

RCMV ALL-03 model and study of CMV pathogenesis in congenital infection

ABSTRACT

Cytomegalovirus (CMV) is one of the most commonly studied members of the *Herpesviridae* family. So far several strains have been identified but human CMV (HCMV) remains the most important due to its ability to infect humans and also cross the placenta causing neonatal infection and mortality. However, there are several limitations in the study of this strain which includes availability and use of model animals. Although strains such as Rhesus CMV (RhCMV), Guinea pig CMV (GPCMV) and Rat CMV (RCMV ALL-03) have been shown to cross the placenta and exhibit similar pathogenesis to HCMV, only RCMV ALL-03 can be conveniently used without much limitations as guinea pigs are resistant to antiviral drugs, while rhesus monkeys are seropositive, considered costly and have ethical use restrictions. We therefore propose the use of RCMV ALL-03 as a model for the study of CMV infection.

Keyword: Cytomegalovirus; Animal model; Congenital infection; Sensory neural hearing defect (SNHD); Central nervous system abnormalitis