

October 20, 1952

Dr. Harlyn O. Halvorson
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Ann Arbor, Michigan

Dear Harlyn,

The samples that you sent for AA analysis have arrived and we will get them going this week.

With respect to your results, I am not clear on how distinct the separation is between the effect of the tryptozane on growth versus enzyme synthesis. It seemed to me from the early results you obtained here that the effect of concentration on induction was far lower than those you are finding now for the growth. If this is so, it is of extreme interest and would be of some value to know whether the same thing holds for the induction of another enzyme system. I shall send you some more of the remaining tryptozane and will try to get a hold of Snyder and see whether I can possibly get some more out of him. I don't know whether they have synthesized anymore or not at the present time.

Our experiments with the beta-galactosidase system are proceeding very nicely. We find we can do the enzyme assay protein determination (using Lowry's micromodification) as well as the counting (using the Q-gas flow counter which increases the sensitivity by a factor of about 7) all on the eluates from a strip. We can move the enzyme 20 cm in a six hour run. It moves a great deal faster than most of the other proteins and we have had it in what looks like almost complete purity on the basis of the specific activity. At the present time, our data indicates that less than 10% of the carbon of the enzyme comes from preexisting cellular material. I think with a little more effort we can probably push this down to 1% and then I think I'll call it quits. The interesting thing is that these experiments were five hour inductions during the course of which there was about three divisions. This suggests very strongly that there is relatively little recycling of protein material in coli. It will be extremely interesting to duplicate this experiment with other organisms in which recycling may be expected to occur.

Please keep me informed on how things are going and let me know as soon as you do when you expect to come down to Urbana.

With kindest regards,

Sincerely yours,

S. Spiegelman

SS:cz