

Study of Potential Vaccine Candidates from *Leptospira interrogans* serovar Copenhageni

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Introduction: Preventive measures as vaccines are the best strategies to combat leptospirosis. The genome from *Leptospira interrogans* serovar Copenhageni was analyzed by bioinformatic tools and proteins, possibly related to its pathogenesis, were identified. **Objectives:** The aim of this work is to study antigens with vaccine potential against leptospirosis. Seven proteins were selected: two hemolysins (SphH and Sph4), three lipoproteins (LipL32, LipL22 and LipL23), an outer membrane (OmpA76) and an ankyrin like protein (AnkB). **Methodology and results:** The genes were amplified, cloned and the proteins were expressed in *E.coli* BL21(DE3)StarpLysS. The proteins LipL32, LipL22 and LipL23 were recovered in the soluble fraction and purified. OmpA76, AnkB, Sph4 and SphH were refolded by different methods. A challenge assay was performed. Hamsters were immunized with a *pool* of the seven proteins and challenged with *L. interrogans* serovar Copenhageni. All the animals of the negative control group (PBS) died, while 30% of the group *pool* of proteins survived. A commercial vaccine or a bacterin of *L. interrogans* conferred a protection of 90% and 100%, respectively. The recognition of the proteins by sera from hamsters infected with *L. interrogans* was analyzed. LipL32 reacted with all tested sera. OmpA76, LipL23 and LipL22 were recognized by sera that have high MAT titers. **Conclusions:** Considering that the proteins LipL32, LipL23, LipL22 and OmpA76 were immunogenic in hamster model of leptospirosis, additional challenge assays could be performed. Parameters like the proteins doses, different combinations of the antigens and other forms of presentation should be considered.

Key words: Recombinant proteins. *Leptospira interrogans*.