

Neutralizing Antibody Response against Inactivated FMDV Type O/IRN/2010 Vaccine by Electron Beam in BALB/C Mice

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Abstract : Foot-and-mouth disease virus (FMDV) is the most economically important disease of livestock. The aim of the study is inactivation of FMD virus type O/IRN/2010 by electron beam without antigenic changes as electron radio vaccine. The BALB/C mice were divided into three groups, each group containing five mice. Three groups of mice were inoculated with conventional vaccine and electron beam irradiated vaccine FMDV type O/IRN/2010 subcutaneously three weeks interval, the final group as negative control. The sera were separated from the blood samples of mice 14 days after last vaccination and tested for the presence of antibodies against FMDV type O/IRN/2010 by serum neutralization test. The Serum Neutralization Test (SNT) was carried out and antibody titration was calculated according to the Kraber protocol. The results of the SNT in three groups of mice showed the titration of neutralizing antibody in the vaccinated mice groups; electron radio vaccine and conventional vaccine were significantly higher than negative control group ($P < 0.05$). Therefore, the radio vaccine is a good candidate to immunize animals against FMDV type O/IRN/2010.

Keywords : FMDV type O/IRN/2010, neutralizing antibody response, electron beam, radio vaccine

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