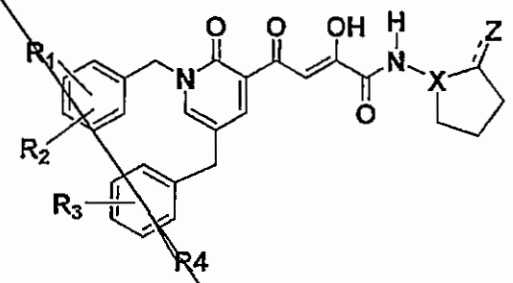
We claim:

1. A compound according to the general structural formula I (including any chiral isomer, geometric isomer, tautomer, regioisomer or pharmaceutically acceptable salt thereof):



Formula I

Wherein R_1, R_2, R_3 and R_4 are each independently H or a halogen;
X is CH or N; and
Z is OH or =O, or a pharmaceutically acceptable salt or ester thereof.

2. A compound according to claim 1 wherein said halogen is F.
3. A compound according to claim 1 or 2

Wherein R_1, R_2, R_3 and R_4 are substituted according to the following alternative sequences:
R_1 = o-F, R_2 = H, R_3 = p-F, R_4 = o-F
R_1 = p-F, R_2 = H, R_3 = p-F, R_4 = o-F
R_1 = o-F, R_2 = o-F, R_3 = o-F, R_4 = H
R_1 = o-F, R_2 = H, R_3 = o-F, R_4 = o-F
R_1 = o-F, R_2 = H, R_3 = p-F, R_4 = H
R_1 = o-F, R_2 = p-F, R_3 = p-F, R_4 = o-F or
R_1 = o-F, R_2 = o-F, R_3 = o-F, R_4 = o-F.

4. A compound according to any of claims 1-3 wherein X is CH.
5. A compound according to any of claims 1-3 wherein X is N.
6. A compound according to any of claim 1-5 where Z is OH.
7. A compound according to any of claims 1-5 wherein Z is =O.

8. A compound according to any of claims 1-3 wherein the said compound is a pharmaceutically acceptable salt.

9. A pharmaceutical composition for treating an HIV infection, comprising a therapeutically effective amount of a compound according to any of claims 1-8 and a pharmaceutically acceptable carrier, additive or excipient.

10. The pharmaceutical composition of claim 9 wherein said composition treats said HIV infection by inhibiting HIV integrase, both wild type and mutants, in the human host.

11. A pharmaceutical composition comprising a therapeutically effective amount of a compound according to any of claims 1-8, a pharmaceutically acceptable carrier, additive or excipient in combination with a therapeutically effective amount of at least one compound selected from the group consisting of i) an additional anti-HIV agent, ii) an anti-infective agent other than an anti-HIV agent, iii) an immunomodulator and iv) a combination agent selected from the group presented in the table shown on pages 27-36, hereof, and a pharmaceutically acceptable carrier, additive or excipient.

12. The composition of claim 11 wherein said anti-infective agent is an antiviral agent selected from the group consisting of a protease inhibitor, a reverse transcriptase inhibitor, an additional integrase inhibitor or a combination thereof.

13. The composition of claim 12 wherein said reverse transcriptase inhibitor is a nucleoside compound.

14. The composition of claim 13 wherein said reverse transcriptase inhibitor is a non-nucleoside compound.

15. The composition of claim 12 wherein the said additional integrase inhibitor is a compound other than a pyridinone hydroxycyclopentyl carboxamide compound according to claim 1.

16. The composition according to any of claims 11-15 in oral or parenteral dosage form.

17. The composition according to any of claims 11-15 formulated for administration as an inhalation spray or a rectal suppository.

18. A method of treating an HIV infection in a patient, said method comprising administering to said patient an effective amount of a composition according to any of claims 11-17.

19. A method of reducing the likelihood of an HIV infection in a patient at risk for said infection, said method comprising administering to said patient an effective amount of a composition according to any of claims 11-17.

20. A method of treating a patient with AIDS or ARC comprising administering to said patient a therapeutically effective amount of the composition according to any of claims 1-17.

21. A method of inhibiting HIV integrase in a subject, said method comprising administering to said subject a therapeutically effective amount of a compound according to any of claims 1-8.

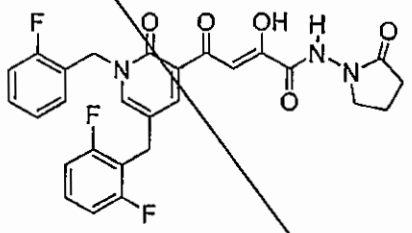
22. The method of claim 21 wherein said subject is a human.

23. The method according to any of the claims 11-14, wherein said anti-HIV or other agent is a compound which is set forth in the table on pages 15-26 herein.

24. A pharmaceutical composition comprising an effective amount of a compound according to any of claim 1-8 in combination with an effective amount of at least one anti-HIV or other compound which is set forth in the table on pages 15-26, herein, in combination with a pharmaceutically acceptable carrier, additive or excipient.

25. A method of treating an HIV infection in a human host comprising administering to said host in combination, an effective amount of at least one compound according to any of claims 1-8 in combination with at least one anti-HIV or other compound, which is set forth which is set forth in the table on any of pages 15-26, herein, in combination with a pharmaceutically acceptable carrier, additive or excipient.

26. A method of treating an HIV infection in a human host comprising administering to said host in combination, an effective amount of a compound according to the structure:



in combination with at least one anti-HIV or other compound, which is set forth in the table on any of pages 15-26 herein, in combination with a pharmaceutically acceptable carrier, additive or excipient.

27. A pharmaceutical composition according to claim 9 or 10 further comprising at least one additional compound selected from the group consisting of

- (-)βDioxolane-G; DXG;
- (-)β-Arctigenin; Arctigenin ;
- (-)-Carbovir; (-)-C-D4G; (-)-Carbovir;
- (-)-β-D-2,6-Diaminopurine dioxolane;Amdoxovir; DAPD; APD
- (+)-2'-Deoxy-3'-oxa-4'-thiocytidine; dOTC (+)
- (+)-2'-Deoxy-3'-oxa-4'-thio-5-fluorocytidine; dOTFC (+)
- (+/-)-Cyclobut-G; A-69992; (+/-)-Lobucavir; C-Oxt-G; Cyclobut-G ; C-Oxetanocin-G
- (R)-2QuinCOAsnPhe[CHOHCH2]PipCONHtBu
- (R)-3,6-Diamino-N-(aminomethyl)hexanamide; Bellenamine
- (R)-PMPA; (R)-9-(2-Phosphonylmethoxypropyl)adenine; PMPA-(R); Tenofovir
- (R)-PMPDAP; PMPDAP-(R)
- (S)-PMPA; (S)-9-(2-Phosphonylmethoxypropyl)adenine; PMPA(S)
- (S)-9-(2-Phosphonylmethoxypropyl)adenine; (S)-PMPA
- α-APA; R89439; Loviride
- α-APA deriv.; R87232
- α-APA deriv.; R88703

- α-APA enantiomer; R90385
- α-L-AZT; AZT-α-L
- α-L-DXC; α-L-Dioxalane-C; DXC-α-L-
- α-L-FTC; FTC-α-L-
- α-Monofluoromethyldehydroornithine methyl ester; MFMOME
- 1,1'-Azobisformamide; ADA; Azodicarbssonamide
- 1-(11-Octylamino-10-hydroxyundecyl)-3,7-dimethylxanthine; CT-2576
- 1-(2',3'-Dideoxy-2'-fluoro-β-D-threo-pentofuranosyl)cytosine; Ro 31-6840
- 1-(2'-Fluoro-2',3'-dideoxy-B-D-erythro-pentofuranosyl)thymine; 2'FddT
- 1-(2OHPr)-4-Substit-piperazine, thienyl carbamate deriv.
- 1-(2OHPr)-4-Substit-piperazine, thienyl carbamate deriv.
- 1-(2OHPr)-4-Substit-piperazine, thienyl carbamate deriv.
- 1-(2OHPr)-4-Substit-piperazine, thienyl carbamate deriv.
- 1-[(2-Hydroxyethoxy)methyl]-6-(3-methylphenyl)thio)thymine; HEPT-M
- 1-[(2-Hydroxyethoxy)methyl]-6-(phenylthio)-2-thiothymine; HEPT-S
- 1-[(2-Hydroxyethoxy)methyl]-6-(phenylthio)thymine; HEPT
- 1-Deoxynojirimycin ; Deoxynojirimycin
- 141W94; VX-478; Amprenavir; Agenerase®; Approved
- 1592U89 Succinate; Abacavir Succinate; Ziagen® Approved
- 1-Aminooxyethylamine; AEA
- 1-Methoxyoxalyl-3,5-dicaffeoylquinic acid; 1-MO-3,5-DCQA; Dicaffeoylquinic acid deriv.
- 1OH-2(Cbz-Tle)3PhPr [14]paracyclophane deriv.
- 1OH-2(Cbz-ValNH)3PhPr [13]metacyclophane deriv.
- 1OH-2(Cbz-ValNH)3PhPr [13]paracyclophane deriv.
- 1OH-2(Cbz-ValNH)3PhPr [14]paracyclophane deriv.
- 1OH-2(Cbz-ValNH)3PhPr [17]paracyclophane deriv.
- 12-Deoxyphorbol-13-(3E,5E-decadienoate); Phorbol deriv.
- 16.alpha.-Bromoepiandrosterone; Epi-Br; ; Inactivin; HE 2000; HE2000; PPB2; DHEA deriv.
- 1-β-D-arabinofuranosyl-5-(2-bromovinyl)uracil; BV-ara-U; BVaraU; BV ara-U; Sorivudine; SQ-32756; Bravavir; Brovavir; Usevir; YN-72; Bromovinyl araU; BVAU
- 2',3'-Didehydro-3'-deoxycytidine; D4C
- 2',3'-Dideoxydidehydroguanosine; D4G

- 2',3'-Didehydro-3'-deoxythymidine; D4T; Stavudine; Zerit® Approved
- 2',3'-Dideoxy-3'-fluoro-4-thiothymidine; 3'-F-4-Thio-ddT
- 2',3'-Dideoxy-3'-fluoro-5-bromouridine; FddBrU
- 2',3'-Dideoxy-3'-fluoro-5-chlorocytidine; 3'-F-5-Cl-ddC
- 2',3'-Dideoxy-3'-fluoro-5-chlorouridine; 935U83; 5-Chloro-2',3'-dideoxy-3'-fluorouridine; FddClU; Raluridine
- 2',3'-Dideoxy-5-ethylcytidine; 5-Et-ddC
- 2',3'-Dideoxyadenosine; D2A; ddAdo; ddA
- 2',3'-Dideoxydidehydroadenosine; d4A
- 2',3'-Dideoxyguanosine; D2G; ddG
- 2',3'-Dideoxy-3'-hydroxymethyl cytidine; 3'-Hydroxymethyl-ddC; BEA-005
- 2,5'-Anhydro-3'-azido-2',3'-dideoxyuridine; AZU-2,5'-anhydro
- 2,5'-Anhydro-3'-azido-3'-deoxythymidine; AZT-2,5'-anhydro
- 2',5'diSilySpiroT; TSAO-T; 2',5'diSilySpiroT; TSAO-me^3T
- 2,6-Diamino-2',3'-dideoxypurine-9-ribofuranoside; ddDAPR; DAPDDR; 2,6-Diamino-ddP
- 2,6-Diaminopurine- 2',3'-dideoxydidehydroriboside; ddeDAPR
- 2,6-Diaminopurine-3'-fluoro-2',3'-dideoxyriboside; 3'-F-ddDAPR
- 2-Aminobenzylstatine Valyl Cbz deriv.; Statine deriv.
- 2-Glycine amide-5-chlorophenyl 2-pyrryl ketone; GCPK
- [2-PyridCH2NCH3CO-Val-NHCH(Bz)]CHOHCHOH; A-77003
- 2'-Azido-2',3'-dideoxyadenosine; 9-(2'-Azido-2',3'-dideoxy-β-D-erythropentofuranosyl)adenine; 2'-N3ddA
- 2'-FddA(B-D-threo); F-ddA; 2'-F-dd-ara-A; 9-(2'-Fluoro-2',3'-dideoxy-B-D-threopentafuranosyl)adenine; Lodensine
- 2'-N3ddA (B-D-threo); 9-(2'-Azido-2',3'-dideoxy-β-threopentafuranosyl)adenine
- 2-NaphCOAsnPhe[CHOHCH2]Pro-OtBu
- 2-Nitrophenylphenylsulfone; NPPS
- 3-(3-Oxo-1-propenyl)-3'-azido-3'-deoxythymidine; 3-(3-Oxo-1-propenyl)AZT
- 3-(Phenylsulfonyl)-indole deriv. ; L-737,126
- 3,5-DCQA; 3,5-Dicaffeoylquinic acid; Dicaffeoylquinic acid
- 3'-Azido-2',3'-dideoxy-5-[(cyanomethyl)oxy]uridine; 3'-N3-5-Cyanomethyloxy-ddU
- 3'-Azido-2',3'-dideoxy-5-aminouridine; 3'-N3-5-NH2-ddU
- 3'-Azido-2',3'-dideoxy-5-aza-6-deazauridine; C-analog of 3'-N3-ddU

- 3'-Azido-2',3'-dideoxy-5-bromouridine; 3'-N3-5-Br-ddU; AZddBrU
- 3'-Azido-2',3'-dideoxy-5-chlorocytidine; 3'-Az-5-Cl-ddC
- 3'-Azido-2',3'-dideoxy-5-dimethylaminouridine; 3'-N3-5-NMe2-ddU
- 3'-Azido-2',3'-dideoxy-5-ethyluridine; 3'-N3-5-EtddU; CS-85; AZddEtU
- 3'-Azido-2',3'-dideoxy-5-fluorocytidine; 3'-N3-5-F-ddC
- 3'-Azido-2',3'-dideoxy-5-fluorouridine; AZddFU
- 3'-Azido-2',3'-dideoxy-5-hydroxyuridine; 3'-N3-5-OH-ddU
- 3'-Azido-2',3'-dideoxy-5-iodouridine; 3'-N3-5-I-ddU; AZddIU
- 3'-Azido-2',3'-dideoxy-5-methyaminouridine; 3'-N3-5-NHMe-ddU
- 3'-Azido-2',3'-dideoxy-5-methylcytidine; CS-92; 3'-N3-5-Me-ddC
- 3'-Azido-2',3'-dideoxy-5-thiocyanatouridine; 3'-N3-5-SCN-ddU
- 3'-Azido-2',3'-dideoxy-5-trifluoromethyluridine; 3'-N3-5-CF3-ddU
- 3'-Azido-2',3'-dideoxycytidine; CS-91; 3'-N3-ddC
- 3'-Azido-2',3'-dideoxyguanosine; AZG; 3'-N3ddG
- 3'-Azido-2',3'-dideoxy-N4--5-dimethylcytidine; 3'-N3-N4-5-diMe-ddC
- 3'-Azido-2',3'-dideoxy-N4-OH-5-methylcytidine; 3'-N3-N4-OH-5-Me-ddC
- 3'-Azido-2',3'-dideoxyuridine; CS-87; 3'-N3ddU; AZdU; Uravidine
- 3'-Azido-3'-deoxy-6-azathymidine; 3'AZ-6AzaT
- 3-Azido-3'-deoxythymidilyl-(5',5')-2',3'-dideoxy-5'-adenylic acid; AZT-P-ddA
- 3'-Azido-3'-deoxythymidilyl-(5',5')-2',3'-dideoxy-5'-adenylic acid, 2-cyanoethyl ester; AZT-P(CyE)-ddA
- 3'-Azido-3'-deoxythymidilyl-(5',5')-2',3'-dideoxy-5'-inosinic acid; AZT-P-ddI
- 3'-Azido-3'-deoxythymidine-5'-(butylmethoxyvalinyl)phosphate; 5'MeOValPO3(Bu)AZT
- 3'-Azido-5-chloro-2',3'-dideoxyuridine; AzddClUrd; AzddClU
- 3'-Deoxythymidine; ddT
- 3'-FddA (B-D-Erythro); 9-(3'-Fluoro-2',3'-dideoxy-B-D-erythropentafuranosyl)adenine
- 3'-FddC; 3'-Fluoro-2',3'-dideoxycytidine
- 3'-FddG; 3'-Fluoro-2',3'-dideoxyguanosine
- 3'-FddT; Alovudine; FddT; FddThD; 3'-FLT; FLT
- 3'-FddU; 3'-Fluoro-2',3'-dideoxyuridine
- 3'-Fluoro-2',3'-dideoxy-5-iodouridine; FddIU
- 3'-N3-ddA; 9-(3'-Azido-2',3'-dideoxy-B-D-erythropentafuranosyl)adenine
- 3TC; Lamivudine; Epivir® Approved;
- Lamivudine & Zidovudine; Combivir® 3TC & AZT; Approved

- 4'-Acetoamidophenyl4-guadinobenzoate; AGB
- 4'-Az-3'-dT; 4'-Azido-3'-deoxythymidine
- 4'-Az-5CldU ; 4'-Azido-5-chloro-2'-deoxyuridine
- 4'-AzdA; 4'-Azido-2'-deoxyadenosine
- 4'-AzdC; 4'-Azido-2'-deoxycytidine
- 4'-AzdG; 4'-Azido-2'-deoxyguanosine
- 4'-AzdI; 4'-Azido-2'-deoxyinosine
- 4'-AzdU; 4'-Azido-2'-deoxyuridine
- 4'-Azido-2'-deoxy-β-D-erythro-pentofuranosyl-5-methyl-2,4-dioxopyrimidine; 4'-Azidothymidine
- 4'-Cyanothymidine; 4'-CN-T
- 4-Methyl-5-(pyrazinyl)-3H-1,2-dithiole-3-thione; Oltipraz
- 5'-[(1,4-Dihydro-1-methyl-3-pyridinylcarbonyl)oxy]-3'-azido-2',3'-deoxythymidine; DP-AZT; HP-AZT; AZT Prodrug; AZT-DHP
- 5'-[[(Z)-4-amino-2-butenyl]methylamino]-5'-deoxyadenosine; MDL 73811
- 5'-Alkylglycosidecarbonate of 3'-azido-3'-deoxythymidine; AcNHGlc-hexyl-CO3 AZT
- 5Cl3PhS-2IndolCONH2
- 5-Fluoro-2',3'-dideoxycytidine; 5-F-ddC
- 5-Methyl-3'-azido-2',3'-dideoxyisocytidine; MeAZddIsoC
- 6-O-Butanoylcastanospermine; BuCast; MDL 28,574; Celgosivir
- 6-Chloro-9-(2,3-dideoxy-b-D-glyceropentofuranosyl)-9H-purine; D2ClP; 6-Chloro-ddP; CPDDR; 6Cl-ddP
- 6-Dimethylaminopurine-2',3'-dideoxyriboside; N-6-dimethylddA; DMAPDDR
- 7-Chloro-N-methyl-5-(1H-pyrrol-2-yl)-3H-1,4-benzodiazepin-2-amine ; Ro 24-7429
- 7-Chloro-5-(2-pyrryl)-3H-1,4-benzodiazepin-2(H)-one ; Ro 5-3335
- 8-Chloro-TIBO; Tivirapine; R86183
- 9-(2,3-Dideoxy-β-D-ribofuranosyl)-6-(methylthio)purine; D2SMeP
- 9-[Bis(OHMe)cBu]A; A-69463; Cyclobutyl-A; Cyclobut-A ; C-oxetanocin A
- A-76890
- A-77212
- A-80987; Ritonavir deriv.
- A-81525; Ritonavir deriv.
- A-83962; Ritonavir deriv.

- A-98881; Azacyclic urea deriv.
- AA; L-ascorbic acid; Calcium Ascorbate
- AAP-BHAP; U-104489; PNU-104489
- Abacavir & Lamivudine & Zidovudine; Trizivir® ABC & (-)-3TC & AZT
- ABT-378; Lopinavir; Component of Kaletra; Aluviran®
- ABT-378 & ABT-538; Kaletra®; Lopinavir & Ritonavir; Aluviran® & Norvir®
- ABT-538; Norvir®; Ritonavir; Component of Kaletra; Approved
- Acemannan
- Adefovir; PMEA; GS-0393
- Adefovir dipivoxil; BisPom PMEA; GS-840; Preveon®
- AG-1343; Viracept®; Nelfinavir; Approved
- AG1350; LY316957; Nelfinavir-octahydro-thienopyridine analog
- AHPBA analog; R-87366
- Alpha-lipoic acid; α-Lipoic acid; Thioctic acid
- ALX40-4C
- AMD3100; JM3100
- Amprenavir phosphate; VX-175; GW433908; GW433908A (*Sodium Salt*); GW433908G (*Calcium Salt*); Fosamprenavir
- Ancer 20; Z-100
- Anti-sense 25-mer phosphorothioate; GEM91
- Atazanavir; CGP-73547; BMS-232632; BMS 232632; Zrivada; Latazanavir; Reyataz®
- Atevirdine; U-87201E; BHAP deriv.
- Aurintricarboxylic acid; Dupont ATA; Dupont DA639; SD-095345; ATA
- AY 9944; trans-1,4-Bis(2-dichlorobenzylaminoethyl)cyclohexane dichlorhydrate
- AZT; Zidovudine; Azidothymidine; Retrovir®
- AZT-PO3(CH3)-AZT; O,O'-Bis(3'-azido-3'-deoxythymidin-5'-yl)methylphosphonate
- Baicalin; TJN-151
- Betulinic acid; Mairin
- Betulinic acid, 3-O-(3',3'-dimethylsuccinate)
- BHAP deriv.
- BHAP deriv.
- BHAP deriv.
- BHAP deriv.

- BHAP deriv.
- BHAP deriv.; Rescriptor® ; Delavirdine; U-90152
- BHAP deriv.; U-88204E
- BI-RG-587; Nevirapine; Viramune® Approved
- BILA 1906 BS
- BILA 2011 BS; Palinavir
- BILA 2185 BS
- Bis(2-nitrophenyl)sulfone; Bis(2NO2Ph)SO2; NSC633001
- bis-ValHOEt-N2aza-peptide isostere; CGP 53820
- bis-ValHOEt-N2aza-peptide isostere; CGP 53820 analog
- BMS-186318
- BocPhe[CHOH(CH2)3CH=CHPhCO]IleAMBI; L-687,908
- BzOCValPhe[diCHOH(RR)]PheValBzOC
- BzOCValPhe[diCHOH(SS)]PheValBzOC

C2-Sym Phosphinic amide deriv. (HOECHST AG)

- Calanolide A ; NSC675451
- Calanolide B
- Capravirine; S-1153
- Castanospermine
- CbzAF(CHOHCH2)AVVOMe
- Cbz-Asn-Apns-Pro-NH-tBu; KNI-102
- CGP 61755; Lasinavir
- CGP 64222
- CNI-H0294
- Coactinon;I-EBU; HEPT deriv.; MKC-442; Emivirine
- Conocurvone; NSC650891
- Coviracil; (-)FTC; (-)-2',3'-Dideoxy-5-fluoro-3'-thiacytidine; Emtricitabine; Emtriva
- C-Oxetanocin-G; A-69992; (+-)Lobucavir; C-Oxt-G; Cyclobut-G; (+-)Cyclobut-G
- Crixivan®; Indinavir; MK639; L-735,524; Approved
- Curdlan Sulfate
- CV-N; Cyanovirin-N
- Cyclic Urea Amide; SD146
- Cyclosporin A; Sandimmune®
- [Me-Ile-4]Cyclosporin A; SDZ NIM 811

- D4A (L); L-2',3'-Didehydro-2',3'-dideoxyadenosine
- D4FC; D-D4FC; 2',3'-Didehydro-2',3'-dideoxy-5-fluorocytidine; DPC 817
- D4FC (L); L-2',3'-Didehydro-2',3'-dideoxy-5-fluorocytidine
- D4G (L); L-2',3'-Didehydro-2',3'-dideoxyguanosine
- D4I (L); L-2',3'-Didehydro-2',3'-dideoxyinosine
- DABO
- ddC; Dideoxycytidine; Zalcitabine; Hivid®
- ddI; Dideoxyinosine; Didanosine; Videx®
- Dehydroepiandrosterone; DHEA; Prasterone; Dehydroisoandrosterone; EL-10
- Dextran Sulfate
- Dicaffeic acid ester; L-Chicoric acid
- DMP-266; Sustiva®; Efavirenz; Approved
- DMP-323; XM-323
- DMP-450
- Docosanol; n-Docosanol
- dOTC (-); (-)-2'-Deoxy-3'-oxa-4'-thiocytidine
- dOTFC (-); (-)-2'-Deoxy-3'-oxa-4'-thio-5-fluorocytidine
- DP-178; Pentafuside; T-20; GP41 127-162 AA; Enfuvirtide; Fuzeon®
- E-BPTU; HEPT deriv.; NSC 648400
- E-EBU; HEPT deriv.; MKC-442 deriv.
- E-EBU-dM; HEPT deriv.; MKC-442 deriv.
- E-EPSeU; HEPT deriv.; MKC-442 deriv.
- E-EPU; HEPT deriv.; MKC-442 deriv.
- Ebselen
- Etoposide
- Epoxy steriod deriv.; (4α,5α,17β)-17-Hydroxy-3-oxo-4,5-epoxyandrostane-2-carboxamide
- Eulicin
- Fenalamide A1; Phenalamide A1; Stipiamide
- Fleephilone
- Fluoroquinolone deriv.; K-12
- Fortovase®; Invirase®; Saquinavir; Ro31-8959; Approved
- Foscarnet; Phosphonoformic acid; Foscavir;
- FPMDAP;

- FPMPA
- FPMPG
- GPGRAF Octomer; SPC3
- Hammerhead anti-gag RNA Ribozyme B
- Harziphilone
- HBY 097; Quinoxaline deriv.
- HEPT deriv.; MKC-442 deriv.
- HEPT deriv.; MKC-442 deriv.
- HOCH2CH2 isostere; ThienopyridCON thienyl urethane deriv.
- HOCH2CH2 isostere; ThienopyridCON thienyl urethane deriv.
- HOCH2CH2 isostere; ThienopyridCON thienyl urethane deriv.
- HOCH2CH2 isostere; ThienopyridCON thienyl urethane deriv.
- HOCH2CH2 isostere; ThienopyridCON thienyl urethane deriv.
- HOCH2CH2 isostere; ThienopyridCONthienyl urethane deriv.; LY326188
- HPMPA
- HPMPDAP
- HU; Hydroxyurea; Hydrea
- Hydroxocobalamin
- Hypericin
- Ingenol 3,5,20-triacetate; ITA; RD3-2118
- Ingenol deriv.; RD4-2138
- Inophyllum B
- Inophyllum P
- iQoa-Mta-Apns-Thz-NH-tBu; KNI-272
- Isentress (Raltegravir)
- IsoquinCON furanyl urethane analog
- IsoquinCON thienyl urethane analog
- IsoquinCON thienyl urethane analog
- KNI-154; Noa-Asn-Apns-Thz-NH-tBu
- KNI-174; Noa-Asn-Apns-Dmt-NH-tBu
- KNI-227; Qoa-Mta-Apns-Thz-NH-tBu
- L-685,434
- L-685,434-6-Hydroxy derivative
- L-685,434-sOEtMorphderivative; L-689,502

- L-685,434-OEtNMe2
- L-685,434-OPrMorph derivative
- L-697,593; 2-Pyridinone deriv.
- L-697,639; 2-Pyridinone deriv.
- L-697,661; 2-Pyridinone deriv.
- L-FddC; β-L-5F-ddC
- Lamivudine & Zidovudine; Combivir® 3TC & AZT; Approved
- LY289612
- LY289612 analog
- LY289612 analog
- LY-300046-HCl; PETT deriv.; Trovirdine
- LY314163; Saquinavir/Nelfinavir deriv..
- LY-73497; N-(2-Phenethyl)-N'-(2-thiazolyl)thiourea; PETT
- MAP; Methyl acetylenic putrescine
- Michellamine A; NSC650898
- Michellamine B; NSC649324
- Michellamine F
- N-6-Et-ddA; N-Ethyl-2',3'-dideoxyadenosine
- N-6-methyl ddA; N6-Methyl-2',3'-dideoxyadenosine
- Naphthalene 2-sulphonate polymer; PRO 2000
- Nelfinavir-octahydro-thienopyridine analog
- Nonoxynol 9
- NSC625487; Thiazolobenzimidazole; TBZ
- Oxathiin deriv.; UC-38
- Oxathiin deriv.; UC-84
- P9941
- Penicillin Et(NH)2 Sym dimer
- Penicillin G, ET(NH)2 deriv.
- Penicillin, 2Isoquin-OHPrNH2 analog
- Penicillin, 2Isoquin-OHPrNH2 analog
- Pentosan Sulfate; Elmiron; SP54; Xylan Sulfate;
- PETT Cl, F deriv.
- PETT deriv.

- PETT deriv.
- PETT deriv.
- PETT deriv.
- Phenoxan
- Phorbol deriv.; Prostratin
- Platanic acid
- PMEDAP
- PMEG
- PMEHx; PMEI
- PMEMAP
- PMET
- PNU-140690; U-140690; Tipranavir
- Pyridinone deriv.
- Pyridinone deriv.
- Quinoxalin2thione deriv; S-2720
- R14458; TIBO deriv..
- R82150; TIBO deriv..
- R82913; TIBO deriv.
- Resobene
- Ribavirin; Virazole
- Ro 31-8959-bis-thf deriv.
- Saquinavir/Nelfinavir deriv.
- Saquinavir/Nelfinavir deriv.
- SB-205569; Val-Phe-Phe-HOCH2CH2 isostere analog
- SC-52151; Telinavir
- SDZ PRI 053
- Suramin Sodium
- T22
- Thalidomide
- Thiangazole; (-)-Thiangazole
- Thiazoloisoindol-5-one
- Thiazoloisoindol-5-one, deriv.
- Tle-Val-Sta, 5PhBuCOOH deriv.; Statine deriv.
- Tle-Val-Sta, 5PhBuCOOH deriv.; Statine deriv.

- UC-781
- Val-Val-Sta, 5PhBuCOOH deriv.; Statine deriv.
- Val-Val-Sta, 5PhBuCOOH deriv.; Statine deriv.
- Val-Val-Sta, 5PhBuCOOH deriv.; Statine deriv.
- Val-Val-Sta, 5PhBuCOOH deriv.; Statine deriv.
- Val-Val-Sta, 5PhBuCOOH deriv.; Statine deriv.
- VB-11,328 and
- Viread®; Tenofovir Disoproxil,

28. A pharmaceutical composition according to claim 9 or 10 further comprising at least one additional compound selected from the group consisting of ACV; AK602; AMD070; APV; ATV; ATZ; AVX754 (apricitabine); AZT; Abacavir; Abacavir / Lamivudine / Zidovudine; Abacavir sulfate; Abacavir sulfate/Lamivudine; Abacavir/Lamivudine; Abelecet; Acyclovir; Adefovir dipivoxil; Adriamycin; Agenerase; Aldesleukin; Alovudine; Aluvia; AmBisome; Amdoxovir; Amphocin; Amphotec; Amphotericin B; Ampligen; Amprenavir; Androderm; Androgel; Apricitabine; Aptivus; Atazanavir; Atripla; Azithromycin; BMS-378806; BMS-488043; Bactrim; Baraclude; Bevirimat; Biaxin; Brecanavir; BufferGel; C31G; CD4-IgG2; CS; CV-N; Calanolide A; Calcium hydroxylapatite; Carbopol 974P; Carrageenan; Carraguard; Cellulose sulfate; Clarithromycin; Combivir; Copegus; Cotrimoxazole; Crixivan; Cyanovirin-N; Cytovene; DAPD; DLV; DS; Darunavir; Delavirdine; Depo-Testosterone; Dextran sulfate; Didanosine; Diflucan; Doxil; Doxorubicin (liposomal); Dronabinol; EFV; Efavirenz; Elvucitabine; Emtricitabine; Emtricitabine;Tenofovir disoproxil fumarate; Emtriva; Enfufirtide; Entecavir; Epivir; Epoetin alfa; Epogen; Epzicom; Etopophos (phosphate salt); Etoposide; Etravirine; FTC; Fluconazole; Fortovase; Fosamprenavir; Foxivudine tidoxil; Fungizone; Fuzeon; GS 9137; GSK-873,140 (aplaviroc); GW433908; GW640385 (brecanavir); Ganciclovir; Globulin, Immune; Growth hormone (human); Hepsera; Hivid; Human growth hormone; IL-2; INH; Immune Globulin Intravenous (Human); Indinavir; Interferon alfa-2; Interleukin-2, recombinant human; Intron A (2b); Invirase; Isentress; Isoniazid; Itraconazole; KP-1461; Lamivudine/Zidovudine; Lexiva; Lopinavir/Ritonavir; MK-0518; Nebupent; Nelfinavir; Neutrexin; Nevirapine; Norvir; Nydrazid; Peptide T; PMPA Prodrug (Viread)' Prezista (Darunavir); PRO 140; PRO 2000; PRO 542 (CD4 IGg2); Procrit (Epoetin); Proleukin; Racivir; Radiesse; Rrebetol; Rescriptor; Retrovir; Reyataz; Ribavirin; Rifabutin; Rifadin; Rifampin; Rimactane; Ritonavir; Roferon-A (2a); Saquinavir; SCH-D (vicriviroc);

Somatropin; Stavudinie; Sulfamethoxazole / Trimethoprim; Sustanon; Sustiva; TNX-355; Taxol; Tenofovir; Tenofovir disoproxil fumarate; Testosterone; Tipranavir; Toposar; Trimetrexate; Trizivir; Truvada (Emtriva and Viread combination); U-90152S (Delaviridine); UC-781; UK-427,857 (maraviroc); Valcyte; Valganciclovir; Valproic acid; VePesid; Vicriviroc; Videx; Viracept (Tennofovir DF); Viramune; Virazole; Viread; Vitrasert; Zalcitabine; Zerit; Ziagen; Zidovudine; Zithromax; Zovirax, and mixtures thereof.

29. The composition according to any of claims 11-17, 24 and 27-28 wherein said composition treats said HIV infection by inhibiting at least HIV integrase, both wild type and mutants, in the human host.

30. The composition according to claim 24, 27 or 28 in oral or parenteral dosage form.

31. The composition according to claim 24, 27 or 28 formulated for administration as an inhalation spray or a rectal suppository.

32. A method of treating an HIV infection in a patient, said method comprising administering to said patient an effective amount of a composition according to claim 24, 27 or 28.

33. A method of reducing the likelihood of an HIV infection in a patient at risk of said infection, said method comprising administering to said patient an effective amount of a composition according to claim 24, 27 or 28 to said patient.

34. A method of treating a patient with AIDS or ARC comprising administering to said patient a therapeutically effective amount of a composition according to claim 24, 27 or 28.

35. A method of inhibiting HIV integrase in a subject, said method comprising administering to said subject a therapeutically effective amount of a composition according to claim 24, 27 or 28.

36. The method according to any claims 32-35 wherein said patient or subject is a human.

37. Use of a composition according to any of claims 9-17, 24, 27 or 28 in the manufacture of medicament for the treatment of HIV in a patient.

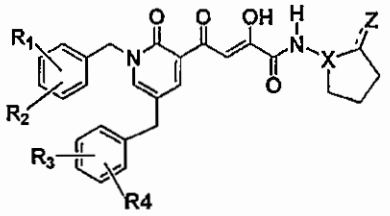
38. Use of a composition according to any of claims 9-17, 24, 27 or 28 in the manufacture of medicament for reducing the likelihood that a patient will contact an HIV infection.

39. Use of a composition according to any of claims 9-17, 24, 27 or 28 in the manufacture of medicament for treating a patient with AIDS or ARC.

40. Use of a composition according to any of claims 9-17, 24, 27 or 28 in the manufacture of medicament for inhibiting HIV integrase in a subject.

41. Use according to any of claims 37-40 wherein said subject is a human patient.

42. A method of treating an HIV infection in a human host comprising administering to said host in combination, an effective amount of a first compound according to the structure:



Formula I

Where R_1 = o-F, R_2 = H, R_3 = p-F, R_4 = o-F

R_1 = p-F, R_2 = H, R_3 = p-F, R_4 = o-F

R_1 = o-F, R_2 = o-F, R_3 = o-F, R_4 = H

R_1 = o-F, R_2 = H, R_3 = o-F, R_4 = o-F

R_1 = o-F, R_2 = H, R_3 = p-F, R_4 = H

R_1 = o-F, R_2 = p-F, R_3 = p-F, R_4 = o-F, or

R_1 = o-F, R_2 = o-F, R_3 = o-F, R_4 = o-F

X is CH or N; and

Z is OH or =O; in combination with an effective amount at least one additional agent set forth below:

- (-)βDioxolane-G; DXG;
- (-)β-Arctigenin; Arctigenin ;
- (-)-Carbovir; (-)-C-D4G; (-)-Carbovir;
- (-)-β-D-2,6-Diaminopurine dioxolane;Amdoxovir; DAPD; APD
- (+)-2'-Deoxy-3'-oxa-4'-thiocytidine; dOTC (+)
- (+)-2'-Deoxy-3'-oxa-4'-thio-5-fluorocytidine; dOTFC (+)
- (+/-)-Cyclobut-G; A-69992; (+/-)-Lobucavir; C-Oxt-G; Cyclobut-G ; C-Oxetanocin-G
- (R)-2QuinCOAsnPhe[CHOHCH2]PipCONHtBu
- (R)-3,6-Diamino-N-(aminomethyl)hexanamide; Bellenamine
- (R)-PMPA; (R)-9-(2-Phosphonylmethoxypropyl)adenine; PMPA-(R); Tenofovir
- (R)-PMPDAP; PMPDAP-(R)
- (S)-PMPA; (S)-9-(2-Phosphonylmethoxypropyl)adenine; PMPA(S)
- (S)-9-(2-Phosphonylmethoxypropyl)adenine; (S)-PMPA
- α-APA; R89439; Loviride
- α-APA deriv.; R87232
- α-APA deriv.; R88703
- α-APA enantiomer; R90385
- α-L-AZT; AZT-α-L
- α-L-DXC; α-L-Dioxalane-C; DXC-α-L-
- α-L-FTC; FTC-α-L-
- α-Monofluoromethyldehydroornithine methyl ester; MFMOME
- 1,1'-Azobisformamide; ADA; Azodicarbonamide
- 1-(11-Octylamino-10-hydroxyundecyl)-3,7-dimethylxanthine; CT-2576
- 1-(2',3'-Dideoxy-2'-fluoro-β-D-threo-pentofuranosyl)cytosine; Ro 31-6840
- 1-(2'-Fluoro-2',3'-dideoxy-B-D-erythro-pentofuranosyl)thymine; 2'FddT
- 1-(2OHPr)-4-Substit-piperazine, thienyl carbamate deriv.
- 1-(2OHPr)-4-Substit-piperazine, thienyl carbamate deriv.
- 1-(2OHPr)-4-Substit-piperazine, thienyl carbamate deriv.
- 1-(2OHPr)-4-Substit-piperazine, thienyl carbamate deriv.

- 1-[(2-Hydroxyethoxy)methyl]-6-(3-methylphenyl)thio)thymine; HEPT-M
- 1-[(2-Hydroxyethoxy)methyl]-6-(phenylthio)-2-thiothymine; HEPT-S
- 1-[(2-Hydroxyethoxy)methyl]-6-(phenylthio)thymine; HEPT
- 1-Deoxynojirimycin ; Deoxynojirimycin
- 141W94; VX-478; Amprenavir; Agenerase®; Approved
- 1592U89 Succinate; Abacavir Succinate; Ziagen® Approved
- 1-Aminooxyethylamine; AEA
- 1-Methoxyoxalyl-3,5-dicaffeoylquinic acid; 1-MO-3,5-DCQA; Dicaffeoylquinic acid deriv.
- 1OH-2(Cbz-Tle)3PhPr [14]paracyclophane deriv.
- 1OH-2(Cbz-ValNH)3PhPr [13]metacyclophane deriv.
- 1OH-2(Cbz-ValNH)3PhPr [13]paracyclophane deriv.
- 1OH-2(Cbz-ValNH)3PhPr [14]paracyclophane deriv.
- 1OH-2(Cbz-ValNH)3PhPr [17]paracyclophane deriv.
- 12-Deoxyphorbol-13-(3E,5E-decadienoate); Phorbol deriv.
- 16.alpha.-Bromoepiandrosterone; Epi-Br; ; Inactivin; HE 2000; HE2000; PPB2; DHEA deriv.
- 1-β-D-arabinofuranosyl-5-(2-bromovinyl)uracil; BV-ara-U; BVaraU; BV ara-U; Sorivudine; SQ-32756; Bravavir; Brovavir; Usevir; YN-72; Bromovinyl araU; BVAU
- 2',3'-Didehydro-3'-deoxycytidine; D4C
- 2',3'-Dideoxydidehydroguanosine; D4G
- 2',3'-Didehydro-3'-deoxythymidine; D4T; Stavudine; Zerit® Approved
- 2',3'-Dideoxy-3'-fluoro-4-thiothymidine; 3'-F-4-Thio-ddT
- 2',3'-Dideoxy-3'-fluoro-5-bromouridine; FddBrU
- 2',3'-Dideoxy-3'-fluoro-5-chlorocytidine; 3'-F-5-Cl-ddC
- 2',3'-Dideoxy-3'-fluoro-5-chlorouridine; 935U83; 5-Chloro-2',3'-dideoxy-3'-fluorouridine; FddClU; Raluridine
- 2',3'-Dideoxy-5-ethylcytidine; 5-Et-ddC
- 2',3'-Dideoxyadenosine; D2A; ddAdo; ddA
- 2',3'-Dideoxydidehydroadenosine; d4A
- 2',3'-Dideoxyguanosine; D2G; ddG
- 2',3'-Dideoxy-3'-hydroxymethyl cytidine; 3'-Hydroxymethyl-ddC; BEA-005
- 2,5'-Anhydro-3'-azido-2',3'-dideoxyuridine; AZU-2,5'-anhydro
- 2,5'-Anhydro-3'-azido-3'-deoxythymidine; AZT-2,5'-anhydro

- 2',5'diSilySpiroT; TSAO-T
- 2',5'diSilySpiroT; TSAO-me^3T
- 2,6-Diamino-2',3'-dideoxypurine-9-ribofuranoside; ddDAPR; DAPDDR; 2,6-Diamino-ddP
- 2,6-Diaminopurine- 2',3'-dideoxydidehydroriboside; ddeDAPR
- 2,6-Diaminopurine-3'-fluoro-2',3'-dideoxyriboside; 3'-F-ddDAPR
- 2-Aminobenzylstatine Valyl Cbz deriv.; Statine deriv.
- 2-Glycine amide-5-chlorophenyl 2-pyrryl ketone; GCPK
- [2-PyridCH2NCH3CO-Val-NHCH(Bz)]CHOHCHOH; A-77003
- 2'-Azido-2',3'-dideoxyadenosine; 9-(2'-Azido-2',3'-dideoxy-β-D-erythropentofuranosyl)adenine; 2'-N3ddA
- 2'-FddA(B-D-threo); F-ddA; 2'-F-dd-ara-A; 9-(2'-Fluoro-2',3'-dideoxy-B-D-threopentafuranosyl)adenine; Lodensine
- 2'-N3ddA (B-D-threo); 9-(2'-Azido-2',3'-dideoxy-β-threopentafuranosyl)adenine
- 2-NaphCOAsnPhe[CHOHCH2]Pro-OtBu
- 2-Nitrophenylphenylsulfone; NPPS
- 3-(3-Oxo-1-propenyl)-3'-azido-3'-deoxythymidine; 3-(3-Oxo-1-propenyl)AZT
- 3-(Phenylsulfonyl)-indole deriv. ; L-737,126
- 3,5-DCQA; 3,5-Dicaffeoylquinic acid; Dicaffeoylquinic acid
- 3'-Azido-2',3'-dideoxy-5-[(cyanomethyl)oxy]uridine; 3'-N3-5-Cyanomethyloxy-ddU
- 3'-Azido-2',3'-dideoxy-5-aminouridine; 3'-N3-5-NH2-ddU
- 3'-Azido-2',3'-dideoxy-5-aza-6-deazauridine; C-analog of 3'-N3-ddU
- 3'-Azido-2',3'-dideoxy-5-bromouridine; 3'-N3-5-Br-ddU; AZddBrU
- 3'-Azido-2',3'-dideoxy-5-chlorocytidine; 3'-Az-5-Cl-ddC
- 3'-Azido-2',3'-dideoxy-5-dimethylaminouridine; 3'-N3-5-NMe2-ddU
- 3'-Azido-2',3'-dideoxy-5-ethyluridine; 3'-N3-5-EtddU; CS-85; AZddEtU
- 3'-Azido-2',3'-dideoxy-5-fluorocytidine; 3'-N3-5-F-ddC
- 3'-Azido-2',3'-dideoxy-5-fluorouridine; AZddFU
- 3'-Azido-2',3'-dideoxy-5-hydroxyuridine; 3'-N3-5-OH-ddU
- 3'-Azido-2',3'-dideoxy-5-iodouridine; 3'-N3-5-I-ddU; AZddIU
- 3'-Azido-2',3'-dideoxy-5-methyaminouridine; 3'-N3-5-NHMe-ddU
- 3'-Azido-2',3'-dideoxy-5-methylcytidine; CS-92; 3'-N3-5-Me-ddC
- 3'-Azido-2',3'-dideoxy-5-thiocyanatouridine; 3'-N3-5-SCN-ddU
- 3'-Azido-2',3'-dideoxy-5-trifluoromethyluridine; 3'-N3-5-CF3-ddU

- 3'-Azido-2',3'-dideoxycytidine; CS-91; 3'-N3-ddC
- 3'-Azido-2',3'-dideoxyguanosine; AZG; 3'-N3ddG
- 3'-Azido-2',3'-dideoxy-N4--5-dimethylcytidine; 3'-N3-N4-5-diMe-ddC
- 3'-Azido-2',3'-dideoxy-N4-OH-5-methylcytidine; 3'-N3-N4-OH-5-Me-ddC
- 3'-Azido-2',3'-dideoxyuridine; CS-87; 3'-N3ddU; AZdU; Uravidine
- 3'-Azido-3'-deoxy-6-azathymidine; 3'AZ-6AzaT
- 3-Azido-3'-deoxythymidilyl-(5',5')-2',3'-dideoxy-5'-adenylic acid; AZT-P-ddA
- 3'-Azido-3'-deoxythymidilyl-(5',5')-2',3'-dideoxy-5'-adenylic acid, 2-cyanoethyl ester; AZT-P(CyE)-ddA
- 3'-Azido-3'-deoxythymidilyl-(5',5')-2',3'-dideoxy-5'-inosinic acid; AZT-P-ddI
- 3'-Azido-3'-deoxythymidine-5'-(butylmethoxyvalinyl)phosphate; 5'MeOValPO3(Bu)AZT
- 3'-Azido-5-chloro-2',3'-dideoxyuridine; AzddClUrd; AzddClU
- 3'-Deoxythymidine; ddT
- 3'-FddA (B-D-Erythro); 9-(3'-Fluoro-2',3'-dideoxy-B-D-erythropentafuranosyl)adenine
- 3'-FddC; 3'-Fluoro-2',3'-dideoxycytidine
- 3'-FddG; 3'-Fluoro-2',3'-dideoxyguanosine
- 3'-FddT; Alovudine; FddT; FddThD; 3'-FLT; FLT
- 3'-FddU; 3'-Fluoro-2',3'-dideoxyuridine
- 3'-Fluoro-2',3'-dideoxy-5-iodouridine; FddIU
- 3'-N3-ddA; 9-(3'-Azido-2',3'-dideoxy-B-D-erythropentafuranosyl)adenine
- 3TC; Lamivudine; Epivir® Approved;
- Lamivudine & Zidovudine; Combivir® 3TC & AZT; Approved
- 4'-Acetoamidophenyl4-guadinobenzoate; AGB
- 4'-Az-3'-dT; 4'-Azido-3'-deoxythymidine
- 4'-Az-5CldU ; 4'-Azido-5-chloro-2'-deoxyuridine
- 4'-AzdA; 4'-Azido-2'-deoxyadenosine
- 4'-AzdC; 4'-Azido-2'-deoxycytidine
- 4'-AzdG; 4'-Azido-2'-deoxyguanosine
- 4'-AzdI; 4'-Azido-2'-deoxyinosine
- 4'-AzdU; 4'-Azido-2'-deoxyuridine
- 4'-Azido-2'-deoxy-β-D-erythro-pentofuranosyl-5-methyl-2,4-dioxopyrimidine; 4'-Azidothymidine
- 4'-Cyanothymidine; 4'-CN-T

- 4-Methyl-5-(pyrazinyl)-3H-1,2-dithiole-3-thione; Oltipraz
- 5'-[(1,4-Dihydro-1-methyl-3-pyridinylcarbonyl)oxy]-3'-azido-2',3'-deoxythymidine; DP-AZT; HP-AZT; AZT Prodrug; AZT-DHP
- 5'-[[(Z)-4-amino-2-butenyl]methylamino]-5'-deoxyadenosine; MDL 73811
- 5'-Alkylglycosidecarbonate of 3'-azido-3'-deoxythymidine; AcNHGlc-hexyl-CO3 AZT
- 5Cl3PhS-2IndolCONH2
- 5-Fluoro-2',3'-dideoxycytidine; 5-F-ddC
- 5-Methyl-3'-azido-2',3'-dideoxyisocytidine; MeAZddIsoC
- 6-O-Butanoylcastanospermine; BuCast; MDL 28,574; Celgosivir
- 6-Chloro-9-(2,3-dideoxy-b-D-glyceropentofuranosyl)-9H-purine; D2ClP; 6-Chloro-ddP; CPDDR; 6Cl-ddP
- 6-Dimethylaminopurine-2',3'-dideoxyriboside; N-6-dimethylddA; DMAPDDR
- 7-Chloro-N-methyl-5-(1H-pyrrol-2-yl)-3H-1,4-benzodiazepin-2-amine ; Ro 24-7429
- 7-Chloro-5-(2-pyrryl)-3H-1,4-benzodiazepin-2(H)-one ; Ro 5-3335
- 8-Chloro-TIBO; Tivirapine; R86183
- 9-(2,3-Dideoxy-β-D-ribofuranosyl)-6-(methylthio)purine; D2SMeP
- 9-[Bis(OHMe)cBu]A; A-69463; Cyclobutyl-A; Cyclobut-A ; C-oxetanocin A
- A-76890
- A-77212
- A-80987; Ritonavir deriv.
- A-81525; Ritonavir deriv.
- A-83962; Ritonavir deriv.
- A-98881; Azacyclic urea deriv.
- AA; L-ascorbic acid; Calcium Ascorbate
- AAP-BHAP; U-104489; PNU-104489
- Abacavir & Lamivudine & Zidovudine; Trizivir® ABC & (-)-3TC & AZT
- ABT-378; Lopinavir; Component of Kaletra; Aluviran®
- ABT-378 & ABT-538; Kaletra®; Lopinavir & Ritonavir; Aluviran® & Norvir®
- ABT-538; Norvir®; Ritonavir; Component of Kaletra; Approved
- Acemannan
- Adefovir; PMEA; GS-0393
- Adefovir dipivoxil; BisPom PMEA; GS-840; Preveon®
- AG-1343; Viracept®; Nelfinavir; Approved

- AG1350; LY316957; Nelfinavir-octahydro-thienopyridine analog
- AHPBA analog; R-87366
- Alpha-lipoic acid; α-Lipoic acid; Thioctic acid
- ALX40-4C
- AMD3100; JM3100
- Amprenavir phosphate; VX-175; GW433908; GW433908A (*Sodium Salt*); GW433908G (*Calcium Salt*); Fosamprenavir
- Ancer 20; Z-100
- Anti-sense 25-mer phosphorothioate; GEM91
- Atazanavir; CGP-73547; BMS-232632; BMS 232632; Zrivada; Latazanavir; Reyataz®
- Atevirdine; U-87201E; BHAP deriv.
- Aurintricarboxylic acid; Dupont ATA; Dupont DA639; SD-095345; ATA
- AY 9944; trans-1,4-Bis(2-dichlorobenzylaminoethyl)cyclohexane dichlorhydrate
- AZT; Zidovudine; Azidothymidine; Retrovir®
- AZT-PO3(CH3)-AZT; O,O'-Bis(3'-azido-3'-deoxythymidin-5'-yl)methylphosphonate
- Baicalin; TJN-151
- Betulinic acid; Mairin
- Betulinic acid, 3-O-(3',3'-dimethylsuccinate)
- BHAP deriv.
- BHAP deriv.
- BHAP deriv.
- BHAP deriv.
- BHAP deriv.
- BHAP deriv.; Rescriptor® ; Delavirdine; U-90152
- BHAP deriv.; U-88204E
- BI-RG-587; Nevirapine; Viramune® Approved
- BILA 1906 BS
- BILA 2011 BS; Palinavir
- BILA 2185 BS
- Bis(2-nitrophenyl)sulfone; Bis(2NO2Ph)SO2; NSC633001
- bis-ValHOEt-N2aza-peptide isostere; CGP 53820
- bis-ValHOEt-N2aza-peptide isostere; CGP 53820 analog
- BMS-186318

- BocPhe[CHOH(CH2)3CH=CHPhCO]IleAMBI; L-687,908
- BzOCValPhe[diCHOH(RR)]PheValBzOC
- BzOCValPhe[diCHOH(SS)]PheValBzOC
- C2-Sym Phosphinic amide deriv. (HOECHST AG)
- Calanolide A ; NSC675451
- Calanolide B
- Capravirine; S-1153
- Castanospermine
- CbzAF(CHOHCH2)AVVOMe
- Cbz-Asn-Apns-Pro-NH-tBu; KNI-102
- CGP 61755; Lasinavir
- CGP 64222
- CNI-H0294
- Coactinon;I-EBU; HEPT deriv.; MKC-442; Emivirine
- Conocurvone; NSC650891
- Coviracil; (-)FTC; (-)-2',3'-Dideoxy-5-fluoro-3'-thiacytidine; Emtricitabine; Emtriva
- C-Oxetanocin-G; A-69992; (+-)Lobucavir; C-Oxt-G; Cyclobut-G; (+-)Cyclobut-G
- Crixivan®; Indinavir; MK639; L-735,524; Approved
- Curdlan Sulfate
- CV-N; Cyanovirin-N
- Cyclic Urea Amide; SD146
- Cyclosporin A; Sandimmune®
- [Me-Ile-4]Cyclosporin A; SDZ NIM 811
- D4A (L); L-2',3'-Didehydro-2',3'-dideoxyadenosine
- D4FC; D-D4FC; 2',3'-Didehydro-2',3'-dideoxy-5-fluorocytidine; DPC 817
- D4FC (L); L-2',3'-Didehydro-2',3'-dideoxy-5-fluorocytidine
- D4G (L); L-2',3'-Didehydro-2',3'-dideoxyguanosine
- D4I (L); L-2',3'-Didehydro-2',3'-dideoxyinosine
- DABO
- ddC; Dideoxycytidine; Zalcitabine; Hivid®
- ddI; Dideoxyinosine; Didanosine; Videx®
- Dehydroepiandrosterone; DHEA; Prasterone; Dehydroisoandrosterone; EL-10
- Dextran Sulfate
- Dicaffeic acid ester; L-Chicoric acid

- DMP-266; Sustiva®; Efavirenz; Approved
- DMP-323; XM-323
- DMP-450
- Docosanol; n-Docosanol
- dOTC (-); (-)-2'-Deoxy-3'-oxa-4'-thiocytidine
- dOTFC (-); (-)-2'-Deoxy-3'-oxa-4'-thio-5-fluorocytidine
- DP-178; Pentafuside; T-20; GP41 127-162 AA; Enfuvirtide; Fuzeon®
- E-BPTU; HEPT deriv.; NSC 648400
- E-EBU; HEPT deriv.; MKC-442 deriv.
- E-EBU-dM; HEPT deriv.; MKC-442 deriv.
- E-EPSeU; HEPT deriv.; MKC-442 deriv.
- E-EPU; HEPT deriv.; MKC-442 deriv.
- Ebselen
- Etoposide
- Epoxy steriod deriv.; (4α,5α,17β)-17-Hydroxy-3-oxo-4,5-epoxyandrostane-2-carboxamide
- Eulicin
- Fenalamide A1; Phenalamide A1; Stipiamide
- Fleephilone
- Fluoroquinolone deriv.; K-12
- Fortovase®; Invirase®; Saquinavir; Ro31-8959; Approved
- Foscarnet; Phosphonoformic acid; Foscavir;
- FPMDAP;
- FPMPA
- FPMPG
- GPGRAF Octomer; SPC3
- Hammerhead anti-gag RNA Ribozyme B
- Harziphilone
- HBY 097; Quinoxaline deriv.
- HEPT deriv.; MKC-442 deriv.
- HEPT deriv.; MKC-442 deriv.
- HOCH2CH2 isostere; ThienopyridCON thienyl urethane deriv.
- HOCH2CH2 isostere; ThienopyridCON thienyl urethane deriv.
- HOCH2CH2 isostere; ThienopyridCON thienyl urethane deriv.

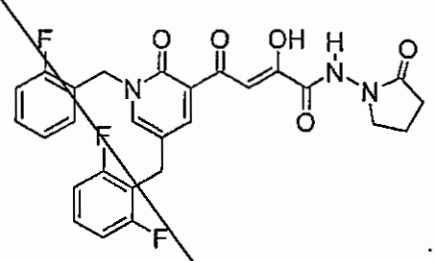
- HOCH2CH2 isostere; ThienopyridCON thienyl urethane deriv.
- HOCH2CH2 isostere; ThienopyridCON thienyl urethane deriv.
- HOCH2CH2 isostere; ThienopyridCONthienyl urethane deriv.; LY326188
- HPMPA
- HPMPDAP
- HU; Hydroxyurea; Hydrea
- Hydroxocobalamin
- Hypericin
- Ingenol 3,5,20-triacetate; ITA; RD3-2118
- Ingenol deriv.; RD4-2138
- Inophyllum B
- Inophyllum P
- iQoa-Mta-Apns-Thz-NH-tBu; KNI-272
- Isentress (Raltegravir)
- IsoquinCON furanyl urethane analog
- IsoquinCON thienyl urethane analog
- IsoquinCON thienyl urethane analog
- KNI-154; Noa-Asn-Apns-Thz-NH-tBu
- KNI-174; Noa-Asn-Apns-Dmt-NH-tBu
- KNI-227; Qoa-Mta-Apns-Thz-NH-tBu
- L-685,434
- L-685,434-6-Hydroxy derivative
- L-685,434-OEtMorphderivative; L-689,502
- L-685,434-OEtNMe2
- L-685,434-OPrMorph derivative
- L-697,593; 2-Pyridinone deriv.
- L-697,639; 2-Pyridinone deriv.
- L-697,661; 2-Pyridinone deriv.
- L-FddC; β-L-5F-ddC
- Lamivudine & Zidovudine; Combivir® 3TC & AZT; Approved
- LY289612
- LY289612 analog
- LY289612 analog

- LY-300046-HCl; PETT deriv.; Trovirdine
- LY314163; Saquinavir/Nelfinavir deriv..
- LY-73497; N-(2-Phenethyl)-N'-(2-thiazolyl)thiourea; PETT
- MAP; Methyl acetylenic putrescine
- Michellamine A; NSC650898
- Michellamine B; NSC649324
- Michellamine F
- N-6-Et-ddA; N-Ethyl-2',3'-dideoxyadenosine
- N-6-methyl ddA; N6-Methyl-2',3'-dideoxyadenosine
- Naphthalene 2-sulphonate polymer; PRO 2000
- Nelfinavir-octahydro-thienopyridine analog
- Nonoxynol 9
- NSC625487; Thiazolobenzimidazole; TBZ
- Oxathiin deriv.; UC-38
- Oxathiin deriv.; UC-84
- P9941
- Penicillin Et(NH)2 Sym dimer
- Penicillin G, ET(NH)2 deriv.
- Penicillin, 2Isoquin-OHPrNH2 analog
- Penicillin, 2Isoquin-OHPrNH2 analog
- Pentosan Sulfate; Elmiron; SP54; Xylan Sulfate;
- PETT Cl, F deriv.
- PETT deriv.
- PETT deriv.
- PETT deriv.
- PETT deriv.
- Phenoxan
- Phorbol deriv.; Prostratin
- Platanic acid
- PMEDAP
- PMEG
- PMEHx; PMEI
- PMEMAP
- PMET

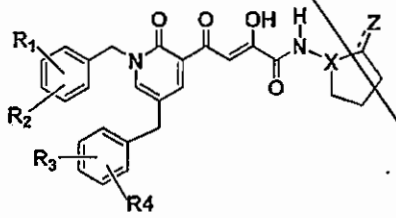
- PNU-140690; U-140690; Tipranavir
- Pyridinone deriv.
- Pyridinone deriv.
- Quinoxalin2thione deriv; S-2720
- R14458; TIBO deriv..
- R82150; TIBO deriv..
- R82913; TIBO deriv.
- Resobene
- Ribavirin; Virazole
- Ro 31-8959-bis-thf deriv.
- Saquinavir/Nelfinavir deriv.
- Saquinavir/Nelfinavir deriv.
- SB-205569; Val-Phe-Phe-HOCH2CH2 isostere analog
- SC-52151; Telinavir
- SDZ PRI 053
- Suramin Sodium
- T22
- Thalidomide
- Thiangazole; (-)-Thiangazole
- Thiazoloisoindol-5-one
- Thiazoloisoindol-5-one, deriv.
- Tle-Val-Sta, 5PhBuCOOH deriv.; Statine deriv.
- Tle-Val-Sta, 5PhBuCOOH deriv.; Statine deriv.
- UC-781
- Val-Val-Sta, 5PhBuCOOH deriv.; Statine deriv.
- Val-Val-Sta, 5PhBuCOOH deriv.; Statine deriv.
- Val-Val-Sta, 5PhBuCOOH deriv.; Statine deriv.
- Val-Val-Sta, 5PhBuCOOH deriv.; Statine deriv.
- Val-Val-Sta, 5PhBuCOOH deriv.; Statine deriv.
- VB-11,328
- Viread®; Tenofovir Disoproxil

and mixtures thereof.

43. A method according to claim 42, wherein said first compound is



44. A method of treating an HIV infection in a human host comprising administering to said host in combination, an effective amount of a first compound according to the structure:



Formula I

Where R_1 = o-F, R_2 = H, R_3 = p-F, R_4 = o-F

R_1 = p-F, R_2 = H, R_3 = p-F, R_4 = o-F

R_1 = o-F, R_2 = o-F, R_3 = o-F, R_4 = H

R_1 = o-F, R_2 = H, R_3 = o-F, R_4 = o-F

R_1 = o-F, R_2 = H, R_3 = p-F, R_4 = H

R_1 = o-F, R_2 = p-F, R_3 = p-F, R_4 = o-F or

R_1 = o-F, R_2 = o-F, R_3 = o-F, R_4 = o-F;

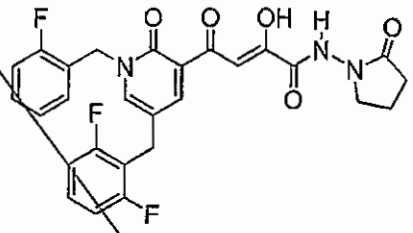
X is CH or N; and

Z is OH or =O;

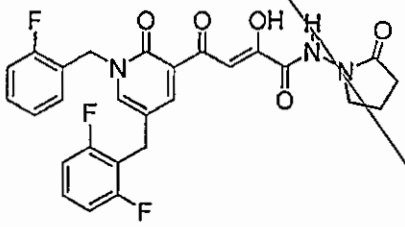
and pharmaceutically acceptable salts thereof, in combination with at least one additional compound selected from the group consisting of ACV; AK602; AMD070; APV; ATV; ATZ; AVX754 (apricitabine); AZT; Abacavir; Abacavir / Lamivudine / Zidovudine; Abacavir sulfate; Abacavir sulfate/Lamivudine; Abacavir/Lamivudine; Abelecet; Acyclovir; Adefovir

dipivoxil; Adriamycin; Agenerase; Aldesleukin; Alovudine; Aluvia; AmBisome; Amdoxovir; Amphocin; Amphotec; Amphotericin B; Ampligen; Amprenavir; Androderm; Androgel; Apricitabine; Aptivus; Atazanavir; Atripla; Azithromycin; BMS-378806; BMS-488043; Bactrim; Baraclude; Bevirimat; Biaxin; Brecanavir; BufferGel; C31G; CD4-IgG2; CS; CV-N; Calanolide A; Calcium hydroxylapatite; Carbopol 974P; Carrageenan; Carraguard; Cellulose sulfate; Clarithromycin; Combivir; Copegus; Cotrimoxazole; Crixivan; Cyanovirin-N; Cytovene; DAPD; DLV; DS; Darunavir; Delavirdine; Depo-Testosterone; Dextran sulfate; Didanosine; Diflucan; Doxil; Doxorubicin (liposomal); Dronabinol; EFV; Efavirenz; Elvucitabine; Emtricitabine; Emtricitabine;Tenofovir disoproxil fumarate; Emtriva; Enfufirtide; Entecavir; Epivir; Epoetin alfa; Epogen; Epzicom; Etopophos (phosphate salt); Etoposide; Etravirine; FTC; Fluconazole; Fortovase; Fosamprenavir; Foxivudine tidoxil; Fungizone; Fuzeon; GS 9137; GSK-873,140 (aplaviroc); GW433908; GW640385 (brecanavir); Ganciclovir; Globulin, Immune; Growth hormone (human); Hepsera; Hivid; Human growth hormone; IL-2; INH; Immune Globulin Intravenous (Human); Indinavir; Interferon alfa-2; Interleukin-2, recombinant human; Intron A (2b); Invirase; Isentress; Isoniazid; Itraconazole; KP-1461; Lamivudine/Zidovudine; Lexiva; Lopinavir/Ritonavir; MK-0518; Nebupent; Nelfinavir; Neutrexin; Nevirapine; Norvir; Nydrazid; Peptide T; PMPA Prodrug (Viread)' Prezista (Darunavir); PRO 140; PRO 2000; PRO 542 (CD4 IGg2); Procrit (Epoetin); Proleukin; Racivir; Radiesse; Rrebetol; Rescriptor; Retrovir; Reyataz; Ribavirin; Rifabutin; Rifadin; Rifampin; Rimactane; Ritonavir; Roferon-A (2a); Saquinavir; SCH-D (vicriviroc); Somatropin; Stavudinie; Sulfamethoxazole / Trimethoprim; Sustanon; Sustiva; TNX-355; Taxol; Tenofovir; Tenofovir disoproxil fumarate; Testosterone; Tipranavir; Toposar; Trimetrexate; Trizivir; Truvada (Emtriva and Viread combination); U-90152S (Delaviridine); UC-781; UK-427,857 (maraviroc); Valcyte; Valganciclovir; Valproic acid; VePesid; Vicriviroc; Videx; Viracept (Tennofovir DF); Viramune; Virazole; Viread; Vitrasert; Zalcitabine; Zerit; Ziagen; Zidovudine; Zithromax; Zovirax and mixtures thereof, further in combination with a pharmaceutically acceptable carrier, additive or excipient.

45. A method according to claim 44 wherein the first compound is



46. A pharmaceutical composition comprising an effective amount of a compound according to the structure:



in combination with an effective amount of at least one additional compound selected from the group

- (-)βDioxolane-G; DXG;
- (-)β-Arctigenin; Arctigenin ;
- (-)-Carbovir; (-)-C-D4G; (-)-Carbovir;
- (-)-β-D-2,6-Diaminopurine dioxolane;Amdoxovir; DAPD; APD
- (+)-2'-Deoxy-3'-oxa-4'-thiocytidine; dOTC (+)
- (+)-2'-Deoxy-3'-oxa-4'-thio-5-fluorocytidine; dOTFC (+)
- (+/-)-Cyclobut-G; A-69992; (+/-)-Lobucavir; C-Oxt-G; Cyclobut-G; C-Oxetanocin-G
- (R)-2QuinCOAsnPhe[CHOHCH2]PipCONHtBu
- (R)-3,6-Diamino-N-(aminomethyl)hexanamide; Bellenamine
- (R)-PMPA; (R)-9-(2-Phosphonylmethoxypropyl)adenine; PMPA-(R); Tenofovir
- (R)-PMPDAP; PMPDAP-(R)
- (S)-PMPA; (S)-9-(2-Phosphonylmethoxypropyl)adenine; PMPA(S)
- (S)-9-(2-Phosphonylmethoxypropyl)adenine; (S)-PMPA
- α-APA; R89439; Loviride
- α-APA deriv.; R87232

- α-APA deriv.; R88703
- α-APA enantiomer; R90385
- α-L-AZT; AZT-α-L
- α-L-DXC; α-L-Dioxalane-C; DXC-α-L-
- α-L-FTC; FTC-α-L-
- α-Monofluoromethyldehydroornithine methyl ester; MFMOME
- 1,1'-Azobisformamide; ADA; Azodicarbonamide
- 1-(11-Octylamino-10-hydroxyundecyl)-3,7-dimethylxanthine; CT-2576
- 1-(2',3'-Dideoxy-2'-fluoro-β-D-threo-pentofuranosyl)cytosine; Ro 31-6840
- 1-(2'-Fluoro-2',3'-dideoxy-B-D-erythro-pentofuranosyl)thymine; 2'FddT
- 1-(2OHPr)-4-Substit-piperazine, thienyl carbamate deriv.
- 1-(2OHPr)-4-Substit-piperazine, thienyl carbamate deriv.
- 1-(2OHPr)-4-Substit-piperazine, thienyl carbamate deriv.
- 1-(2OHPr)-4-Substit-piperazine, thienyl carbamate deriv.
- 1-[(2-Hydroxyethoxy)methyl]-6-(3-methylphenyl)thio)thymine; HEPT-M
- 1-[(2-Hydroxyethoxy)methyl]-6-(phenylthio)-2-thiothymine; HEPT-S
- 1-[(2-Hydroxyethoxy)methyl]-6-(phenylthio)thymine; HEPT
- 1-Deoxynojirimycin ; Deoxynojirimycin
- 141W94; VX-478; Amprenavir; Agenerase®; Approved
- 1592U89 Succinate; Abacavir Succinate; Ziagen® Approved
- 1-Aminooxyethylamine; AEA
- 1-Methoxyoxalyl-3,5-dicaffeoylquinic acid; 1-MO-3,5-DCQA; Dicaffeoylquinic acid deriv.
- 1OH-2(Cbz-Tle)3PhPr [14]paracyclophane deriv.
- 1OH-2(Cbz-ValNH)3PhPr [13]metacyclophane deriv.
- 1OH-2(Cbz-ValNH)3PhPr [13]paracyclophane deriv.
- 1OH-2(Cbz-ValNH)3PhPr [14]paracyclophane deriv.
- 1OH-2(Cbz-ValNH)3PhPr [17]paracyclophane deriv.
- 12-Deoxyphorbol-13-(3E,5E-decadienoate); Phorbol deriv.
- 16.alpha.-Bromoepiandrosterone; Epi-Br; ; Inactivin; HE 2000; HE2000; PPB2; DHEA deriv.
- 1-β-D-arabinofuranosyl-5-(2-bromovinyl)uracil; BV-ara-U; BVaraU; BV ara-U; Sorivudine; SQ-32756; Bravavir; Brovavir; Usevir; YN-72; Bromovinyl araU; BVAU
- 2',3'-Didehydro-3'-deoxycytidine; D4C

- 2',3'-Dideoxydidehydroguanosine; D4G
- 2',3'-Didehydro-3'-deoxythymidine; D4T; Stavudine; Zerit® Approved
- 2',3'-Dideoxy-3'-fluoro-4-thiothymidine; 3'-F-4-Thio-ddT
- 2',3'-Dideoxy-3'-fluoro-5-bromouridine; FddBrU
- 2',3'-Dideoxy-3'-fluoro-5-chlorocytidine; 3'-F-5-Cl-ddC
- 2',3'-Dideoxy-3'-fluoro-5-chlorouridine; 935U83; 5-Chloro-2',3'-dideoxy-3'-fluorouridine; FddClU; Raluridine
- 2',3'-Dideoxy-5-ethylcytidine; 5-Et-ddC
- 2',3'-Dideoxyadenosine; D2A; ddAdo; ddA
- 2',3'-Dideoxydidehydroadenosine; d4A
- 2',3'-Dideoxyguanosine; D2G; ddG
- 2',3'-Dideoxy-3'-hydroxymethyl cytidine; 3'-Hydroxymethyl-ddC; BEA-005
- 2,5'-Anhydro-3'-azido-2',3'-dideoxyuridine; AZU-2,5'-anhydro
- 2,5'-Anhydro-3'-azido-3'-deoxythymidine; AZT-2,5'-anhydro
- 2',5'diSilySpiroT; TSAO-T
- 2',5'diSilySpiroT; TSAO-me^3T
- 2,6-Diamino-2',3'-dideoxypurine-9-ribofuranoside; ddDAPR; DAPDDR; 2,6-Diamino-ddP
- 2,6-Diaminopurine- 2',3'-dideoxydidehydroriboside; ddeDAPR
- 2,6-Diaminopurine-3'-fluoro-2',3'-dideoxyriboside; 3'-F-ddDAPR
- 2-Aminobenzylstatine Valyl Cbz deriv.; Statine deriv.
- 2-Glycine amide-5-chlorophenyl 2-pyrryl ketone; GCPK
- [2-PyridCH2NCH3CO-Val-NHCH(Bz)]CHOHCHOH; A-77003
- 2'-Azido-2',3'-dideoxyadenosine; 9-(2'-Azido-2',3'-dideoxy-β-D-erythropentofuranosyl)adenine; 2'-N3ddA
- 2'-FddA(B-D-threo); F-ddA; 2'-F-dd-ara-A; 9-(2'-Fluoro-2',3'-dideoxy-B-D-threopentafuranosyl)adenine; Lodensine
- 2'-N3ddA (B-D-threo); 9-(2'-Azido-2',3'-dideoxy-β-threopentafuranosyl)adenine
- 2-NaphCOAsnPhe[CHOHCH2]Pro-OtBu
- 2-Nitrophenylphenylsulfone; NPPS
- 3-(3-Oxo-1-propenyl)-3'-azido-3'-deoxythymidine; 3-(3-Oxo-1-propenyl)AZT
- 3-(Phenylsulfonyl)-indole deriv. ; L-737,126
- 3,5-DCQA; 3,5-Dicaffeoylquinic acid; Dicaffeoylquinic acid
- 3'-Azido-2',3'-dideoxy-5-[(cyanomethyl)oxy]uridine; 3'-N3-5-Cyanomethyloxy-ddU

- 3'-Azido-2',3'-dideoxy-5-aminouridine; 3'-N3-5-NH2-ddU
- 3'-Azido-2',3'-dideoxy-5-aza-6-deazauridine; C-analog of 3'-N3-ddU
- 3'-Azido-2',3'-dideoxy-5-bromouridine; 3'-N3-5-Br-ddU; AZddBrU
- 3'-Azido-2',3'-dideoxy-5-chlorocytidine; 3'-Az-5-Cl-ddC
- 3'-Azido-2',3'-dideoxy-5-dimethylaminouridine; 3'-N3-5-NMe2-ddU
- 3'-Azido-2',3'-dideoxy-5-ethyluridine; 3'-N3-5-EtddU; CS-85; AZddEtU
- 3'-Azido-2',3'-dideoxy-5-fluorocytidine; 3'-N3-5-F-ddC
- 3'-Azido-2',3'-dideoxy-5-fluorouridine; AZddFU
- 3'-Azido-2',3'-dideoxy-5-hydroxyuridine; 3'-N3-5-OH-ddU
- 3'-Azido-2',3'-dideoxy-5-iodouridine; 3'-N3-5-I-ddU; AZddIU
- 3'-Azido-2',3'-dideoxy-5-methyaminouridine; 3'-N3-5-NHMe-ddU
- 3'-Azido-2',3'-dideoxy-5-methylcytidine; CS-92; 3'-N3-5-Me-ddC
- 3'-Azido-2',3'-dideoxy-5-thiocyanatouridine; 3'-N3-5-SCN-ddU
- 3'-Azido-2',3'-dideoxy-5-trifluoromethyluridine; 3'-N3-5-CF3-ddU
- 3'-Azido-2',3'-dideoxycytidine; CS-91; 3'-N3-ddC
- 3'-Azido-2',3'-dideoxyguanosine; AZG; 3'-N3ddG
- 3'-Azido-2',3'-dideoxy-N4--5-dimethylcytidine; 3'-N3-N4-5-diMe-ddC
- 3'-Azido-2',3'-dideoxy-N4-OH-5-methylcytidine; 3'-N3-N4-OH-5-Me-ddC
- 3'-Azido-2',3'-dideoxyuridine; CS-87; 3'-N3ddU; AZdU; Uravidine
- 3'-Azido-3'-deoxy-6-azathymidine; 3'AZ-6AzaT
- 3-Azido-3'-deoxythymidilyl-(5',5')-2',3'-dideoxy-5'-adenylic acid; AZT-P-ddA
- 3'-Azido-3'-deoxythymidilyl-(5',5')-2',3'-dideoxy-5'-adenylic acid, 2-cyanoethyl ester; AZT-P(CyE)-ddA
- 3'-Azido-3'-deoxythymidilyl-(5',5')-2',3'-dideoxy-5'-inosinic acid; AZT-P-ddI
- 3'-Azido-3'-deoxythymidine-5'-(butylmethoxyvalinyl)phosphate; 5'MeOValPO3(Bu)AZT
- 3'-Azido-5-chloro-2',3'-dideoxyuridine; AzddClUrd; AzddClU
- 3'-Deoxythymidine; ddT
- 3'-FddA (B-D-Erythro); 9-(3'-Fluoro-2',3'-dideoxy-B-D-erythropentafuranosyl)adenine
- 3'-FddC; 3'-Fluoro-2',3'-dideoxycytidine
- 3'-FddG; 3'-Fluoro-2',3'-dideoxyguanosine
- 3'-FddT; Alovudine; FddT; FddThD; 3'-FLT; FLT
- 3'-FddU; 3'-Fluoro-2',3'-dideoxyuridine
- 3'-Fluoro-2',3'-dideoxy-5-iodouridine; FddIU
- 3'-N3-ddA; 9-(3'-Azido-2',3'-dideoxy-B-D-erythropentafuranosyl)adenine

- 3TC; Lamivudine; Epivir® Approved;
- Lamivudine & Zidovudine; Combivir® 3TC & AZT; Approved
- 4'-Acetoamidophenyl4-guadinobenzoate; AGB
- 4'-Az-3'-dT; 4'-Azido-3'-deoxythymidine
- 4'-Az-5CldU ; 4'-Azido-5-chloro-2'-deoxyuridine
- 4'-AzdA; 4'-Azido-2'-deoxyadenosine
- 4'-AzdC; 4'-Azido-2'-deoxycytidine
- 4'-AzdG; 4'-Azido-2'-deoxyguanosine
- 4'-AzdI; 4'-Azido-2'-deoxyinosine
- 4'-AzdU; 4'-Azido-2'-deoxyuridine
- 4'-Azido-2'-deoxy-β-D-erythro-pentofuranosyl-5-methyl-2,4-dioxopyrimidine; 4'-Azidothymidine
- 4'-Cyanothymidine; 4'-CN-T
- 4-Methyl-5-(pyrazinyl)-3H-1,2-dithiole-3-thione; Oltipraz
- 5'-[(1,4-Dihydro-1-methyl-3-pyridinylcarbonyl)oxy]-3'-azido-2',3'-deoxythymidine; DP-AZT; HP-AZT; AZT Prodrug; AZT-DHP
- 5'-[[(Z)-4-amino-2-butenyl]methylamino]-5'-deoxyadenosine; MDL 73811
- 5'-Alkylglycosidecarbonate of 3'-azido-3'-deoxythymidine; AcNHGlc-hexyl-CO3 AZT
- 5Cl3PhS-2IndolCONH2
- 5-Fluoro-2',3'-dideoxycytidine; 5-F-ddC
- 5-Methyl-3'-azido-2',3'-dideoxyisocytidine; MeAZddIsoC
- 6-O-Butanoylcastanospermine; BuCast; MDL 28,574; Celgosivir
- 6-Chloro-9-(2,3-dideoxy-b-D-glyceropentofuranosyl)-9H-purine; D2ClP; 6-Chloro-ddP; CPDDR; 6Cl-ddP
- 6-Dimethylaminopurine-2',3'-dideoxyriboside; N-6-dimethylddA; DMAPDDR
- 7-Chloro-N-methyl-5-(1H-pyrrol-2-yl)-3H-1,4-benzodiazepin-2-amine ; Ro 24-7429
- 7-Chloro-5-(2-pyrryl)-3H-1,4-benzodiazepin-2(H)-one ; Ro 5-3335
- 8-Chloro-TIBO; Tivirapine; R86183
- 9-(2,3-Dideoxy-β-D-ribofuranosyl)-6-(methylthio)purine; D2SMeP
- 9-[Bis(OHMe)cBu]A; A-69463; Cyclobutyl-A; Cyclobut-A ; C-oxetanocin A
- A-76890
- A-77212
- A-80987; Ritonavir deriv.

- A-81525; Ritonavir deriv.
- A-83962; Ritonavir deriv.
- A-98881; Azacyclic urea deriv.
- AA; L-ascorbic acid; Calcium Ascorbate
- AAP-BHAP; U-104489; PNU-104489
- Abacavir & Lamivudine & Zidovudine; Trizivir® ABC & (-)-3TC & AZT
- ABT-378; Lopinavir; Component of Kaletra; Aluviran®
- ABT-378 & ABT-538; Kaletra®; Lopinavir & Ritonavir; Aluviran® & Norvir®
- ABT-538; Norvir®; Ritonavir; Component of Kaletra; Approved
- Acemannan
- Adefovir; PMEA; GS-0393
- Adefovir dipivoxil; BisPom PMEA; GS-840; Preveon®
- AG-1343; Viracept®; Nelfinavir; Approved
- AG1350; LY316957; Nelfinavir-octahydro-thienopyridine analog
- AHPBA analog; R-87366
- Alpha-lipoic acid; α-Lipoic acid; Thioctic acid
- ALX40-4C
- AMD3100; JM3100
- Amprenavir phosphate; VX-175; GW433908; GW433908A (*Sodium Salt*); GW433908G (*Calcium Salt*); Fosamprenavir
- Ancer 20; Z-100
- Anti-sense 25-mer phosphorothioate; GEM91
- Atazanavir; CGP-73547; BMS-232632; BMS 232632; Zrivada; Latazanavir; Reyataz®
- Atevirdine; U-87201E; BHAP deriv.
- Aurintricarboxylic acid; Dupont ATA; Dupont DA639; SD-095345; ATA
- AY 9944; trans-1,4-Bis(2-dichlorobenzylaminoethyl)cyclohexane dichlorhydrate
- AZT; Zidovudine; Azidothymidine; Retrovir®
- AZT-PO3(CH3)-AZT; O,O'-Bis(3'-azido-3'-deoxythymidin-5'-yl)methylphosphonate
- Baicalin; TJN-151
- Betulinic acid; Mairin
- Betulinic acid, 3-O-(3',3'-dimethylsuccinate)
- BHAP deriv.
- BHAP deriv.

- BHAP deriv.
- BHAP deriv.
- BHAP deriv.
- BHAP deriv.; Rescriptor® ; Delavirdine; U-90152
- BHAP deriv.; U-88204E
- BI-RG-587; Nevirapine; Viramune® Approved
- BILA 1906 BS
- BILA 2011 BS; Palinavir
- BILA 2185 BS
- Bis(2-nitrophenyl)sulfone; Bis(2NO2Ph)SO2; NSC633001
- bis-ValHOEt-N2aza-peptide isostere; CGP 53820
- bis-ValHOEt-N2aza-peptide isostere; CGP 53820 analog
- BMS-186318
- BocPhe[CHOH(CH2)3CH=CHPhCO]IleAMBI; L-687,908
- BzOCValPhe[diCHOH(RR)]PheValBzOC
- BzOCValPhe[diCHOH(SS)]PheValBzOC
- C2-Sym Phosphinic amide deriv. (HOECHST AG)
- Calanolide A ; NSC675451
- Calanolide B
- Capravirine; S-1153
- Castanospermine
- CbzAF(CHOHCH2)AVVOMe
- Cbz-Asn-Apns-Pro-NH-tBu; KNI-102
- CGP 61755; Lasinavir
- CGP 64222
- CNI-H0294
- Coactinon;I-EBU; HEPT deriv.; MKC-442; Emivirine
- Conocurvone; NSC650891
- Coviracil; (-)FTC; (-)-2',3'-Dideoxy-5-fluoro-3'-thiacytidine; Emtricitabine; Emtriva
- C-Oxetanocin-G; A-69992; (+-)Lobucavir; C-Oxt-G; Cyclobut-G; (+-)Cyclobut-G
- Crixivan®; Indinavir; MK639; L-735,524; Approved
- Curdlan Sulfate
- CV-N; Cyanovirin-N
- Cyclic Urea Amide; SD146

- Cyclosporin A; Sandimmune®
- [Me-Ile-4]Cyclosporin A; SDZ NIM 811
- D4A (L); L-2',3'-Didehydro-2',3'-dideoxyadenosine
- D4FC; D-D4FC; 2',3'-Didehydro-2',3'-dideoxy-5-fluorocytidine; DPC 817
- D4FC (L); L-2',3'-Didehydro-2',3'-dideoxy-5-fluorocytidine
- D4G (L); L-2',3'-Didehydro-2',3'-dideoxyguanosine
- D4I (L); L-2',3'-Didehydro-2',3'-dideoxyinosine
- DABO
- ddC; Dideoxycytidine; Zalcitabine; Hivid®
- ddI; Dideoxyinosine; Didanosine; Videx®
- Dehydroepiandrosterone; DHEA; Prasterone; Dehydroisoandrosterone; EL-10
- Dextran Sulfate
- Dicaffeic acid ester; L-Chicoric acid
- DMP-266; Sustiva®; Efavirenz; Approved
- DMP-323; XM-323
- DMP-450
- Docosanol; n-Docosanol
- dOTC (-); (-)-2'-Deoxy-3'-oxa-4'-thiocytidine
- dOTFC (-); (-)-2'-Deoxy-3'-oxa-4'-thio-5-fluorocytidine
- DP-178; Pentafuside; T-20; GP41 127-162 AA; Enfuvirtide; Fuzeon®
- E-BPTU; HEPT deriv.; NSC 648400
- E-EBU; HEPT deriv.; MKC-442 deriv.
- E-EBU-dM; HEPT deriv.; MKC-442 deriv.
- E-EPSeU; HEPT deriv.; MKC-442 deriv.
- E-EPU; HEPT deriv.; MKC-442 deriv.
- Ebselen
- Etoposide
- Epoxy steriod deriv.; (4α,5α,17β)-17-Hydroxy-3-oxo-4,5-epoxyandrostane-2-carboxamide
- Eulicin
- Fenalamide A1; Phenalamide A1; Stipiamide
- Fleephilone
- Fluoroquinolone deriv.; K-12
- Fortovase®; Invirase®; Saquinavir; Ro31-8959; Approved

- Foscarnet; Phosphonoformic acid; Foscavir;
- FPMDAP;
- FPMPA
- FPMPG
- GPGRAF Octomer; SPC3
- Hammerhead anti-gag RNA Ribozyme B
- Harziphilone
- HBY 097; Quinoxaline deriv.
- HEPT deriv.; MKC-442 deriv.
- HEPT deriv.; MKC-442 deriv.
- HOCH2CH2 isostere; ThienopyridCON thienyl urethane deriv.
- HOCH2CH2 isostere; ThienopyridCON thienyl urethane deriv.
- HOCH2CH2 isostere; ThienopyridCON thienyl urethane deriv.
- HOCH2CH2 isostere; ThienopyridCON thienyl urethane deriv.
- HOCH2CH2 isostere; ThienopyridCON thienyl urethane deriv.
- HOCH2CH2 isostere; ThienopyridCONthienyl urethane deriv.; LY326188
- HPMPA
- HPMPDAP
- HU; Hydroxyurea; Hydrea
- Hydroxocobalamin
- Hypericin
- Ingenol 3,5,20-triacetate; ITA; RD3-2118
- Ingenol deriv.; RD4-2138
- Inophyllum B
- Inophyllum P
- iQoa-Mta-Apns-Thz-NH-tBu; KNI-272
- Isentress (Raltegravir)
- IsoquinCON furanyl urethane analog
- IsoquinCON thienyl urethane analog
- IsoquinCON thienyl urethane analog
- KNI-154; Noa-Asn-Apns-Thz-NH-tBu
- KNI-174; Noa-Asn-Apns-Dmt-NH-tBu
- KNI-227; Qoa-Mta-Apns-Thz-NH-tBu
- L-685,434

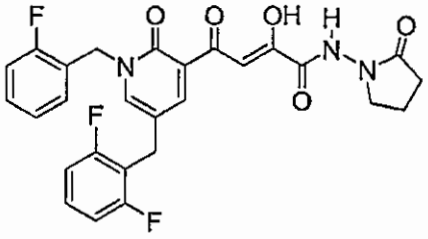
- L-685,434-6-Hydroxy derivative
- L-685,434-OEtMorphderivative; L-689,502
- L-685,434-OEtNMe2
- L-685,434-OPrMorph derivative
- L-697,593; 2-Pyridinone deriv.
- L-697,639; 2-Pyridinone deriv.
- L-697,661; 2-Pyridinone deriv.
- L-FddC; β-L-5F-ddC
- Lamivudine & Zidovudine; Combivir® 3TC & AZT; Approved
- LY289612
- LY289612 analog
- LY289612 analog
- LY-300046-HCl; PETT deriv.; Trovirdine
- LY314163; Saquinavir/Nelfinavir deriv..
- LY-73497; N-(2-Phenethyl)-N'-(2-thiazolyl)thiourea; PETT
- MAP; Methyl acetylenic putrescine
- Michellamine A; NSC650898
- Michellamine B; NSC649324
- Michellamine F
- N-6-Et-ddA; N-Ethyl-2',3'-dideoxyadenosine
- N-6-methyl ddA; N6-Methyl-2',3'-dideoxyadenosine
- Naphthalene 2-sulphonate polymer; PRO 2000
- Nelfinavir-octahydro-thienopyridine analog
- Nonoxynol 9
- NSC625487; Thiazolobenzimidazole; TBZ
- Oxathiin deriv.; UC-38
- Oxathiin deriv.; UC-84
- P9941
- Penicillin Et(NH)2 Sym dimer
- Penicillin G, ET(NH)2 deriv.
- Penicillin, 2Isoquin-OHPrNH2 analog
- Penicillin, 2Isoquin-OHPrNH2 analog
- Pentosan Sulfate; Elmiron; SP54; Xylan Sulfate;

- PETT Cl, F deriv.
- PETT deriv.
- PETT deriv.
- PETT deriv.
- PETT deriv.
- Phenoxan
- Phorbol deriv.; Prostratin
- Platanic acid
- PMEDAP
- PMEG
- PMEHx; PMEI
- PMEMAP
- PMET
- PNU-140690; U-140690; Tipranavir
- Pyridinone deriv.
- Pyridinone deriv.
- Quinoxalin2thione deriv; S-2720
- R14458; TIBO deriv..
- R82150; TIBO deriv..
- R82913; TIBO deriv.
- Resobene
- Ribavirin; Virazole
- Ro 31-8959-bis-thf deriv.
- Saquinavir/Nelfinavir deriv.
- Saquinavir/Nelfinavir deriv.
- SB-205569; Val-Phe-Phe-HOCH2CH2 isostere analog
- SC-52151; Telinavir
- SDZ PRI 053
- Suramin Sodium
- T22
- Thalidomide
- Thiangazole; (-)-Thiangazole
- Thiazoloisoindol-5-one
- Thiazoloisoindol-5-one, deriv.

- Tle-Val-Sta, 5PhBuCOOH deriv.; Statine deriv.
- Tle-Val-Sta, 5PhBuCOOH deriv.; Statine deriv.
- UC-781
- Val-Val-Sta, 5PhBuCOOH deriv.; Statine deriv.
- Val-Val-Sta, 5PhBuCOOH deriv.; Statine deriv.
- Val-Val-Sta, 5PhBuCOOH deriv.; Statine deriv.
- Val-Val-Sta, 5PhBuCOOH deriv.; Statine deriv.
- Val-Val-Sta, 5PhBuCOOH deriv.; Statine deriv.
- VB-11,328
- Viread®; Tenofovir Disoproxil,

and mixtures thereof, further in combination with a pharmaceutically acceptable carrier, additive or excipient.

47. A pharmaceutical composition comprising an effective amount of a compound according to the structure:



in combination with at least one additional compound selected from the group consisting of ACV; AK602; AMD070; APV; ATV; ATZ; AVX754 (apricitabine); AZT; Abacavir; Abacavir / Lamivudine / Zidovudine; Abacavir sulfate; Abacavir sulfate/Lamivudine; Abacavir/Lamivudine; Abelecet; Acyclovir; Adefovir dipivoxil; Adriamycin; Agenerase; Aldesleukin; Alovudine; Aluvia; AmBisome; Amdoxovir; Amphocin; Amphotec; Amphotericin B; Ampligen; Amprenavir; Androderm; Androgel; Apricitabine; Aptivus; Atazanavir; Atripla; Azithromycin; BMS-378806; BMS-488043; Bactrim; Baraclude; Bevirimat; Biaxin; Brecanavir; BufferGel; C31G; CD4-IgG2; CS; CV-N; Calanolide A; Calcium hydroxylapatite; Carbopol 974P; Carrageenan; Carraguard; Cellulose sulfate; Clarithromycin; Combivir; Copegus; Cotrimoxazole; Crixivan; Cyanovirin-N; Cytovene;

DAPD; DLV; DS; Darunavir; Delavirdine; Depo-Testosterone; Dextran sulfate; Didanosine; Diflucan; Doxil; Doxorubicin (liposomal); Dronabinol; EFV; Efavirenz; Elvucitabine; Emtricitabine; Emtricitabine;Tenofovir disoproxil fumarate; Emtriva; Enfufirtide; Entecavir; Epivir; Epoetin alfa; Epogen; Epzicom; Etopophos (phosphate salt); Etoposide; Etravirine; FTC; Fluconazole; Fortovase; Fosamprenavir; Foxivudine tidoxil; Fungizone; Fuzeon; GS 9137; GSK-873,140 (aplaviroc); GW433908; GW640385 (brecanavir); Ganciclovir; Globulin, Immune; Growth hormone (human); Hepsera; Hivid; Human growth hormone; IL-2; INH; Immune Globulin Intravenous (Human); Indinavir; Interferon alfa-2; Interleukin-2, recombinant human; Intron A (2b); Invirase; Isentress; Isoniazid; Itraconazole; KP-1461; Lamivudine/Zidovudine; Lexiva; Lopinavir/Ritonavir; MK-0518; Nebupent; Nelfinavir; Neutrexin; Nevirapine; Norvir; Nydrazid; Peptide T; PMPA Prodrug (Viread)' Prezista (Darunavir); PRO 140; PRO 2000; PRO 542 (CD4 IGg2); Procrit (Epoetin); Proleukin; Racivir; Radiesse; Rrebetol; Rescriptor; Retrovir; Reyataz; Ribavirin; Rifabutin; Rifadin; Rifampin; Rimactane; Ritonavir; Roferon-A (2a); Saquinavir; SCH-D (vicriviroc); Somatropin; Stavudinie; Sulfamethoxazole / Trimethoprim; Sustanon; Sustiva; TNX-355; Taxol; Tenofovir; Tenofovir disoproxil fumarate; Testosterone; Tipranavir; Toposar; Trimetrexate; Trizivir; Truvada (Emtriva and Viread combination); U-90152S (Delaviridine); UC-781; UK-427,857 (maraviroc); Valcyte; Valganciclovir; Valproic acid; VePesid; Vicriviroc; Videx; Viracept (Tennofovir DF); Viramune; Virazole; Viread; Vitrasert; Zalcitabine; Zerit; Ziagen; Zidovudine; Zithromax; Zovirax and mixtures thereof, further in combination with a pharmaceutically acceptable carrier, additive or excipient.

48. The compound:
    - (1S,2S)-4-(5-(2,4-difluorobenzyl)-1-(2-fluorobenzyl)-2-oxo-1,2-dihydropyridin-3-yl)-2- hydroxy-N-(2-hydroxycyclopentyl)-4-oxobut-2-enamide
    - (1R,2R)-4-(5-(2,4-difluorobenzyl)-1-(2-fluorobenzyl)-2-oxo-1,2-dihydropyridin-3-yl)-2-hydroxy-N-(2-hydroxycyclopentyl)-4-oxobut-2-enamide
    - 4-(5-(2,4-difluorobenzyl)-1-(2-fluorobenzyl)-2-oxo-1,2-dihydropyridin-3-yl)-2-hydroxy-4-oxo-N-(2-oxopyrrolidin-1-yl)but-2-enamide
    - (1S,2S)-4-(5-(2,4-difluorobenzyl)-1-(4-fluorobenzyl)-2-oxo-1,2-dihydropyridin-3-yl)-2-hydroxy-N-(2-hydroxycyclopentyl)-4-oxobut-2-enamide
    - (1R,2R)-4-(5-(2,4-difluorobenzyl)-1-(4-fluorobenzyl)-2-oxo-1,2-dihydropyridin-3-yl)-2-hydroxy-N-(2-hydroxycyclopentyl)-4-oxobut-2-enamide

•4-(5-(2,4-difluorobenzyl)-1-(4-fluorobenzyl)-2-oxo-1,2-dihydropyridin-3-yl)-2-hydroxy-4-oxo-N-(2-oxopyrrolidin-1-yl)but-2-enamide

• (1S,2S)-4-(1-(2-fluorobenzyl)-5-(4-fluorobenzyl)-2-oxo-1,2-dihydropyridin-3-yl)-2-hydroxy-N-(2-hydroxycyclopentyl)-4-oxobut-2-enamide

• (1R,2R)-4-(1-(2-fluorobenzyl)-5-(4-fluorobenzyl)-2-oxo-1,2-dihydropyridin-3-yl)-2-hydroxy-N-(2-hydroxycyclopentyl)-4-oxobut-2-enamide

•4-(1-(2-fluorobenzyl)-5-(4-fluorobenzyl)-2-oxo-1,2-dihydropyridin-3-yl)-2-hydroxy-4-oxo-N-(2-oxopyrrolidin-1-yl)but-2-enamide

• (1S,2S)-4-(1-(2,6-difluorobenzyl)-5-(2-fluorobenzyl)-2-oxo-1,2-dihydropyridin-3-yl)-2-hydroxy-N-(2-hydroxycyclopentyl)-4-oxobut-2-enamide

• (1R,2R)-4-(1-(2,6-difluorobenzyl)-5-(2-fluorobenzyl)-2-oxo-1,2-dihydropyridin-3-yl)-2-hydroxy-N-(2-hydroxycyclopentyl)-4-oxobut-2-enamide

•4-(1-(2,6-difluorobenzyl)-5-(2-fluorobenzyl)-2-oxo-1,2-dihydropyridin-3-yl)-2-hydroxy-4-oxo-N-(2-oxopyrrolidin-1-yl)but-2-enamide

• (1S,2S)-4-(1,5-bis(2,4-difluorobenzyl)-2-oxo-1,2-dihydropyridin-3-yl)-2-hydroxy-N-(2-hydroxycyclopentyl)-4-oxobut-2-enamide

• (1R,2R)-4-(1,5-bis(2,4-difluorobenzyl)-2-oxo-1,2-dihydropyridin-3-yl)-2-hydroxy-N-(2-hydroxycyclopentyl)-4-oxobut-2-enamide

•4-(1,5-bis(2,4-difluorobenzyl)-2-oxo-1,2-dihydropyridin-3-yl)-2-hydroxy-4-oxo-N-(2- oxopyrrolidin-1-yl)but-2-enamide

• (1S,2S)-4-(5-(2,6-difluorobenzyl)-1-(2-fluorobenzyl)-2-oxo-1,2-dihydropyridin-3-yl)-2-hydroxy-N-(2-hydroxycyclopentyl)-4-oxobut-2-enamide

• (1R,2R)-4-(5-(2,6-difluorobenzyl)-1-(2-fluorobenzyl)-2-oxo-1,2-dihydropyridin-3-yl)-2-hydroxy-N-(2-hydroxycyclopentyl)-4-oxobut-2-enamide

•4-(5-(2,6-difluorobenzyl)-1-(2-fluorobenzyl)-2-oxo-1,2-dihydropyridin-3-yl)-2-hydroxy-4-oxo-N-(2-oxopyrrolidin-1-yl)but-2-enamide

• (1S,2S)-4-(1,5-bis(2,6-difluorobenzyl)-2-oxo-1,2-dihydropyridin-3-yl)-2-hydroxy-N-(2-hydroxycyclopentyl)-4-oxobut-2-enamide

• (1R,2R)-4-(1,5-bis(2,6-difluorobenzyl)-2-oxo-1,2-dihydropyridin-3-yl)-2-hydroxy-N-(2-hydroxycyclopentyl)-4-oxobut-2-enamide, or

•4-(1,5-bis(2,6-difluorobenzyl)-2-oxo-1,2-dihydropyridin-3-yl)-2-hydroxy-4-oxo-N-(2-oxopyrrolidin-1-yl)but-2-enamide.

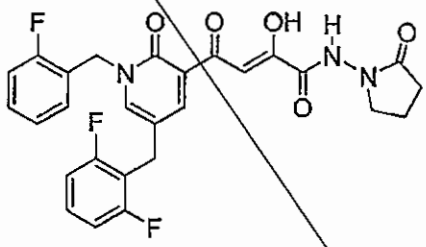
49. A pharmaceutical composition comprising a compound according to claim 48 in combination with a pharmaceutically acceptable carrier, additive or excipient.

50. The composition according to claim 49 in oral or parenteral dosage form.

51. Use of a compound according to any of claim 1-8 in the manufacture of a medicament for a first medical use.

52. A kit comprising a pharmaceutical composition according to any of claims 11-17, 24, 27-31, 46-47 and 49 and instructions for a medical professional and/or a patient on how to administer said composition.

53. The compound



54. A pharmaceutical composition comprising an effective amount of a compound according to claim 53 in combination with a pharmaceutically acceptable carrier, additive or excipient.

55. Use of a composition according to claim 54 in the manufacture of a medicament for the treatment of HIV in a patient.

56. Use of a composition according to claim 54 in the manufacture of a medicament for reducing the likelihood that a patient will contact an HIV infection.

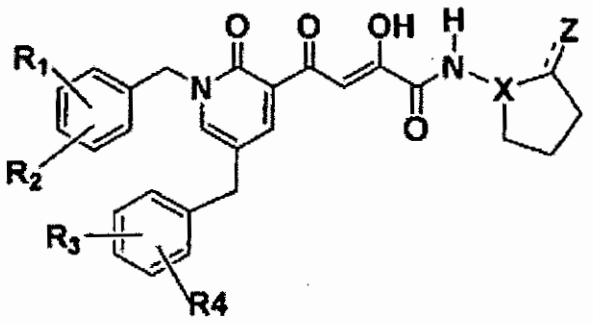
57. Use of a composition according to claim 54 in the manufacture of medicament for treating a patient with AIDS or ARC.

58. Use of a composition according to claim 54 in the manufacture of medicament for inhibiting HIV integrase in a subject or patient.

59. Use according to any of claims 55-58 wherein said patient is a human patient.

Claims

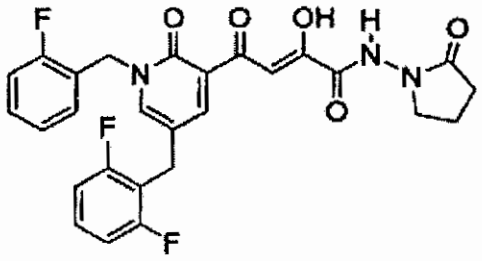
1. A compound according to the general structural formula I (including any chiral isomer, geometric isomer, tautomer, regioisomer or pharmaceutically acceptable salt thereof):



Formula I

Wherein R_1, R_2, R_3 and R_4 are each independently H or a halogen;
X is CH or N; and
Z is OH or =O, or a pharmaceutically acceptable salt or ester thereof.

2. A compound according to claim 1 which is



3. A compound according to claim 1 wherein said halogen is F.

6. A compound according to any of claims 1 or 3-4 wherein X is N.

7. A compound according to any of claim 1 or 3-6 where Z is OH.

8. A compound according to any of claims 1 or 3-6 wherein Z is =O.

9. A compound according to any of claims 1-8 wherein the said compound is a pharmaceutically acceptable salt.

10. A compound according to claim 1 which is:

- (1S,2S)-4-(5-(2,4-difluorobenzyl)-1-(2-fluorobenzyl)-2-oxo-1,2-dihydropyridin-3-yl)-2-hydroxy-N-(2-hydroxy-cyclopentyl)-4-oxobut-2-enamide
- (1R,2R)-4-(5-(2,4-difluorobenzyl)-1-(2-fluorobenzyl)-2-oxo-1,2-dihydropyridin-3-yl)-2-hydroxy-N-(2-hydroxy-cyclopentyl)-4-oxobut-2-enamide

- 4-(5-(2,4-difluorobenzyl)-1-(2-fluorobenzyl)-2-oxo-1,2-dihydropyridin-3-yl)-2-hydroxy-4-oxo-N-(2-oxopyrrolidin-1-yl)but-2-enamide
- (1S,2S)-4-(5-(2,4-difluorobenzyl)-1-(4-fluorobenzyl)-2-oxo-1,2-dihydropyridin-3-yl)-2-hydroxy-N-(2-hydroxycyclopentyl)-4-oxobut-2-enamide
- (1R,2R)-4-(5-(2,4-difluorobenzyl)-1-(4-fluorobenzyl)-2-oxo-1,2-dihydropyridin-3-yl)-2-hydroxy-N-(2-hydroxycyclopentyl)-4-oxobut-2-enamide
- 4-(5-(2,4-difluorobenzyl)-1-(4-fluorobenzyl)-2-oxo-1,2-dihydropyridin-3-yl)-2-hydroxy-4-oxo-N-(2-oxopyrrolidin-1-yl)but-2-enamide
- (1S,2S)-4-(1-(2-fluorobenzyl)-5-(4-fluorobenzyl)-2-oxo-1,2-dihydropyridin-3-yl)-2-hydroxy-N-(2-hydroxycyclopentyl)-4-oxobut-2-enamide
- (1R,2R)-4-(1-(2-fluorobenzyl)-5-(4-fluorobenzyl)-2-oxo-1,2-dihydropyridin-3-yl)-2-hydroxy-N-(2-hydroxycyclopentyl)-4-oxobut-2-enamide
- 4-(1-(2-fluorobenzyl)-5-(4-fluorobenzyl)-2-oxo-1,2-dihydropyridin-3-yl)-2-hydroxy-4-oxo-N-(2-oxopyrrolidin-1-yl)but-2-enamide
- (1S,2S)-4-(1-(2,6-difluorobenzyl)-5-(2-fluorobenzyl)-2-oxo-1,2-dihydropyridin-3-yl)-2-hydroxy-N-(2-hydroxycyclopentyl)-4-oxobut-2-enamide
- (1R,2R)-4-(1-(2,6-difluorobenzyl)-5-(2-fluorobenzyl)-2-oxo-1,2-dihydropyridin-3-yl)-2-hydroxy-N-(2-hydroxycyclopentyl)-4-oxobut-2-enamide
- 4-(1-(2,6-difluorobenzyl)-5-(2-fluorobenzyl)-2-oxo-1,2-dihydropyridin-3-yl)-2-hydroxy-4-oxo-N-(2-oxopyrrolidin-1-yl)but-2-enamide
- (1S,2S)-4-(1,5-bis(2,4-difluorobenzyl)-2-oxo-1,2-dihydropyridin-3-yl)-2-hydroxy-N-(2-hydroxycyclopentyl)-4-oxobut-2-enamide
- (1R,2R)-4-(1,5-bis(2,4-difluorobenzyl)-2-oxo-1,2-dihydropyridin-3-yl)-2-hydroxy-N-(2-hydroxycyclopentyl)-4-oxobut-2-enamide
- 4-(1,5-bis(2,4-difluorobenzyl)-2-oxo-1,2-dihydropyridin-3-yl)-2-hydroxy-4-oxo-N-(2- oxopyrrolidin-1-yl)but-2-enamide
- (1S,2S)-4-(5-(2,6-difluorobenzyl)-1-(2-fluorobenzyl)-2-oxo-1,2-dihydropyridin-3-yl)-2-hydroxy-N-(2-hydroxycyclopentyl)-4-oxobut-2-enamide
- (1R,2R)-4-(5-(2,6-difluorobenzyl)-1-(2-fluorobenzyl)-2-oxo-1,2-dihydropyridin-3-yl)-2-hydroxy-N-(2-hydroxycyclopentyl)-4-oxobut-2-enamide
- 4-(5-(2,6-difluorobenzyl)-1-(2-fluorobenzyl)-2-oxo-1,2-dihydropyridin-3-yl)-2-hydroxy-4-oxo-N-(2-oxopyrrolidin-1-yl)but-2-enamide
- (1S,2S)-4-(1,5-bis(2,6-difluorobenzyl)-2-oxo-1,2-dihydropyridin-3-yl)-2-hydroxy-N-(2-hydroxycyclopentyl)-4-oxobut-2-enamide
- (1R,2R)-4-(1,5-bis(2,6-difluorobenzyl)-2-oxo-1,2-dihydropyridin-3-yl)-2-hydroxy-N-(2-hydroxycyclopentyl)-4-oxobut-2-enamide, or
- 4-(1,5-bis(2,6-difluorobenzyl)-2-oxo-1,2-dihydropyridin-3-yl)-2-hydroxy-4-oxo-N-(2-oxopyrrolidin-1-yl)but-2-enamide.

11. A pharmaceutical composition comprising a therapeutically effective amount of a compound according to any of claims 1-10 and a pharmaceutically acceptable carrier, additive or excipient.

12. The pharmaceutical composition of claim 11 wherein said composition treats said HIV infection by inhibiting HIV integrase, both wild type and mutants, in the human host.

13. A pharmaceutical composition comprising a therapeutically effective amount of a compound according to any of claims 1-10, a pharmaceutically acceptable carrier, additive or excipient in combination with a therapeutically effective amount of at least one compound selected from the group consisting of i) an additional anti-HIV agent, ii) an anti-infective agent other than an anti-HIV agent, iii) an immunomodulator and iv) a combination agent selected from the group presented in the table shown on pages 27-36, hereof, and a pharmaceutically acceptable carrier, additive or excipient.

14. The composition of claim 13 wherein said anti-infective agent is an antiviral agent selected from the group consisting of a protease inhibitor, a reverse transcriptase inhibitor, an additional integrase inhibitor or a combination thereof.

15. The composition according to any of claims 11-14 in oral or parenteral dosage form.

16. A pharmaceutical composition according to claim 11 or 12 further comprising at least one additional compound

selected from the group consisting of

- (-)βDioxolane-G; DXG;
- (-)β-Arctigenin; Arctigenin ;
- (-)-Carbovir; (-)-C-D4G; (-)-Carbovir;
- (-)-β-D-2,6-Diaminopurine dioxolane;Amdoxovir; DAPD; APD
- (+)-2'-Deoxy-3'-oxa-4'-thiocytidine; dOTC (+)
- (+)-2'-Deoxy-3'-oxa-4'-thio-5-fluorocytidine; dOTFC (+)
- (+/-)-Cyclobut-G; A-69992; (+/-)-Lobucavir; C-Oxt-G; Cyclobut-G ; C-Oxetanocin-G
- (R)-2QuinCOAsnPhe[CHOHCH2]PipCONHtBu
- (R)-3,6-Diamino-N-(aminomethyl)hexanamide; Bellenamine
- (R)-PMPA; (R)-9-(2-Phosphonylmethoxypropyl)adenine; PMPA-(R); Tenofovir
- (R)-PMPDAP; PMPDAP-(R)
- (S)-PMPA; (S)-9-(2-Phosphonylmethoxypropyl)adenine; PMPA(S)
- (S)-9-(2-Phosphonylmethoxypropyl)adenine; (S)-PMPA
- α-APA; R89439; Loviride
- α-APA deriv.; R87232
- α-APA deriv.; R88703
- α-APA enantiomer; R90385
- α-L-AZT; AZT-α-L
- α-L-DXC; α-L-Dioxalane-C; DXC-α-L-
- α-L-FTC; FTC-α-L-
- α-Monofluoromethyldehydroornithine methyl ester; MFMOME
- 1,1'-Azobisformamide; ADA; Azodicarbssonamide
- 1-(11-Octylamino-10-hydroxyundecyl)-3,7-dimethylxanthine; CT-2576
- 1-(2',3'-Dideoxy-2'-fluoro-β-D-threo-pentofuranosyl)cytosine; Ro 31-6840
- 1-(2'-Fluoro-2',3'-dideoxy-B-D-erythro-pentofuranosyl)thymine; 2'FddT
- 1-(20HPr)-4-Substit-piperazine, thienyl carbamate deriv.
- 1-(20HPr)-4-Substit-piperazine, thienyl carbamate deriv.
- 1-(20HPr)-4-Substit-piperazine, thienyl carbamate deriv.
- 1-(20HPr)-4-Substit-piperazine, thienyl carbamate deriv.
- 1-[(2-Hydroxyethoxy)methyl]-6-(3-methylphenyl)thio)thymine; HEPT-M
- 1-[(2-Hydroxyethoxy)methyl]-6-(phenylthio)-2-thiothymine; HEPT-S
- 1-[(2-Hydroxyethoxy)methyl]-6-(phenylthio)thymine; HEPT
- 1-Deoxynojirimycin; Deoxynojirimycin
- 141 W94; VX-478; Amprenavir; Agenerase®; Approved
- 1592U89 Succinate; Abacavir Succinate; Ziagen® Approved
- 1-Aminooxyethylamine; AEA
- 1-Methoxyoxalyl-3,5-dicaffeoylquinic acid; 1-MO-3,5-DCQA; Dicaffeoylquinic acid deriv.
- 1OH-2(Cbz-Tle)3PhPr [14]paracyclophane deriv.
- 1OH-2(Cbz-ValNH)3PhPr [13]metacyclophane deriv.
- 1OH-2(Cbz-ValNH)3PhPr [13]paracyclophane deriv.
- 1OH-2(Cbz-ValNH)3PhPr [14]paracyclophane deriv.
- 1OH-2(Cbz-ValNH)3PhPr [17]paracyclophane deriv.
- 12-Deoxyphorbol-13-(3E,5E-decadienoate); Phorbol deriv.
- 16.alpha.-Bromoepiandrosterone; Epi-Br; ; Inactivin; HE 2000; HE2000; PPB2; DHEA deriv.
- 1-β-D-arabinofuranosyl-5-(2-bromovinyl)uracil; BV-ara-U; BVaraU; BV ara-U; Sorivudine; SQ-32756; Bravavir; Brovavir; Usevir; YN-72; Bromovinyl araU; BVAU
- 2',3'-Didehydro-3'-deoxycytidine; D4C
- 2',3'-Dideoxydidehydroguanosine; D4G
- 2',3'-Didehydro-3'-deoxythymidine; D4T; Stavudine; Zerit® Approved
- 2',3'-Dideoxy-3'-fluoro-4-thiothymidine; 3'-F-4-Thio-ddT
- 2',3'-Dideoxy-3'-fluoro-5-bromouridine; FddBrU
- 2',3'-Dideoxy-3'-fluoro-5-chlorocytidine; 3'-F-5-Cl-ddC
- 2',3'-Dideoxy-3'-fluoro-5-chlorouridine; 935U83; 5-Chloro-2',3'-dideoxy-3'-fluorouridine; FddClU; Raluridine
- 2',3'-Dideoxy-5-ethylcytidine; 5-Et-ddC
- 2',3'-Dideoxyadenosine; D2A; ddAdo; ddA
- 2',3'-Dideoxydidehydroadenosine; d4A

- 2',3'-Dideoxyguanosine; D2G; ddG
- 2',3'-Dideoxy-3'-hydroxymethyl cytidine; 3'-Hydroxymethyl-ddC; BEA-005
- 2,5'-Anhydro-3'-azido-2',3'-dideoxyuridine; AZU-2,5'-anhydro
- 2,5'-Anhydro-3'-azido-3'-deoxythymidine; AZT-2,5'-anhydro
- 2',5'diSilySpiroT; TSAO-T; 2',5'diSilySpiroT; TSAO-me^3T
- 2,6-Diamino-2',3'-dideoxypurine-9-ribofuranoside; ddDAPR; DAPDDR; 2,6-Diamino-ddP
- 2,6-Diaminopurine- 2',3'-dideoxydidehydroriboside; ddeDAPR
- 2,6-Diaminopurine-3'-fluoro-2',3'-dideoxyriboside; 3'-F-ddDAPR
- 2-Aminobenzylstatine Valyl Cbz deriv.; Statine deriv.
- 2-Glycine amide-5-chlorophenyl 2-pyrryl ketone; GCPK
- [2-PyridCH2NCH3CO-Val-NHCH(Bz)]CHOHCHOH; A-77003
- 2'-Azido-2',3'-dideoxyadenosine; 9-(2'-Azido-2',3'-dideoxy-β-D-erythropentofuranosyl)adenine; 2'-N3ddA
- 2'-FddA(B-D-threo); F-ddA; 2'-F-dd-ara-A; 9-(2'-Fluoro-2',3'-dideoxy-B-D-threopentafuranosyl)adenine; Lodensine
- 2'-N3ddA (B-D-threo); 9-(2'-Azido-2',3'-dideoxy-β-threopentafuranosyl)adenine
- 2-NaphCOAsnPhe[CHOHCH2]Pro-OtBu
- 2-Nitrophenylphenylsulfone; NPPS
- 3-(3-Oxo-1-propenyl)-3'-azido-3'-deoxythymidine; 3-(3-Oxo-1-propenyl)AZT
- 3-(Phenylsulfonyl)-indole deriv. ; L-737,126
- 3,5-DCQA; 3,5-Dicaffeoylquinic acid; Dicaffeoylquinic acid
- 3'-Azido-2',3'-dideoxy-5-[(cyanomethyl)oxy]uridine; 3'-N3-5-Cyanomethyloxy-ddU
- 3'-Azido-2',3'-dideoxy-5-aminouridine; 3'-N3-5-NH2-ddU
- 3'-Azido-2',3'-dideoxy-5-aza-6-deazauridine; C-analog of 3'-N3-ddU
- 3'-Azido-2',3'-dideoxy-5-bromouridine; 3'-N3-5-Br-ddU; AZddBrU
- 3'-Azido-2',3'-dideoxy-5-chlorocytidine; 3'-Az-5-Cl-ddC
- 3'-Azido-2',3'-dideoxy-5-dimethylaminouridine; 3'-N3-5-NMe2-ddU
- 3'-Azido-2',3'-dideoxy-5-ethyluridine; 3'-N3-5-EtddU; CS-85; AZddEtU
- 3'-Azido-2',3'-dideoxy-5-fluorocytidine; 3'-N3-5-F-ddC
- 3'-Azido-2',3'-dideoxy-5-fluorouridine; AZddFU
- 3'-Azido-2',3'-dideoxy-5-hydroxyuridine; 3'-N3-5-OH-ddU
- 3'-Azido-2',3'-dideoxy-5-iodouridine; 3'-N3-5-I-ddU; AZddIU
- 3'-Azido-2',3'-dideoxy-5-methyaminouridine; 3'-N3-5-NHMe-ddU
- 3'-Azido-2',3'-dideoxy-5-methylcytidine; CS-92; 3'-N3-5-Me-ddC
- 3'-Azido-2',3'-dideoxy-5-thiocyanatouridine; 3'-N3-5-SCN-ddU
- 3'-Azido-2',3'-dideoxy-5-trifluoromethyluridine; 3'-N3-5-CF3-ddU
- 3'-Azido-2',3'-dideoxycytidine; CS-91; 3'-N3-ddC
- 3'-Azido-2',3'-dideoxyguanosine; AZG; 3'-N3ddG
- 3'-Azido-2',3'-dideoxy-N4--5-dimethylcytidine; 3'-N3-N4-5-diMe-ddC
- 3'-Azido-2',3'-dideoxy-N4-OH-5-methylcytidine; 3'-N3-N4-OH-5-Me-ddC
- 3'-Azido-2',3'-dideoxyuridine; CS-87; 3'-N3ddU; AZdU; Uravidine
- 3'-Azido-3'-deoxy-6-azathymidine; 3'AZ-6AzaT
- 3-Azido-3'-deoxythymidilyl-(5',5')-2',3'-dideoxy-5'-adenylic acid; AZT-P-ddA
- 3'-Azido-3'-deoxythymidilyl-(5',5')-2',3'-dideoxy-5'-adenylic acid, 2-cyanoethyl ester; AZT-P(CyE)-ddA
- 3'-Azido-3'-deoxythymidilyl-(5',5')-2',3'-dideoxy-5'-inosinic acid; AZT-P-ddI
- 3'-Azido-3'-deoxythymidine-5'-(butylmethoxyvalinyl)phosphate; 5'MeOValPO3(Bu)AZT
- 3'-Azido-5-chloro-2',3'-dideoxyuridine; AzddClUrd; AzddClU
- 3'-Deoxythymidine; ddT
- 3'-FddA (B-D-Erythro); 9-(3'-Fluoro-2',3'-dideoxy-B-D-erythropentafuranosyl)adenine
- 3'-FddC; 3'-Fluoro-2',3'-dideoxycytidine
- 3'-FddG; 3'-Fluoro-2',3'-dideoxyguanosine
- 3'-FddT; Alovudine; FddT; FddThD; 3'-FLT; FLT
- 3'-FddU; 3'-Fluoro-2',3'-dideoxyuridine
- 3'-Fluoro-2',3'-dideoxy-5-iodouridine; FddIU
- 3'-N3-ddA; 9-(3'-Azido-2',3'-dideoxy-B-D-erythropentafuranosyl)adenine
- 3TC; Lamivudine; Epivir® Approved;
- Lamivudine & Zidovudine; Combivir® 3TC & AZT; Approved
- 4'-Acetoamidophenyl4-guadinobenzoate; AGB
- 4'-Az-3'-dT; 4'-Azido-3'-deoxythymidine

- 4'-Az-5CldU ; 4'-Azido-5-chloro-2'-deoxyuridine
- 4'-AzdA; 4'-Azido-2'-deoxyadenosine
- 4'-AzdC; 4'-Azido-2'-deoxycytidine
- 4'-AzdG; 4'-Azido-2'-deoxyguanosine
- 4'-AzdI; 4'-Azido-2'-deoxyinosine
- 4'-AzdU; 4'-Azido-2'-deoxyuridine
- 4'-Azido-2'-deoxy-β-D-erythro-pentofuranosyl-5-methyl-2,4-dioxopyrimidine; 4'-Azidothymidine
- 4'-Cyanothymidine; 4'-CN-T
- 4-Methyl-5-(pyrazinyl)-3H-1,2-dithiole-3-thione; Oltipraz
- 5'-[(1,4-Dihydro-1-methyl-3-pyridinylcarbonyl)oxy]-3'-azido-2',3'-deoxythymidine; DP-AZT; HP-AZT; AZT Pro-drug; AZT-DHP
- 5'-[[(Z)-4-amino-2-butenyl]methylamino]-5'-deoxyadenosine; MDL 73811
- 5'-Alkylglycosidecarbonate of 3'-azido-3'-deoxythymidine; AcNHGlc-hexyl-CO3 AZT
- 5Cl3PhS-2IndolCONH2
- 5-Fluoro-2',3'-dideoxycytidine; 5-F-ddC
- 5-Methyl-3'-azido-2',3'-dideoxyisocytidine; MeAZddIsoC
- 6-O-Butanoylcastanospermine; BuCast; MDL 28,574; Celgosivir
- 6-Chloro-9-(2,3-dideoxy-b-D-glyceropentofuranosyl)-9H-purine; D2ClP; 6-Chloro-ddP; CPDDR; 6Cl-ddP
- 6-Dimethylaminopurine-2',3'-dideoxyriboside; N-6-dimethylddA; DMAPDDR
- 7-Chloro-N-methyl-5-(1H-pyrrol-2-yl)-3H-1,4-benzodiazepin-2-amine ; Ro 24-7429
- 7-Chloro-5-(2-pyrryl)-3H-1,4-benzodiazepin-2(H)-one ; Ro 5-3335
- 8-Chloro-TIBO; Tivirapine; R86183
- 9-(2,3-Dideoxy-β-D-ribofuranosyl)-6-(methylthio)purine; D2SMeP
- 9-[Bis(OHMe)cBu]A; A-69463; Cyclobutyl-A; Cyclobut-A ; C-oxetanocin A
- A-76890
- A-77212
- A-80987; Ritonavir deriv.
- A-81525; Ritonavir deriv.
- A-83962; Ritonavir deriv.
- A-98881; Azacyclic urea deriv.
- AA; L-ascorbic acid; Calcium Ascorbate
- AAP-BHAP; U-104489; PNU-104489
- Abacavir & Lamivudine & Zidovudine; Trizivir® ABC & (-)-3TC & AZT
- ABT-378; Lopinavir; Component of Kaletra; Aluviran®
- ABT-378 & ABT-538; Kaletra®; Lopinavir & Ritonavir; Aluviran® & Norvir®
- ABT-538; Norvir®; Ritonavir; Component of Kaletra; Approved
- Acemannan
- Adefovir; PMEA; GS-0393
- Adefovir dipivoxil; BisPom PMEA; GS-840; Preveon®
- AG-1343; Viracept®; Nelfinavir; Approved
- AG1350; LY316957; Nelfinavir-octahydro-thienopyridine analog
- AHPBA analog; R-87366
- Alpha-lipoic acid; α-Lipoic acid; Thioctic acid
- ALX40-4C
- AMD3100; JM3100
- Amprenavir phosphate; VX-175; GW433908; GW433908A (*Sodium Salt*); GW433908G (*Calcium Salt*); Fosamprenavir
- Ancer 20; Z-100
- Anti-sense 25-mer phosphorothioate; GEM91
- Atazanavir; CGP-73547; BMS-232632; BMS 232632; Zrivada; Latazanavir; Reyataz®
- Atevirdine; U-87201E; BHAP deriv.
- Aurintricarboxylic acid; Dupont ATA; Dupont DA639; SD-095345; ATA
- AY 9944; trans-1,4-Bis(2-dichlorobenzylaminoethyl)cyclohexane dichlorhydrate
- AZT; Zidovudine; Azidothymidine; Retrovir®
- AZT-P03(CH3)-AZT; O,O'-Bis(3'-azido-3'-deoxythymidin-5'-yl)methylphosphonate
- Baicalin; TJN-151
- Betulinic acid; Mairin
- Betulinic acid, 3-O-(3',3'-dimethylsuccinate)

- BHAP deriv.
- BHAP deriv.
- BHAP deriv.
- BHAP deriv.
- BHAP deriv.
- BHAP deriv.; Rescriptor® ; Delavirdine; U-90152
- BHAP deriv.; U-88204E
- BI-RG-587; Nevirapine; Viramune® Approved
- BILA 1906 BS
- BILA 2011 BS; Palinavir
- BILA 2185 BS
- Bis(2-nitrophenyl)sulfone; Bis(2NO2Ph)SO2; NSC633001
- bis-ValHOEt-N2aza-peptide isostere; CGP 53820
- bis-ValHOEt-N2aza-peptide isostere; CGP 53820 analog
- BMS-186318
- BocPhe[CHOH(CH2)3CH=CHPhCO]IleAMBI; L-687,908
- BzOCValPhe[diCHOH(RR)]PheValBzOC
- BzOCValPhe[diCHOH(SS)]PheValBzOC C2-Sym Phosphinic amide deriv. (HOECHST AG)
- Calanolide A ; NSC675451
- Calanolide B
- Capravirine; S-1153
- Castanospermine
- CbzAF(CHOHCH2)AVVOMe
- Cbz-Asn-Apns-Pro-NH-tBu; KNI-102
- CGP 61755; Lasinavir
- CGP 64222
- CNI-H0294
- Coactinon;I-EBU; HEPT deriv.; MKC-442; Emivirine
- Conocurvone; NSC650891
- Coviracil; (-)FTC; (-)-2',3'-Dideoxy-5-fluoro-3'-thiacytidine; Emtricitabine; Emtriva
- C-Oxetanocin-G; A-69992; (+-)Lobucavir; C-Oxt-G; Cyclobut-G; (+-)Cyclobut-G
- Crixivan®; Indinavir; MK639; L-735,524; Approved
- Curdlan Sulfate
- CV-N; Cyanovirin-N
- Cyclic Urea Amide; SD146
- Cyclosporin A; Sandimmune®
- [Me-Ile-4]Cyclosporin A; SDZ NIM 811
- D4A (L); L-2',3'-Didehydro-2',3'-dideoxyadenosine
- D4FC; D-D4FC; 2',3'-Didehydro-2',3'-dideoxy-5-fluorocytidine; DPC 817
- D4FC (L); L-2',3'-Didehydro-2',3'-dideoxy-5-fluorocytidine
- D4G (L); L-2',3'-Didehydro-2',3'-dideoxyguanosine
- D4I (L); L-2',3'-Didehydro-2',3'-dideoxyinosine
- DABO
- ddC; Dideoxycytidine; Zalcitabine; Hivid®
- ddI; Dideoxyinosine; Didanosine; Videx®
- Dehydroepiandrosterone; DHEA; Prasterone; Dehydroisoandrosterone; EL-10
- Dextran Sulfate
- Dicaffeic acid ester; L-Chicoric acid
- DMP-266; Sustiva®; Efavirenz; Approved
- DMP-323; XM-323
- DMP-450
- Docosanol; n-Docosanol
- dOTC (-); (-)-2'-Deoxy-3'-oxa-4'-thiocytidine
- dOTFC (-); (-)-2'-Deoxy-3'-oxa-4'-thio-5-fluorocytidine
- DP-178; Pentafuside; T-20; GP41 127-162 AA; Enfuvirtide; Fuzeon®
- E-BPTU; HEPT deriv.; NSC 648400
- E-EBU; HEPT deriv.; MKC-442 deriv.
- E-EBU-dM; HEPT deriv.; MKC-442 deriv.

- E-EPSeU; HEPT deriv.; MKC-442 deriv.
- E-EPU; HEPT deriv.; MKC-442 deriv.
- Ebselen
- Etoposide
- Epoxy steriod deriv.; (4α,5α,17β)-17-Hydroxy-3-oxo-4,5-epoxyandrostane-2-carboxamide
- Eulicin
- Fenalamide A1; Phenalamide A1; Stiplamide
- Fleephilone
- Fluoroquinolone deriv.; K-12
- Fortovase®; Invirase®; Saquinavir; Ro31-8959; Approved
- Foscarnet; Phosphonoformic acid; Foscavir;
- FPMDAP;
- FPMPA
- FPMPG
- GPGRAF Octomer; SPC3
- Hammerhead anti-gag RNA Ribozyme B
- Harziphilone
- HBY 097; Quinoxaline deriv.
- HEPT deriv.; MKC-442 deriv.
- HEPT deriv.; MKC-442 deriv.
- HOCH2CH2 isostere; ThienopyridCON thienyl urethane deriv.
- HOCH2CH2 isostere; ThienopyridCON thienyl urethane deriv.
- HOCH2CH2 isostere; ThienopyridCON thienyl urethane deriv.
- HOCH2CH2 isostere; ThienopyridCON thienyl urethane deriv.
- HOCH2CH2 isostere; ThienopyridCON thienyl urethane deriv.
- HOCH2CH2 isostere; ThienopyridCONthienyl urethane deriv.; LY326168
- HPMPA
- HPMPDAP
- HU; Hydroxyurea; Hydrea
- Hydroxocobalamin
- Hypericin
- Ingenol 3,5,20-triacetate; ITA; RD3-2118
- Ingenol deriv.; RD4-2138
- Inophyllum B
- Inophyllum P
- iQoa-Mta-Apns-Thz-NH-tBu; KNI-272
- Isentress (Raltegravir)
- IsoquinCON furanyl urethane analog
- IsoquinCON thienyl urethane analog
- IsoquinCON thienyl urethane analog
- KNI-154; Noa-Asn-Apns-Thz-NH-tBu
- KNI-174; Noa-Asn-Apns-Dmt-NH-tBu
- KNI-227; Qoa-Mta-Apns-Thz-NH-tBu
- L-685,434
- L-685,434-6-Hydroxy derivative
- L-685,434-sOEtMorphderivative; L-689,502
- L-685,434-OEtNMe2
- L-685,434-OPrMorph derivative
- L-697,593; 2-Pyridinone deriv.
- L-697,639; 2-Pyridinone deriv.
- L-697,661; 2-Pyridinone deriv.
- L-FddC; β-L-5F-ddC
- Lamivudine & Zidovudine; Combivir® 3TC & AZT; Approved
- LY289612
- LY289612 analog
- LY289612 analog
- LY-300046-HCl; PETT deriv.; Trovirdine
- LY314163; Saquinavir/Nelfinavir deriv..

- LY-73497; N-(2-Phenethyl)-N'-(2-thiazolyl)thiourea; PE
- MAP; Methyl acetylenic putrescine
- Michellamine A; NSC650898
- Michellamine B; NSC649324
- Michellamine F
- N-6-Et-ddA; N-Ethyl-2',3'-dideoxyadenosine
- N-6-methyl ddA; N6-Methyl-2',3'-dideoxyadenosine
- Naphthalene 2-sulphonate polymer; PRO 2000
- Nelfinavir-octahydro-thienopyridine analog
- Nonoxynol 9
- NSC625487; Thiazolobenzimidazole; TBZ
- Oxathiin deriv.; UC-38
- Oxathiin deriv.; UC-84
- P9941
- Penicillin Et(NH)2 Sym dimer
- Penicillin G, ET(NH)2 deriv.
- Penicillin, 2Isoquin-OHPrNH2 analog
- Penicillin, 2Isoquin-OHPrNH2 analog
- Pentosan Sulfate; Elmiron; SP54; Xylan Sulfate;
- PETT Cl, F deriv.
- PETT deriv.
- PETT deriv.
- PETT deriv.
- PETT deriv.
- Phenoxan
- Phorbol deriv.; Prostratin
- Platanic acid
- PMEDAP
- PMEG
- PMEHx; PMEI
- PMEMAP
- PMET
- PNU-140690; U-140690; Tipranavir
- Pyridinone deriv.
- Pyridinone deriv.
- Quinoxalin2thione deriv; S-2720

- R14458; TIBO deriv..
- R82150; TIBO deriv..
- R82913; TIBO deriv.
- Resobeno
- Ribavirin; Virazole
- Ro 31-8959-bis-thf deriv.
- Saquinavir/Nelfinavir deriv.
- Saquinavir/Nelfinavir deriv.
- SB-205569; Val-Phe-Phe-HOCH2CH2 isostere analog
- SC-52151; Telinavir
- SDZ PRI 053
- Suramin Sodium
- T22
- Thalidomide
- Thiangazole; (-)-Thiangazole
- Thiazoloisoindol-5-one
- Thiazoloisoindol-5-one, deriv.
- Tle-Val-Sta, 5PhBuCOOH deriv.; Statine deriv.
- Tle-Val-Sta, 5PhBuCOOH deriv.; Statine deriv.
- UC-781
- Val-Val-Sta, 5PhBuCOOH deriv.; Statine deriv.
- Val-Val-Sta, 5PhBuCOOH deriv.; Statine deriv.

- Val-Val-Sta, 5PhBuCOOH deriv.; Statine deriv.
- Val-Val-Sta, 5PhBuCOOH deriv.; Statine deriv.
- Val-Val-Sta, 5PhBuCOOH deriv.; Statine deriv.
- VB-11,328
- Viread®; Tenofovir Disoproxil and mixtures thereof.

17. A pharmaceutical composition according to claim 11 or 12 further comprising at least one additional compound selected from the group consisting of ACV; AK602; AMD070; APV; ATV; ATZ; AVX754 (apricitabine); AZT; Abacavir; Abacavir / Lamivudine / Zidovudine; Abacavir sulfate; Abacavir sulfate/Lamivudine; Abacavir/Lamivudine; Abelecet; Acyclovir; Adefovir dipivoxil; Adriamycin; Agenerase; Aldesleukin; Alovudine; Aluvia; AmBisome; Amdoxovir; Amphocin; Amphotec; Amphotericin B; Ampligen; Amprenavir; Androderm; Androgel; Apricitabine; Aptivus; Atazanavir; Atripla; Azithromycin; BMS-378806; BMS-488043; Bactrim; Baraclude; Bevirimat; Biaxin; Brecanavir; BufferGel; C31G; CD4-IgG2; CS; CV-N; Calanolide A; Calcium hydroxylapatite; Carbopol 974P; Carrageenan; Carraguard; Cellulose sulfate; Clarithromycin; Combivir; Copegus; Cotrimoxazole; Crixivan; Cyanovirin-N; Cytovene; DAPD; DLV; DS; Darunavir; Delavirdine; Depo-Testosterone; Dextran sulfate; Didanosine; Diflucan; Doxil; Doxorubicin (liposomal); Dronabinol; EFV; Efavirenz; Elvucitabine; Emtricitabine; Emtricitabine;Tenofovir disoproxil fumarate; Emtriva; Enfuvirtide; Entecavir; Epivir; Epoetin alfa; Epogen; Epzicom; Etopophos (phosphate salt); Etoposide; Etravirine; FTC; Fluconazole; Fortovase; Fosamprenavir; Foxivudine tidoxil; Fungizone; Fuzeon; GS 9137; GSK-873,140 (aplaviroc); GW433908; GW640385 (brecanavir); Ganciclovir; Globulin, Immune; Growth hormone (human); Hepsera; Hivid; Human growth hormone; IL-2; INH; Immune Globulin Intravenous (Human); Indinavir; Interferon alfa-2; Interleukin-2, recombinant human; Intron A (2b); Invirase; Isentress; Isoniazid; Itraconazole; KP-1461; Lamivudine/Zidovudine; Lexiva; Lopinavir/Ritonavir; MK-0518; Nebupent; Nelfinavir; Neutrexin; Nevirapine; Norvir; Nydrazid; Peptide T; PMPA Prodrug (Viread)' Prezista (Darunavir); PRO 140; PRO 2000; PRO 542 (CD4 IGg2); Procrit (Epoetin); Proleukin; Racivir; Radiesse; Rrebetol; Rescriptor; Retrovir; Reyataz; Ribavirin; Rifabutin; Rifadin; Rifampin; Rimactane; Ritonavir; Roferon-A (2a); Saquinavir; SCH-D (vicriviroc); Somatropin; Stavudinle; Sulfamethoxazole / Trimethoprim; Sustanon; Sustiva; TNX-355; Taxol; Tenofovir; Tenofovir disoproxil fumarate; Testosterone; Tipranavir; Toposar; Trimetrexate; Trizivir; Truvada (Emtriva and Viread combination); U-90152S (Delaviridine); UC-781; UK-427,857 (maraviroc); Valcyte; Valganciclovir; Valproic acid; VePesid; Vicriviroc; Videx; Viracept (Tenofovir DF); Viramune; Virazole; Viread; Vitrasert; Zalcitabine; Zerit; Ziagen; Zidovudine; Zithromax; Zovirax, and mixtures thereof.

18. Compound according to any of claims 1-10 for use as medicament.

19. Compound according to any of claims 1-10 for use in inhibiting HIV integrase in a subject.

20. Composition according to any of claims 11-17 for use in treating an HIV infection in a patient.

21. Composition according to any of claims 11-17 for use in reducing the likelihood of an HIV infection in a patient at risk for said infection.

22. Composition according to any of claims 11-17 for use in treating a patient with AIDS or ARC.

23. Composition for use according to any of claims 21-22 wherein said patient or subject is a human.