

SUMMARY OF THESIS

CARVALHO, Enéas de - Análise das proteínas de *Leptospira* com possível papel hemolítico através de expressão recombinante: detecção de expressão nativa, atividade biológica e potencial vacinal. São Paulo, 2008. (Tese de doutoramento - Instituto de Biociências da Universidade de São Paulo).

***Leptospira* HEMOLYTIC PROTEIN ANALYSIS BY THE RECOMBINANT EXPRESSION: DETECTION OF NATIVE EXPRESSION, BIOLOGICAL ACTIVITY AND VACCINATION POTENTIAL**

Leptospirosis is considered the most disseminated zoonosis of the world, and also a reemerging disease. This disease, caused by pathogenic bacteria of the genus *Leptospira*, has high rates of infection in developing countries, leading to severe economic and medical costs. There is not a licensed vaccine against leptospirosis for human use. After the genome sequencing of three species of leptospires, several genes were pointed to be promising vaccinal candidates. An important category of these candidates are those with putative hemolytic activity. In this work, we cloned and expressed some proteins with putative hemolytic activity. The recombinant proteins obtained, however, did not show hemolytic activity. One of these proteins, TlyC, was investigated with regard to its possible ability to interact to extracellular matrix (ECM) components. The results obtained indicate that TlyC binds with high affinity to several ECM components and that this protein

can inhibit the leptospira bind to a biological material that resembles the ECM. The transcription and expression of these proteins were detected in leptospires cultures. Some of the recombinant proteins were used in an animal challenge against leptospirosis, but none of them were protective. We concluded that these proteins do not seem to be good vaccine candidates and that TlyC is a protein that interacts with the ECM and its components.

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