TITLE: EXTRACTION AND CHARACTERIZATION OF MANNOSE-BIDING LECTIN ISOLATED FROM *Corynebacterium pseudotuberculosis*

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ABSTRACT:

Corynebacterium pseudotuberculosis is defined as a Gram-positive bacillus. It is the etiologic agent of the caseous lymphadenitis, a high prevalence infectious disease in small ruminants, which it is characterized by an inflammatory process in the lymph nodes and organs. The spread of the microorganism from a lymph node to other organs and tissues depends on the virulence of the strains, the infectious bacterial load and the animal clinical condition. Carbohydrates are intrinsically related to the bacterial binding to the host epithelial cell receptors, because they act as specific targets for a pathogen binding thus contributing to the infection establishment. Lectins, on the other hand, are proteins that have an ability to bind to carbohydrates reversibly. They are classified according to their specificity to carbohydrates, characteristic that allows their purification based on this interaction. Mannose-binding lectins are very important for both hosts and microorganisms, as an essential standard for the immune system activation. Therefore, bacterial colonization and consequent infection can be avoided in case of an inhibited cell-pathogen interaction. A method to prevent the pathogen adhesion it is use vaccines with antigenic adhesives obtained by purification, which induce a local immune response. The aim of this study was to characterize the mannose-binding lectins in *C. pseudotuberculosis* isolates. For a protein extraction, it was used a pool of *C. pseudotuberculosis* isolates from different cities in the state of Pernambuco. The lectin was isolated by affinity chromatography in a Mannose-Agarose column. As result, it was obtained an OD of 4000 at 280 nm for the protein quantification, and the electrophoretic profile by the SDS-PAGE method showed a protein band with apparent mass around 50 kDa. It was concluded that the protocol of protein extraction is adequate and that *C. pseudotuberculosis* have mannose-binding proteins.

Keywords: bacillus, gram-positive, lectin, lymphadenitis, sheep.

Development agency: Fundação de Amparo à Ciência e Tecnologia do Estado de Pernambuco (FACEPE)