reaction of substrate with a nucleotide in the DNA primer.

I am writing to ask you for any advice that you can offer on the ion-exchange chromatography of the bromo-uracil nucleotide and dinucleotides. We are using your methods with great pleasure and profit.

I might mention that we are able starting with $C^{14}$-labeled thymidine triphosphate to isolate $C^{14}$-thymidylic dinucleotides from DNAase digests of the product. We could establish by a variety of enzymatic analyses that we have a genuine 3-5 diester, but what we can't say is whether the thymidine triphosphate reacted with deoxycytidylic (for example) as the triphosphate in the reaction mixture or as a component of the DNA. Most of our present efforts are directed toward purifying the enzyme and it has become a back-breaking logistical proglem.

With many thanks for your help and very best regards,

Sincerely yours,

AK/McK

Arthur Kornberg.