Harnessing Host-Pathogen Interaction Mechanisms To Combat Gram-Negative Bacterial Infections

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Abstract
Gram-Negative bacterial infections are a major cause of morbidity and mortality worldwide, with diminishing treatment options. With the recent alarming increase in antibiotic resistant and persistent/chronic Gram-negative bacilli (GNB) infections, there is an urgent need to develop new and improved treatment strategies to combat this threat. Since complex interplay between host and pathogen ultimately decides the outcome of an infection, it is important to understand the host-bacterial interaction mechanisms for enhancing therapeutic options. In this seminar, I will discuss current research efforts from my laboratory, aimed at discovering the cell biological and immunological mechanisms governing GNB pathogenesis with emphasis on persistent and antibiotic resistant infections caused by clinically relevant bacteria such as Uropathogenic E. coli, and Acinetobacter baumannii. The presentation will discuss new findings on the mechanisms by which nutrient acquisition impacts on persistent bacterial infections. Besides, I will also discuss the role of NOD-like receptors in the host immune response to bacterial infections.

Selected Publications for Reference