

Antiviral activity of fosphonoformate on rotavirus transcription and replication

Ríos, Maritza

Muñoz, Marianne

Spencer, Eugenio

The antiviral effect of foscarnet (PFA) on the replication of rotavirus, a member of the Reoviridae, was studied. The pyrophosphate analogue is an effective inhibitor of several viral polymerases acting on the enzyme pyrophosphate binding site. Replication of rotavirus in MA104 cells using different u.o.i. was inhibited by PFA in a concentration dependent manner, due to the inhibition of both plus- and minus-strand RNA synthesis. The addition of PFA to infected cells was specific for the inhibition of viral replication since uninfected cell incubated at the same PFA concentrations did not exhibit any cytotoxic effect. The 50% inhibitory effect of PFA on in vitro mRNA synthesis was obtained at a concentration of 150 μ M. Over 80% of the in vitro minus-strand RNA synthesis was inhibited at a concentration of 320 μ M, when PFA was assayed using replicase-enriched cell infected fraction. The results suggest that the effect may be due to an interaction of PFA with the viral polymerase, since t