Novel Alkoxyalkyl Phosphate Derivatives of Nucleoside Phosphonates with Antiviral Activity

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Technology description

Description

Phosphonate nucleosides are currently in clinical use as drugs to treat viral infections and cancer. Their limitations as therapeutics arise from poor oral availability, poor cell uptake and toxicity in the kidney. There is a continuing need for less toxic, more effective pharmaceutical agents to treat a variety of disorders associated with viral infection and cell proliferation.
Novel alkoxyalkyl phosphate derivatives of nucleoside phosphonates have been designed and synthesized that have broad-spectrum antiviral activity when tested in cell culture assays against a variety of viruses, including herpes simplex virus-1 and -2, vaccinia virus, human cytomegalovirus and cowpox virus. The level of antiviral activity demonstrated is greatly increased compared with that of the unmodified nucleoside phosphonates. It is likely that these derivatives may provide improved oral availability in vivo compared with unmodifed phosphonate nucleosides and may potentially be developed into drugs for the treatment of a range of viral diseases and cancers.

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