

TITLE: IDENTIFICATION OF *STAPHYLOCOCCUS SAPROPHYTICUS* SECRETED ANTIGENIC PROTEINS BY USING IMMUNOPRECIPITATION METHOD

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ABSTRACT:

Staphylococcus saprophyticus is a Gram-positive bacterium associated with urinary tract infections (UTI), which has a remarkable importance in the infection of sexually active young women. This bacterial specie is the second causative agent of ITU in women. Numerous large-scale studies of the identification and characterization of antigenic proteins using immunoproteomic tools are available in *Staphylococcus aureus*. However, in *S. saprophyticus*, immunoproteomic studies are still deficient. In previous studies, we have identified 3 antigen secreted by *S. saprophyticus*, by 2D-SDS-PAGE method: transglycosylase IsaA, enolase and a putative secretory antigen (SsaA). In order to identify others antigenic proteins, we decided performed immunoproteomic techniques based on immunoprecipitation and liquid chromatography coupled to in-tandem mass spectrometry (LC-MS/MS), to complement this analysis. We identified a bifunctional autolysin, L-lactato dehydrogenase, alkyl hydroperoxide reductase, rhodanese-related sulfurtransferase, and transglycosylase IsaA. IsaA protein is consider a immunodominant antigen in bacteria of *Staphylococcus* genus, and in our study, it was detected in *S. saprophyticus* by using two immunoproteomic techniques. Our analysis shows that the techniques presents different detection sensitivities, while 2D-SDS-PAGE was able to identify abundant antigenic proteins in the secretome of *S. saprophyticus*, the immunoprecipitation technique was able to detect others antigenic proteins. However, it is necessary further studies to characterize these proteins in *S. saprophyticus*. The identification of antigenic proteins in pathogenic microorganisms such as *S. saprophyticus* is important, since it may contribute to the identification of novel diagnostic and therapeutic targets.

Keywords: immunoproteomic, *Staphylococcus saprophyticus*, tract urinary infections, antigens

Development Agency: CNPq, CAPES, FAPEG, INCT-IPH