Immunogenicity Assessment of Brucella mellitensis HspA and TF Proteins by Immunized Rabbit Serum

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Background & Objectives: Bacteria of the genus Brucella are facultative intracellular pathogens which have developed the capacity to survive and multiply in professional and nonprofessional phagocytes. Immunity against B. melitensis involves antigen-specific T-cell activation, CD4+ and CD8+ T cells, and humoral immune response. Due to drawbacks of live attenuated vaccines, much attention has been focused on screening Brucella-protective antigens as subunit vaccine candidates.

Methods: In order to screen immunogenic candidate antigens for the development of a brucellosis subunit vaccine, we cloned, expressed and purified Heat Shock Protein A (HspA) and Trigger Factor (TF). These recombinant antigens were then evaluated by serum from a B. mellitensis-infected rabbit using ElISA and Western blot.

Results: Our results show that both rHspA and rTF reacted with rabbit immune serum. The immunized rabbit serum reacted with recombinant Brucella proteins HspA and TF with 10.7-fold and 17-fold respectively increased binding compared to pre immunized serum in ELISA.

Conclusion: Because of protective effect of TF that was shown in mice previously, so we think TF protein can be considered as subunit vaccine and also more studies are needed for evaluating of protective effect of HspA.

Keywords: *Brucella mellitensis*; HspA; TF; Immunogenicity