BRITISH COLUMBIA RESEARCH COUNCIL

UNIVERSITY OF BRITISH COLUMBIA · · · VANCOUVER 8, B. C.

March 18, 57

Dear Arthur:

I am happy to say that the PRPP problem is now being concluded satisfactorily.

Problem I - The isolation of PRPP in a relatively pure state is accomplished by isolation of di salt at pH 7.5 - 8 at controlled temperature. Graph I shows ion exchange analysis of 2 µ moles of PRPP, prepared from middle labelled ATP. As you see a little degradation (in the desired direction) had already occurred during isolation.

Next, we hydrolyzed (degraded) same amount of PRPP (same sample) and put it on the same column (regenerated) and used identical eluents and elutions. We obtained Graph II. Details are on the Graph - since ~ 40 counts are due to background, practically all counts appeared in Ribose Di-P fraction and coincident with the ribose peak.

The specific degradation and quantitation of PRPP to Ribose Diphosphate + Pi caused a lot of anxiety but the solution was found in using Ba ion catalysis at room temperature at pH 10.5.

Thank you so much for the plentiful sample of "hot" ATP - terminal labelled. I made

PRPP from it the same day and have in fact been using it in recent experiments since I could afford to be liberal with that sample. It was the middle labelled ATP that has gone down really low by now but I am glad that the very last experiment (Graph II) worked. Although the counts are not very high, the picture proves the point quite clearly.

In a day or so I will forward the results of PRPP from terminal labelled ATP. It does go as expected and ~ 90 % of the counts appear in the Pi. – but the pictures are not very pretty yet, because of the PRPP sample having POP and RSP contaminations. We just want to repeat isolation of PRPP in at least as good a state as the sample in Graph I. (If any degradation occurs during isolation then I like to have it in a the desired direction rather than RSP + POP direction) – In any case, the whole thing will be over by the end of this week. The other experiments we want to do this week are to test R1,5-diP- in the system and also to put degradation products of PRPP on a paper chromatogram and identify the R-diphosphate as the 'cyclic' 5'- diphosphate.

Now that at long last the end is in sight, it would be nice to write it up. (The fact in catalysis of degradation was of especial interest to us and we are studying such effects with other nucleotide coenzymes). I would like to know from you whether you definitely want me to be in St. Louis before Fed. meetings. I am going to be rather rushed that week but will try to get there just the same.

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I am planning to leave here on April 2 and will be finished with talks in Ontario by April 8. Then expect to be in Boston area for a couple of days. I like to visit Bob Chambers for a day after that but this may have to be omitted (we still have to write up a part of Bob's work which John has continued).

There is also the possibility of my staying over in the East after Fed. meetings and so, please just say when it is convenient to You.

Roy Markham is expected to be here for the summer and we are looking forward to having him here. I am definitely planning to have done with writing before then, so that I can work with Roy on oligonucleotides.

This pretty well covers my end of the story. With best regards & greetings from all of us.

Yours -
Gobind.

P/S. Van Potter is here for three days.