1948

Dept of Bacteriology
~~DAVIS~~ BRANCH OF THE COLLEGE OF ~~AGRICULTURE~~
~~DIVISION OF DAIRY INDUSTRY~~
3521 L.S.B.
U. of California,
Berkeley, Calif.

Dear Lederberg,

I am writing you from the Sierras, where my wife and I are camping together with the Hassids.

I have been working with your maltose+ glucose- strain of E. coli and we've got some extremely interesting results. As soon as I return to Berkeley, we shall attack the problem with everything at our disposal.

To summarize the results to date briefly:

(1) Your analysis was quite correct. Both the fermentation & the respiration of maltose are much more rapid than of glucose.

(2) Dry cell preparations also ferment maltose but not glucose.

(3) In the presence of poisons, phosphate is esterified, indicating a phosphorolytic mechanism.

(4) The analysis is greatly complicated by the simultaneous breakdown of reserve materials (apparently glycogen) in the bacterial cells.

If we can prove phosphorolysis of maltose, we shall want to report it as soon as possible,

and since, naturally, we shall do so with you as co-author, we should like a few more details about the culture, etc. as follows.

(1) The exact nomenclature of the strain and its characters.

(2) The derivation of the strain and the successive mutations involved.

(3) Any financial support of your work that you wish mentioned in the footnotes.

Needless to say, we shall send any forthcoming manuscripts first to you for approval.

In addition to the above information, I would like to have the following:

(1) The wild type strain to compare with the mutant.

(2) Any other interesting strains, such as

(a) trehalose ~~+~~ positive glucose negative.

(b) lactose positive, glucose & galactose negative.

(c) " " galactose negative.

(d) melibiose " glucose & galactose negative.

(e) " " galactose negative.

If I can get a fellowship for my sabbatical year (1949-50) I would like to spend part of the year with you, trying to pin down some of the genes you are working with to particular enzymes. I am extremely encouraged by the results to date and find that E coli is a very good bug to work with. Please excuse this hasty & semi-literate letter. With warmest regards, Mike Doudoroff