Leptospira interrogans Hypothetical Protein is an Adhesin

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Leptospira interrogans causes leptospirosis, one of the most important zoonoses diseases in the world. Leptospirosis is considered endemic in tropical countries, such as Brazil, but may become epidemic. Genomic information has the potential to provide the knowledge of the pathogenesis and the development of new therapeutics. In this context, adhesins are an attractive target because they mediate adherence to host tissues. The genome from L. interrogans serovar Copenhageni strain Fiocruz L1-130 was analyzed by bioinformatics tools and a predicted extracellular hypothetical protein was found. This gene was amplified from the genomic DNA by PCR, cloned, and expressed in E. coli BL21 SI in insoluble form. The recombinant protein was refolded in PBS buffer and shown to interact to extracellular matrix (ECM) components. The results indicate this protein binds A31, LLCPK and Vero cells and it is able to bind matrigel, specifically to laminin. This protein was detected in virulent L. interrogans culture. The protective immunity using homologous serovar challenge in hamster was evaluated, unfortunately with negative results. Nevertheless, this protein has demonstrated to be important for the host-pathogen interaction and can help to understand the virulence mechanisms in Leptospires.

Keywords: Leptospira interrogans, adhesin, hypothetical protein

Supported by: FAPESP, CNPq and Fundação Butantan