

March 21, 1951

Dr. Herman M. Kalckar
Universitetets Institut for Cytofysiologi
Juliane Maries Vej 28
København

Dear Herman:

I received your letter yesterday and am sincerely happy about the favorable developments with you. Please accept my congratulations and very best wishes in your new and important post.

First, I might say, after a brief inquiry, the prospect for obtaining funds from the Research Grants division of the NIH looks rather favorable. I learned that it is a perfectly legal and acceptable operation to grant funds abroad either because (1) the investigator is especially talented and plans to pursue a program that is of great importance to science, or (2) the contemplated work could not be carried out adequately in the United States. I think that there is no question in our minds that you will fall very comfortably into the first category.

The most important favorable aspect is the current composition of the Biochemistry Study Section which will consider your application. It consists of the following persons:

Severo Ochoa	Floyd Daft
Vernon Cheldelin	(NIH)
(Oregon State)	Wendell Griffith
George Brown	(Texas)
(Sloane-Kettering)	J. Sendray
Emil Smith	(U. S. Navy, Bethesda)
(Utah)	Darby
J. Miller	(Duke)
(Wisconsin)	Goldsmith
H. Clarke	(Tulane)
(Columbia)	Davidson
	(Harvard)

C. G. King, Chairman

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You may not recognize the names of several members of this section since they may represent the nutritional and clinical interests of the group, but it is apparent that with Severo, George Brown, and Floyd Daft on the Board, you can be assured of a very personal as well as scientific endorsement. I will take the liberty of mentioning your letter to Severo when I see him in a couple of weeks; and it may be worthwhile to write to some other members of the Board if you should think it fit, although I hardly deem it necessary.

With regard to the amount of money, I would recommend that you ask for \$10,000, as that is a reasonable request. However, you had better be guided by Severo's advice on this point, rather than mine. If you like, I should be happy to look over your application, in conjunction with Dr. Irvin Fuhr, who is secretary of this Study Section, for points of language and technical detail before it is sent officially to the Section. With regard to Greenstein, Shannon and Huggins, I see no harm in writing them, although I doubt that they could help in any direct way. Please feel free to write me about any questions that you have with regard to the application, and I will do my best to try to get them answered for you.

Your mention of an interest in obtaining a Fellowship in this country for Klenow prompts me to tell you that we would be very happy to consider for a Fellowship in our group someone whom you would endorse. From time to time we have space available for a special research Fellow, and there is a likelihood that there may be an opening at the end of the summer. We would be very happy for the opportunity of having someone with us whose training and interests you would consider mutually beneficial, to him and ourselves. In the case of Klenow, he may have some particular laboratory in mind, and I would certainly urge that he apply for an NIH Fellowship. We will do our best to second your recommendation of him.

I am most interested in the things you are finding with adenine and perhaps the extensions of the work recorded by McNutt. We are just in the process of preparing some C^{14} adenine by your method and also C^{14} orotic acid with the hope of learning something about their metabolic activity.

Dr. Hayaishi and I have some studies under way on the metabolism of pyrimidines by microorganisms, and the first thing we observed is that uracil is quantitatively oxidized to barbituric acid and thymine very likely to methyl barbituric acid. There appear to be alternative pathways of metabolism which we are also looking into.

Another point of interest perhaps is some work we have done with uridine diphosphate isolated from the product accumulated by penicillin-inhibited S. aureus (Park and Johnson, JBC 1949). This nucleotide is converted to

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UTP by transfer from phosphopyruvate with purified transferring enzyme from muscle. The UTP phosphorylates glucose with yeast hexokinase (at an appreciably slower rate than ATP) and probably also is active with phosphohexokinase. However, UDP is inert with myokinase, and I hardly know how to evaluate at this point the true significance of these nucleotides.

You may be interested in some work we did on the enzymatic cleavage of nicotinamide riboside. We purified an activity from extracts of beef liver acetone powder which phosphorytically cleaves nicotinamide riboside to form nicotinamide, ribose-1-phosphate and hydrogen ion. Since the enzyme has a rather high pH optimum, the reversibility, although definite, is slight. It appears, in comparative studies with inosine, that we may be dealing with your enzyme in this reaction.

Sylvy and the members of our laboratory group join me in sending you our warmest regards. Please remember us to Vips.

Sincerely yours,

Arthur Kornberg

AK:rsb