

Recombinant Proteins of the Swine Hepatitis E Virus and Their Uses as a Vaccine and Diagnostic Reagents for Medical and Veterinary Applications

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Technology description

Summary

This invention is based on the discovery of the swine hepatitis E virus (swine HEV), the first animal strain of HEV identified and characterized, and its ability to infect across species. The inventors have found that the swine HEV is widespread in the general pig population in the United States and other countries and that swine HEV can infect non-human primates. The inventors have amplified and sequenced the complete genome of swine HEV. The capsid gene (ORF2) of swine HEV has been cloned and expressed in a baculovirus expression system.

The possibility that swine HEV may infect humans raises a potential public health concern for zoonosis or xenozoonosis in the United States and perhaps other countries. Therefore, it is likely that a vaccine based on the recombinant capsid protein of swine HEV will protect humans against zoonotic, as well as other, HEV infections and pigs against infection with the swine HEV. Also, diagnostic reagents based on these recombinant proteins of swine HEV will be very useful in screening donor pigs used in xenotransplantation and in detecting swine HEV or similar virus infection in humans. The diagnostic reagents may also be useful for veterinary studies and monitoring pig herds in general.

Institution

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