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Construction and immunological study on recombinant multi-epitope DNA vaccine of H3/H1 subtypes of influenza virus

Huijun Lu, Lei Tan, Mingyao Tian and Ningyi Jin

Institute of Military Veterinary, Academy of Military Medical Sciences, China

The eukaryotic expression vector pVAX1 was designed to multi-epitope DNA vaccine mainly on seasonal influenza H3 subtype and pandemic influenza H1 subtype combined to epitope cassette which have a breakthrough species barrier to infect humans Avian influenza H5, H7, H9 subtype HA antigen Th and B cell epitopes, and constructed the single expression of H3HA and H1HA1 the control group. The components of antigen transcription and antigenicity were detected by RT-PCR, indirect immunofluorescence, Western Blot methods. Multi-epitope DNA vaccine was taken immune with mice assisted with electroporation method, and detected the cellular immunity and humoral immunity level of each immunization groups. Humoral immunity results show that with specific antigen stimulation, multiple epitopes immunization groups assisted with electroporation got the same level with the single-expression group, and they were significantly higher than the group not using electroporation. Multi-epitope immunization group take an significant advantage on H5/H7/H9 subtypes epitope related specific antigen stimulation. IL-2 and IL-4 cytokines detection results, multi-epitope assisted electroporation immunization was significantly higher than that of single expression group and non use electroporation. Use low doses of H1 subtype influenza virus on the immune protection of mice to challenge, multi-epitope immunization group assisted electroporation can produce a better immune protection (80%), which is significantly higher than that of single-expression group and non-use of electroporation assisted.

Biography

Huijun Lu completed his MD. and Ph.D. from AMMS and JLU in China. Dr. Huijun Lu has received many honor and awards. He is a Research Associate at Military Veterinary Institute of Academy of Military Medical Sciences of PLA. He is major in genetic engineering influenza virus vaccine research in China.