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Antibody Response to *H. Pertussis* Undenatured Bacterial Antigen.*

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(Introduced by A. P. Krueger.)

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The rise in complement fixing antibodies in the sera of rabbits following a single injection of *H. pertussis* undenatured bacterial antigen (Krueger *et al.*)¹ was determined. The method used was that described (Miller²) in connection with a study of other types of *H. pertussis* extracts. Comparable amounts on the basis of total nitrogen content were used—approximately 0.05 mg./cc. In 6 rabbits tested the appearance of complement fixing antibodies was demonstrated on the 6th to the 20th day after injection. The rise in their titre thereafter was gradual. This response to *H. pertussis* U. B. A. differs from that of *H. pertussis* extracts previously described,² in that it is slower and more variable.

The antibody response to repeated injections of *H. pertussis* U. B. A. was then observed in 10 children. None had a history of whooping cough or *H. pertussis* vaccination. They were members of a group of 50 subjected to 4 immunizing injections of *H. pertussis* U. B. A. At weekly intervals there were given subcutaneously 0.5 cc., 1.0 cc., 1.0 cc., and 2.0 cc. of a preparation containing 8 mg. of nitrogen/100 cc.

Complement fixing antibodies were demonstrated in the sera of 4 children on the seventh day after completion of the injections and a fifth sera was found positive on the eighteenth day. On the sixty-fourth day 3 of these remained positive. Agglutinins were demonstrated in 5 sera on the seventh day, in 9 sera on the eighteenth day and in only 3 sera on the sixty-fourth day. Precipitins were demonstrated in 3 instances on the eighteenth day and in 9 instances on the sixty-fourth day.

Conclusion. Herein it is demonstrated that *H. pertussis* U. B. A., an undenatured extract prepared by mechanical disruption of Phase I *H. pertussis* bacilli and subsequent filtration through a collodion membrane, is able to stimulate the formation of complement fixing antibodies, agglutinins and precipitins.

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¹ Krueger, A. P., Nichols, V. C., and Frawley, J. M., *PROC. SOC. EXP. BIOL. AND MED.*, 1933, **30**, 1097.

² Miller, J. J., Jr., *J. Immunol.*, 1934, **26**, 247.