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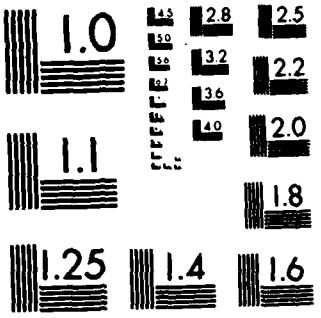

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VIRULENCE FACTORS OF ENTEROPATHOGENIC ESCHERICHIA COLI

Final Report

Doyle J. Evans, Jr., Ph.D.

February 1983

Supported by

US Army Medical Research and Development Command
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The University of Texas Health Science Center
Houston, Texas 77030

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Report documents studies on antigenic analysis of Type VI fimbriae of Escherichia coli and on purification and characterization of a prototype species of Type V-A hemagglutinin.

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FOREWORD

In conducting the research described in this report, the investigator(s) adhered to the "Guide for the Care and Use of Laboratory Animals," prepared by the Committee on Care and Use of Laboratory Animals of the Institute of Laboratory Animal Resources, National Research Council (DHEW Publication No. (NIH) 78-23, Revised 1978).

This communication constitutes the final progress report for Contract No. DAMD17-79-C-9077 entitled "VIRULENCE FACTORS OF ENTEROPATHOGENIC Escherichia coli."

Two projects were completed; these are documented in detail in publications. Working with FEEC strains provided by Dr. L.Young (University of California, Los Angeles) we performed a thorough antigenic analysis of the Type VI fimbriae of these E. coli. The finding of antigenic heterogeneity of these fimbriae (1) has important implications for diagnosis of UTI and bacteremic infections and also for consideration in progress towards implementation of immunoprophylaxis via vaccination with appropriate fimbrial antigens.

The second project involved purification and characterization of a prototype species of Type V-A hemagglutinin (2), which proved to be a surface-associated glycoprotein.

Final months of this project involved attempts to use an adult rabbit model to reproduce pyelonephritis in order to characterize the role of Type V-A hemagglutinin in this process. However, these efforts were unsuccessful in proving this important point.

1. Clegg, Steven, Doyle J. Evans, Jr., and Dolores G. Evans. "Antigenic Heterogeneity of Hemagglutinin Type VI Fimbriae Produced by Escherichia coli Isolated from Patients with Bacteremia." J. Clinical Microbiology, 16: 174-180; 1982.

2. Sheladia, Vithalbhai L., James P. Chambers, Juan Guevara, Jr., and Doyle J. Evans. "Isolation, Purification, and Partial Characterization of Type V-A Hemagglutinin from Escherichia coli GV-12, O1:H ." J. Bacteriology, 152: 757-761; 1982.

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