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## REPRODUCTIVE PATHOLOGICAL CHANGES IN MICE ASSOCIATED WITH *BRUCELLA MELITENSIS* AND ITS LIPOPOLYSACCHARIDES

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### Abstract

*Brucella melitensis* is the gram-negative, aerobic bacteria that cause brucellosis in goats. Brucellosis causes abortion in wild and domestic animals resulting in enormous financial losses. There is still lack of knowledge of host cell response towards the immunogen of *Brucella melitensis* and the response of mice towards the LPS immunogen. In this experiment 3 groups of male mice were used and each group was inoculated with 1 mL PBS (pH 7),  $1 \times 10^9$  *Brucella melitensis* and 1 mL lipopolysaccharides from  $10^9$  colonies of *Brucella melitensis* intraperitoneally to examine the clinical signs like mobility, eye discharge, closed eyes, ruffled hair and responsiveness exhibited in the mice. All 3 groups of mice that were inoculated with immunogens were observed for histopathological changes in the male reproductive organs like testes, vas deferens and seminal vesicle. The duration of observation was 5 days. After the fifth day all the mice that were still alive were euthanised by cervical dislocation and the histopathology lesions examined. Mice that were inoculated with the *Brucella melitensis* showed severe clinical signs. Mice infected with *Brucella melitensis* started to die from sixth hour post-inoculation. For the LPS group, the mice showed less movement beginning at 2 hours post-inoculation but became normal again after 5 hours post-inoculation. The control group exhibited normal clinical signs. Histopathology results showed mice inoculated with *Brucella melitensis* had moderate to severe atrophy of the spermatocytes of the testes and degenerative necrosis of the pseudostratified epithelium of vas deferens, while mice that were inoculated with LPS showed mild to moderate atrophy of the spermatocytes of the testes and moderate to severe degenerative necrosis of the pseudostratified epithelium of vas deferens.

**Keywords:** *Brucella melitensis*, brucellosis, lipopolysaccharides, atrophy, spermatocytes, vas deferens