Carbocyclic Nucleotides as Potential Anti-Viral Agents

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Technology description

Technology Summary

Flaviviridae are a family of RNA viruses with a single stranded positive sense RNA genome. The RNA viral genome plays important roles during viral replication, including as mRNA for viral protein synthesis, a template for RNA replication, and a nascent RNA genome for a newly formed virus. The family includes the genera Flavivirus, Hepacivirus, Hepatitis G Virus and Pestivirus.

Major diseases caused by Flaviviridae include hepatitis C, Dengue fever, West Nile encephalitis, tick-borne encephalitis and yellow fever. There remains a strong medical need to develop anti-Flaviviridae therapies that are effective, well tolerated, and reasonably safe. Described in this invention are compounds and methods to treat and/or prevent infections from Flaviviridae.

Inventor

• Chung K. (David) Chu, Distinguished Research Professor, Emeritus

Dr. Chu’ s research focuses on nucleoside and carbohydrate chemistry, antiviral chemotherapy (HIV, Hepatitis B and C, West Nile and Epstein-Barr), cancer chemotherapy, structure-based drug design and molecular modeling, and antiviral drug discovery for bioterrorism. Dr. Chu is an inventor of the hepatitis B drug clevudine, and was inducted into the National Academy of Inventors in 2016.

http://pbs.rx.uga.edu/people/faculty-members/david-chu/

Application area

Small molecules for the treatment of hepatitis C, Dengue fever, West Nile encephalitis, tick-borne encephalitis and yellow fever.

Advantages

· New spiro (2,4)heptane compositions and related prodrugs which may address current issues such as drug resistance

· Complimentary prodrugs designed to enhance the level of active drugs inside the target cells

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