Title: Generation of an attenuated *Salmonella* expressing adhesins and toxins of *Pasteurella multocida* and *Bordetella bronchiseptica* for pig progressive atrophic rhinitis and evaluation of its immune responses

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Abstract

Objective: The Fim A, CP39, PtfA, ToxA and F1P2 antigens associated with pig progressive Atrophic Rhinitis and Pneumonic Pasteurellosis were expressed in an attenuated *Salmonella* delivery system. In addition, the immune responses induced by this delivery strain were investigated in a murine model.

Procedures: Each antigen secreted from the delivery strain was confirmed by Western blot analysis. Thirty BALB/c mice were divided equally into two groups; group A were intra-nasally inoculated with the mixture of the five delivery strains and group B were inoculated with sterile PBS. Serum and vaginal samples were collected at weeks 0, 2, 4, 6 and 8 post-inoculation for assessment of antigen specific serum IgG and vaginal IgA concentrations via an ELISA. In addition, splenocytes were prepared for evaluation of splenic lymphocyte proliferative responses, CD3+CD4+, CD3+CD8+ and B-cell populations and the levels of IFN-γ expression at 4 weeks post-inoculation (WPI).

Results: In group A, all antigen-specific serum IgG were significantly increased compared to those of group B from 2WPI till 8 WPI. All antigen-specific IgA in group A were also significantly greater than those of group B. In addition, the significant splenic lymphocyte proliferative responses, the elevations of $CD3^{+}CD4^{+}$, $CD3^{+}CD8^{+}$ and B-cell populations, and the induction of IFN-γ expression in group A were observed.

Conclusion & Clinical Relevance: Results of this study indicated that the mixture of five delivery strains expressing specific antigen for these diseases was capable of inducing significant humoral and cellular immune responses.

Biography

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