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In Vitro Sensitivity of Herpesvirus simiae (B-virus) to Twelve Antivirals Effective Against Herpesvirus hominis (H. simplex). K.F. Soike and J.K. Hilliard, Delta Regional Primate Research Center, Covington, LA and Southwest Foundation for Biomedical Research, San Antonio, TX.

Herpesvirus simiae (B-virus) occurs as an enzootic infection in several species of macaque monkeys. Clinical disease in macaques infected with this virus is rare but primary infection may cause gingivostomatitis with oral lesions. Infection in humans results in severe encephalitis with high mortality. Human infection is uncommon but can occur in persons exposed to virus shed in monkey saliva and genital secretions by bites, scratches or exposure to infected tissues.

Several episodes of human B virus infections have occurred in the last three years resulting in three deaths. Antiviral therapy with either acyclovir or ganciclovir has prevented death in several exposed infected persons. With the availability of a number of new experimental antiherpesvirus drugs we have conducted in vitro evaluations of some of these drugs against a B virus isolate. We have found that while acyclovir, ganciclovir and vidarabine have antiviral activity in vitro, the fluorinated pyrimidine nucleosides have a much lower effective dose. The fluorinated pyrimidine nucleosides were highly effective in a yield reduction assay at concentrations of 0.1 and 0.2 µg/ml where concentrations of 25 and 50 µg/ml of acyclovir or ganciclovir were required for similar inhibition of virus replication. (Supported by NIH Contract #NO1-AI-62521 and NIH #RR013163).

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EFFECT OF OXETANOCIN-G ON REPLICATION OF HEPATITIS B VIRUS *IN VITRO* AND *IN VIVO*

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Chronic hepatitis B virus (HBV) infection represents a worldwide health care problem. No satisfactory antiviral treatment has been established so far. We investigated anti-HBV activity of various compounds by *in vitro* system using a cell line, HB611, that continuously produces Dane-like particles. OXETANOCIN-G (OXT-G), a novel nucleoside analog, exhibited a very strong anti-HBV activity in this system. Treatment of HB611 cells with 1.5µM of OXT-G for 15-days lowered intracellular episomal HBV-DNA to 50% without any cytotoxicity. On the other hand, 31.8µM of adenine arabinoside and 199.7µM of acyclovir were needed to obtain equal anti-HBV activities. We also examined effect of OXT-G on replicating intermediates of HBV and HBV-related components in HB611 cells. Treatment with OXT-G did not reduce HBV-transcripts in HB611 cells. Minor effect was examined on production of HBsAg, HBeAg, formation of core or Dane-like particles. But HBV-DNA synthesis in core particles and Dane-like particles was strongly inhibited by OXT-G treatment. For *in vivo* study, we used 1.2HB-BS10 transgenic mice, which allow viral replication in their liver and kidney. The mice were injected intraperitoneally with 30-45 mg/kg/day of OXT-G for 7 days and then cytoplasmic DNA was analysed by Southern Blot hybridization. HBV-DNA of cytoplasm was significantly decreased in both tissues. Our results indicate that OXT-G inhibits HBV replication both *in vitro* and *in vivo*, and may be an effective antiviral drug for HBV therapy.