UNIVERSITY OF SOUTHERN CALIFORNIA
UNIVERSITY PARK
LOS ANGELES 7

October 7, 1948

Dr. J. Lederberg
Department of Genetics
University of Wisconsin
Madison 6, Wisconsin

VI, VII, C 1,5

Dear Dr. Lederberg:

Under separate cover I am sending you our cholerae-suis and poona strains. These are culture no. 34 (S. cholerae-suis) and no. 91 (S. poona) as listed by Edwards in his Monograph. We did not get these cultures direct from Edwards but obtained them in a lyophilized state from Dr. Barnes in Bethesda. I am also sending, in sealed tubes, our two phage strains. The phage against cholerae-suis is quite specific and does not lyse culture 91 or any of the other Salmonellas tested. The phage against poona is not as specific and does lyse culture 34 to some extent as well as other Salmonella strains. We hope these materials will be of some value to you.

? XIII, XXII, I 1,6

In reference to your comment on the possibility that phage resistant mutants from individual cultures might have altered antigenic structure I might say that we tested a fair number of colonies of resistant strains and failed to detect any new antigens in these forms although in some we did notice a loss of an antigen. Frankly, we have much more control work to do before we are satisfied with our present results.

Since I last wrote we have carried on another experiment which indicates that the transference of antigens between these two strains is probably induced by chemical factors rather than being a gene recombination. We grew organism 34 in broth, added phage 34 to our culture and lysed it. The lysed culture was filtered through a Seitz glass filter obtaining sterile filtrates. We then grew organism 91 in the sterile filtrate and after varying periods of time removed portions of the culture, lysed them with our 91 phage and plated out the phage treated samples. We picked 36 colonies from our plates, transferred to slants and checked the antigenic structure of these 36 isolates from the slant growths. Of this group 5 showed altered antigenic structure. Two had antigen VI, XIII and XXII. Two had antigens VI, XIII and one had VII, XIII, and XXII. In each of these cases we apparently added an antigen from organisms 34

to organism 91. The isolates from this particular experiment have not been stable. Three apparently reverted to their initial antigenic structure after two sub-cultures, and the other two which contained the VI antigen now apparently have the VII antigen instead. It is very puzzling indeed.

I want to thank you for the coli strains you are sending us. We wish to use them to gather some information on the suggestion put forth by Gale that penicillin prevents the transport of glutamic acid into the cell.

Sincerely yours,

S. C. Rittenberg

S. C. Rittenberg
Assistant Professor
Department of Bacteriology

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