

**LipL53, A TEMPERATURE-REGULATED PROTEIN FROM LEPTOSPIRA INTERROGANS THAT BINDS TO EXTRACELULLAR MATRIX.**

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Extensive studies aimed to understand the pathogenesis of *Leptospira* have provided important knowledge about virulence factors. Thus, the expression of genes involved in virulence that are regulated by temperature, as well as the production of proteins capable of interacting with extracellular matrix, are considered critical events during the infection process. **Objectives:** In this study, we set out to characterize a protein, LipL53, from *L. interrogans* previously identified on screening studies to react with serum sample of individual diagnosed with leptospirosis (Gamberini et al., 2005). **Methods:** The recombinant protein was expressed as insoluble form in *E. coli* and refolded by decreasing concentrations of urea during the purification throughout Ni<sup>2+</sup>-charged chromatography. The presence of the LipL53 transcripts among pathogenic serovars of *Leptospira* and the effect of temperature shift on LipL53 transcription profile were evaluated by RT-PCR. The binding ability of this protein with extracellular matrix components was analyzed by ELISA. **Results:** The secondary structure content of recombinant LipL53 as assessed by circular dichroism showed a mixture of  $\beta$ -strands and  $\alpha$ -helix. The presence of LipL53 transcripts at 30°C were only detected within the virulent strains. However, upon shifted of attenuated cultures of pathogenic strains from 30 to 37 and 39°C these transcripts could also be observed. The attachment of LipL53 to laminin, collagen I and cellular and plasma fibronectin was specific and dose-dependent. **Conclusion:** Our results suggest that LipL53 is a novel adhesin of *L. interrogans* that could have an important role in the pathogenesis of the disease. **Keywords:** *Leptospira interrogans*, Adherence, Virulence. **Supported:** FAPESP, CNPq, Fundação Butantan.