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**IMMUNOGENICITY EVALUATION OF *Brucella abortus* RECOMBINANT  
55KDA SURFACE MEMBRANE PROTEIN COMBINED WITH  
DETOXIFIED LIPOPOLYSACCHARIDE IN BALB/C MOUSE MODEL****YAHYAEI S<sup>\*1</sup> AND KHORAMABADI N<sup>2</sup>****1:** Master of Science in Microbiology, Department of Microbiology, Karaj Branch, Islamic Azad University, Karaj, Iran**2:** PhD. Bacteriology, Department of Microbiology Tarbiat Modares University Tehran, Tehran, Iran

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**ABSTRACT**

Brucellosis is a zoonotic infection caused by the bacterial genus *Brucella*. Controls of the disease in animals are performed by administration of live attenuated vaccines which are strictly pathogenic for humans. Main antigen of the *Brucellae* is Lipopolysaccharide (LPS), which is a T-independent one. For eliciting cell-mediated immunity against LPS, it should be combined with a protein antigen. Here we report the production of a recombinant outer membrane protein of *Brucella abortus* (BC55) and evaluation of its ability to elicit protective immunity when combined with LPS. *Brucella bc55* was amplified with PrimStar HS, cloned in pET32a (+). Recombinant pET32a vectors were transferred into *Escherichia coli* GM2163. Expression of recombinant protein was induced by IPTG 1mM. Recombinant protein was purified using nickel resin. This protein was combined with detoxified LPS and injected subcutaneously to BALB/c mice. Immunized animals were challenged with pathogenic strain 544. Recovered bacteria from spleen of mice were compared to those of control groups. Our results show that the combined antigen could elicit partial immunity in mice model and is comparable to that conferred by standard vaccine strains. We concluded that this antigenic compound in combination with other efficient material may be more effective.

**Keywords: *Brucella abortus*, 55kda, Recombinant Proteins, Protection**

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