

April 5, 1947

Dr. Jacques Monod
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Dear Jacques:

I am stimulated by your recent two papers in the Annals to write you once more in, probably, the vain hope that you might answer. In particular, I noticed something that I did not realize when you were telling me about these papers.

You will recall that when we spoke about the lactose problem, that I had found that the negative could oxidize lactose and that the unadapted positive could oxidize it. You pointed out, however, that in your strain this was not the case and at the time we decided that perhaps the difference could be explained on the basis of strain differences. You recall we planned on exchanging strains to see whether that was so.

I notice however that your test for oxidation was done with a 10% lactose solution. This fact may explain the discrepancy because I find that the oxidation of lactose (as well as other sugars) by cells not adapted to fermentation is extremely responsive to increased concentration. Thus, for example, I did not obtain any measurable oxygen uptake by lactose-unadapted coli until I had reached concentrations close to 1% and I found that this could be further increased by increasing the concentration of the lactose up to 4%. This same phenomenon of striking response to concentration, which is not true of adapted cells, I found also to be true of galactose, and I might note that this phenomenon has now been confirmed in Van Niel's laboratory. I therefore wonder whether you might not find the same thing with your coli strains if you were to increase the lactose concentration.

I understand from Delbruck that you have done some work on the interaction between phage infection and adaptive enzyme formation. The results, as he reports them, seem rather interesting but not very surprising.

Our work here is proceeding at a satisfactory rate in some directions and not quite as satisfactorily in others. I won't take the time now to give you a detailed account since I hope to see you this summer in Paris.

We are trying very hard to obtain transformations in yeast and have gotten some very encouraging results. We have been using tagged strains in an effort to make the experiments fool-proof and guarantee that we are actually transforming the strains that we start with. We have gotten positive results with transformations to galactose fermentation and we are now attempting to define with some precision the conditions of the transformation. This may take some time in doing.

My plans for the proposed trip to Europe are not as yet complete from a financial point of view. I have gotten some support from the Stockholm meetings and have written to Needham at the suggestion of Boris. Unfortunately, I have not as yet heard any definite decisions in this matter. I hope I hear soon either negatively or positively since if it is negative, I would like to make efforts in other directions to pay my way.

What I would like to do would be to spend about six weeks with you fellows after the congresses are over. I sincerely hope this will be possible.

Give my regards to Andre, and tell him that I am looking forward to seeing him once more. I have not finished his book as yet but am terrifically impressed with the broadness and generality of his thinking. It has made quite an impression here. I noted recently a review on another book which mentioned Andre's as being the most significant contribution of the last decade to general microbiology. I do not think the reviewer was overstating the case. I hope his plans for the translation are progressing.

Well, hope to see you soon. Regards from Helen and John, as well as the rest of the gang.

Sincerely yours,

S. Spiegelman

ss/b