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## 2<sup>nd</sup> WORLD VACCINES AND IMMUNOLOGY CONGRESS

October 15-16, 2018 | Tokyo, Japan

Devrishov D et al., Biomed Res 2018, Volume 29 | DOI: 10.4066/biomedicalresearch-C5-014

### THE PRESENT AND FUTURE OF VACCINEAL PREVENTION OF ANIMAL BRUCELLOSIS

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The effectiveness of corrective measures for brucellosis is largely determined by the quality of epidemiological surveillance and the effectiveness of vaccine prevention. Used live vaccines do not fully protect against infection, at the same time they pose a potential risk of *Brucella* infection in animals with low immune resistance and post-vaccination complications and pose a danger to livestock breeders and the population consuming untreated products from vaccinated animals. Inactivated vaccines did not find practical application due to insufficient efficacy and high reactogenicity. Considering that vaccination is the basis for the prevention of *Brucella* infection, we conducted studies on the selection of strains, developed and experimentally tested a split conjugated biosafe vaccine based on immunogenically active subcellular and soluble peptides of three *Brucella* strains: *B. melitensis* and two strains of *Brucella bovis* biotype. To stimulate specific immunity, *Brucella* antigens were conjugated to an immunoprotector. The immunoprotector was obtained from a culture of B lymphocytes sensitized with *Brucella* antigens. Activity control was assessed by immunostimulating of the mechanisms of cellular and humoral immunity and immunogenic activity of the vaccine in guinea pigs. The immunogenic activity of the declared vaccine was studied on guinea pigs weighing 300-400 g, which were subcutaneously injected into the groin area with test specimens of vaccines at a dose of 0.5 cm<sup>3</sup>. After four weeks vaccinated guinea pigs were infected with a virulent culture of *B. bovis* 10 in an infectious dose (ID). At the same time, non-vaccinated (control) guinea pigs were infected. 30 days after infection, guinea pigs were killed and bacteriological seeding of lymph nodes and organs on *Brucella* agar and *Brucella* broth was performed. Seeding was sterile in 100% of vaccinated guinea pigs. In seeding from control unvaccinated guinea pigs in 100% of cases, a culture of *Brucella* of the infecting strain was isolated. As a result, immunization of the split-conjugated brucellosis vaccine activates the cellular and humoral immune response, enhancing the induction of specific antibodies. Advantages of a split-conjugated vaccine: biosafety, protection of immunized animals from infection with *brucella* during experimental infection, reliably exceeds the specific efficiency of live anti-brucella vaccines from strains *B. abortus* 19 and *B. melitensis* Rev-1.

### BIOGRAPHY

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