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7152 C

An Attempt to Reactivate Mercuric Bichloride Inactivated Vaccinia Virus.

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A property common to many enzymes^{1, 2} is the ease with which mercury bichloride inactivation may be quantitatively reversed. Such reactivation after bichloride inactivation has also been demonstrated with bacteriophage^{3, 4} and since some workers have postulated an analogy between phage and viruses the following experiments were undertaken to determine whether or not bichloride inactivated vaccinia virus could be reactivated.

The least amount of mercury bichloride which would extinguish the reaction of the viruses in rabbit skin was first determined. A calf-skin strain (dermovaccine) and a rabbit-brain strain (neuro-lapine) of virus were used. Heated and unheated virus-saline mixtures were used as controls. Portions of a 1-500 suspension of the viruses (known to be active in a 1-1,000 suspension) were exposed to equal amounts of various mercury bichloride dilutions for 24 hours at room temperature. One-tenth cubic centimeter of each virus-bichloride or virus-saline mixture was injected intradermally into corresponding shaved skin areas on 2 albino rabbits. The heated virus-saline or heated virus-bichloride mixtures caused no reaction on the skin of rabbits. The reaction of the dermovaccine was extinguished by the 1-10,000 dilution but not by the 1-100,000 dilution of bichloride. The reaction of the neurolapine was ex-

¹ Marston, H. R., *Biochem. J.*, 1923, **17**, 851.

² Euler, H. V., and Svanberg, O., *Fermentforsch.*, 1919, **3**, 330; 1920, **4**, 29, 90, 142.

³ Krueger, A. P., and Baldwin, D. M., *J. Gen. Physiol.*, 1933, **17**, 129.

⁴ Krueger, A. P., and Baldwin, D. M., *J. Gen. Physiol.*, in press.

tinguished by a 1-1,000 but not by any higher dilution of bichloride.

The specific doses of bichloride were applied to fresh suspensions of the viruses and half of the mixtures treated with H_2S , which treatment had restored the activity of bacteriophage. Virus-saline mixtures treated with H_2S served as additional controls. The experiment was performed twice. In each instance the addition of H_2S to the virus-bichloride mixtures did not render the mixture active when inoculated into rabbit skin. The addition of H_2S to virus-saline mixtures did not destroy the virus though there was slight diminution in the extent and severity of the reaction in rabbit skin. This was probably due to unfavorable changes in the tonicity and acidity of the suspending medium.

7153 P

Effect of a Diet Consisting Exclusively of Carrots on Serum Protein Concentration of the Rat.*

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It was pointed out¹ that no significant fall of serum protein concentration occurred in rats kept for a period of 5 months on a diet extremely low in protein, provided the diet was otherwise adequate. These results are at variance with the conclusions of Kohman,² and of Frisch, Mendel and Peters.³ However, the diet used by these observers consisted in large part of carrots and the question therefore came up whether carrots alone may exercise some specific blood protein lowering effect. The present experiments were planned to obtain information about this possibility.

Eighty-eight young adult white rats were placed on a diet consisting exclusively of fresh carrots. No salts or vitamins were added. After varying intervals groups of 5 or 6 animals were exsanguinated under ether anesthesia, aliquot portions of serum were pooled and the total serum proteins were measured.⁴ The experi-

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¹ Bloomfield, A. L., *J. Exp. Med.*, 1933, **57**, 705.

² Kohman, E. A., *Am. J. Physiol.*, 1920, **51**, 378.

³ Frisch, R. A., Mendel, L. B., and Peters, J. P., *J. Biol. Chem.*, 1929, **84**, 167.

⁴ Barnett, C. W., Jones, R. B., and Cohn, R., *J. Exp. Med.*, 1932, **55**, 683.