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[Continued on next page]

(54) **Title**: PURINE MONOPHOSPHATE PRODRUGS FOR TREATMENT OF VIRAL INFECTIONS

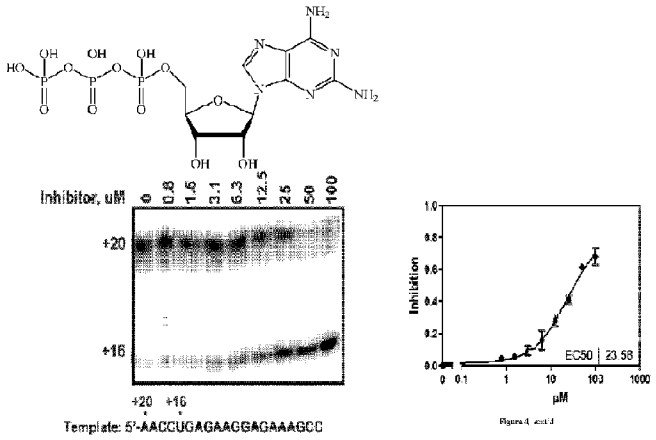


Figure 4: Incorporation of ((2R,3S,4R,5R)-5-(2,6-diamino-9*H*-purin-9-yl)-2,4-dihydroxytetrahydrofuran-2-yl)methyl tetrahydrogen triphosphate by HCV NS5B

(57) **Abstract**: The present invention is directed to compounds, compositions and methods for treating or preventing viral infections using nucleoside analog monophosphate prodrugs. More specifically, HCV, Norovirus, Saporovirus, Dengue virus, Chikungunya virus and Yellow fever in human patients or other animal hosts. The compounds are certain 2,6-diamino 2-C-methyl purine nucleoside monophosphate prodrugs and modified prodrug analogs, and pharmaceutically acceptable, salts, prodrugs, and other derivatives thereof. In particular, the compounds show potent antiviral activity against HCV, Norovirus, Saporovirus, Dengue virus, Chikungunya virus and Yellow fever. This invention teaches how to modify the metabolic pathway of 2,6-diamino 2'-C-methyl purine and deliver nucleotide triphosphate(s) to polymerases at heretofore unobtainable therapeutically-relevant concentrations.

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A. CLASSIFICATION OF SUBJECT MATTER

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A61K 31/7028 *(2006.01)*
A61P 31/12 *(2006.01)*

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

C07H 19/20, 19/173, 19/10, C07D 405/04, 487/04, A61K 31/7076, 31/7072, 31/7028, A61P 31/12

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

STN Online, DEPATISnet, Esp@cenet, Google, PatSearch, RUPAT, SCOPUS, WIPO

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 2010/091386 A2 (RFS PHARMA LLC et al.) 12.08.2010, p. 1, 13-24, 42-45, 71-74, claims 1-7	1-32, 30(2), 31(2), 32(2), 33-42
X	US 2010/0016251 A1 (PHARMASSET, INC.) 21.01.2010, paragraphs [0002] - [0033], claims 1, 3, 5, 7	1-32, 30(2), 31(2), 32(2), 33-38
X	WO 2006/121820 A1 (VALEANT RESEARCH & DEVELOPMENT) 16.11.2006, p. 2, lines 14-21, p. 5, 17, lines 15-19, claim 1	1-32, 30(2), 31(2), 32(2), 33-35
X	WO 2008/121634 A2 (PHARMASSET, INC.) 09.10.2008, p. 20-24, claim 1	1-32, 30(2), 31(2), 32(2), 33-35

[X] Further documents are listed in the continuation of Box C. [ ] See patent family annex.

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C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 2007/017248 A2 (VALENT RESEARCH & DEVELOPMENT) 08.03.2007, p. 1, 4-6, claim 1	1-32, 30(2), 31(2), 32(2), 33-42
A	WO 2001/090121 A (IDENIX (CAYMAN) LTD et al.) 29.11.2001, p. 1, claims	1-32, 30(2), 31(2), 32(2), 33-42