

Construction of Recombinant Baculoviruses Carrying the Gene Encoding the Major Capsid Protein, VP1, From Calicivirus Strains (Including Norovirus Strains Toronto, Hawaii, Desert Shield, Snow Mountain, and MD145-12)

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Technology description

The noroviruses (known as "Norwalk-like viruses") are associated with an estimated 23,000,000 cases of acute gastroenteritis in the United States each year. Norovirus illness often occurs in outbreaks, affecting large numbers of individuals, illustrated recently by well-publicized reports of gastroenteritis outbreaks on several recreational cruise ships and in settings such as hospitals and schools. Norovirus disease is clearly important in terms of medical costs and missed workdays, and accumulating data support its emerging recognition as important agents of diarrhea-related morbidity.

Because the noroviruses cannot be propagated by any means in the laboratory, an important strategy in their study is the development of molecular biology-based tools. This invention reports the development of recombinant baculoviruses carrying the capsid gene from several caliciviruses associated with human disease. Growth of these baculovirus recombinants in insect cells results in the expression of virus-like particles (VLPs) that are antigenically indistinguishable from the native calicivirus particle.

Application area

These VLPs can be purified in large quantities for use as diagnostic reagents and potential vaccine candidates.

Institution

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