

Th-1 Type Cytokine Response to Recombinant 18kDa Outer Membrane Protein (Omp19) of *Brucella abortus*

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Background & Objectives: As a prevalent zoonose, brucellosis is of great concern economically. Attenuated vaccine strains are available for prevention of the disease in cattle but not in humans. Development of new efficient vaccines also useful for humans is a field of interest for researchers. *Brucella* antigens which induce cell-mediated immune response may have a key role in development of new vaccines. This study aimed to survey cytokine response to the recombinant protein moiety of 18kDa lipoprotein (Omp19) of *brucella abortus*.

Methods: *opm19* gene cloned in pET28a(+) and the recombinant Omp19 produced in *E. coli* Bl-21. Recombinant protein purified using Ni-NTA resin. Recombinant Omp19 administered subcutaneous to BALB/c mice emulsified with ferund's adjuvant. Two boosters with twelve-day intervals administered to mice. Six day after last booster, mice sacrificed and spleen lymphocytes isolated and cultured. IL-4 and IFN- γ levels in response to stimulation with recombinant Omp19 assayed subsequently.

Results: Lymphocyte from Omp19-immunized mice produced a higher level of IFN- γ compared to non-immune ones ($p < 0.001$). No difference observed between immunized and non-immunized groups in IL-4 levels.

Conclusion: Our results suggest that *Brucella abortus* Omp19 induces cell-mediated immune response in mice. Cell-mediated response is essential in battling brucellosis; thus Omp19 is a suitable antigen in new vaccine investigations. Brucellosis, *Brucella abortus*, Omp19, IL-4, IFN- γ

Keywords: Brucellosis; *Brucella abortus*; Omp19, IL-4; IFN- γ