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April 18, 1974

Professor Hans L. Kornberg
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Dear Dr. Kornberg,

Thank you for your letter of April 5th. How curious that you should have unearthed those remarks about chloroacetate just now. I say this because within the last month I had also reminded myself of those ancient observations, reread those remarks, and looked around a bit to see if anyone else had done any more work on those types than I had done. The answer is generally negative. I never did do the comprehensive study that I had planned, partly because the strains in which these -utants occurred became less interesting for some other reasons irrelevant to the present purpose. I think there is some passing mention of these mutants in one or another later symposium volume but I cannot put my hands upon it and I do not think it would add any significant information.

It is apparent that some or all of these mutants are deficient in the so-called formic hydrogen lyase reaction, and I certainly think it would be rewarding today to see if they can be related to the set of chlorate resistant mutants which embrace a whole set of defects connected with the embedding of the wall bound cytochrome system. I have, however, not pursued this myself nor am I likely to do so and it would please me very much to learn that you were able to shed some additional light on these curious beasts.

May I call your attention also to Penfold's observations on mutants resistant to ethylene chlorohydrin which he reported to be incapable of fermenting glycerol. I recently had some suspicion that these might be tied up to C-AMP activation defects but can offer no particular evidence in support of that speculation. I do not recall having confirmed his claimed observation in fact.

It would be intriguing to know the mechanism of resistance that these mutants display with the considerable likelihood that they will prove to be permease specific effects perhaps entailing a wider range of dysfunctions in the cell membrane.

I have not been able to find any further literature on chloroacetate and would be intrigued if you could eventually share news of your findings. I am curious to know in fact how you happened to stumble on this point in my 1947 paper, particularly if you were in fact looking for light on this

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particular question.

Let me apologize for having led you to a fruitless search for the "elsewhere" with the hope that it did not detain you too long before your writing me.

Sincerely yours,

Joshua Lederberg
Professor of Genetics

JL/rr