Possible role of two proteins of *Leptospira interrogans* involved host-pathogen interactions

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**Introduction:** Leptospirosis is a zoonosis of global importance that is being considered a major emerging infectious disease. Studies have been conducted to characterize novel antigens. **Objectives:** Our goal is the expression and characterization of surface proteins of *L. interrogans* serovar Copenhageni encoded by the genes LIC11834 and LIC12253. **Methods:** Bioinformatics analysis of the two gene sequences; design of primers; genomic DNA extraction and RNA extraction and amplification by PCR (study of conservation); cloning of PCR products in expression vector; expression and purification of recombinant proteins; protein analysis by circular dichroism spectroscopy; production of polyclonal antibodies by mice immunization; evaluation of the capacity of these proteins to mediate attachment to ECM and components human serum by binding assays. **Results:** We show that leptospiral proteins encoded by the genes LIC11834 and LIC12253 interact with laminin. Metaperiodate - treated laminin reduced rLIC12253 - laminin interaction, suggesting the involvement of sugar moieties in this interaction. The rLIC11834 is also PLG - binding receptor, capable of generating plasmin in the presence of an activator. Although in a weak manner, both proteins interact with C4bp suggesting a possible role in leptospiral immune evasion. *In silico* analysis together with immunoflorescence data suggest that these proteins are probably surface exposed. Moreover, the recombinant proteins partially inhibited leptospiral adherence to immobilized laminin and PLG. We believe that these multifunctional proteins have the potential to participate in the interaction of leptospires to hosts by mediating adhesion, may help the bacteria to escape the immune system and to overcome tissue barriers.

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