J Vaccines Vaccin 2015, 6:3
http://dx.doi.org/10.4172/2157-7560.S1.025

OMICS International
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5th Asia Pacific Global Summit and Expo on
Vaccines & Vaccination

July 27-29, 2015 Brisbane, Australia

E-BABE- Oral vaccine as an alternative to parental vaccine against Classical Swine Fever in backyard pig farms

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Control and eradication of Classical Swine Fever (CSF) in countries with a high proportion of backyard holdings is a challenge with scattered farms and remote areas which are difficult to reach. Vaccination is still the choice in CSF-endemic countries, where the usual control measures like stamping out and other measures are economically not viable. Attenuated Chinese-C strain vaccines though effective are difficult, where the pigs needs to be restrained for parental injection. Lack of adequate veterinary services and knowledge on CSF at the pig owner's level seriously also affect the vaccination coverage in backyard holdings in general.

The aim of this study was to evaluate the efficacy of the CSF oral bait vaccine in village backyard pig farms and also to assess the farmers' knowledge and motivation about vaccination.

A total of 224 pigs from 71 village backyard farms were fed 2 baits per pig. Serum samples were collected before and after vaccination and tested for antibodies by virus neutralisation test.

The results indicated that 73% of vaccinated pigs had either a slight (two-threefold) or significant (at least fourfold) increase of the antibody titre against CSFV. The number of pigs with protective antibody titres (≥ 40) rose from (24% to 60% following vaccination.

The oral vaccine is effective in domestic backyard pigs could be useful for a substitute for attenuated parental vaccine especially in developing countries. It could be a useful tool to combat CSF which has a serious impact on the backyard farmers affecting their sustenance and livelihoods.

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Enhancement of efficacy of *Haemophilus influenza* type B (Hib) vaccine by formulation strategy: Liposomal systems

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Current immunization preparation for *Haemophilus influenzae* type B (Hib) infections is based on Hib polysaccharide – tetanus toxoid (TT) conjugate, which is administered to children by i.m. and s.c. injection. The conjugate preparation process involves several cumbersome and complex steps and harsh reagents, resulting in antigen losses. As an alternative, particulate carriers can be developed to co-entrap the antigen and TT, which are reported to ensure good adjuvant effect, to potentiate T-cell dependent immune response.

In the present study, Hib capsular polysaccharide (Hib-CPS) and Tetanus toxoid (TT) co-entrapped liposomes were prepared by dehydration-rehydration of vesicles method and characterized. Comparative in vivo efficacy evaluation of the liposomal systems with conventional Hib-TT conjugate vaccine, was carried out in Wistar rats, wherein the antibody titres (IgG and IgA) in serum, nasal lavage and BAL were compared. In addition, lymphocyte proliferation assay was carried out on blood samples of the immunized animals to assess T cell response (in vitro CD4+ T cell response).

Small unilamellar vesicles (540-570 nm), with good antigen entrapment (60-70%) were obtained. In vivo efficacy study has revealed increased IgG and IgA titres with liposomal system, and good and comparable lymphocyte proliferation index values, indicating T-cell response. In conclusion, Hib polysaccharide co - entrapped with TT in liposomal systems can be an effective alternative to conventional Hib-TT conjugate vaccine.

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