Abstract

Equine influenza virus is a leading cause of respiratory disease in horses worldwide. Disease prevention is by vaccination with inactivated whole virus vaccines. Most current influenza vaccines are generated in embryonated hens’ eggs. Virions are harvested from allantoic fluid and chemically inactivated. Although this system has served well over the years, the use of eggs as the substrate for vaccine production has several well-recognized disadvantages (cost, egg supply, waste disposal and yield in eggs). The aim of this study was to evaluate a baculovirus system as a potential method for producing recombinant equine influenza hemagglutinin to be used as a vaccine. The hemagglutinin ectodomain (HA1 subunit) was cloned and expressed using a baculovirus expression vector. The expression was determined by SDS-PAGE and immunoblotting. A high yield, 20 g/ml of viral protein, was obtained from recombinant baculovirus-infected cells. The immune response in BALB/c mice was examined following rHA1 inoculation. Preliminary results show that recombinant hemagglutinin expressed from baculovirus elicits a strong antibody response in mice; therefore it could be used as an antigen for subunit vaccines and diagnostic tests.

Keywords

Hemagglutinin, Baculovirus, Vaccine.