

عنوان مقاله:

The combined use of recombinant and pVAX-omp₃₁ DNA Vaccine for immunological protection against pathogenic *Brucella melitensis* in an experimental model of BALB/c Mice

محل انتشار:

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خلاصه مقاله:

Background and Aim: Brucellosis is still an important zoonotic infection and evaluation of immunologic properties of various bacterial antigens along with different vaccination strategies helps in designing efficient vaccines against the disease. The aim of this study is to immunologically evaluate the eukaryotic vector pVAX₁, carrying the outer membrane protein gene of 31 kDa (Omp₃₁) *B. melitensis*. **Materials and Methods:** In this study which was carried out in 2014, whole sequence of omp₃₁ of *B. melitensis* was inserted between BamHI and XhoI of pVAX₁ plasmid vector. Female BALB/c mice aged 6-8 weeks (purchased from Pasteur Institute of Iran) were immunized intra-muscularly with 100 µg of the construct, followed by either protein or plasmid boosters separately. The level of IL-4, IL-12, IFN-γ, total serum IgG, and specific IgG₁ and IgG_{2a} against recombinant Omp₃₁ were evaluated. Finally the protective immune response following exposure to *B. melitensis* 16M was evaluated. **Results:** DNA-vaccine omp₃₁ career with protein reminders Omp₃₁, stimulate higher levels of IFN-γ, IL-12 and IgG_{2a} compared to groups of DNA-vaccine or recombinant protein. Protective immunity was also significantly higher in mice which immunized with DNA vaccine– protein regimen. **Conclusions:** Mice which immunized with DNA vaccine–protein regimen showed a significantly higher levels of IL-12 and IFN-γ along with serum IgG_{2a} which together imply augmentation of T cell-mediated immune responses against Omp₃₁. The latter was confirmed by significant protective response to *B. melitensis* 16M challenge.

کلمات کلیدی:

Omp₃₁, pVAX₁, DNA واکسن، *B. melitensis*, DNA vaccine, Omp₃₁, pVAX₁

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