IMMUNOGENICITY AND PROTECTIVE EFFICACY OF SLPS SUBUNIT VACCINE AND STRAIN RB51 VACCINE IN MICE (Mus musculus) AGAINST B. abortus FIELD ISOLATE INFECTION

Saiful Anis

ABSTRACT

This study was conducted to evaluate the immunogenicity and protective efficacy of smooth Brucella abortus lipopolysaccharide (SLPS) as a subunit vaccine. Subcutaneous injection of SLPS with Al(OH)$_3$ and montanide as adjuvant into BALB/c mice elicited both humoral and cellular immune responses. Animals injected with SLPS develop antibodies without statistical differences compared to animals vaccinated with B. Abortus vaccine SRB51, which exhibited a dominance of immunoglobulin G2b (IgG2b) over IgG3, IgG2a and IgG1. In addition, the SLPS subunit vaccine induce T-cell-proliferative response characterized by the production IL-2 and also induced the production of gamma interferon, suggesting the induction of a typical T-helper-1-dominated immune response in mice. The SLPS subunit vaccine induced a strong, significant level of protection in BALB/c mice against challenge with B. Abortus virulent; the protection unit was lower than the one induced by B. Abortus vaccine SRB51. Altogether, these data suggest that the SLPS subunit vaccine is a good candidate for use in future studies of vaccination against brucellosis.

Key words: Brucella abortus, SLPS, subunit vaccine, immunoglobulin, protection unit.