

Article Title No. 5	The immune response and protective efficacy of a potential DNA vaccine against virulent <i>Pasteurella multocida</i>
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Abstract

Background: *Pasteurella multocida* is the main cause of several infections of farm animals, and the immunity gained from commercial vaccines is for the short term only and needs to be routinely administered, so work on new vaccines against virulent *P. multocida* is crucial.

Results: In this study, the OmpH gene was amplified from ten *P. multocida* strains, and the PCR products were sequenced and analyzed. The results of RFLP analysis of OmpH gene digested by MspI enzyme showed that all of ten strains examined possessed one restriction site and two fragments, 350 and 650 bp. The OmpH sequence of strain No. 10 was cloned into bacterial expression vector pUCP24, and the recombinant pUCP24-OmpH was expressed in *E. coli* DH5 α . Serum samples obtained from the ELISA test from a group of vaccinated rats indicate that the antibodies were present at high titer in immunized rats and can be tested as a vaccine candidate with a challenge.

Conclusions: In rats infected with the DNA vaccine and inactivated vaccine, a significant increase in serum antibody levels was observed. In addition, the DNA vaccine provided the vaccinated rats with partial protection; however, the protective efficacy was greater than that offered by the live attenuated vaccine. This successful recombinant vaccine is immunogenic and may potentially be used as a vaccine in the future.

