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***B.melitensis* strain B115 As Vaccine Against *Brucella* spp. Infections.**

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**Introduction:** Brucellosis is a zoonotic disease affecting domesticated livestock, transmissible to humans. *B.melitensis*, the most pathogenic species for humans, is usually isolated from small ruminants. However, *B.melitensis* is also emerging as an important problem in cattle. Since this infection does not cause abortion in cattle, it could remain undetected. The vaccination is essential for the control of animal brucellosis and it is also the best way to control human infection. Unfortunately, available vaccines *B.abortus* S19 and *B.abortus* RB51, for cattle, and *B.melitensis* Rev1 for small ruminants, do not afford 100% protection, induce antibodies which hamper the serological discrimination between infected and vaccinated animals and are infectious for humans. Moreover, RB51 is not effective against *B. melitensis* and *B. ovis*.

**Methods:** We evaluated the potentiality of the natural *B.melitensis* B115 rough strain, as new attenuated vaccine. In our preliminary studies, vaccination of mice with *B.melitensis* B115 did not induce interfering antibodies and afforded a protection against *B.melitensis* and *B.ovis* similar to that conferred by Rev1. Its residual virulence was significantly lower than the virulent strain. In this study, we evaluated the efficiency of B115 against *B.abortus* and *B.suis* in mice.

**Results:** Unlike its rough phenotype, *B.melitensis* B115 showed an adequate persistence in mice to induce a solid humoral and cell-mediated immunity. B115 afforded a protection against *B.abortus* virulent strain similar to that conferred by RB51. In contrast, only a weak protection against *B.suis* was obtained when a single dose of vaccine ( $10^9$  CFU ) was given to each mouse .

**Discussion:** B115 confirmed its potential value as vaccine for brucellosis. The promising features showed in laboratory animals encourage further evaluations in target animal hosts.

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