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The Effect of some Nucleoside Analogues on Reproduction of Adenoviruses. N.S.Dyachenko[1], L.N.Nosach[1], V.L.Zhovnovataya[2], S.I.Butenko[1], I.V.Alekseeva[2], A.S.Shalamay[3], M.Yu.Lidak[3], T.L. Tsilevich[4] and V.L.Florentiev[4]
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The effect of ribamidyl(ribavirin), some acyclic analogues nucleosides, phosphoalkoxymethyl derivatives nucleoside bases and azapyrimidine nucleosides on adenovirus reproduction in cell culture has been studied. Ribamidyl and some anomalous azanucleosides possessed the pronounced antiadenoviral activity which was expressed in inhibiting synthesis of viral DNA and protein, infectious virions, and preventing the formation of DNA-containing intranuclear inclusion bodies. Selectivity index was 62-125. Some peculiarities in viral genome functioning were found in the effect of ribamidyl in the concentration of 31 mkg/ml which was expressed in viral DNA synthesis, structural polypeptides but in disturbance of the formation of immunologically active hexon, possibly, due to the violation of trimerization process.

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β-L-2',3'-Dideoxycytidine (L-DDC) and its 5-Fluoro Derivative (L-FDDC) are Potent Inhibitors of Hepatitis B Virus (HBV). R. F. Schinazi,[1]* J.-P. Sommadossi,[2] G. Gosselin,[3] and J-.L. Imbach.[3] VA Medical Center/Emory University, Decatur, GA 30033;[1] University of Alabama, Birmingham, AL 35294;[2] and University of Monpellier II, 34095 Monpellier, France.[3]

(-)-β-L-DDC and (-)-β-L-FDDC were stereoselectively synthesized from L-xylose and found to have potent and selective anti-HIV-1 and HIV-2 activity. This prompted their evaluation as potential inhibitors of HBV in transfected 2.2.15 cells. HBV DNA replication intermediates and HBV virion levels were measured on day 9 (see table). For comparison, natural β-D-DDC and (-)-2',3'-dideoxy-5-fluoro-3'-thiacytidine [(-)-FTC] were included as controls.

Compound	HBV virion EC_{90} ± SD, μM	HBV replic. Interm. EC_{90} ± SD, μM	Cytotoxicity IC_{50} ± SD, μM
β-D-DDC	5.8 ± 1.4	11.5± 2.2	218 ± 25
β-L-DDC	1.1 ± 0.2	1.8 ± 0.2	493 ± 64
β-L-FDDC	0.30 ± 0.03	4.8 ± 0.6	438 ± 57
(-)-β-L-FTC	0.15 ± 0.02	0.18 ± 0.03	292 ± 13

The order of decreasing potency for the compounds was (-)-β-L-FTC > β-L-FDDC ≈ β-L-DDC > β-D-DDC. Inhibition of HBV in 2.2.15 liver cells by the L-cytosine nucleosides appears to be selective. The effect of the 5'-triphosphates of these compounds on HBV DNA polymerase will be reported.