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Biochemical Research Laboratory
November 6, 1950

Dr. Arthur Kornberg
National Institutes of Health
U. S. Public Health Service
Bethesda 14, Maryland

Dear Arthur:

I hope you will forgive this long delay in answering your letter, but I put it off from day to day hoping that I would be able to make some definite statements concerning the nature of the adenylic acid in coenzyme A. However, the clarification of the picture is slower than I had anticipated, so I thought I would drop you a note concerning the progress to date.

First, I want to thank you for the kind gift of your nucleotidase. The package arrived in rather bad condition, the thermos was completely demolished (this I will replace for you), but fortunately, the vial of enzyme was intact. I assayed it for DPN splitting and found it to contain about 900 units/ml. I made a few trials on Co A with your enzyme and again found that Co A is split better at pH 5.0 than it is at pH 7.5. This is a difference which still remains to be exolained.

I have been able to demonstrate that Co A has a free phosphate group in addition to the bridge and if this group is on the adenosine portion of the molecule, then it would have certain similarities to TPN. In this connection, I would like to ask you if you were able to determine how adenosine diphosphate moves on paper with respect to the other adenosine mononucleotides?

One difficulty that I have encountered is that the acid phosphatase present in potato extracts strips the free phosphate group from Co A during the attack on the bridge. I wonder how you avoided this difficulty in your TPN work. One possible explanation is that I work at pH 5.0 in an acetate buffer, which is near the optimum for the acid phosphatase, while you work at pH 7.5 and in phosphate buffer. Have you determined whether the acid phosphatase is inhibited by phosphate?

In several experiments, I have been able to get evidence for the appearance of some AMP-5 after potato splitting. The amount of AMP-5

which can be demonstrated is quite variable and never more than 0.6 μM per μM of pantothenate. I believe that the potato acid phosphatase is splitting some of the AMP-5 and I'm trying now to suppress the activity of this phosphatase.

We have been having rather good luck with paper chromatography in the purification of Co A. It now begins to look as if we will have some rather pure material in the near future. When this becomes available, I would like to know if it would still be possible to accept your offer for me to visit you for a few days. At that time, if it will not be too great an inconvenience to you, I would like to go over my data with you and perhaps repeat some of the more critical experiments.

Please accept my belated congratulations on your winning of the Paul Lewis Award.

Sincerely,

Dave

G. David Novelli

GDN:jl