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INSTITUTE OF MICROBIOLOGY

August 20, 1962

NEW BRUNSWICK, NEW JERSEY

Dr. Joshua Lederberg  
Department of Genetics  
Stanford University Medical School  
Palo Alto, California

Dear Josh:

I have your request for information on the effect of polymyxin in modifying E. coli conjugation, specifically asking for a more detailed reference than the brief allusion in my antibiotic review. The experiments involved were done while I was working at Cold Spring Harbor under a Fort Detrick contract. The observation, made about 1953, showed that a strain 58-161 became progressively more resistant to polymyxin, it became progressively harder to recover prototrophs from W 1177 matings. After 6-10 gradient plate isolations the matings became fruitless. For approximate levels of drug required, see the review, figure 3 .

It seems very possible that my casual reference to episome elimination is premature. The well-known effects of polymyxin on the cell surface suggest that changes in the bacterial wall associated with resistance may be incompatible with retention of the mating potential. I had written something about this idea in my renewal application for USPHS E-2615, but soon thereafter your paper with Sneath came out.

If you are doing no more work along these lines, there are probably enough differences between polymyxin and periodate to justify some investigation into the former. On the other hand, maybe you have a student working on this or related problems. Let me know by postcard whether this problem is still tied up, and whether, if not, I can use your stocks: W 2324, W 3064, W 3086, W 6, W 3876, W 3776, W 3780, providing you are willing to send them to me.

Best regards.

Sincerely,

Vernon

Vernon Bryson

VB:DP

[Very likely F eliminatus]

Bryson