5-Substituted Derivatives of Conformationally Locked Nucleoside Analogues

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Technology description

Summary

This invention relates to 5-substituted derivatives of conformationally locked nucleoside analogues and methods of using these derivatives as antiviral and anticancer agents. The compounds contemplated by the invention are nucleoside analogues where the 5-substituent is a halogen, alkyl, alkene, halovinyl or alkyne group, and the nucleotide base is cytosine or uracil. The analogues are particularly effective in treating viral infections, specifically infections of DNA viruses such as Herpes simplex virus (HSV), Varicella zoster virus (VSV), Epstein Barr virus (EBV), and Cytomegalovirus (CMV) as well as members of the Poxviridae family. The inventors have demonstrated in plaque reduction assays that 5-substituted uracils (bromo, iodo, and bromovinyl) attached to a bicyclo[3.1.0]hexane template are thirty times more potent than acyclovir against HSV-1 and HSV-2.

Institution

NIH - National Institutes of Health

联系我们

叶先生

电 话：021-65679356

手 机：13414935137

邮 箱：yeyingsheng@zf-ym.com