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Immune Evasio on *Leptospira*: Identification of Surface Bacterial Ligands to Human Complement Regulator Factor H

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Leptospirosis is a worldwide zoonosis and represents a serious health problem in urban areas of developing countries. Like other pathogens, leptospires have evolved strategies to evade the innate immune system. Binding of the regulators Factor H (FH) and C4b binding protein (C4BP) has been demonstrated for pathogenic strains of *Leptospira*. Leptospiral immunoglobulin-like (Lig) proteins belong to a family of surface-exposed determinants that have Ig-like repeat domains found in virulence factors such as intimin and invasin. The Lig proteins are expressed during host infection, but loss of protein expression occurs upon culture attenuation of pathogenic strains. Lig proteins can bind to a variety of extracellular matrix (ECM) components, thereby mediating adhesion to host cells. Moreover, LigA has been shown to be the best vaccine candidate against leptospirosis. Considering that during infection important virulence factors of many pathogens may interact with multiple host proteins, including coagulation cascade molecules, ECM components and complement regulators, we decided to evaluate whether the Lig proteins would contribute to leptospiral immune evasion by interacting with host complement regulators. Both the C- and the N-terminal portions of LigA and LigB genes were cloned and the proteins were expressed in *E. coli*. The binding of the purified recombinant proteins to FH and C4BP was assessed by Western blot overlay and ELISA. The C-terminal portions of both LigA and LigB bound serum FH. To date, only two leptospiral proteins (LenA and LenB) have been described to interact with FH. Considering that leptospires are highly invasive microorganisms, there might be several other bacterial receptors for this host molecule. The identification of these receptors is of great relevance, since they may represent targets for immune interference.

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