

Infectious Disease Epidemics on Xenophobia

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Abstract

Getah virus (GETV) is a mosquito-borne virus of the genus Alphavirus in the family Togaviridae and, in recent years, it has caused several outbreaks in animals. The molecular basis for GETV pathogenicity is not well understood. Therefore, a reverse genetic system of GETV is needed to produce genetically modified viruses for the study of the viral replication and its pathogenic mechanism. Here, we generated a CMV-driven infectious cDNA clone based on a previously isolated GETV strain, GX201808 (pGETV-GX). Transfection of pGETV-GX into BHK-21 cells resulted in the recovery of a recombinant virus (rGETV-GX) which showed similar growth characteristics to its parental virus. Then three-day-old mice were experimentally infected with either the parental or recombinant virus. The recombinant virus showed milder pathogenicity than the parental virus in the mice. Based on the established CMV-driven cDNA clone, subgenomic promoter and two restriction enzyme sites (BamHI and EcoRI) were introduced into the region between E1 protein and 3'UTR. Then the green fluorescent protein (GFP), red fluorescent protein (RFP) and improved light-oxygen-voltage (iLOV) genes were inserted into the restriction enzyme sites.

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