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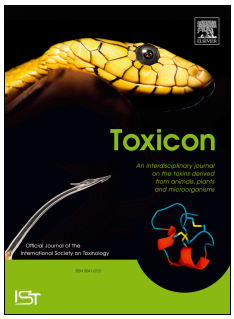

Immuno-modulatory functions of the type -3 secretion system and impacts on the pulmonary host defense: A role for ExoS of *Pseudomonas aeruginosa* in cystic fibrosis

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IMMUNO-MODULATORY FUNCTIONS OF THE TYPE -3 SECRETION SYSTEM AND IMPACTS ON THE PULMONARY HOST DEFENSE: A ROLE FOR EXOS OF PSEUDOMONAS AERUGINOSA IN CYSTIC FIBROSIS.

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INTRODUCTION

1. Abstract

Number of previous reviews had described the structures and the various functions of the exotoxins produced by the type-3 secretion system of *Pseudomonas aeruginosa* and their roles in the interactions of this bacterium with host cells. In this review, we summarize some relevant data of literatures on ExoS, an exotoxin from the type-3 secretion system of *P. aeruginosa*, with a particular focus on the role of this toxin in the airways innate response of the host to infection by this bacterium, and its implication in the elimination of *Staphylococcus aureus* from the airways of patients with cystic fibrosis.

2. PAMPs and innate immune response

One of the main functions of innate immunity/inflammation is to allow the host to recognize invading pathogens. Charles Janeway (1) suggested that pathogens express structures that allow their recognition by the host defense systems. He named these structures 'pathogen-associated molecular patterns' or PAMPs that are conserved motifs expressed by families of microorganisms and are essential for their survival. PAMPs include numerous virulence factors such as lipopolysaccharides (LPS) of Gram-negative bacteria, lipopeptides of Gram-positive bacteria and double-stranded RNA (dsRNA) of certain viruses. PAMPs recognition is a key step in anti-