Equine Infectious Anemia Vaccine

ID 204

Background
The equine infectious anemia virus (EIAV) is a member of the lentivirus subfamily of retroviruses and causes persistent infection and chronic disease in horses worldwide. As such, it is closely related to human immunodeficiency virus (HIV), simian immunodeficiency virus (SIV) and feline immunodeficiency virus (FIV). Disease caused by EIAV is spread by blood transmission and most often occurs by biting flies and other insects carrying virus particles from one animal to another.

The disease is significant because horses that demonstrate exposure to EIAV via testing for antibodies in the blood (Coggins Test or similar anti-p26 antibody detecting test) are required to be destroyed or strictly quarantined. Because of the Coggins Test and its broad use in the world, especially in testing all performance horses that are transferred into and out of the United States, it is critical that vaccinated equines be able to be differentiated from infected equines.

Technology Description
The invention provides an equine infectious anemia (EIA) vaccine that provides immunity to mammals, especially equines, from infection with equine infectious anemia virus (EIAV). It also allows differentiation between vaccinated and non-vaccinated, but exposed, mammals or equines. This vaccine encompasses at least one mutation in an EIAV which produces a non-functional gene in the vaccine virus that is always expressed in disease-producing wild-type EIA viruses. This EIA vaccine virus cannot cause clinical disease in mammals or spread or shed to other mammals including equines.

Applications
• Production of an equine infectious anemia virus (EIAV) vaccine

Advantages
• No currently active vaccine available to prevent EIAV
• Allows diagnostic differentiation between vaccinated and non-vaccinated, but exposed or diseased mammals

Stage of Development
• In vivo work in progress

US Patents 6,461,616; 6,528,250; 6,585,978; 6,727,078; 7,026,113

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Research Interests

Viral immunology and vaccine development, especially as related to AIDS, emerging diseases, and biodefense.

Selected Publications


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