

THE ROCKEFELLER INSTITUTE FOR MEDICAL RESEARCH

66TH STREET AND YORK AVENUE  
NEW YORK 21, N.Y.

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Dear Joshua,

With regard to the Fla-H transduction, the point I ~~was~~ wanted to make was that the four i turned up in the ~~first~~ first experiment, ~~and was~~ four out of four tests. The subsequent repeats with more carefully heated FA gave only three b reversions. I felt at that time and still feel that there is sufficient significance ~~in~~ the two sets of results to warrant the conclusion that the first was an artifact. Anyhow that is water under the dam.

I sent off a stock of the semivirulent mutant (H4)<sup>\*</sup>. Its properties are as follows: 1) plaque is semiturbid, ~~contra~~ full turbid or clear, 2) it has lost its capacity to lysogenize but not its capacity to immunize 3) still exhibits the Boyd effect.

Under conditions of single infection of log phase cells all of the infected cells lyse in the first generation. With multiple infection all of the cells give rise to both a colony (small and mottled) and an infective center. There is a definite discontinuity in ~~at~~ the multiplicity determining whether lysis of survival results, but it has been as yet too elusive to pin down to a precise number; ~~but is~~ in the range of two to four. At any given multiplicity the number of survivors is unaffected by simultaneous infection with an equivalent number of virulent phage. Further additions of virulent phage cause a loss in survivors in direct proportion to the ratio of the two kinds of phage.

The experiments must therefore be done ~~not~~ with multiple infection. There is an absolute increase in the number of contaminated clones, this even when calculated on the basis of segregation of the input and that lysis of a cell withdraws only a single particle from the pool of particles. The final yield is at ~~least~~ least a factor of ten greater than to be expected, again calculated on the previous basis. Experiments are done under conditions where reinfection is not possible. It ~~seems~~ would seem that during the period of what might be called self-immunization the particles grow at slow rate. When by segregation their number falls below a certain value the cell lysis.

I'm not sure what you can do with it but you are welcome to play with it. I would adapt it to the particular strains before use.

Sincerely,  
*Norton*  
Norton

\* ca  $5 \times 10^{10}$  / ml

✓ *In freezer*