

- 26 (S)-2-[(2R,3R,4R,5R)-5-(2,4-Dioxo-3,4-dihydro-2H-pyrimidin-1-yl)-4-fluoro-3-hydroxy-4-methyl-tetrahydro-furan-2-ylmethoxy]-(4-methoxy-phenoxy)-phosphorylamino]-propionic acid butyl ester;
- 27 (S)-2-[(2R,3R,4R,5R)-5-(2,4-Dioxo-3,4-dihydro-2H-pyrimidin-1-yl)-4-fluoro-3-hydroxy-4-methyl-tetrahydro-furan-2-ylmethoxy]-(4-fluoro-phenoxy)-phosphorylamino]-propionic acid ethyl ester;
- 28 (S)-2-[(2R,3R,4R,5R)-5-(2,4-Dioxo-3,4-dihydro-2H-pyrimidin-1-yl)-4-fluoro-3-hydroxy-4-methyl-tetrahydro-furan-2-ylmethoxy]-(4-fluoro-phenoxy)-phosphorylamino]-propionic acid isopropyl ester;
- 29 (S)-2-[(2R,3R,4R,5R)-5-(2,4-Dioxo-3,4-dihydro-2H-pyrimidin-1-yl)-4-fluoro-3-hydroxy-4-methyl-tetrahydro-furan-2-ylmethoxy]-(4-fluoro-phenoxy)-phosphorylamino]-propionic acid benzyl ester;
- 30 (S)-2-[(2R,3R,4R,5R)-5-(2,4-Dioxo-3,4-dihydro-2H-pyrimidin-1-yl)-4-fluoro-3-hydroxy-4-methyl-tetrahydro-furan-2-ylmethoxy]-(4-methoxy-phenoxy)-phosphorylamino]-propionic acid isopropyl ester;
- 31 (S)-2-{(2-Chloro-phenoxy)-[(2R,3R,4R,5R)-5-(2,4-dioxo-3,4-dihydro-2H-pyrimidin-1-yl)-4-fluoro-3-hydroxy-4-methyl-tetrahydro-furan-2-ylmethoxy]-phosphorylamino}-propionic acid benzyl ester;
- 32 (S)-2-{(2,4-Dichloro-phenoxy)-[(2R,3R,4R,5R)-5-(2,4-dioxo-3,4-dihydro-2H-pyrimidin-1-yl)-4-fluoro-3-hydroxy-4-methyl-tetrahydro-furan-2-ylmethoxy]-phosphorylamino}-propionic acid butyl ester;
- 33 (S)-2-[(2R,3R,4R,5R)-5-(2,4-Dioxo-3,4-dihydro-2H-pyrimidin-1-yl)-4-fluoro-3-hydroxy-4-methyl-tetrahydro-furan-2-ylmethoxy]-p-tolyloxy-phosphorylamino}-propionic acid isopropyl ester;
- 34 (S)-2-[(2R,3R,4R,5R)-5-(2,4-Dioxo-3,4-dihydro-2H-pyrimidin-1-yl)-4-fluoro-3-hydroxy-4-methyl-tetrahydro-furan-2-ylmethoxy]-(4-fluoro-phenoxy)-phosphorylamino]-propionic acid butyl ester;
- 35 (S)-2-{(3,4-Dichloro-phenoxy)-[(2R,3R,4R,5R)-5-(2,4-dioxo-3,4-dihydro-2H-pyrimidin-1-yl)-4-fluoro-3-hydroxy-4-methyl-tetrahydro-furan-2-ylmethoxy]-phosphorylamino}-propionic acid ethyl ester;
- 36 (S)-2-{(2-Chloro-phenoxy)-[(2R,3R,4R,5R)-5-(2,4-dioxo-3,4-dihydro-2H-pyrimidin-1-yl)-4-fluoro-3-hydroxy-4-methyl-tetrahydro-furan-2-ylmethoxy]-phosphorylamino}-propionic acid isopropyl ester;
- 37 (S)-2-[(2R,3R,4R,5R)-5-(2,4-Dioxo-3,4-dihydro-2H-pyrimidin-1-yl)-4-fluoro-3-hydroxy-4-methyl-tetrahydro-furan-2-ylmethoxy]-(4-methoxy-phenoxy)-phosphorylamino]-propionic acid benzyl ester;
- 38 (S)-2-[(2R,3R,4R,5R)-5-(2,4-Dioxo-3,4-dihydro-2H-pyrimidin-1-yl)-4-fluoro-3-hydroxy-4-methyl-tetrahydro-furan-2-ylmethoxy]-phenoxy-phosphorylamino}-propionic acid pentyl ester;
- 39 (S)-2-{(4-Chloro-phenoxy)-[(2R,3R,4R,5R)-5-(2,4-dioxo-3,4-dihydro-2H-pyrimidin-1-yl)-4-fluoro-3-hydroxy-4-methyl-tetrahydro-furan-2-ylmethoxy]-phosphorylamino}-propionic acid isopropyl ester;
- 40 (S)-2-{(4-Chloro-phenoxy)-[(2R,3R,4R,5R)-5-(2,4-dioxo-3,4-dihydro-2H-pyrimidin-1-yl)-4-fluoro-3-hydroxy-4-methyl-tetrahydro-furan-2-ylmethoxy]-phosphorylamino}-propionic acid butyl ester;
- 41 (S)-2-{(4-Chloro-phenoxy)-[(2R,3R,4R,5R)-5-(2,4-dioxo-3,4-dihydro-2H-pyrimidin-1-yl)-4-fluoro-3-hydroxy-4-methyl-tetrahydro-furan-2-ylmethoxy]-phosphorylamino}-propionic acid ethyl ester;

- 42 (S)-2-[[{(2R,3R,4R,5R)-5-(2,4-Dioxo-3,4-dihydro-2H-pyrimidin-1-yl)-4-fluoro-3-hydroxy-4-methyl-tetrahydro-furan-2-ylmethoxy]-p-tolyloxy-phosphorylamino}-propionic acid butyl ester;
- 5 43 (S)-2-[[{(2R,3R,4R,5R)-5-(2,4-Dioxo-3,4-dihydro-2H-pyrimidin-1-yl)-4-fluoro-3-hydroxy-4-methyl-tetrahydro-furan-2-ylmethoxy]-p-tolyloxy-phosphorylamino}-propionic acid benzyl ester;
- 44 (S)-2-[[{(2R,3R,4R,5R)-5-(2,4-Dioxo-3,4-dihydro-2H-pyrimidin-1-yl)-4-fluoro-3-hydroxy-4-methyl-tetrahydro-furan-2-ylmethoxy]-phenoxy-phosphorylamino}-butyric acid methyl ester;
- 10 45 (S)-2-[[{(2R,3R,4R,5R)-5-(2,4-Dioxo-3,4-dihydro-2H-pyrimidin-1-yl)-4-fluoro-3-hydroxy-4-methyl-tetrahydro-furan-2-ylmethoxy]-phenoxy-phosphorylamino}-propionic acid 4-fluoro-benzyl ester;
- 46 (S)-2-[(2-Chloro-phenoxy)-[(2R,3R,4R,5R)-5-(2,4-dioxo-3,4-dihydro-2H-pyrimidin-1-yl)-4-fluoro-3-hydroxy-4-methyl-tetrahydro-furan-2-ylmethoxy]-phosphorylamino}-propionic acid butyl ester;
- 15 47 (S)-2-[[{(2R,3R,4R,5R)-5-(2,4-Dioxo-3,4-dihydro-2H-pyrimidin-1-yl)-4-fluoro-3-hydroxy-4-methyl-tetrahydro-furan-2-ylmethoxy]-phenoxy-phosphorylamino}-propionic acid 3-methyl-butyl ester;
- 48 (S)-2-[(2,4-Dichloro-phenoxy)-[(2R,3R,4R,5R)-5-(2,4-dioxo-3,4-dihydro-2H-pyrimidin-1-yl)-4-fluoro-3-hydroxy-4-methyl-tetrahydro-furan-2-ylmethoxy]-phosphorylamino}-propionic acid ethyl ester;
- 20 49 (S)-2-[[{(2R,3R,4R,5R)-5-(2,4-Dioxo-3,4-dihydro-2H-pyrimidin-1-yl)-4-fluoro-3-hydroxy-4-methyl-tetrahydro-furan-2-ylmethoxy]-phenoxy-phosphorylamino}-propionic acid cyclohexyl ester;
- 25 50 (R)-2-[[{(2R,3R,4R,5R)-5-(2,4-Dioxo-3,4-dihydro-2H-pyrimidin-1-yl)-4-fluoro-3-hydroxy-4-methyl-tetrahydro-furan-2-ylmethoxy]-phenoxy-phosphorylamino}-propionic acid butyl ester;
- 51 (R)-2-[[{(2R,3R,4R,5R)-5-(2,4-Dioxo-3,4-dihydro-2H-pyrimidin-1-yl)-4-fluoro-3-hydroxy-4-methyl-tetrahydro-furan-2-ylmethoxy]-phenoxy-phosphorylamino}-propionic acid isopropyl ester;
- 30 52 (R)-2-[[{(2R,3R,4R,5R)-5-(2,4-Dioxo-3,4-dihydro-2H-pyrimidin-1-yl)-4-fluoro-3-hydroxy-4-methyl-tetrahydro-furan-2-ylmethoxy]-phenoxy-phosphorylamino}-propionic acid benzyl ester;
- 53 (S)-2-[(2-Chloro-phenoxy)-[(2R,3R,4R,5R)-5-(2,4-dioxo-3,4-dihydro-2H-pyrimidin-1-yl)-4-fluoro-3-hydroxy-4-methyl-tetrahydro-furan-2-ylmethoxy]-phosphorylamino}-propionic acid butyl ester;
- 35 54 (S)-2-[(4-Bromo-phenoxy)-[(2R,3R,4R,5R)-5-(2,4-dioxo-3,4-dihydro-2H-pyrimidin-1-yl)-4-fluoro-3-hydroxy-4-methyl-tetrahydro-furan-2-ylmethoxy]-phosphorylamino}-propionic acid isopropyl ester;
- 40 55 (S)-2-[[{(2R,3R,4R,5R)-5-(2,4-Dioxo-3,4-dihydro-2H-pyrimidin-1-yl)-4-fluoro-3-hydroxy-4-methyl-tetrahydro-furan-2-ylmethoxy]-(4-fluoro-phenoxy)-phosphorylamino]-propionic acid cyclohexyl ester;
- 56 (S)-2-[[{(2R,3R,4R,5R)-5-(2,4-Dioxo-3,4-dihydro-2H-pyrimidin-1-yl)-4-fluoro-3-hydroxy-4-methyl-tetrahydro-furan-2-ylmethoxy]-(4-bromo-phenoxy)-phosphorylamino]-propionic acid cyclohexyl ester;
- 45 57 (S)-2-[[{(2R,3R,4R,5R)-5-(2,4-Dioxo-3,4-dihydro-2H-pyrimidin-1-yl)-4-fluoro-3-hydroxy-4-methyl-tetrahydro-furan-2-ylmethoxy]-phenoxy-phosphorylamino}-butyric acid isopropyl ester;

- 58 (S)-2-{[(2R,3R,4R,5R)-5-(2,4-Dioxo-3,4-dihydro-2H-pyrimidin-1-yl)-4-fluoro-3-hydroxy-4-methyl-tetrahydro-furan-2-ylmethoxy]-phenoxy-phosphorylamino}-butyric acid cyclohexyl ester;
- 5 59 (S)-2-{[(2R,3R,4R,5R)-5-(2,4-Dioxo-3,4-dihydro-2H-pyrimidin-1-yl)-4-fluoro-3-hydroxy-4-methyl-tetrahydro-furan-2-ylmethoxy]-(4-fluoro-phenoxy)-phosphorylamino}-butyric acid cyclohexyl ester;
- 60 (S)-2-{(4-Chloro-phenoxy)-[(2R,3R,4 R,5R)-5-(2,4-dioxo-3,4-dihydro-2H-pyrimidin-1-yl)-4-fluoro-3-hydroxy-4-methyl-tetrahydro-furan-2-ylmethoxy]-phosphorylamino}-butyric acid isopropyl ester;
- 10 61 (S)-2-{[(2R,3R,4R,5R)-5-(2,4-Dioxo-3,4-dihydro-2H-pyrimidin-1-yl)-4-fluoro-3-hydroxy-4-methyl-tetrahydro-furan-2-ylmethoxy]-phenoxy-phosphorylamino}-propionic acid 2,2-difluoro-ethyl ester;
- 62 (S)-2-{[(2R,3R,4R,5R)-5-(2,4-Dioxo- 3,4-dihydro-2H-pyrimidin-1-yl)-4-fluoro-3-hydroxy-4-methyl-tetrahydro-furan-2-ylmethoxy]-phenoxy-phosphorylamino}-propionic acid 2,2,2-trifluoro-1-trifluoromethyl-ethyl ester;
- 15 63 (S)-2-{[(2R,3R,4R,5R)-5-(2,4-Dioxo-3,4-dihydro-2H-pyrimidin-1-yl)-4-fluoro-3-hydroxy-4-methyl-tetrahydro-furan-2-ylmethoxy]-phenoxy-phosphorylamino}-propionic acid 2-fluoro-1-fluoromethyl-ethyl ester;
- 64 (S)-2-{[(2R,3R,4R,5R)-5-(2,4-Dioxo- 3,4-dihydro-2H-pyrimidin-1-yl)-4-fluoro-3-hydroxy-4-methyl-tetrahydro-furan-2-ylmethoxy]-phenoxy-phosphorylamino}-propionic acid cyclopropyl methyl ester;
- 20 65 (S)-2-{[(2R,3R,4R,5R)-5-(2,4-Dioxo-3,4-dihydro-2H-pyrimidin-1-yl)-4-fluoro-3-hydroxy-4-methyl-tetrahydro-furan-2-ylmethoxy]-phenoxy-phosphorylamino}-butyric acid cyclopentyl ester;
- 25 66 (S)-2-{[(2R,3R,4R,5R)-5-(6-Amino-purin-9-yl)-4-fluoro-3-hydroxy-4-methyl-tetrahydro-furan-2-ylmethoxy]-phenoxy-phosphorylamino}-propionic acid methyl ester;
- 67 (S)-2-{[(2R,3R,4R,5R)-5-(2-Amino-6-hydroxy-purin-9-yl)-4-fluoro-3-hydroxy-4-methyl-tetrahydro-furan-2-ylmethoxy]-phenoxy-phosphorylamino}-propionic acid methyl ester;
- 30 68 (S)-2-{(R)-[(2R,3R,4R,5R)-5-(2,6-Diamino-purin-9-yl)-4-fluoro-3-hydroxy-4-methyl-tetrahydro-furan-2-ylmethoxy]-phenoxy-phosphorylamino}-propionic acid methyl ester;
- 69 (S)-2-{[(2R,3R,4R,5R)-5-(2-Amino-6-cyclopentylamino-purin-9-yl)-4-fluoro-3-hydroxy-4-methyl-tetrahydro-furan-2-ylmethoxy]-phenoxy-phosphorylamino}-propionic acid methyl ester;
- 35 70 (S)-2-{[(2R,3R,4R,5R)-5-(2-Amino-6-azetidin-1-yl-purin-9-yl)-4-fluoro-3-hydroxy-4-methyl-tetrahydro-furan-2-ylmethoxy]-phenoxy-phosphorylamino}-propionic acid methyl ester;
- 40 71 (S)-2-{[(2R,3R,4R,5R)-5-(2-Amino-6-diethylamino-purin-9-yl)-4-fluoro-3-hydroxy-4-methyl-tetrahydro-furan-2-ylmethoxy]-phenoxy-phosphorylamino}-propionic acid methyl ester;
- 72 (S)-2-{[(2R,3R,4R,5R)-5-(2-Amino-6-propylamino-purin-9-yl)-4-fluoro-3-hydroxy-4-methyl-tetrahydro-furan-2-ylmethoxy]-phenoxy-phosphorylamino}-propionic acid methyl ester;
- 45 73 (S)-2-{[(2R,3R,4R,5R)-5-(2-Amino-6-cyclobutylamino-purin-9-yl)-4-fluoro-3-hydroxy-4-methyl-tetrahydro-furan-2-ylmethoxy]-phenoxy-phosphorylamino}-propionic acid methyl ester;

74 (S)-2-((2R,3R,4R,5R)-5-[2-Amino-6-(4-methyl-piperazin-1-yl)-
purin-9-yl]-4-fluoro-3-hydroxy-4-methyl-tetrahydro-furan-2-ylmethoxy)-
phenoxy)-phosphorylamino)-propionic acid methyl ester;

75 (2S)-methyl 2-((((2R,3R,4R,5R)-4-fluoro-3-hydroxy-4-methyl-5-(6-
5 (propylamino)-9H-purin-9-yl)tetrahydrofuran-2-
yl)methoxy)(phenoxy)phosphorylamino)propanoate;

76 (2S)-methyl 2-((((2R,3R,4R,5R)-5-(6-(cyclobutylamino)-9H-purin-9-
yl)-4-fluoro-3-hydroxy-4-methyltetrahydrofuran-2-
yl)methoxy)(phenoxy)phosphorylamino)propanoate;

77 (2S)-methyl 2-((((2R,3R,4R,5R)-5-(6-(cyclopentylamino)-9H-purin-
9-yl)-4-fluoro-3-hydroxy-4-methyltetrahydrofuran-2-
10 (yl)methoxy)(phenoxy)phosphorylamino)propanoate;

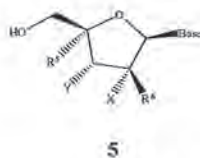
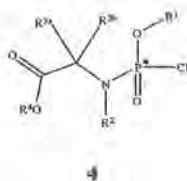
78 (2S)-methyl 2-((((2R,3R,4R,5R)-5-(6-(aziridin-1-yl)-9H-purin-9-yl)-
4-fluoro-3-hydroxy-4-methyltetrahydrofuran-2-
15 (yl)methoxy)(phenoxy)phosphorylamino)propanoate;

79 (2S)-methyl 2-((((2R,3R,4R,5R)-4-fluoro-3-hydroxy-4-methyl-5-(6-
(piperidin-1-yl)-9H-purin-9-yl)tetrahydrofuran-2-
yl)methoxy)(phenoxy)phosphorylamino)propanoate; and

80 (2S)-methyl 2-((((2R,3R,4R,5R)-5-(6-(azetidin-1-yl)-9H-purin-9-yl)-
20 4-fluoro-3-hydroxy-4-methyltetrahydrofuran-2-
yl)methoxy)(phenoxy)phosphorylamino)propanoate

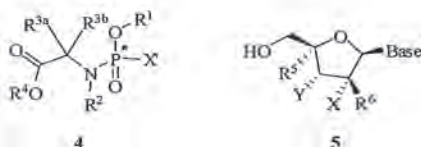
said process comprising:

25 reacting a substituted phosphochloridate compound 4 with a nucleoside
analog 5



11. A product its stereoisomer, salt, hydrate, solvate or crystalline
form thereof, prepared a process comprising:

30 reacting a substituted phosphochloridate compound 4 with a nucleoside
analog 5



wherein

- (a) R^1 is hydrogen, n-alkyl; branched alkyl; cycloalkyl; or aryl, which includes, but is not limited to, phenyl or naphthyl, where phenyl or naphthyl are optionally substituted with at least one of C_{1-6} alkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, C_{1-6} alkoxy, F, Cl, Br, I, nitro, cyano, C_{1-6} haloalkyl, $-N(R^{1'})_2$, C_{1-6} acylamino, $-NHSO_2C_{1-6}$ alkyl, $-SO_2N(R^{1'})_2$, $COR^{1''}$, and $-SO_2C_{1-6}$ alkyl; $R^{1'}$ is independently hydrogen or alkyl, which includes, but is not limited to, C_{1-20} alkyl, C_{1-10} alkyl, or C_{1-6} alkyl, $R^{1''}$ is $-OR'$ or $-N(R^{1'})_2$;
- (b) R^2 is hydrogen, C_{1-10} alkyl, R^{3a} or R^{3b} and R^2 together are $(CH_2)_n$ so as to form a cyclic ring that includes the adjoining N and C atoms, $C(O)CR^{3a}R^{3b}NHR^1$, where n is 2 to 4 and R^1 , R^{3a} , and R^{3b} ;
- (c) R^{3a} and R^{3b} are (i) independently selected from hydrogen, C_{1-10} alkyl, cycloalkyl, $-(CH_2)_c(NR^{3'})_2$, C_{1-6} hydroxyalkyl, $-CH_2SH$, $-(CH_2)_2S(O)_dMe$, $-(CH_2)_3NHC(=NH)NH_2$, (1H-indol-3-yl)methyl, (1H-imidazol-4-yl)methyl, $-(CH_2)_eCOR^{3''}$, aryl and aryl C_{1-3} alkyl, said aryl groups optionally substituted with a group selected from hydroxyl, C_{1-10} alkyl, C_{1-6} alkoxy, halogen, nitro and cyano; (ii) R^{3a} and R^{3b} both are C_{1-6} alkyl; (iii) R^{3a} and R^{3b} together are $(CH_2)_f$ so as to form a spiro ring; (iv) R^{3a} is hydrogen and R^{3b} and R^2 together are $(CH_2)_n$ so as to form a cyclic ring that includes the adjoining N and C atoms (v) R^{3b} is hydrogen and R^{3a} and R^2 together are $(CH_2)_n$ so as to form a cyclic ring that includes the adjoining N and C atoms, where c is 1 to 6, d is 0 to 2, e is 0 to 3, f is 2 to 5, n is 2 to 4, and where $R^{3'}$ is independently hydrogen or C_{1-6} alkyl and $R^{3''}$ is $-OR'$ or $-N(R^{3'})_2$; (vi) R^{3a} is H and R^{3b} is H, CH_3 , CH_2CH_3 , $CH(CH_3)_2$, $CH_2CH(CH_3)_2$, $CH(CH_3)CH_2CH_3$, CH_2Ph , CH_2 -indol-3-yl, $-CH_2CH_2SCH_3$, CH_2CO_2H , $CH_2C(O)NH_2$, CH_2CH_2COOH , $CH_2CH_2C(O)NH_2$, $CH_2CH_2CH_2CH_2NH_2$, $-CH_2CH_2CH_2NHC(NH)NH_2$, CH_2 -imidazol-4-yl, CH_2OH , $CH(OH)CH_3$, $CH_2((4'-OH)-Ph)$, CH_2SH , or lower cycloalkyl; or (viii)

R^{3a} is CH₃, -CH₂CH₃, CH(CH₃)₂, CH₂CH(CH₃)₂, CH(CH₃)CH₂CH₃, CH₂Ph, CH₂-indol-3-yl, -CH₂CH₂SCH₃, CH₂CO₂H, CH₂C(O)NH₂, CH₂CH₂COOH, CH₂CH₂C(O)NH₂, CH₂CH₂CH₂CH₂NH₂, -CH₂CH₂CH₂NHC(NH)NH₂, CH₂-imidazol-4-yl, CH₂OH, CH(OH)CH₃, CH₂((4'-OH)-Ph), CH₂SH, or lower cycloalkyl and R^{3b} is H, where R³ is independently hydrogen or alkyl, which includes, but is not limited to, C₁₋₂₀ alkyl, C₁₋₁₀ alkyl, or C₁₋₆ alkyl, R^{3'} is -OR' or -N(R^{3'})₂;

(d) R⁴ is hydrogen, C₁₋₁₀ alkyl, C₁₋₁₀ alkyl optionally substituted with a lower alkyl, alkoxy, di(lower alkyl)-amino, or halogen, C₁₋₁₀ haloalkyl, C₃₋₁₀ cycloalkyl, cycloalkyl alkyl, cycloheteroalkyl, aminoacyl, aryl, such as phenyl, heteroaryl, such as, pyridinyl, substituted aryl, or substituted heteroaryl;

(e) R⁵ is H, a lower alkyl, CN, vinyl, O-(lower alkyl), hydroxyl lower alkyl, i.e., -(CH₂)_pOH, where p is 1 -6, including hydroxyl methyl (CH₂OH), CH₂F, N₃, CH₂CN, CH₂NH₂, CH₂NHCH₃, CH₂N(CH₃)₂, alkyne (optionally substituted), or halogen, including F, Cl, Br, or I, with the provisos that when X is OH, base is cytosine and R⁶ is H, R⁵ cannot be N₃ and when X is OH, R⁶ is CH₃ or CH₂F and B is a purine base, R⁵ cannot be H;

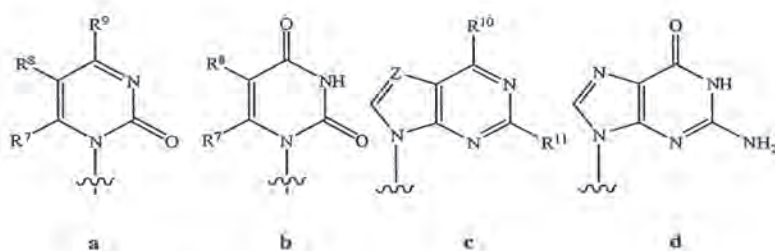
(f) R⁶ is H, CH₃, CH₂F, CHF₂, CF₃, F, or CN;

(g) X is H, OH, F, OMe, halogen, NH₂, or N₃;

(h) Y is OH, H, C₁₋₄ alkyl, C₂₋₄ alkenyl, C₂₋₄ alkynyl, vinyl, N₃, CN, Cl, Br, F, I, NO₂, OC(O)O(C₁₋₄ alkyl), OC(O)O(C₁₋₄ alkyl), OC(O)O(C₂₋₄ alkynyl), OC(O)O(C₂₋₄ alkenyl), OC₁₋₁₀ haloalkyl, O(aminoacyl), O(C₁₋₁₀ acyl), O(C₁₋₄ alkyl), O(C₂₋₄ alkenyl), S(C₁₋₄ acyl), S(C₁₋₄ alkyl), S(C₂₋₄ alkynyl), S(C₂₋₄ alkenyl), SO(C₁₋₄ acyl), SO(C₁₋₄ alkyl), SO(C₂₋₄ alkynyl), SO(C₂₋₄ alkenyl), SO₂(C₁₋₄ acyl), SO₂(C₁₋₄ alkyl), SO₂(C₂₋₄ alkynyl), SO₂(C₂₋₄ alkenyl), OS(O)₂(C₁₋₄ acyl), OS(O)₂(C₁₋₄ alkyl), OS(O)₂(C₂₋₄ alkenyl), NH₂, NH(C₁₋₄ alkyl), NH(C₂₋₄ alkenyl), NH(C₂₋₄ alkynyl), NH(C₁₋₄ acyl), N(C₁₋₄ alkyl)₂, N(C₁₋₁₈ acyl)₂, wherein alkyl, alkynyl, alkenyl and vinyl are optionally substituted by N₃, CN, one to three halogen (Cl, Br, F, I), NO₂, C(O)O(C₁₋₄ alkyl), C(O)O(C₁₋₄ alkyl), C(O)O(C₂₋₄ alkynyl), C(O)O(C₂₋₄ alkenyl), O(C₁₋₄ acyl), O(C₁₋₄ alkyl), O(C₂₋₄ alkenyl), S(C₁₋₄ acyl), S(C₁₋₄ alkyl), S(C₂₋₄ alkynyl), S(C₂₋₄ alkenyl), SO(C₁₋₄ acyl),

acyl), SO(C₁₋₄ alkyl), SO(C₂₋₄ alkynyl), SO(C₂₋₄ alkenyl), SO₂(C₁₋₄ acyl), SO₂(C₁₋₄ alkyl), SO₂(C₂₋₄ alkynyl), SO₂(C₂₋₄ alkenyl), OS(O)₂(C₁₋₄ acyl), OS(O)₂(C₁₋₄ alkyl), OS(O)₂(C₂₋₄ alkenyl), NH₂, NH(C₁₋₄ alkyl), NH(C₂₋₄ alkenyl), NH(C₂₋₄ alkynyl), NH(C₁₋₄ acyl), N(C₁₋₄ alkyl)₂, N(C₁₋₄ acyl)₂;

- 5 the base is a naturally occurring or modified purine or pyrimidine base represented by the following structures:



wherein

- 10 Z is N or CR¹²;

- R⁷, R⁸, R⁹, R¹⁰, and R¹¹ are independently H, F, Cl, Br, I, OH, OR', SH, SR', NH₂, NHR', NR'₂, lower alkyl of C₁-C₆, halogenated (F, Cl, Br, I) lower alkyl of C₁-C₆, lower alkenyl of C₂-C₆, halogenated (F, Cl, Br, I) lower alkenyl of C₂-C₆, lower alkynyl of C₂-C₆ such as C≡CH, halogenated (F, Cl, Br, I) lower alkynyl of C₂-C₆, lower alkoxy of C₁-C₆, halogenated (F, Cl, Br, I) lower alkoxy of C₁-C₆, CO₂H, CO₂R', CONH₂, CONHR', CONR'₂, CH=CHCO₂H, or CH=CHCO₂R',
- 15

- wherein R' is an optionally substituted alkyl, which includes, but is not limited to, an optionally substituted C₁₋₂₀ alkyl, an optionally substituted C₁₋₁₀ alkyl, an optionally substituted lower alkyl; an optionally substituted cycloalkyl; an optionally substituted alkynyl of C₂-C₆, an optionally substituted lower alkenyl of C₂-C₆, or optionally substituted acyl, which includes but is not limited to C(O) alkyl, C(O)(C₁₋₂₀ alkyl), C(O)(C₁₋₁₀ alkyl), or C(O)(lower alkyl) or alternatively, in the instance of NR'₂, each R' comprise at least one C atom that are joined to form a heterocycle comprising at least two carbon atoms; and
- 20
- 25

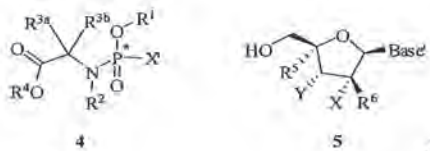
R^{12} is an H, halogen (including F, Cl, Br, I), OH, OR', SH, SR', NH₂, NHR', NR'₂, NO₂ lower alkyl of C₁-C₆, halogenated (F, Cl, Br, I) lower alkyl of C₁-C₆, lower alkenyl of C₂-C₆, halogenated (F, Cl, Br, I) lower alkenyl of C₂-C₆, lower alkynyl of C₂-C₆, halogenated (F, Cl, Br, I) lower alkynyl of C₂-C₆, lower alkoxy of C₁-C₆, halogenated (F, Cl, Br, I) lower alkoxy of C₁-C₆, CO₂H, CO₂R', CONH₂, CONHR', CONR'₂, CH=CHCO₂H, or CH=CHCO₂R'; with the proviso that when base is represented by the structure c with R¹¹ being hydrogen, R¹² is not a: (i) -C≡C-H, (ii) -C=CH₂, or (iii) -NO₂

and

10 wherein X' is a leaving group, such as, Cl.

12. A product its stereoisomer, salt, hydrate, solvate or crystalline form thereof, prepared a process comprising:

15 reacting a substituted phosphochloridate compound 4 with a nucleoside analog 5



wherein the product comprises a compound, its stereoisomer, salt, hydrate, solvate, or crystalline form thereof, selected from among

20 5 2'-Deoxy-2'-fluoro-2'-C-methyluridine 5'-(phenyl methoxy-alanyl phosphate ((S)-2-[(2R,3R,4R,5R)-5-(2,4-Dioxo-3,4-dihydro-2H-pyrimidin-1-yl)-4-fluoro-3-hydroxy-4-methyl-tetrahydro-furan-2-ylmethoxy]-phenoxy-phosphorylamino}-propionic acid methyl ester);

25 6 2'-Deoxy-2'-fluoro-2'-C-methyluridine 5'-(phenyl methoxy-valyl phosphate ((S)-2-[(2R,3R,4R,5R)-5-(2,4-Dioxo-3,4-dihydro-2H-pyrimidin-1-yl)-4-fluoro-3-hydroxy-4-methyl-tetrahydro-furan-2-ylmethoxy]-phenoxy-phosphorylamino}-3-methyl-butyric acid methyl ester);

30 7 2'-Deoxy-2'-fluoro-2'-C-methyluridine 5'-(4-bromophenyl methoxy-valyl phosphate ((S)-2-[(4-bromo-phenoxy)-[(2R,3R,4R,5R)-5-(2,4-dioxo-3,4-dihydro-2H-pyrimidin-1-yl)-4-fluoro-3-hydroxy-4-methyl-tetrahydro-furan-2-ylmethoxy]-phosphorylamino}-3-methyl-butyric acid methyl ester);

- 8 2'-Deoxy-2'-fluoro-2'-C-methyluridine 5'-(4-bromophenyl methoxy-alanyl phosphate (((S)-2-{(4-bromo-phenoxy)-[(2R,3R,4R,5R)-5-(2,4-dioxo-3,4-dihydro-2H-pyrimidin-1-yl)-4-fluoro-3-hydroxy-4-methyl-tetrahydro-furan-2-ylmethoxy]-phosphorylamino}-propionic acid methyl ester);
- 5 9 N⁴-(N,N-dimethylformamidinyl)-2'-deoxy-2'-fluoro-2'-C-methylcytidine;
- 10 10 2'-Deoxy-2'-fluoro-2'-C-methylcytidine 5'-(phenyl methoxy-alanyl phosphate (((S)-2-{[(2R,3R,4R,5R)-5-(2-oxo-3-amino-pyrimidin-1-yl)-4-fluoro-3-hydroxy-4-methyl-tetrahydro-furan-2-ylmethoxy]-phenoxy-phosphorylamino}-propionic acid methyl ester);
- 15 11 2'-Deoxy-2'-fluoro-2'-C-methylcytidine 5'-(4-bromophenyl methoxy-valyl phosphate (2'-Deoxy-2'-fluoro-2'-C-methyluridine 5'-(4-bromophenyl methoxy-valyl phosphate ((S)-2-{(4-bromo-phenoxy)-[(2R,3R,4R,5R)-5-(2-oxo-3-amino-pyrimidin-1-yl)-4-fluoro-3-hydroxy-4-methyl-tetrahydro-furan-2-ylmethoxy]-phosphorylamino}-3-methyl-butyric acid methyl ester);
- 20 12 2'-deoxy-2'-fluoro-2'-C-methylcytidine 5'-(phenyl methoxy-valyl phosphate ((S)-2-{[(2R,3R,4R,5R)-5-(2-oxo-3-amino-pyrimidin-1-yl)-4-fluoro-3-hydroxy-4-methyl-tetrahydro-furan-2-ylmethoxy]-phenoxy-phosphorylamino}-3-methyl-butyric acid methyl ester;
- 25 13 (S)-2-{[(2R,3R,4R,5R)-5-(2,4-Dioxo-3,4-dihydro-2H-pyrimidin-1-yl)-4-fluoro-3-hydroxy-4-methyl-tetrahydro-furan-2-ylmethoxy]-phenoxy-phosphorylamino}-propionic acid ethyl ester;
- 14 (S)-2-{[(2R,3R,4R,5R)-5-(2,4-Dioxo-3,4-dihydro-2H-pyrimidin-1-yl)-4-fluoro-3-hydroxy-4-methyl-tetrahydro-furan-2-ylmethoxy]-(naphthalen-1-yloxy)-phosphorylamino}-propionic acid benzyl ester;
- 30 15 {(2R,3R,4R,5R)-5-(2,4-Dioxo-3,4-dihydro-2H-pyrimidin-1-yl)-4-fluoro-3-hydroxy-4-methyl-tetrahydro-furan-2-ylmethoxy]-phenoxy-phosphorylamino}-acetic acid methyl ester;
- 16 (S)-2-{(2,4-Dichloro-phenoxy)-[(2R,3R,4R,5R)-5-(2,4-dioxo-3,4-dihydro-2H-pyrimidin-1-yl)-4-fluoro-3-hydroxy-4-methyl-tetrahydro-furan-2-ylmethoxy]-phosphorylamino}-propionic acid methyl ester;
- 35 17 (S)-2-{[(2R,3R,4R,5R)-5-(2,4-Dioxo-3,4-dihydro-2H-pyrimidin-1-yl)-4-fluoro-3-hydroxy-4-methyl-tetrahydro-furan-2-ylmethoxy]-(naphthalen-1-yloxy)-phosphorylamino}-propionic acid methyl ester;
- 18 (S)-1-{[(2R,3R,4R,5R)-5-(2,4-Dioxo-3,4-dihydro-2H-pyrimidin-1-yl)-4-fluoro-3-hydroxy-4-methyl-tetrahydro-furan-2-ylmethoxy]-phenoxy-phosphoryl}-pyrrolidine-2-carboxylic acid methyl ester;
- 40 19 (S)-2-{[(2R,3R,4R,5R)-5-(2,4-Dioxo-3,4-dihydro-2H-pyrimidin-1-yl)-4-fluoro-3-hydroxy-4-methyl-tetrahydro-furan-2-ylmethoxy]-phenoxy-phosphorylamino}-propionic acid butyl ester;
- 20 (S)-2-{[(2R,3R,4R,5R)-5-(2,4-Dioxo-3,4-dihydro-2H-pyrimidin-1-yl)-4-fluoro-3-hydroxy-4-methyl-tetrahydro-furan-2-ylmethoxy]-phenoxy-phosphorylamino}-propionic acid benzyl ester;
- 45 21 (S)-2-{[(2R,3R,4R,5R)-5-(2,4-Dioxo-3,4-dihydro-2H-pyrimidin-1-yl)-4-fluoro-3-hydroxy-4-methyl-tetrahydro-furan-2-ylmethoxy]-(4-fluoro-phenoxy)-phosphorylamino}-propionic acid methyl ester;
- 22 (S)-2-{(4-Chloro-phenoxy)-[(2R,3R,4R,5R)-5-(2,4-dioxo-3,4-dihydro-2H-pyrimidin-1-yl)-4-fluoro-3-hydroxy-4-methyl-tetrahydro-furan-2-ylmethoxy]-phosphorylamino}-propionic acid methyl ester;

- 23 (S)-2-[(3,4-Dichloro-phenoxy)-[(2R,3R,4R,5R)-5-(2,4-dioxo-3,4-dihydro-2H-pyrimidin-1-yl)-4-fluoro-3-hydroxy-4-methyl-tetrahydro-furan-2-ylmethoxy]-phosphorylamino]-propionic acid methyl ester;
- 5 24 (S)-2-[(2R,3R,4R,5R)-5-(2,4-Dioxo-3,4-dihydro-2H-pyrimidin-1-yl)-4-fluoro-3-hydroxy-4-methyl-tetrahydro-furan-2-ylmethoxy]-phenoxy-phosphorylamino]-propionic acid sec-butyl ester;
- 25 (S)-2-[(2R,3R,4R,5R)-5-(2,4-Dioxo-3,4-dihydro-2H-pyrimidin-1-yl)-4-fluoro-3-hydroxy-4-methyl-tetrahydro-furan-2-ylmethoxy]-phenoxy-phosphorylamino]-propionic acid isopropyl ester;
- 10 26 (S)-2-[(2R,3R,4R,5R)-5-(2,4-Dioxo-3,4-dihydro-2H-pyrimidin-1-yl)-4-fluoro-3-hydroxy-4-methyl-tetrahydro-furan-2-ylmethoxy]-(4-methoxyphenoxy)-phosphorylamino]-propionic acid butyl ester;
- 27 (S)-2-[(2R,3R,4R,5R)-5-(2,4-Dioxo-3,4-dihydro-2H-pyrimidin-1-yl)-4-fluoro-3-hydroxy-4-methyl-tetrahydro-furan-2-ylmethoxy]-(4-fluorophenoxy)-phosphorylamino]-propionic acid ethyl ester;
- 15 28 (S)-2-[(2R,3R,4R,5R)-5-(2,4-Dioxo-3,4-dihydro-2H-pyrimidin-1-yl)-4-fluoro-3-hydroxy-4-methyl-tetrahydro-furan-2-ylmethoxy]-(4-fluorophenoxy)-phosphorylamino]-propionic acid isopropyl ester;
- 29 (S)-2-[(2R,3R,4R,5R)-5-(2,4-Dioxo-3,4-dihydro-2H-pyrimidin-1-yl)-4-fluoro-3-hydroxy-4-methyl-tetrahydro-furan-2-ylmethoxy]-(4-fluorophenoxy)-phosphorylamino]-propionic acid benzyl ester;
- 20 30 (S)-2-[(2R,3R,4R,5R)-5-(2,4-Dioxo-3,4-dihydro-2H-pyrimidin-1-yl)-4-fluoro-3-hydroxy-4-methyl-tetrahydro-furan-2-ylmethoxy]-(4-methoxyphenoxy)-phosphorylamino]-propionic acid isopropyl ester;
- 25 31 (S)-2-[(2-Chloro-phenoxy)-[(2R,3R,4R,5R)-5-(2,4-dioxo-3,4-dihydro-2H-pyrimidin-1-yl)-4-fluoro-3-hydroxy-4-methyl-tetrahydro-furan-2-ylmethoxy]-phosphorylamino]-propionic acid benzyl ester;
- 32 (S)-2-[(3,4-Dichloro-phenoxy)-[(2R,3R,4R,5R)-5-(2,4-dioxo-3,4-dihydro-2H-pyrimidin-1-yl)-4-fluoro-3-hydroxy-4-methyl-tetrahydro-furan-2-ylmethoxy]-phosphorylamino]-propionic acid butyl ester;
- 30 33 (S)-2-[(2R,3R,4R,5R)-5-(2,4-Dioxo-3,4-dihydro-2H-pyrimidin-1-yl)-4-fluoro-3-hydroxy-4-methyl-tetrahydro-furan-2-ylmethoxy]-p-tolylphosphorylamino]-propionic acid isopropyl ester;
- 34 (S)-2-[(2R,3R,4R,5R)-5-(2,4-Dioxo-3,4-dihydro-2H-pyrimidin-1-yl)-4-fluoro-3-hydroxy-4-methyl-tetrahydro-furan-2-ylmethoxy]-(4-fluorophenoxy)-phosphorylamino]-propionic acid butyl ester;
- 35 35 (S)-2-[(3,4-Dichloro-phenoxy)-[(2R,3R,4R,5R)-5-(2,4-dioxo-3,4-dihydro-2H-pyrimidin-1-yl)-4-fluoro-3-hydroxy-4-methyl-tetrahydro-furan-2-ylmethoxy]-phosphorylamino]-propionic acid ethyl ester;
- 40 36 (S)-2-[(2-Chloro-phenoxy)-[(2R,3R,4R,5R)-5-(2,4-dioxo-3,4-dihydro-2H-pyrimidin-1-yl)-4-fluoro-3-hydroxy-4-methyl-tetrahydro-furan-2-ylmethoxy]-phosphorylamino]-propionic acid isopropyl ester;
- 37 (S)-2-[(2R,3R,4R,5R)-5-(2,4-Dioxo-3,4-dihydro-2H-pyrimidin-1-yl)-4-fluoro-3-hydroxy-4-methyl-tetrahydro-furan-2-ylmethoxy]-(4-methoxyphenoxy)-phosphorylamino]-propionic acid benzyl ester;
- 45 38 (S)-2-[(2R,3R,4R,5R)-5-(2,4-Dioxo-3,4-dihydro-2H-pyrimidin-1-yl)-4-fluoro-3-hydroxy-4-methyl-tetrahydro-furan-2-ylmethoxy]-phenoxy-phosphorylamino]-propionic acid pentyl ester;

- 39 (S)-2-[(4-Chloro-phenoxy)-[(2R,3R,4R,5R)-5-(2,4-dioxo-3,4-dihydro-2H-pyrimidin-1-yl)-4-fluoro-3-hydroxy-4-methyl-tetrahydro-furan-2-ylmethoxy]-phosphorylamino]-propionic acid isopropyl ester;
- 5 40 (S)-2-[(4-Chloro-phenoxy)-[(2R,3R,4R,5R)-5-(2,4-dioxo-3,4-dihydro-2H-pyrimidin-1-yl)-4-fluoro-3-hydroxy-4-methyl-tetrahydro-furan-2-ylmethoxy]-phosphorylamino]-propionic acid butyl ester;
- 41 (S)-2-[(4-Chloro-phenoxy)-[(2R,3R,4R,5R)-5-(2,4-dioxo-3,4-dihydro-2H-pyrimidin-1-yl)-4-fluoro-3-hydroxy-4-methyl-tetrahydro-furan-2-ylmethoxy]-phosphorylamino]-propionic acid ethyl ester;
- 10 42 (S)-2-[(2R,3R,4R,5R)-5-(2,4-Dioxo-3,4-dihydro-2H-pyrimidin-1-yl)-4-fluoro-3-hydroxy-4-methyl-tetrahydro-furan-2-ylmethoxy]-p-tolyl-oxy-phosphorylamino]-propionic acid butyl ester;
- 43 (S)-2-[(2R,3R,4R,5R)-5-(2,4-Dioxo-3,4-dihydro-2H-pyrimidin-1-yl)-4-fluoro-3-hydroxy-4-methyl-tetrahydro-furan-2-ylmethoxy]-p-tolyl-oxy-phosphorylamino]-propionic acid benzyl ester;
- 15 44 (S)-2-[(2R,3R,4R,5R)-5-(2,4-Dioxo-3,4-dihydro-2H-pyrimidin-1-yl)-4-fluoro-3-hydroxy-4-methyl-tetrahydro-furan-2-ylmethoxy]-phenoxy-phosphorylamino]-butyric acid methyl ester;
- 45 (S)-2-[(2R,3R,4R,5R)-5-(2,4-Dioxo-3,4-dihydro-2H-pyrimidin-1-yl)-4-fluoro-3-hydroxy-4-methyl-tetrahydro-furan-2-ylmethoxy]-phenoxy-phosphorylamino]-propionic acid 4-fluoro-benzyl ester;
- 20 46 (S)-2-[(2-Chloro-phenoxy)-[(2R,3R,4R,5R)-5-(2,4-dioxo-3,4-dihydro-2H-pyrimidin-1-yl)-4-fluoro-3-hydroxy-4-methyl-tetrahydro-furan-2-ylmethoxy]-phosphorylamino]-propionic acid butyl ester;
- 25 47 (S)-2-[(2R,3R,4R,5R)-5-(2,4-Dioxo-3,4-dihydro-2H-pyrimidin-1-yl)-4-fluoro-3-hydroxy-4-methyl-tetrahydro-furan-2-ylmethoxy]-phenoxy-phosphorylamino]-propionic acid 3-methyl-butyl ester;
- 48 (S)-2-[(2,4-Dichloro-phenoxy)-[(2R,3R,4R,5R)-5-(2,4-dioxo-3,4-dihydro-2H-pyrimidin-1-yl)-4-fluoro-3-hydroxy-4-methyl-tetrahydro-furan-2-ylmethoxy]-phosphorylamino]-propionic acid ethyl ester;
- 30 49 (S)-2-[(2R,3R,4R,5R)-5-(2,4-Dioxo-3,4-dihydro-2H-pyrimidin-1-yl)-4-fluoro-3-hydroxy-4-methyl-tetrahydro-furan-2-ylmethoxy]-phenoxy-phosphorylamino]-propionic acid cyclohexyl ester;
- 50 (R)-2-[(2R,3R,4R,5R)-5-(2,4-Dioxo-3,4-dihydro-2H-pyrimidin-1-yl)-4-fluoro-3-hydroxy-4-methyl-tetrahydro-furan-2-ylmethoxy]-phenoxy-phosphorylamino]-propionic acid butyl ester;
- 35 51 (R)-2-[(2R,3R,4R,5R)-5-(2,4-Dioxo-3,4-dihydro-2H-pyrimidin-1-yl)-4-fluoro-3-hydroxy-4-methyl-tetrahydro-furan-2-ylmethoxy]-phenoxy-phosphorylamino]-propionic acid isopropyl ester;
- 40 52 (R)-2-[(2R,3R,4R,5R)-5-(2,4-Dioxo-3,4-dihydro-2H-pyrimidin-1-yl)-4-fluoro-3-hydroxy-4-methyl-tetrahydro-furan-2-ylmethoxy]-phenoxy-phosphorylamino]-propionic acid benzyl ester;
- 53 (S)-2-[(2-Chloro-phenoxy)-[(2R,3R,4R,5R)-5-(2,4-dioxo-3,4-dihydro-2H-pyrimidin-1-yl)-4-fluoro-3-hydroxy-4-methyl-tetrahydro-furan-2-ylmethoxy]-phosphorylamino]-propionic acid butyl ester;
- 45 54 (S)-2-[(4-Bromo-phenoxy)-[(2R,3R,4R,5R)-5-(2,4-dioxo-3,4-dihydro-2H-pyrimidin-1-yl)-4-fluoro-3-hydroxy-4-methyl-tetrahydro-furan-2-ylmethoxy]-phosphorylamino]-propionic acid isopropyl ester;

- 55 (S)-2-[[[(2R,3R,4R,5R)-5-(2,4-Dioxo-3,4-dihydro-2H-pyrimidin-1-yl)-4-fluoro-3-hydroxy-4-methyl-tetrahydro-furan-2-ylmethoxy]-(4-fluoro-phenoxy)-phosphorylamino]-propionic acid cyclohexyl ester;
- 56 (S)-2-[[[(2R,3R,4R,5R)-5-(2,4-Dioxo-3,4-dihydro-2H-pyrimidin-1-yl)-4-fluoro-3-hydroxy-4-methyl-tetrahydro-furan-2-ylmethoxy]-(4-bromo-phenoxy)-phosphorylamino]-propionic acid cyclohexyl ester;
- 57 (S)-2-[[[(2R,3R,4R,5R)-5-(2,4-Dioxo-3,4-dihydro-2H-pyrimidin-1-yl)-4-fluoro-3-hydroxy-4-methyl-tetrahydro-furan-2-ylmethoxy]-phenoxy-phosphorylamino]-butyric acid isopropyl ester;
- 58 (S)-2-[[[(2R,3R,4R,5R)-5-(2,4-Dioxo-3,4-dihydro-2H-pyrimidin-1-yl)-4-fluoro-3-hydroxy-4-methyl-tetrahydro-furan-2-ylmethoxy]-phenoxy-phosphorylamino]-butyric acid cyclohexyl ester;
- 59 (S)-2-[[[(2R,3R,4R,5R)-5-(2,4-Dioxo-3,4-dihydro-2H-pyrimidin-1-yl)-4-fluoro-3-hydroxy-4-methyl-tetrahydro-furan-2-ylmethoxy]-(4-fluoro-phenoxy)-phosphorylamino]-butyric acid cyclohexyl ester;
- 60 (S)-2-[(4-Chloro-phenoxy)-[(2R,3R,4R,5R)-5-(2,4-dioxo-3,4-dihydro-2H-pyrimidin-1-yl)-4-fluoro-3-hydroxy-4-methyl-tetrahydro-furan-2-ylmethoxy]-phosphorylamino]-butyric acid isopropyl ester;
- 61 (S)-2-[[[(2R,3R,4R,5R)-5-(2,4-Dioxo-3,4-dihydro-2H-pyrimidin-1-yl)-4-fluoro-3-hydroxy-4-methyl-tetrahydro-furan-2-ylmethoxy]-phenoxy-phosphorylamino]-propionic acid 2,2-difluoro-ethyl ester;
- 62 (S)-2-[[[(2R,3R,4R,5R)-5-(2,4-Dioxo-3,4-dihydro-2H-pyrimidin-1-yl)-4-fluoro-3-hydroxy-4-methyl-tetrahydro-furan-2-ylmethoxy]-phenoxy-phosphorylamino]-propionic acid 2,2,2-trifluoro-1-trifluoromethyl-ethyl ester;
- 63 (S)-2-[[[(2R,3R,4R,5R)-5-(2,4-Dioxo-3,4-dihydro-2H-pyrimidin-1-yl)-4-fluoro-3-hydroxy-4-methyl-tetrahydro-furan-2-ylmethoxy]-phenoxy-phosphorylamino]-propionic acid 2-fluoro-1-fluoromethyl-ethyl ester;
- 64 (S)-2-[[[(2R,3R,4R,5R)-5-(2,4-Dioxo-3,4-dihydro-2H-pyrimidin-1-yl)-4-fluoro-3-hydroxy-4-methyl-tetrahydro-furan-2-ylmethoxy]-phenoxy-phosphorylamino]-propionic acid cyclopropyl methyl ester;
- 65 (S)-2-[[[(2R,3R,4R,5R)-5-(2,4-Dioxo-3,4-dihydro-2H-pyrimidin-1-yl)-4-fluoro-3-hydroxy-4-methyl-tetrahydro-furan-2-ylmethoxy]-phenoxy-phosphorylamino]-butyric acid cyclopentyl ester;
- 66 (S)-2-[[[(2R,3R,4R,5R)-5-(6-Amino-purin-9-yl)-4-fluoro-3-hydroxy-4-methyl-tetrahydro-furan-2-ylmethoxy]-phenoxy-phosphorylamino]-propionic acid methyl ester;
- 67 (S)-2-[[[(2R,3R,4R,5R)-5-(2-Amino-6-hydroxy-purin-9-yl)-4-fluoro-3-hydroxy-4-methyl-tetrahydro-furan-2-ylmethoxy]-phenoxy-phosphorylamino]-propionic acid methyl ester;
- 68 (S)-2-[(R)-[(2R,3R,4R,5R)-5-(2,6-Diamino-purin-9-yl)-4-fluoro-3-hydroxy-4-methyl-tetrahydro-furan-2-ylmethoxy]-phenoxy-phosphorylamino]-propionic acid methyl ester;
- 69 (S)-2-[[[(2R,3R,4R,5R)-5-(2-Amino-6-cyclopentylamino-purin-9-yl)-4-fluoro-3-hydroxy-4-methyl-tetrahydro-furan-2-ylmethoxy]-phenoxy-phosphorylamino]-propionic acid methyl ester;
- 70 (S)-2-[[[(2R,3R,4R,5R)-5-(2-Amino-6-azetidin-1-yl-purin-9-yl)-4-fluoro-3-hydroxy-4-methyl-tetrahydro-furan-2-ylmethoxy]-phenoxy-phosphorylamino]-propionic acid methyl ester;

- 71 (S)-2-{{[(2R,3R,4R,5R)-5-(2-Amino-6-diethylamino-purin-9-yl)-4-fluoro-3-hydroxy-4-methyl-tetrahydro-furan-2-ylmethoxy]-phenoxy-phosphorylamino}-propionic acid methyl ester;
- 5 72 (S)-2-{{[(2R,3R,4R,5R)-5-(2-Amino-6-propylamino-purin-9-yl)-4-fluoro-3-hydroxy-4-methyl-tetrahydro-furan-2-ylmethoxy]-phenoxy-phosphorylamino}-propionic acid methyl ester;
- 73 (S)-2-{{[(2R,3R,4R,5R)-5-(2-Amino-6-cyclobutylamino-purin-9-yl)-4-fluoro-3-hydroxy-4-methyl-tetrahydro-furan-2-ylmethoxy]-phenoxy-phosphorylamino}-propionic acid methyl ester;
- 10 74 (S)-2-{{[(2R,3R,4R,5R)-5-[2-Amino-6-(4-methyl-piperazin-1-yl)-purin-9-yl]-4-fluoro-3-hydroxy-4-methyl-tetrahydro-furan-2-ylmethoxy]-phenoxy-phosphorylamino}-propionic acid methyl ester;
- 75 (2S)-methyl 2-((((2R,3R,4R,5R)-4-fluoro-3-hydroxy-4-methyl-5-(6-(propylamino)-9H-purin-9-yl)tetrahydrofuran-2-ylmethoxy)(phenoxy)phosphorylamino)propanoate;
- 15 76 (2S)-methyl 2-((((2R,3R,4R,5R)-5-(6-(cyclobutylamino)-9H-purin-9-yl)-4-fluoro-3-hydroxy-4-methyltetrahydrofuran-2-ylmethoxy)(phenoxy)phosphorylamino)propanoate;
- 77 (2S)-methyl 2-((((2R,3R,4R,5R)-5-(6-(cyclopentylamino)-9H-purin-9-yl)-4-fluoro-3-hydroxy-4-methyltetrahydrofuran-2-ylmethoxy)(phenoxy)phosphorylamino)propanoate;
- 20 78 (2S)-methyl 2-((((2R,3R,4R,5R)-5-(6-(aziridin-1-yl)-9H-purin-9-yl)-4-fluoro-3-hydroxy-4-methyltetrahydrofuran-2-ylmethoxy)(phenoxy)phosphorylamino)propanoate;
- 25 79 (2S)-methyl 2-((((2R,3R,4R,5R)-4-fluoro-3-hydroxy-4-methyl-5-(6-(piperidin-1-yl)-9H-purin-9-yl)tetrahydrofuran-2-ylmethoxy)(phenoxy)phosphorylamino)propanoate; and
- 80 (2S)-methyl 2-((((2R,3R,4R,5R)-5-(6-(azetidin-1-yl)-9H-purin-9-yl)-4-fluoro-3-hydroxy-4-methyltetrahydrofuran-2-ylmethoxy)(phenoxy)phosphorylamino)propanoate
- 30

wherein Base' is as recited in each of compounds 5-74; and

wherein X' is a leaving group, such as, Cl.

35

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Inventor(s): Jinfa Du et al.
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Appl. No.: 14/013,237
Filing Date: 08-29-2013
Examiner: LEWIS, PATRICK T
Art Unit: 1672
Confirmation Number: 7005

INFORMATION DISCLOSURE STATEMENT
UNDER 37 CFR §1.56

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Commissioner:

Applicants submit herewith documents for the Examiner's consideration in accordance with 37 CFR §§1.56, 1.97 and 1.98.

Applicants respectfully request that each listed document be considered by the Examiner and be made of record in the present application and that an initialed copy of Form PTO/SB/08 be returned in accordance with MPEP §609.

Applicant requests that, in accordance with 37 CFR §1.98(d), the Examiner review all applications relied on for an earlier effective filing date under 35 U.S.C. 120, including U.S. Application No. 12/053,015, filed 21-Mar-2008; U.S. Application No. 13/099671 filed 03-May-2011; U.S. Application No. 13/609614 filed 11-Sep-2012; U.S. Application No. 14/057675 filed 18-Oct-2013; U.S. Application No. 14/254737 filed 16-Apr-2014; and U.S. Application

14/255,833 filed 17-Apr-2014, for copies of references of record therein that are not being provided here; although Applicant would be pleased to provide copies of any such documents at the Examiner's request.

The submission of any document herewith is not an admission that such document constitutes prior art against the claims of the present application or that such document is considered material to patentability as defined in 37 CFR §1.56(b). Applicants do not waive any rights to take any action which would be appropriate to antedate or otherwise remove as a competent reference any document submitted herewith.

TIMING OF THE DISCLOSURE

The listed documents are being submitted in compliance with 37 C.F.R. §1.97(c), before the mailing date of any of a final action under § 1.113, a notice of allowance under § 1.311, or an action that otherwise closes prosecution in the application.

Fees in the amount of \$180.00 to cover the fee associated with an information disclosure statement under 37 C.F.R. §1.97(c) are being paid by deposit account number 50-6219 via EFS-Web. The Commissioner is hereby authorized to charge any additional fees which may be required regarding this submission under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 50-6219.

Respectfully submitted,

Date February 25, 2015

By /Neeta C. Thakur/

Sheppard, Mullin, Richter & Hampton LLP
379 Lytton Avenue
Palo Alto, CA 94301
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Customer No.: 117796

Neeta Thakur, Ph.D.
Attorney for Applicant
Registration No. 59,123

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT Date Submitted: February 25, 2015 <i>(use as many sheets as necessary)</i>		Application Number	14/013,237
		Filing Date	29-Aug-2013
		First Named Inventor	Jinfa Du
		Art Unit	1672
		Examiner Name	LEWIS, PATRICK T
Sheet 1 of 8	Attorney Docket Number	37JD-199059-US4	

U.S. PATENT DOCUMENTS					
Examiner Initials*	Cite No. ¹	Document Number Number-Kind Code ² (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
	A1	US-2010022468	01-08-2010	Meppen	
	A2	US-20130288997	10-31-2013	BRUCE S. ROSS, ET AL.	
	A3	US-20130310551	11-21-2013	BRUCE S. ROSS, ET AL.	
	A4	US-6812219	11-02-2004	LaColla et al.	
	A5	US-7105493	09-12-2006	Sommadossi et al.	
	A6	US-7125855	10-24-2006	Bhat et al.	
	A7	US-7323453	01-29-2008	Olsen	
	A8	US-7608597	10-27-2009	Sommadossi et al.	
	A9	US-7608600	10-27-2009	Storer	
	A10	US-7635689	12-22-2009	LaColla et al.	
	A11	US-8735372	05-27-2014	Du et al.	
	A12	US-8906880	12-09-2014	Du et al.	
	A13	US-20030109697	07-12-2003	Shepard et al.	
	A14	US-6589941	07-08-2003	Fahrig et al.	

UNPUBLISHED U.S. PATENT APPLICATION DOCUMENTS					
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FOREIGN PATENT DOCUMENTS						
Examiner Initials*	Cite No. ¹	Foreign Patent Document Country Code ³ Number ⁴ Kind Code ⁵ (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Documents	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T ⁶
	A15	WO-2006/035061	04-06-2006	Tlibotec Pharm L to.		
	A16	WO-2011/123645	10-06-2011	Pharmasset, Inc.		
	A17	WO-1996/29336	09-26-1996	Medical Research Council		
	A18	WO-1999/037753	07-29-1999	Newbiotics, Inc.		
	A19	WO-2001/07454	02-01-2011	Newbiotics, Inc.		
	A20	WO-2008/121634	10-09-2008	Pharmasset, Inc.		

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Sheet	2	of	8
		Attorney Docket Number	37JD-199059-US4

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	A21	Claims of U.S. Patent Application No. 13/956,195 as amended Oct. 21, 2013.	
	A22	CLARK et al., "Synthesis and antiviral activity of 2'-deoxy-2'-fluoro-2'-C-methyl purine nucleosides as inhibitors of hepatitis C virus RNA replication", BIOORGANIC & MEDICINAL CHEMISTRY LETTERS, PERGAMON, AMSTERDAM, NL, vol. 16, no. 6, 15 March 2006 (2006-03-15), pages 1712-1715, XP027966449, ISSN: 0960-894X	
	A23	CODINGTON, et al., "Nucleoside-s. XVIII. Synthesis of 2'-Fluorothymidine, 2'-FluoroDE-oxyuridine, and Other 2'-Halogeno-2'-DE-oxy Nucleoside-s 1'2", The Division of Nucleoprotein Chemistry, Sloan-Kettering Institute for Cancer Research, Sloan-Kettering Division of Cornell University Medical College, New York 21, New York, Vol. 29, pages 558-564, (1963).	
	A24	GUDMUNDSSON, Kristjan S., et al., "Phosphoramidate ProtiDE-s of 2',3'-DiDE-oxy-3'-fluoroaDE-nosine and Related Nucleoside-s with Potent Activity Against HIV and HBV," Nucleoside-s, Nucleotide-s & Nucleic Acids (2003) 22 (10):1953-1961.	
	A25	HREBABECKY, et al., "1-(3,5-O-alkyliDE-ne-2-DE-oxy-4-C-hydroxymethyl-alpha-L-threo-pentofuranosyl) uracils," Collect. Czech. Chem. Commun., Vol. 62, pages 957-970, (1997).	
	A26	HREBABECKY, et al., "Synthesis of 1-(3-azido-2,3-diDE-oxy-4-C-hydroxymethyl-alpha-L-threo-pentofuranosyl)thymine, 1-(2, 3-diDE-oxy-4-C-hydroxymethyl-alpha-L-glycero-pentofuranosyl)thymine and 1-(2,3-diDE-oxy-4-C-hydroxymethyl-alpha-L-glycero-pent-2-enofuranosyl)thymine," Collect Czech. Chem. Commun., Vol. 58, pages 409-420, (1992).	
	A27	HREBABECKY, et al., "Synthesis of 1-(3-azido-2,3-diDE-oxy-beta-D-allofuranosyl)thymine, 1-(2,3-diDE-oxy-beta-D-allofuranosyl)thymine, and 1-(2,3-diDE-oxy-beta-D-erythro-hex-2-enofuranosyl)thymine," Carbohydrate Research, Vol. 216, pages 179-186, (1991).	
	A28	HREBABECKY, et al., "Synthesis of 1-(3-azido-2,3-diDE-oxy-beta-D-ribo-hexofuranosyl)-, 1-(2,3-diDE-oxy-beta-D-erythro-hexofuranosyl)- and 1-(2,3-diDE-oxy-beta-D-erythro-hex-2-enofuranosyl)pyrimidine nucleoside-s," Collect. Czech. Chem. Commun., Vol. 59, pages 412-420, (1993)	
	A29	Written Opinion of PCT/US2010/035641 mailed September 28, 2010	
	A30	Written Opinion of PCT/EP2006/069060 mailed January 30, 2007	
	A31	Written Opinion of PCT/US2005/025916 mailed June 15, 2006	

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		Art Unit	1672
		Examiner Name	LEWIS, PATRICK T
Sheet 3 of 8	Attorney Docket Number	37JD-199059-US4	

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	A32	Written Opinion of PCT/US2005/032406 mailed May 8, 2008	
	A33	International Search Report issued in International PCT application No. PCT/US2008/058183 mailed March 31, 2010 (7 pages)	
	A34	LIN, et al., "A stereospecific synthesis of 2',3'-diDE-oxy-β-L-cytidine (β-L-ddC), a potent inhibitor against human hepatitis B virus (HBV) and human immunodeficiency virus (HIV)," Tetrahedron Letters, Vol. 35, No. 21, pages 3477-3480, (1994).	
	A35	MCGUIGAN et al., "Synthesis, anti-human immunodeficiency virus activity and esterase lability of some novel carboxylic ester-modified phosphoramidate DE-derivatives of stavudine (d4T)," Antiviral Chemistry & Chemotherapy, Vol. 9, pages 473-479 (1998)	
	A36	MOURIER, et al., "Enantioselective synthesis and biological evaluation of 5-o-carboranyl-pyrimidine-nucleosides," Bioorganic & Medicinal Chemistry, Vol 7, pages 2759-2766, (1999).	
	A37	Response filed October 25, 2010 at the EPO for European patent application No. EP08732818.3	
	A38	Response to non-final Office Action dated October 1, 2009 for U.S. Application No. 12/142,554	
	A39	ROBINS, et al., "Nucleic acid related compounds. 91. Biomimetic reactions are in harmony with loss of 2'-substituents as free radicals (not anions) during mechanism-based inactivation of ribonucleotide reductases. differential interactions of azide-, halogen, and alkylthio groups with tributylstannane and triphenylsilane," Journal of the American Chemical Society, Vol. 118, No. 46, pages 11341-11348, (1996).	
	A40	SANEYOSHI, "Facile synthesis of 2'-O-cyanoethyluridine by ring-opening reaction of 2,2'-anhydrouridine with cyanoethyl trimethylsilyl ether in the presence of BF ₃ Et ₂ O," Tetrahedron Letters, Vol. 48, pages 8554-8557, (2007).	
	A41	Selected Prosecution documents from US 10/828,753 (1) February 26, 2007 Amendment; (2) March 30, 2007 Office Action; (3) June 9, 2007 Interview Summary; (4) September 12, 2007 Amendment; (5) September 12, 2007 Declaration; (6) September 24, 2007 Declaration; (7) November 28, 2007 Amendment; (8) February 26, 2008 Office Action; (9) March 11, 2008 Amendment; and (10) May 29, 2008 Notice of Allowance)	
	A42	Selected Prosecution Documents from US 11/854,218: (1) September 12, 2007 Amendment; (2) October 1, 2008 Office Action; (3) March 31, 2010 Response; (4) March 31, 2011 Declaration; (5) July 22, 2010 Office Action; (6) October 11, 2010 Amendment; (7) October 11, 2010 Declaration; (8) December 23, 2010 Office Action; (9) June 28, 2011 Amendment.	

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		Filing Date	29-Aug-2013
		First Named Inventor	Jinfa Du
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Sheet 4 of 8	Attorney Docket Number	37JD-199059-US4	

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	A43	U.S. Application No. 12/142,554, Pending claims filed on 12/17/2009	
	A44	U.S. Patent Application No. 13/956,195, as filed July 31, 2013	
	A45	VAN ROMPAEY, et al., "Mycobacterium tuberculosis thymidine monophosphate kinase inhibitors; biological evaluation and conformational analysis of 2'-and 3'-modified thymidine analogues," Eur. J. Org. Chem., pages 2911-2918, (2003).	
	A46	VANHEUSDE-N, et al., "Discovery of bicyclic thymidine analogues as selective and high-affinity inhibitors of mycobacterium tuberculosis thymidine monophosphate kinase," J. Med. Chem., Vol. 47, pages 6187-6194, (2004).	
	A47	VANHEUSDE-N, et al., "Synthesis and evaluation of thymidine-5'-O-monophosphate analogues as inhibitors of mycobacterium tuberculosis thymidylate kinase," Bioorganic & Medicinal Chemistry Letters, Vol. 12, pages 2695-2698, (2002).	
	A48	WU et al., "Targeting NS5B RNA-DE-penDE-nt RNA Polymerase For Anti-HCV Chemotherapy," Current Drug Targets- Infectious DisorDE-rs, Vol. 3, No.3, pages 207- 219 (2003)	
	A49	U.S. Application No. 11/225,724 pending claims filed 10/02/2009	
	A50	Selected Prosecution documents from US 12/053,015: (1) June 15, 2010 Resitricition Requirements; (2) October 28, 2010 Amendment ; (3) January 5, 2011 Notice of Alloance; and (4) April 1, 2011 Amendment.	
	A51	US 12/783,680 filed May 20, 210 - Originally filed claims	
	A52	US 13/076,552, filed March 31, 2011 - Originally filed claims.	
	A53	US 12/645,710 filed December 23, 2009 - Originally filed claims.	
	A54	US 12/878,262 - Pending Claims as of September 1, 2011.	

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	A55	Selected Prosecution Documents for US 12/878,262: (1) September 9, 2010 Amendment; (2) June 8, 2011 Office Action; and (3) September 1, 2011 Amendment	
	A56	Office Action for Australian Application No. 2012241173 dated 04/08/2014.	
	A57	Office Action for Colombian Application No. 09-120.744A dated 06/25/2014.	
	A58	Extended Search Report for European Application No. 14151876.1 dated 09/18/2014	
	A59	Communication pursuant to Rules 70(2) and 70a(2) EPC and reference to Rule 39(1) EPC for European Application No. 14179593.0 dated 01/19/2015.	
	A60	English Translation of Office Action for Korean Application No. 10-2009-7022652 dated 12/19/2013.	
	A61	Office Action for Korean Application No. 10-2012-7004146 dated 10/29/2014.	
	A62	English Translation of Office Action for Israeli Application No. 222810 dated 01/04/2015.	
	A63	English Translation of Office Action in Mexican Application No. MX/A/2012/000289 dated 01/22/2015.	
	A64	English Translation of Office Action in Mexican Application No. MX/A/2012/000289 dated 10/30/2014.	
	A65	Office Action in Chinese Application No. 200880018024.2 dated 10/31/2014	
	A66	Office Action in Japanese Application No. 2014-093905 dated 01/13/2015.	

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	A67	Subsequent Substantive Examination Report for Phillipines Application No. 1/2009/501847 dated 11/10/2014.	
	A68	Opposition by the Initiative for Medicines, Access & Knowledge (I-Mak) to Indian Application No. 3658/KOLNP/2009 N	
	A69	Opposition by NATCO Pharma Limited to Indian Application No. 3658/KOLNP/2009 dated 03/03/2014.	
	A70	Opposition by SANKLAP Rehabilitation Trust to Indian Application No. 3658/KOLNP/2009 dated 09/10/2014.	
	A71	Opposition by Indian Pharmaceutical Alliance to Indian Application No. 3658/KOLNP/2009 dated 02/17/2015.	
	A72	Opposition by Actavis Group PTC ehf to European Application No. 08732818.3 dated 02/23/2015.	
	A73	Opposition by Teva Pharmaceutical Industries to European Application No. 08732818.3 dated 02/10/2015.	
	A74	Opposition by Medecins Du Monde to European Application No. 08732818.3 dated 02/10/2015.	
	A75	Opposition by Ellis IP Ltd. to European Application No. 08732818.3 dated 02/10/2015.	
	A76	Opposition by Mr. Holm Herbert Fleisher to European Application No. 08732818.3 dated 02/19/2015.	
	A77	Opposition by Generics [UK] Ltd (trading as Mylan) to European Application No. 08732818.3 dated 02/19/2015.	
	A78	Opposition by IPS to European Application No. 08732818.3 dated 02/23/2015.	

Examiner Signature	Date Considered
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*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. 1 Applicant's unique citation designation number (optional). 2 See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. 3 Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). 4 For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. 5 Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. 6 Applicant is to place a check mark here if English language Translation is attached. This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449/PTO		Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT Date Submitted: February 25, 2015 <i>(use as many sheets as necessary)</i>		Application Number	14/013,237
		Filing Date	29-Aug-2013
		First Named Inventor	Jinfa Du
		Art Unit	1672
		Examiner Name	LEWIS, PATRICK T
Sheet	7	of	8
		Attorney Docket Number	37JD-199059-US4

NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.) date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ⁶
	A79	Opposition by Pharmaceutical Works Polpharma S.A. to European Application No. 08732818.3 dated 02/19/2015.	
	A80	Opposition by Stada Arzneimittel AG to European Application No. 08732818.3 dated 02/19/2015.	
	A81	Opposition by ZBM Patents= Zea, Barlocchi & Markvardsen to European Application No. 08732818.3 dated 02/23/2015.	
	A82	Furman et al., "The Anti-Hepatitis B Virus Activities, Cytotoxicities, and Anabolic Profiles of the (-) and (+) Enantiomers of <i>cis</i> -5-Fluoro-1-[2-(Hydroxymethyl)-1,3-Ozathiolan-5-yl]Cytosine," <i>Antimicrobial Agents and Chemotherapy</i> , (1992), 36(2):2686-2692.	
	A83	Chang et al., "Deoxycytidine-resistant Stereoisomer Is the Active Form of (±)-2',3'-Dideoxy-3'-thiacytidine in the Inhibition of Hepatitis B Virus Replication," <i>J. Bio. Chem.</i> , (1992), 267(20):13938-13942.	
	A84	Trousdale, et al., "Activity of 1-(2'-Fluoro-2'-Deoxy-β-D-Arabinofuranosyl)Thymine Against Herpes Simplex Virus in Cell Cultures and Rabbit Eyes," <i>Antimicrobial Agents and Chemotherapy</i> , (1983), 23(6):808-813.	
	A85	Klumpp, et al., "The Novel Nucleoside Analog R1479(4'-Azidocytidine) Is a Potent Inhibitor of NS5B-dependent RNA Synthesis and Hepatitis C Virus Replication in Cell Culture," <i>J. Bio. Chem.</i> , (2006), 281:3793-3799.	
	A86	Landowski et al, "Targeted delivery to PEPT1-overexpressing cells: Acidic, basic, and secondary floxuridine amino acid ester prodrugs," <i>MCT</i> , (2005), 4(4):659-667.	
	A87	McGuigan, "Phosphoramidate derivatives of stavudine as inhibitors of HIV: unnatural amino acids may substitute for alanine," <i>Antiviral Chemistry & Chemotherapy</i> , (2000), 11:111-116.	
	A88	Perrone, Thesis entitled "Design Synthesis and Biological Evaluation of Novel Nucleotide Prodrugs as Potential Anti-Hepatitis C Virus Agents," (2007).	
	A89	Zemlicka, "Lipophilic phosphoramidates as antiviral pro-nucleotides, <i>Biochem Biophys Acta</i> , (2002), 276-286.	
	A90	Sofia, "Discovery of a beta-D-2'-Deoxy-2'-alpha-fluoro-2'-beta-C-methyluridine Nucleotide Prodrug (PSI-7977) for the Treatment of Hepatitis C Virus," <i>J. Med. Chem.</i> , (2010), 53.	

Examiner Signature		Date Considered	
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*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. 1 Applicant's unique citation designation number (optional). 2 See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. 3 Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). 4 For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. 5 Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. 6 Applicant is to place a check mark here if English language Translation is attached. This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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Substitute for form 1449/PTO		Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT Date Submitted: February 25, 2015 <i>(use as many sheets as necessary)</i>		Application Number	14/013,237
		Filing Date	29-Aug-2013
		First Named Inventor	Jinfa Du
		Art Unit	1672
		Examiner Name	LEWIS, PATRICK T
Sheet	8	of	8
		Attorney Docket Number	37JD-199059-US4

NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.) date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ⁶
	A91	Abstract, 100, presented at the 19 th International Conference of Antiviral Research, May 7-11, 2006	
	A92	Guinic, et al., " Cyclic monophosphate prodrugs of base=modified 2'-C-methyl ribonucleosides as potent inhibitors of hepatitis C virus RNA replicaon," Bloorg Med Chem Lett., (2007), 17(9):2456-2458.	

Examiner Signature		Date Considered	
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If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.

PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875					Application or Docket Number 14/013,237	Filing Date 08/29/2013	☐ To be Mailed	
ENTITY: ☒ LARGE ☐ SMALL ☐ MICRO								
APPLICATION AS FILED – PART I								
(Column 1)		(Column 2)						
FOR	NUMBER FILED	NUMBER EXTRA			RATE (\$)	FEE (\$)		
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A			N/A			
☐ SEARCH FEE (37 CFR 1.16(k), (l), or (m))	N/A	N/A			N/A			
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A			N/A			
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	+			X \$	=		
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	+			X \$	=		
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$310 (\$155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).							
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))								
* If the difference in column 1 is less than zero, enter "0" in column 2.					TOTAL			
APPLICATION AS AMENDED – PART II								
(Column 1)		(Column 2)		(Column 3)				
AMENDMENT	02/25/2015	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)	
	Total (37 CFR 1.16(i))	+ 28	Minus	** 28	= 0	X \$80 =	0	
	Independent (37 CFR 1.16(h))	+ 2	Minus	*** 3	= 0	X \$420 =	0	
	☐ Application Size Fee (37 CFR 1.16(s))							
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							
TOTAL ADD'L FEE						0		
(Column 1)		(Column 2)		(Column 3)				
AMENDMENT		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)	
	Total (37 CFR 1.16(i))	+	Minus	**	=	X \$	=	
	Independent (37 CFR 1.16(h))	+	Minus	***	=	X \$	=	
	☐ Application Size Fee (37 CFR 1.16(s))							
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							
TOTAL ADD'L FEE								
* If the entry in column 1 is less than the entry in column 2, write "0" in column 3. ** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20". *** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3". The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.								

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**
If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Application Number 	Application/Control No. 14/013,237	Applicant(s)/Patent under Reexamination DU ET AL.	
Document Code - DISQ		Internal Document – DO NOT MAIL	

TERMINAL DISCLAIMER	☒ APPROVED	☐ DISAPPROVED
Date Filed : 25 FEB 2015	This patent is subject to a Terminal Disclaimer	

Approved/Disapproved by:

Three TDs filed and approved.

JAB

Doc Code: PET.AUTO Document Description: Petition automatically granted by EFS-Web		PTO/SB/83 U.S. Patent and Trademark Office Department of Commerce
Electronic Petition Request	REQUEST FOR WITHDRAWAL AS ATTORNEY OR AGENT AND CHANGE OF CORRESPONDENCE ADDRESS	
Application Number	14013237	
Filing Date	29-Aug-2013	
First Named Inventor	Jinfa Du	
Art Unit	1672	
Examiner Name	PATRICK LEWIS	
Attorney Docket Number	37JD-199059-US4	
Title	NUCLEOSIDE PHOSPHORAMIDATE PRODRUGS	
☒ Please withdraw me as attorney or agent for the above identified patent application and the practitioners of record associated with Customer Number:		117796
The reason(s) for this request are those described in 37 CFR: 11.116(a)(3)		
Certifications		
☒ I/We have given reasonable notice to the client, prior to the expiration of the response period, that the practitioner(s) intend to withdraw from employment		
☒ I/We have delivered to the client or a duly authorized representative of the client all papers and property (including funds) to which the client is entitled		
☒ I/We have notified the client of any responses that may be due and the time frame within which the client must respond		
Change the correspondence address and direct all future correspondence to: The address of the first named inventor or assignee that has properly made itself of record pursuant to 37 CFR 3.71 (for applications filed before September 16, 2012) or the applicant (for applications filed on or after September 16, 2012), associated with Customer Number:		124963
I am authorized to sign on behalf of myself and all withdrawing practitioners.		
Signature	/Lorna L. Tanner/	
Name	Lorna L. Tanner	
Registration Number	50782	



UNITED STATES PATENT AND TRADEMARK OFFICE

Commissioner for Patents
United States Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450
www.uspto.gov

Decision Date : March 31, 2015

In re Application of :

Jinfa Du

Application No : 14013237

Filed : 29-Aug-2013

Attorney Docket No : 37JD-199059-US4

DECISION ON REQUEST TO WITHDRAW AS
ATTORNEY/AGENT OF RECORD

This is an electronic decision on the Request to Withdraw as attorney or agent of record under 37 CFR§ 1.36(b), filed March 31, 2015

The request is **APPROVED**

The request was signed by Lorna L. Tanner (registration no. 50782) on behalf of all attorneys/agents associated with Customer Number 117796 . All attorneys/agents associated with Customer Number 117796 have been withdrawn.

Since there are no remaining attorneys of record, all future communications from the Office will be directed to the first named inventor or assignee that has properly made itself of record pursuant to 37 CFR 3.71 (for applications filed before September 16, 2012) or the applicant (for applications filed on or after September 16, 2012), with Customer number 124963 .

As a reminder, requester is required to inform the first named inventor or assignee that has properly made itself of record pursuant to 37 CFR 3.71 (for applications filed before September 16, 2012) or the applicant (for applications filed on or after September 16, 2012) of the electronically processed petition.

Telephone inquiries concerning this decision should be directed to the Patent Electronic Business Center (EBC) at 866-217-9197.

Office of Petitions

Electronic Acknowledgement Receipt	
EFS ID:	21935267
Application Number:	14013237
International Application Number:	
Confirmation Number:	7005
Title of Invention:	NUCLEOSIDE PHOSPHORAMIDATE PRODRUGS
First Named Inventor/Applicant Name:	Jinfa Du
Customer Number:	117796
Filer:	Lorna Lea Tanner/Kory Mingus
Filer Authorized By:	Lorna Lea Tanner
Attorney Docket Number:	37JD-199059-US4
Receipt Date:	31-MAR-2015
Filing Date:	29-AUG-2013
Time Stamp:	19:44:52
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no
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File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Petition automatically granted by EFS	petition-request.pdf	31476 88602ba5ed990c006d12316ad1e4931851 d8d052	no	1

Warnings:

Information:

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
14/013,237	08/29/2013	Jinfa Du	37ID-199059-US4

117796
Gilead Sciences, Inc.
c/o Sheppard Mullin Richter & Hampton LLP
379 Lytton Avenue
Palo Alto, CA 94301

CONFIRMATION NO. 7005
POWER OF ATTORNEY NOTICE



Date Mailed: 04/01/2015

NOTICE REGARDING CHANGE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 03/31/2015.

- The withdrawal as attorney in this application has been accepted. Future correspondence will be mailed to the new address of record. 37 CFR 1.33.

/eefswuser/

Office of Data Management, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101

POWER OF ATTORNEY TO PROSECUTE APPLICATIONS BEFORE THE USPTO

I hereby revoke all previous powers of attorney given in the application identified in the attached statement under 37 CFR 3.73(c).

I hereby appoint:



Practitioners associated with Customer Number:

124963

OR



Practitioner(s) named below (if more than ten patent practitioners are to be named, then a customer number must be used):

Name	Registration Number	Name	Registration Number

As attorney(s) or agent(s) to represent the undersigned before the United States Patent and Trademark Office (USPTO) in connection with any and all patent applications assigned only to the undersigned according to the USPTO assignment records or assignments documents attached to this form in accordance with 37 CFR 3.73(c).

Please change the correspondence address for the application identified in the attached statement under 37 CFR 3.73(c) to:



The address associated with Customer Number:

124963

OR

☐	Firm or Individual Name			
	Address			
	City	State	Zip	
	Country			
	Telephone	Email		

Assignee Name and Address: Gilead Pharmasset LLC
333 Lakeside Drive
Foster City, California 94404

A copy of this form, together with a statement under 37 CFR 3.73(c) (Form PTO/AIA/96 or equivalent) is required to be filed in each application in which this form is used. The statement under 37 CFR 3.73(c) may be completed by one of the practitioners appointed in this form, and must identify the application in which this Power of Attorney is to be filed.

SIGNATURE of Assignee of Record

The individual whose signature and title is supplied below is authorized to act on behalf of the assignee

Signature	<i>Lawrence F. Rozsnyai</i>	Date	April 02, 2015
Name	Lawrence F. Rozsnyai	Telephone	415-205-9936
Title	Patent Counsel		

This collection of information is required by 37 CFR 1.31, 1.32 and 1.33. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 3 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Electronic Acknowledgement Receipt	
EFS ID:	21964244
Application Number:	14013237
International Application Number:	
Confirmation Number:	7005
Title of Invention:	NUCLEOSIDE PHOSPHORAMIDATE PRODRUGS
First Named Inventor/Applicant Name:	Jinfa Du
Customer Number:	124963
Filer:	Lawrence F. Rozsnyai/Sylvia Brennan
Filer Authorized By:	Lawrence F. Rozsnyai
Attorney Docket Number:	37JD-199059-US4
Receipt Date:	03-APR-2015
Filing Date:	29-AUG-2013
Time Stamp:	12:16:41
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no
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File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		PH3080PC4_2015_04_02_State ment373_as_Filed.PDF	311187 28540488075102d0821d1c27b4a5d039160 4750	yes	3

Multipart Description/PDF files in .zip description			
Document Description		Start	End
Assignee showing of ownership per 37 CFR 3.73		1	2
Power of Attorney		3	3

Warnings:

Information:

Total Files Size (in bytes):	311187
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This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111
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National Stage of an International Application under 35 U.S.C. 371
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New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

STATEMENT UNDER 37 CFR 3.73(c)

Applicant/Patent Owner: Gilead Pharmasset LLC
Application No./Patent No.: 14/013,237 Filed/Issue Date: 08-29-2013
Titled: NUCLEOSIDE PHOSPHORAMIDATE PRODRUGS
Gilead Pharmasset LLC, a Corporation
(Name of Assignee) (Type of Assignee, e.g., corporation, partnership, university, government agency, etc.)

states that, for the patent application/patent identified above, it is (choose one of options 1, 2, 3 or 4 below):

1. ☐ The assignee of the entire right, title, and interest
2. ☐ An assignee of less than the entire right, title, and interest (check applicable box):
- ☐ The extent (by percentage) of its ownership interest is _____%. Additional Statement(s) by the owners holding the balance of the interest must be submitted to account for 100% of the ownership interest.
- ☐ There are unspecified percentages of ownership. The other parties, including inventors, who together own the entire right, title and interest are:

Additional Statement(s) by the owner(s) holding the balance of the interest must be submitted to account for the entire right, title, and interest.

3. ☐ The assignee of an undivided interest in the entirety (a complete assignment from one of the joint inventors was made). The other parties, including inventors, who together own the entire right, title, and interest are:

Additional Statement(s) by the owner(s) holding the balance of the interest must be submitted to account for the entire right, title, and interest.

4. ☐ The recipient, via a court proceeding or the like (e.g., bankruptcy, probate), of an undivided interest in the entirety (a complete transfer of ownership interest was made). The certified document(s) showing the transfer is attached.

The interest identified in option 1, 2 or 3 above (not option 4) is evidenced by either (choose one of options A or B below):

- A. ☐ An assignment from the inventor(s) of the patent application/patent identified above. The assignment was recorded in the United States Patent and Trademark Office at Reel _____, Frame _____, or for which a copy thereof is attached.
- B. ☒ A chain of title from the inventor(s), of the patent application/patent identified above, to the current assignee as follows:

1. From: Michael Joseph SOFIA, et al To: Pharmasset, Inc.
The document was recorded in the United States Patent and Trademark Office at
Reel 031139, Frame 0548, or for which a copy thereof is attached.
2. From: Pharmasset, Inc. To: Gilead Pharmasset LLC
The document was recorded in the United States Patent and Trademark Office at
Reel 031157, Frame 0296, or for which a copy thereof is attached.

[Page 1 of 2]

This collection of information is required by 37 CFR 3.73(b). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

STATEMENT UNDER 37 CFR 3.73(c)

3. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at
Reel _____, Frame _____, or for which a copy thereof is attached.

4. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at
Reel _____, Frame _____, or for which a copy thereof is attached.

5. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at
Reel _____, Frame _____, or for which a copy thereof is attached.

6. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at
Reel _____, Frame _____, or for which a copy thereof is attached.

☐ Additional documents in the chain of title are listed on a supplemental sheet(s).

☒ As required by 37 CFR 3.73(c)(1)(i), the documentary evidence of the chain of title from the original owner to the assignee was, or concurrently is being, submitted for recordation pursuant to 37 CFR 3.11.

[NOTE: A separate copy (i.e., a true copy of the original assignment document(s)) must be submitted to Assignment Division in accordance with 37 CFR Part 3, to record the assignment in the records of the USPTO. See MPEP 302.08]

The undersigned (whose title is supplied below) is authorized to act on behalf of the assignee.

Lawrence F. Rozsnyai
Signature

Lawrence F. Rozsnyai

Printed or Typed Name

April 02, 2015
Date

Patent Counsel (Reg No: 58,427)

Title or Registration Number



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

NOTICE OF ALLOWANCE AND FEE(S) DUE

124963 7590 04/08/2015
Gilead Pharmasset LLC
c/o Gilead Sciences, Inc.
333 Lakeside Drive
Foster City, CA 94404

EXAMINER

LEWIS, PATRICK T

ART UNIT PAPER NUMBER

1672

DATE MAILED: 04/08/2015

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/013,237	08/29/2013	Jinfa Du	37JD-199059-US4	7005

TITLE OF INVENTION: NUCLEOSIDE PHOSPHORAMIDATE PRODRUGS

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	UNDISCOUNTED	\$960	\$0	\$0	\$960	07/08/2015

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the ENTITY STATUS shown above. If the ENTITY STATUS is shown as SMALL or MICRO, verify whether entitlement to that entity status still applies.

If the ENTITY STATUS is the same as shown above, pay the TOTAL FEE(S) DUE shown above.

If the ENTITY STATUS is changed from that shown above, on PART B - FEE(S) TRANSMITTAL, complete section number 5 titled "Change in Entity Status (from status indicated above)".

For purposes of this notice, small entity fees are 1/2 the amount of undiscounted fees, and micro entity fees are 1/2 the amount of small entity fees.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: **Mail** Mail Stop ISSUE FEE
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450
or Fax (571)-273-2885

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

124963 7590 04/08/2015
 Gilad Pharmasset LLC
 c/o Gilad Sciences, Inc.
 333 Lakeside Drive
 Foster City, CA 94404

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/013,237	08/29/2013	Jinfa Du	37JD-199059-US4	7005

TITLE OF INVENTION: NUCLEOSIDE PHOSPHORAMIDATE PRODRUGS

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	UNDISCOUNTED	\$960	\$0	\$0	\$960	07/08/2015

EXAMINER	ART UNIT	CLASS-SUBCLASS
LEWIS, PATRICK T	1672	514-051000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

- ☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. Use of a **Customer Number** is required.

2. For printing on the patent front page, list

- (1) The names of up to 3 registered patent attorneys or agents OR, alternatively, 1 _____
 (2) The name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed. 2 _____
 3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

(B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent): ☐ Individual ☐ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:

- ☐ Issue Fee
☐ Publication Fee (No small entity discount permitted)
☐ Advance Order - # of Copies _____

4b. Payment of Fee(s): (Please first reapply any previously paid issue fee shown above)

- ☐ A check is enclosed.
☐ Payment by credit card. Form PTO-2038 is attached.
☐ The director is hereby authorized to charge the required fee(s), any deficiency, or credits any overpayment, to Deposit Account Number _____ (enclose an extra copy of this form).

5. Change in Entity Status (from status indicated above)

- ☐ Applicant certifying micro entity status. See 37 CFR 1.29
☐ Applicant asserting small entity status. See 37 CFR 1.27
☐ Applicant changing to regular undiscounted fee status.

NOTE: Absent a valid certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.

NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.

NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

NOTE: This form must be signed in accordance with 37 CFR 1.31 and 1.33. See 37 CFR 1.4 for signature requirements and certifications.

Authorized Signature _____ Date _____
 Typed or printed name _____ Registration No. _____



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/013,237	08/29/2013	Jinfa Du	37JD-199059-US4	7005

124963 7590 04/08/2015
Gilead Pharmasset LLC
c/o Gilead Sciences, Inc.
333 Lakeside Drive
Foster City, CA 94404

EXAMINER

LEWIS, PATRICK T

ART UNIT	PAPER NUMBER
----------	--------------

1672

DATE MAILED: 04/08/2015

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b) (Applications filed on or after May 29, 2000)

The Office has discontinued providing a Patent Term Adjustment (PTA) calculation with the Notice of Allowance.

Section 1(h)(2) of the AIA Technical Corrections Act amended 35 U.S.C. 154(b)(3)(B)(i) to eliminate the requirement that the Office provide a patent term adjustment determination with the notice of allowance. See Revisions to Patent Term Adjustment, 78 Fed. Reg. 19416, 19417 (Apr. 1, 2013). Therefore, the Office is no longer providing an initial patent term adjustment determination with the notice of allowance. The Office will continue to provide a patent term adjustment determination with the Issue Notification Letter that is mailed to applicant approximately three weeks prior to the issue date of the patent, and will include the patent term adjustment on the patent. Any request for reconsideration of the patent term adjustment determination (or reinstatement of patent term adjustment) should follow the process outlined in 37 CFR 1.705.

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

OMB Clearance and PRA Burden Statement for PTOL-85 Part B

The Paperwork Reduction Act (PRA) of 1995 requires Federal agencies to obtain Office of Management and Budget approval before requesting most types of information from the public. When OMB approves an agency request to collect information from the public, OMB (i) provides a valid OMB Control Number and expiration date for the agency to display on the instrument that will be used to collect the information and (ii) requires the agency to inform the public about the OMB Control Number's legal significance in accordance with 5 CFR 1320.5(b).

The information collected by PTOL-85 Part B is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450. Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Notice of Allowability	Application No. 14/013,237	Applicant(s) DU ET AL.	
	Examiner PATRICK LEWIS	Art Unit 1672	AI/A (First Inventor to File) Status No

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Terminal Disclaimer dated 2/25/2015.
☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

2. ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

3. ☒ The allowed claim(s) is/are 13-40. As a result of the allowed claim(s), you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov.

4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

Certified copies:

a) ☐ All b) ☐ Some *c) ☐ None of the:

1. ☐ Certified copies of the priority documents have been received.

2. ☐ Certified copies of the priority documents have been received in Application No. _____.

3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)	5. ☐ Examiner's Amendment/Comment
2. ☒ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date <u>02252015</u>	6. ☐ Examiner's Statement of Reasons for Allowance
3. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material	7. ☐ Other _____.
4. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____	

/PATRICK LEWIS/ Primary Examiner, Art Unit 1672	
--	--

Issue Classification 	Application/Control No. 14013237	Applicant(s)/Patent Under Reexamination DU ET AL	
	Examiner PATRICK LEWIS	Art Unit 1672	

CPC					
Symbol				Type	Version
C07D	417	/	14	F	2013-01-01
A61K	31	/	706	I	2013-01-01
A61K	31	/	7064	I	2013-01-01
A61K	31	/	7076	I	2013-01-01
C07H	19	/	04	I	2013-01-01
C07H	19	/	06	I	2013-01-01
C07H	19	/	10	I	2013-01-01
C07H	19	/	20	I	2013-01-01
A61K	31	/	7072	I	2013-01-01
A61K	45	/	06	I	2013-01-01
C07H	17	/	02	I	2013-01-01
		/			
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		/			
		/			

CPC Combination Sets					
Symbol		Type	Set	Ranking	Version
	/				
	/				

NONE		Total Claims Allowed:	
(Assistant Examiner)	(Date)	27	
/PATRICK LEWIS/ Primary Examiner, Art Unit 1672	4/2/2015	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	NONE

Issue Classification 	Application/Control No. 14013237	Applicant(s)/Patent Under Reexamination DU ET AL
	Examiner PATRICK LEWIS	Art Unit 1672

US ORIGINAL CLASSIFICATION						INTERNATIONAL CLASSIFICATION														
CLASS		SUBCLASS				CLAIMED					NON-CLAIMED									
514		51				A	0	1	N	42 / 04 (2006.01.01)										
CROSS REFERENCE(S)						A	6	1	K	31 / 70 (2006.01.01)										
CLASS	SUBCLASS (ONE SUBCLASS PER BLOCK)																			
514	42	43	49	50	51															

NONE		Total Claims Allowed:	
		27	
(Assistant Examiner)	(Date)	O.G. Print Claim(s)	O.G. Print Figure
/PATRICK LEWIS/ Primary Examiner, Art Unit 1672	4/2/2015	1	NONE
(Primary Examiner)	(Date)		

Issue Classification 	Application/Control No. 14013237	Applicant(s)/Patent Under Reexamination DU ET AL
	Examiner PATRICK LEWIS	Art Unit 1672

☒ Claims renumbered in the same order as presented by applicant ☐ CPA ☒ T.D. ☐ R.1.47															
Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original
	1		17		33										
	2		18		34										
	3		19		35										
	4		20		36										
	5		21		37										
	6		22		38										
	7		23		39										
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	9		25												
	10		26												
	11		27												
	12		28												
	13		29												
	14		30												
	15		31												
	16		32												

NONE		Total Claims Allowed:	
		27	
(Assistant Examiner)	(Date)	O.G. Print Claim(s)	O.G. Print Figure
/PATRICK LEWIS/ Primary Examiner, Art Unit 1672	4/2/2015	1	NONE
(Primary Examiner)	(Date)		

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449/PTO		Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT Date Submitted: February 25, 2015 <i>(use as many sheets as necessary)</i>		Application Number	14/013,237
		Filing Date	29-Aug-2013
		First Named Inventor	Jinfa Du
		Art Unit	1672
		Examiner Name	LEWIS, PATRICK T
Sheet 1	of 8	Attorney Docket Number	37JD-199059-US4

U.S. PATENT DOCUMENTS					
Examiner Initials*	Cite No. ¹	Document Number Number-Kind Code ² (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
	A1	US-2010022468	01-08-2010	Meppen	
	A2	US-20130288997	10-31-2013	BRUCE S. ROSS, ET AL.	
	A3	US-20130310551	11-21-2013	BRUCE S. ROSS, ET AL.	
	A4	US-6812219	11-02-2004	LaColla et al.	
	A5	US-7105493	09-12-2006	Sommadossi et al.	
	A6	US-7125855	10-24-2006	Bhat et al.	
	A7	US-7323453	01-29-2008	Olsen	
	A8	US-7608597	10-27-2009	Sommadossi et al.	
	A9	US-7608600	10-27-2009	Storer	
	A10	US-7635689	12-22-2009	LaColla et al.	
	A11	US-8735372	05-27-2014	Du et al.	
	A12	US-8906880	12-09-2014	Du et al.	
	A13	US-20030109697	07-12-2003	Shepard et al.	
	A14	US-6589941	07-08-2003	Fahrig et al.	

UNPUBLISHED U.S. PATENT APPLICATION DOCUMENTS					
Examiner Initials*	Cite No. ¹	U.S. Patent Application Document Serial Number-Kind Code ² (if known)	Filing Date of Cited Document MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear

FOREIGN PATENT DOCUMENTS						
Examiner Initials*	Cite No. ¹	Foreign Patent Document Country Code ³ Number ⁴ Kind Code ⁵ (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Documents	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T ⁶
	A15	WO-2006/035061	04-06-2006	Tilbotec Pharm L to.		
	A16	WO-2011/123645	10-06-2011	Pharmasset, Inc.		
	A17	WO-1996/29336	09-26-1996	Medical Research Council		
	A18	WO-1999/037753	07-29-1999	Newbiotics, Inc.		
	A19	WO-2001/07454	02-01-2011	Newbiotics, Inc.		
	A20	WO-2008/121634	10-09-2008	Pharmasset, Inc.		

Examiner Signature	/Patrick Lewis/ (04/02/2015)	Date Considered	
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		Filing Date	29-Aug-2013
		First Named Inventor	Jinfa Du
		Art Unit	1672
		Examiner Name	LEWIS, PATRICK T
Sheet	2	of	8
		Attorney Docket Number	37JD-199059-US4

NON PATENT LITERATURE DOCUMENTS			
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	A21	Claims of U.S. Patent Application No. 13/956,195 as amended Oct. 21, 2013.	
	A22	CLARK et al., "Synthesis and antiviral activity of 2'-deoxy-2'-fluoro-2'-C-methyl purine nucleosides as inhibitors of hepatitis C virus RNA replication", BIOORGANIC & MEDICINAL CHEMISTRY LETTERS, PERGAMON, AMSTERDAM, NL, vol. 16, no. 6, 15 March 2006 (2006-03-15), pages 1712-1715, XP027966449, ISSN: 0960-894X	
	A23	CODINGTON, et al., "Nucleoside-s. XVIII. Synthesis of 2'-Fluorothymidine, 2'-FluoroDE-oxyuridine, and Other 2'-Halogeno-2'-DE-oxy Nucleoside-s 1'2", The Division of Nucleoprotein Chemistry, Sloan-Kettering Institute for Cancer Research, Sloan-Kettering Division of Cornell University Medical College, New York 21, New York, Vol. 29, pages 558-564, (1963).	
	A24	GUDMUNDSSON, Kristjan S., et al., "Phosphoramidate ProtiDE-s of 2',3'-DiDE-oxy-3'-fluoroaDE-nosine and Related Nucleoside-s with Potent Activity Against HIV and HBV," Nucleoside-s, Nucleotide-s & Nucleic Acids (2003) 22 (10):1953-1961.	
	A25	HREBABECKY, et al., "1-(3,5-O-alkyliDE-ne-2-DE-oxy-4-C-hydroxymethyl-alpha-L-threo-pentofuranosyl) uracils," Collect. Czech. Chem. Commun., Vol. 62, pages 957-970, (1997).	
	A26	HREBABECKY, et al., "Synthesis of 1-(3-azido-2,3-diDE-oxy-4-C-hydroxymethyl-alpha-L-threo-pentofuranosyl)thymine, 1-(2,3-diDE-oxy-4-C-hydroxymethyl-alpha-L-glycero-pentofuranosyl)thymine and 1-(2,3-diDE-oxy-4-C-hydroxymethyl-alpha-L-glycero-pent-2-enofuranosyl)thymine," Collect Czech. Chem. Commun., Vol. 58, pages 409-420, (1992).	
	A27	HREBABECKY, et al., "Synthesis of 1-(3-azido-2,3-diDE-oxy-beta-D-allofuranosyl)thymine, 1-(2,3-diDE-oxy-beta-D-allofuranosyl)thymine, and 1-(2,3-diDE-oxy-beta-D-erythro-hex-2-enofuranosyl)thymine," Carbohydrate Research, Vol. 216, pages 179-186, (1991).	
	A28	HREBABECKY, et al., "Synthesis of 1-(3-azido-2,3-diDE-oxy-beta-D-ribo-hexofuranosyl)-, 1-(2,3-diDE-oxy-beta-D-erythro-hexofuranosyl)- and 1-(2,3-diDE-oxy-beta-D-erythro-hex-2-enofuranosyl)pyrimidine nucleoside-s," Collect. Czech. Chem. Commun., Vol. 59, pages 412-420, (1993)	
	A29	Written Opinion of PCT/US2010/035641 mailed September 28, 2010	
	A30	Written Opinion of PCT/EP2006/069060 mailed January 30, 2007	
	A31	Written Opinion of PCT/US2005/025916 mailed June 15, 2006	

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Sheet 3 of 8	Attorney Docket Number	37JD-199059-US4	

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	A32	Written Opinion of PCT/US2005/032406 mailed May 8, 2008	
	A33	International Search Report issued in International PCT application No. PCT/US2008/058183 mailed March 31, 2010 (7 pages)	
	A34	LIN, et al., "A stereospecific synthesis of 2',3'-diDE-oxy-β-L-cytidine (β-L-ddC), a potent inhibitor against human hepatitis B virus (HBV) and human immunodeficiency virus (HIV)," Tetrahedron Letters, Vol. 35, No. 21, pages 3477-3480, (1994).	
	A35	MCGUIGAN et al., "Synthesis, anti-human immunodeficiency virus activity and esterase lability of some novel carboxylic ester-modified phosphoramidate DE-derivatives of stavudine (d4T)," Antiviral Chemistry & Chemotherapy, Vol. 9, pages 473-479 (1998)	
	A36	MOURIER, et al., "Enantioselective synthesis and biological evaluation of 5-o-carboranyl-pyrimidine-nucleosides," Bioorganic & Medicinal Chemistry, Vol 7, pages 2759-2766, (1999).	
	A37	Response filed October 25, 2010 at the EPO for European patent application No. EP08732818.3	
	A38	Response to non-final Office Action dated October 1, 2009 for U.S. Application No. 12/142,554	
	A39	ROBINS, et al., "Nucleic acid related compounds. 91. Biomimetic reactions are in harmony with loss of 2'-substituents as free radicals (not anions) during mechanism-based inactivation of ribonucleotide reductases. differential interactions of azide-, halogen, and alkylthio groups with tributylstannane and triphenylsilane," Journal of the American Chemical Society, Vol. 118, No. 46, pages 11341-11348, (1996).	
	A40	SANEYOSHI, "Facile synthesis of 2'-O-cyanoethyluridine by ring-opening reaction of 2,2'-anhydrouridine with cyanoethyl trimethylsilyl ether in the presence of BF ₃ Et ₂ O," Tetrahedron Letters, Vol. 48, pages 8554-8557, (2007).	
	A41	Selected Prosecution documents from US 10/828,753 (1) February 26, 2007 Amendment; (2) March 30, 2007 Office Action; (3) June 9, 2007 Interview Summary; (4) September 12, 2007 Amendment; (5) September 12, 2007 Declaration; (6) September 24, 2007 Declaration; (7) November 28, 2007 Amendment; (8) February 26, 2008 Office Action; (9) March 11, 2008 Amendment; and (10) May 29, 2008 Notice of Allowance)	
	A42	Selected Prosecution Documents from US 11/854,218: (1) September 12, 2007 Amendment; (2) October 1, 2008 Office Action; (3) March 31, 2010 Response; (4) March 31, 2011 Declaration; (5) July 22, 2010 Office Action; (6) October 11, 2010 Amendment; (7) October 11, 2010 Declaration; (8) December 23, 2010 Office Action; (9) June 28, 2011 Amendment.	

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		First Named Inventor	Jinfa Du
		Art Unit	1672
		Examiner Name	LEWIS, PATRICK T
Sheet 4 of 8	Attorney Docket Number	37JD-199059-US4	

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	A43	U.S. Application No. 12/142,554, Pending claims filed on 12/17/2009	
	A44	U.S. Patent Application No. 13/956,195, as filed July 31, 2013	
	A45	VAN ROMPAEY, et al., "Mycobacterium tuberculosis thymidine monophosphate kinase inhibitors; biological evaluation and conformational analysis of 2'-and 3'-modified thymidine analogues," Eur. J. Org. Chem., pages 2911-2918, (2003).	
	A46	VANHEUSDE-N, et al., "Discovery of bicyclic thymidine analogues as selective and high-affinity inhibitors of mycobacterium tuberculosis thymidine monophosphate kinase," J. Med. Chem., Vol. 47, pages 6187-6194, (2004).	
	A47	VANHEUSDE-N, et al., "Synthesis and evaluation of thymidine-5'-O-monophosphate analogues as inhibitors of mycobacterium tuberculosis thymidylate kinase," Bioorganic & Medicinal Chemistry Letters, Vol. 12, pages 2695-2698, (2002).	
	A48	WU et al., "Targeting NS5B RNA-DE-penDE-nt RNA Polymerase For Anti-HCV Chemotherapy," Current Drug Targets- Infectious DisorDE-rs, Vol. 3, No.3, pages 207- 219 (2003)	
	A49	U.S. Application No. 11/225,724 pending claims filed 10/02/2009	
	A50	Selected Prosecution documents from US 12/053,015: (1) June 15, 2010 Resitricition Requirements; (2) October 28, 2010 Amendment ; (3) January 5, 2011 Notice of Alloance; and (4) April 1, 2011 Amendment.	
	A51	US 12/783,680 filed May 20, 210 - Originally filed claims	
	A52	US 13/076,552, filed March 31, 2011 - Originally filed claims.	
	A53	US 12/645,710 filed December 23, 2009 - Originally filed claims.	
	A54	US 12/878,262 - Pending Claims as of September 1, 2011.	

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	A55	Selected Prosecution Documents for US 12/878,262: (1) September 9, 2010 Amendment; (2) June 8, 2011 Office Action; and (3) September 1, 2011 Amendment	
	A56	Office Action for Australian Application No. 2012241173 dated 04/08/2014.	
	A57	Office Action for Colombian Application No. 09-120.744A dated 06/25/2014.	
	A58	Extended Search Report for European Application No. 14151876.1 dated 09/18/2014	
	A59	Communication pursuant to Rules 70(2) and 70a(2) EPC and reference to Rule 39(1) EPC for European Application No. 14179593.0 dated 01/19/2015.	
	A60	English Translation of Office Action for Korean Application No. 10-2009-7022652 dated 12/19/2013.	
	A61	Office Action for Korean Application No. 10-2012-7004146 dated 10/29/2014.	
	A62	English Translation of Office Action for Israeli Application No. 222810 dated 01/04/2015.	
	A63	English Translation of Office Action in Mexican Application No. MX/A/2012/000289 dated 01/22/2015.	
	A64	English Translation of Office Action in Mexican Application No. MX/A/2012/000289 dated 10/30/2014.	
	A65	Office Action in Chinese Application No. 200880018024.2 dated 10/31/2014	
	A66	Office Action in Japanese Application No. 2014-093905 dated 01/13/2015.	

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	A67	Subsequent Substantive Examination Report for Philippines Application No. 1/2009/501847 dated 11/10/2014.	
	A68	Opposition by the Initiative for Medicines, Access & Knowledge (I-Mak) to Indian Application No. 3658/KOLNP/2009 N	
	A69	Opposition by NATCO Pharma Limited to Indian Application No. 3658/KOLNP/2009 dated 03/03/2014.	
	A70	Opposition by SANKLAP Rehabilitation Trust to Indian Application No. 3658/KOLNP/2009 dated 09/10/2014.	
	A71	Opposition by Indian Pharmaceutical Alliance to Indian Application No. 3658/KOLNP/2009 dated 02/17/2015.	
	A72	Opposition by Actavis Group PTC ehf to European Application No. 08732818.3 dated 02/23/2015.	
	A73	Opposition by Teva Pharmaceutical Industries to European Application No. 08732818.3 dated 02/10/2015.	
	A74	Opposition by Medecins Du Monde to European Application No. 08732818.3 dated 02/10/2015.	
	A75	Opposition by Ellis IP Ltd. to European Application No. 08732818.3 dated 02/10/2015.	
	A76	Opposition by Mr. Holm Herbert Fleisher to European Application No. 08732818.3 dated 02/19/2015.	
	A77	Opposition by Generics [UK] Ltd (trading as Mylan) to European Application No. 08732818.3 dated 02/19/2015.	
	A78	Opposition by IPS to European Application No. 08732818.3 dated 02/23/2015.	

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	A79	Opposition by Pharmaceutical Works Polpharma S.A. to European Application No. 08732818.3 dated 02/19/2015.	
	A80	Opposition by Stada Arzneimittel AG to European Application No. 08732818.3 dated 02/19/2015.	
	A81	Opposition by ZBM Patents= Zea, Barlocchi & Markvardsen to European Application No. 08732818.3 dated 02/23/2015.	
	A82	Furman et al., "The Anti-Hepatitis B Virus Activities, Cytotoxicities, and Anabolic Profiles of the (-) and (+) Enantiomers of <i>cis</i> -5-Fluoro-1-[2-(Hydroxymethyl)-1,3-Ozathiolan-5-yl]Cytosine," Antimicrobial Agents and Chemotherapy, (1992), 36(2):2686-2692.	
	A83	Chang et al., "Deoxycytidine-resistant Stereoisomer Is the Active Form of (±)-2',3'-Dideoxy-3'-thiacytidine in the Inhibition of Hepatitis B Virus Replication," J. Bio. Chem, (1992), 267(20):13938-13942.	
	A84	Trousdale, et al., "Activity of 1-(2'-Fluoro-2'-Deoxy-β-D-Arabinofuranosyl)Thymine Against Herpes Simplex Virus in Cell Cultures and Rabbit Eyes," Antimicrobial Agents and Chemotherapy, (1983), 23(6):808-813.	
	A85	Klumpp, et al., "The Novel Nucleoside Analog R1479(4'-Azidocytidine) Is a Potent Inhibitor of NS5B-dependent RNA Synthesis and Hepatitis C Virus Replication in Cell Culture," J. Bio. Chem., (2006), 281:3793-3799.	
	A86	Landowski et al, "Targeted delivery to PEPT1-overexpressing cells: Acidic, basic, and secondary floxuridine amino acid ester prodrugs," MCT, (2005), 4(4):659-667.	
	A87	McGuigan, "Phosphoramidate derivatives of stavudine as inhibitors of HIV: unnatural amino acids may substitute for alanine," Antiviral Chemistry & Chemotherapy, (2000), 11:111-116.	
	A88	Perrone, Thesis entitled "Design Synthesis and Biological Evaluation of Novel Nucleotide Prodrugs as Potential Anti-Hepatitis C Virus Agents," (2007).	
	A89	Zemlicka, "Lipophilic phosphoramidates as antiviral pro-nucleotides, Biochem Biophys Acta, (2002), 276-286.	
	A90	Sofia, "Discovery of a beta-D-2'-Deoxy-2'-alpha-fluoro-2'-beta-C-methyluridine Nucleotide Prodrug (PSI-7977) for the Treatment of Hepatitis C Virus," J. Med. Chem., (2010), 53.	

Examiner Signature	/Patrick Lewis/ (04/02/2015)	Date Considered	
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*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. 1 Applicant's unique citation designation number (optional). 2 See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. 3 Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). 4 For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. 5 Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. 6 Applicant is to place a check mark here if English language Translation is attached. This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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4822-1296-2578.1

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Substitute for form 1449/PTO		Complete if Known			
INFORMATION DISCLOSURE STATEMENT BY APPLICANT Date Submitted: February 25, 2015 <i>(use as many sheets as necessary)</i>		Application Number	14/013,237		
		Filing Date	29-Aug-2013		
		First Named Inventor	Jinfa Du		
		Art Unit	1672		
		Examiner Name	LEWIS, PATRICK T		
Sheet	8	of	8	Attorney Docket Number	37JD-199059-US4

NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.) date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ⁶
	A91	Abstract, 100, presented at the 19 th International Conference of Antiviral Research, May 7-11, 2006	
	A92	Guinic, et al., " Cyclic monophosphate prodrugs of base=modified 2'-C-methyl ribonucleosides as potent inhibitors of hepatitis C virus RNA replicaon," Bloorg Med Chem Lett., (2007), 17(9):2456-2458.	

Examiner Signature	/Patrick Lewis/ (04/02/2015)	Date Considered	
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*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. 1 Applicant's unique citation designation number (optional). 2 See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. 3 Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). 4 For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. 5 Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. 6 Applicant is to place a check mark here if English language Translation is attached. This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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4822-1296-2578.1

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH, /P.L./ (04/02/2015)

Index of Claims 	Application/Control No. 14013237	Applicant(s)/Patent Under Reexamination DU ET AL.
	Examiner PATRICK LEWIS	Art Unit 1672

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

☒ Claims renumbered in the same order as presented by applicant				☐ CPA				☒ T.D.				☐ R.1.47			
CLAIM		DATE													
Final	Original	09/19/2014	04/02/2015												
	1	-	-												
	2	-	-												
	3	-	-												
	4	-	-												
	5	-	-												
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	36	✓	=												

<i>Index of Claims</i> 	Application/Control No. 14013237	Applicant(s)/Patent Under Reexamination DU ET AL.
	Examiner PATRICK LEWIS	Art Unit 1672

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

☒ Claims renumbered in the same order as presented by applicant										☐ CPA										☒ T.D.										☐ R.1.47									
CLAIM		DATE																																					
Final	Original	09/19/2014	04/02/2015																																				
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	38	✓	=																																				
	39	✓	=																																				
	40	✓	=																																				

Search Notes 	Application/Control No. 14013237	Applicant(s)/Patent Under Reexamination DU ET AL.
	Examiner PATRICK LEWIS	Art Unit 1672

CPC- SEARCHED		
Symbol	Date	Examiner

CPC COMBINATION SETS - SEARCHED		
Symbol	Date	Examiner

US CLASSIFICATION SEARCHED			
Class	Subclass	Date	Examiner

SEARCH NOTES		
Search Notes	Date	Examiner
Inventor, REGISTRY, CAPLUS, MEDLINE (see attached)	9/19/2014	/PL/
Updated Inventor, REGISTRY, CAPLUS, MEDLINE searches	4/2/2015	/PL/

INTERFERENCE SEARCH			
US Class/ CPC Symbol	US Subclass / CPC Group	Date	Examiner
514	42, 43, 49, 50, 51	4/2/2015	/PL/
A61K	31/7042, 31/7052, 31/706, 31/7064, 31/7068, 31/7072	4/2/2015	/PL/

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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
14/013,237	08/29/2013	Jinfa Du	37ID-199059-US4

124963
Gilead Pharmasset LLC
c/o Gilead Sciences, Inc.
333 Lakeside Drive
Foster City, CA 94404

CONFIRMATION NO. 7005
POA ACCEPTANCE LETTER



Date Mailed: 04/09/2015

NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 04/03/2015.

The Power of Attorney in this application is accepted. Correspondence in this application will be mailed to the above address as provided by 37 CFR 1.33.

/dtdinh/

Office of Data Management, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101

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Alexandria, Virginia 22313-1450
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134963 7590 04/08/2015
Gilead Pharmasset LLC
c/o Gilead Sciences, Inc.
333 Lakeside Drive
Foster City, CA 94404

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

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Sylvia Brennan	(Depositor's name)
<i>[Signature]</i>	(Signature)
June 04, 2015	(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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14/013,237 08/29/2013 Jinfu Du ~399B-199659-4164~ 7005

TITLE OF INVENTION: NUCLEOSIDE PHOSPHORAMIDATE PRODRUGS

PH3080, PC4

APPL. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	UNDISCOUNTED	\$960	\$0	\$0	\$960	07/08/2015

EXAMINER	ART UNIT	CLASS-SUBCLASS
LEWIS, PATRICK T	1672	514-051000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.563)

- ☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
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GILEAD PHARMASSET LLC

(B) RESIDENCE (CITY AND STATE OR COUNTRY)

Foster City, California

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☐ Applicant asserting small entity status. See 37 CFR 1.27
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Authorized Signature *L. F. Rozsnyai*
Typed or printed name Lawrence F. Rozsnyai

Date June 4, 2015

Registration No. 58,427

Electronic Patent Application Fee Transmittal				
Application Number:		14013237		
Filing Date:		29-Aug-2013		
Title of Invention:		NUCLEOSIDE PHOSPHORAMIDATE PRODRUGS		
First Named Inventor/Applicant Name:		Jinfa Du		
Filer:		Lawrence F. Rozsnyai/Sylvia Brennan		
Attorney Docket Number:		37JD-199059-US4		
Filed as Large Entity				
Filing Fees for Utility under 35 USC 111(a)				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Utility Appl Issue Fee	1501	1	960	960

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Extension-of-Time:				
Miscellaneous:				
Total in USD (\$)				960

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EFS ID:	22541180
Application Number:	14013237
International Application Number:	
Confirmation Number:	7005
Title of Invention:	NUCLEOSIDE PHOSPHORAMIDATE PRODRUGS
First Named Inventor/Applicant Name:	Jinfa Du
Customer Number:	124963
Filer:	Lawrence F. Rozsnyai/Sylvia Brennan
Filer Authorized By:	Lawrence F. Rozsnyai
Attorney Docket Number:	37JD-199059-US4
Receipt Date:	04-JUN-2015
Filing Date:	29-AUG-2013
Time Stamp:	16:42:56
Application Type:	Utility under 35 USC 111(a)

Payment information:

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2	Fee Worksheet (SB06)	fee-info.pdf	30686 980e982231e192206664aa097c38019271b070	no	2
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**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**
(Not for submission under 37 CFR 1.99)

Application Number		
Filing Date		2013-08-29
First Named Inventor	Jinfa Du	
Art Unit	NYA	
Examiner Name	NYA	
Attorney Docket Number	03956.053800.3	

Change(s) applied to document, /JLB/ 5/13/2015	5	20110251152	A1	2011-10-13	ROSS et al. ~~PHARMASSET, INC.~~	
	6	20100286083	A1	2010-11-11	BAO et al. ~~PHARMASSET, INC.~~	
	7	20120107278	A1	2012-05-03	BERREY et al. ~~PHARMASSET, INC.~~	
	8	20110245484	A1	2011-10-10	ROSS et al. ~~PHARMASSET, INC.~~	

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	1	2006/050161	WO	A2	2006-05-11	BIOCRIST PHARMACEUTICALS, INC.		☐
	2	2007/095269	WO	A2	2007-08-23	MERCK & CO., INC.		☐

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	1	GUDMUNDSSON, Kristjan S., et al., "Phosphoramidate Prodrugs of Carbocyclic 2',3'-Dideoxy-2',3'-Didehydro-7-Deazaadenosine with Potent Activity Against HIV and HBV," Nucleosides, Nucleotides & Nucleic Acids (2004) 23(12): 1929-1937.	☐

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	Filing Date		2013-08-29
	First Named Inventor	Jinfa Du	
	Art Unit	NYA	
	Examiner Name	NYA	
	Attorney Docket Number	03956.053800.3	

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	1	8334270	B2	2012-12-18	Sofia et al. ~~GILEAD PHARMASSET LLC~~	
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Change(s) applied to document: J.L.B./ 5/13/2015	1	20100081628	A1	2010-04-01	DU et al. ~~PHARMASSET, INC.~~	
	2	20100279973	A1	2010-11-04	CHUN et al. ~~PHARMASSET, INC.~~	
	3	20110015146	A1	2011-01-20	SOFIA et al. ~~PHARMASSET, INC.~~	
	4	20100298257	A1	2010-11-25	ROSS et al. ~~PHARMASSET, INC.~~	

Doc code: IDS

Doc description: Information Disclosure Statement (IDS) Filed

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		14013237	
	Filing Date		2013-08-29	
	First Named Inventor	Jinfa Du		
	Art Unit	1623		
	Examiner Name	NYA		
	Attorney Docket Number	03956.053800.3		

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	1	20130029929	A1	2013-01-31	Sofia et al.	
Change(s) applied to document. /J.L.B./ 5/13/2015	2	20130137654	A1	2013-05-30	Ross et al. ~~Gilead Pharmaceuticals LLC~~	
	3	20130165401	A1	2013-06-27	Ross et al. ~~Gilead Pharmaceuticals LLC~~	
	4	20130165644	A1	2013-06-27	Ross et al. ~~Gilead Pharmaceuticals LLC~~	

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	Filing Date		2013-08-29
	First Named Inventor	Jinfa Du	
	Art Unit	NYA	
	Examiner Name	NYA	
	Attorney Docket Number	03956.053800.3	

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	1	20130029929	A1	2013-01-31	Sofia et al. ~~GILEAD PHARMASSET LLC~~	

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	1	2006/116557	WO	A1	2006-11-02	GENELABS TECHNOLOGIES, INC.		☐

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Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.		T ⁵

Doc code: IDS

Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (01-10)

Approved for use through 07/31/2012. OMB 0851-0031

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		
	Filing Date		2013-08-29
	First Named Inventor	Jinfa Du	
	Art Unit	NYA	
	Examiner Name	NYA	
	Attorney Docket Number	03956.053800.3	

U.S. PATENTS

Remove

Examiner Initial*	Cite No	Patent Number	Kind Code ¹	Issue Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear
Change(s) applied to document, /J.L.B./ 5/13/2015		7202224	B2	2007-04-10	Eldrup et al. ~~Merck & Co., Inc.~~ ~~ISIS Pharmaceuticals, Inc.~~	
	2	7390791	B2	2008-06-24	Becker et al. ~~Gilead Sciences, Inc.~~	
	3	7879815	B2	2011-02-01	MacCoss et al. ~~Merck Sharp & Dohme Corp.,~~ ~~Istituto di Ricerche di~~	
	4	7964580	B2	2011-06-21	Sofia et al. ~~Pharmasset, Inc.~~	
	5	8148349	B2	2012-04-03	Meppen et al. ~~Istituto di Ricerche di Biologia~~ ~~Molecolare P. Ang~~	

If you wish to add additional U.S. Patent citation information please click the Add button.

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U.S. PATENT APPLICATION PUBLICATIONS

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Examiner Initial*	Cite No	Publication Number	Kind Code ¹	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear
	1	20020198173	A1	2002-12-26	Schinazi et al.	

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Substitute for form 1449/PTO		Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT Date Submitted: February 25, 2015 <i>(use as many sheets as necessary)</i>		Application Number	14/013,237
		Filing Date	29-Aug-2013
		First Named Inventor	Jinfa Du
		Art Unit	1672
		Examiner Name	LEWIS, PATRICK T
Sheet 1 of 8	Attorney Docket Number	37JD-199059-US4	

U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	Document Number Number-Kind Code ² (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
	A1	US-2010022468	01-08-2010	Meppen	
	A2	US-20130288997	10-31-2013	BRUCE S. ROSS, ET AL.	
	A3	US-20130310551	11-21-2013	BRUCE S. ROSS, ET AL.	
	A4	US-6812219	11-02-2004	LaColla et al.	
	A5	US-7105493	09-12-2006	Sommadossi et al.	
	A6	US-7125855	10-24-2006	Bhat et al.	
	A7	US-7323453	01-29-2008	Olsen	
	A8	US-7608597	~~10-27-2009~~	Sommadossi et al.	October 27, 2009
	A9	US-7608600	10-27-2009	Storer	
	A10	US-7635689	12-22-2009	LaColla et al.	
	A11	US-8735372	05-27-2014	Du et al.	
	A12	US-8906880	12-09-2014	Du et al.	
	A13	US-20030109697	~~07-12-2003~~	Shepard et al.	
	A14	US-6589941	07-08-2003	Fahrig et al.	

Change(s) applied
to document,
N.G.
5/18/2015

UNPUBLISHED U.S. PATENT APPLICATION DOCUMENTS

Examiner Initials*	Cite No. ¹	U.S. Patent Application Document Serial Number-Kind Code ² (if known)	Filing Date of Cited Document MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	Foreign Patent Document Country Code ³ Number ⁴ Kind Code ⁵ (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Documents	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T ⁶
	A15	WO-2006/035061	04-06-2006	Tilbotec Pharm L to.		
	A16	WO-2011/123645	10-06-2011	Pharmasset, Inc.		
	A17	WO-1996/29336	09-26-1996	Medical Research Council		
	A18	WO-1999/037753	07-29-1999	Newbiotics, Inc.		
	A19	WO-2001/07454	~~02-01-2001~~	Newbiotics, Inc.	2001-02-01	
	A20	WO-2008/121634	10-09-2008	Pharmasset, Inc.		

Examiner Signature	/Patrick Lewis/ (04/02/2015)	Date Considered	
--------------------	------------------------------	-----------------	--

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. 1 Applicant's unique citation designation number (optional). 2 See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. 3 Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). 4 For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. 5 Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. 6 Applicant is to place a check mark here if English language Translation is attached. This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.

4822-1296-2578.1

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /P.L./ (04/02/2015)



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	ISSUE DATE	PATENT NO.	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/013,237	07/21/2015	9085573	37JD-199059-US4	7005
124963	7590	06/30/2015		
Gilead Pharmasset LLC c/o Gilead Sciences, Inc. 333 Lakeside Drive Foster City, CA 94404				

ISSUE NOTIFICATION

The projected patent number and issue date are specified above.

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b) (application filed on or after May 29, 2000)

The Patent Term Adjustment is 0 day(s). Any patent to issue from the above-identified application will include an indication of the adjustment on the front page.

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Application Assistance Unit (AAU) of the Office of Data Management (ODM) at (571)-272-4200.

APPLICANT(s) (Please see PAIR WEB site <http://pair.uspto.gov> for additional applicants):

Gilead Pharmasset LLC, Foster City, CA;
Jinfa Du, Redwood City, CA;
Dhanapalan Nagarathnam, Bethany, CT;
Michael Joseph Sofia, Doylestown, PA;
Peiyuan Wang, Totowa, NJ;

The United States represents the largest, most dynamic marketplace in the world and is an unparalleled location for business investment, innovation, and commercialization of new technologies. The USA offers tremendous resources and advantages for those who invest and manufacture goods here. Through SelectUSA, our nation works to encourage and facilitate business investment. To learn more about why the USA is the best country in the world to develop technology, manufacture products, and grow your business, visit SelectUSA.gov.

POWER OF ATTORNEY TO PROSECUTE APPLICATIONS BEFORE THE USPTO

I hereby revoke all previous powers of attorney given in the application identified in the attached statement under 37 CFR 3.73(c).

I hereby appoint:



Practitioners associated with Customer Number:

117796

OR



Practitioner(s) named below (if more than ten patent practitioners are to be named, then a customer number must be used):

Name	Registration Number	Name	Registration Number

As attorney(s) or agent(s) to represent the undersigned before the United States Patent and Trademark Office (USPTO) in connection with any and all patent applications assigned only to the undersigned according to the USPTO assignment records or assignments documents attached to this form in accordance with 37 CFR 3.73(c).

Please change the correspondence address for the application identified in the attached statement under 37 CFR 3.73(c) to:



The address associated with Customer Number:

117796

OR

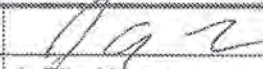
☐	Firm or Individual Name			
	Address			
	City	State	Zip	
	Country			
	Telephone	Email		

Assignee Name and Address: Gilead Pharmasset LLC
c/o Gilead Sciences, Inc.
333 Lakeside Drive
Foster City, CA 94404

A copy of this form, together with a statement under 37 CFR 3.73(c) (Form PTO/AIA/96 or equivalent) is required to be filed in each application in which this form is used. The statement under 37 CFR 3.73(c) may be completed by one of The practitioners appointed in this form, and must identify the application in which this Power of Attorney is to be filed.

SIGNATURE of Assignee of Record

The individual whose signature and title is supplied below is authorized to act on behalf of the assignee

Signature		Date	March 4, 2014
Name	J. Elin Hartum	Telephone	650-522-1871
Title	Associate General Counsel, Intellectual Property		

This collection of information is required by 37 CFR 1.31, 1.32 and 1.33. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 3 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

STATEMENT UNDER 37 CFR 3.73(c)

Applicant/Patent Owner: Gilead Pharmasset LLC

Application No./Patent No.: 9,085,573 Filed/Issue Date: July 21, 2015

Titled: NUCLEOSIDE PHOSPHORAMIDATE PRODRUGS

Gilead Pharmasset LLC, a corporation
(Name of Assignee) (Type of Assignee, e.g., corporation, partnership, university, government agency, etc.)

states that, for the patent application/patent identified above, it is (choose one of options 1, 2, 3 or 4 below):

1. ☒ The assignee of the entire right, title, and interest.
2. ☐ An assignee of less than the entire right, title, and interest (check applicable box):
- ☐ The extent (by percentage) of its ownership interest is _____ (%). Additional Statement(s) by the owners holding the balance of the interest must be submitted to account for 100% of the ownership interest.
- ☐ There are unspecified percentages of ownership. The other parties, including inventors, who together own the entire right, title and interest are:

Additional Statement(s) by the owner(s) holding the balance of the interest must be submitted to account for the entire right, title, and interest.

3. ☐ The assignee of an undivided interest in the entirety (a complete assignment from one of the joint inventors was made). The other parties, including inventors, who together own the entire right, title, and interest are:

Additional Statement(s) by the owner(s) holding the balance of the interest must be submitted to account for the entire right, title, and interest.

4. ☐ The recipient, via a court proceeding or the like (e.g., bankruptcy, probate), of an undivided interest in the entirety (a complete transfer of ownership interest was made). The certified document(s) showing the transfer is attached.

The interest identified in option 1, 2 or 3 above (not option 4) is evidenced by either (choose one of options A or B below):

- A. ☐ An assignment from the inventor(s) of the patent application/patent identified above. The assignment was recorded in the United States Patent and Trademark Office at Reel _____ Frame _____, or for which a copy thereof is attached.
- B. ☒ A chain of title from the inventor(s), of the patent application/patent identified above, to the current assignee as follows:

1. From: Michael Joseph Sofia et al. To: Pharmasset, Inc.
The document was recorded in the United States Patent and Trademark Office at
Reel 031139, Frame 0548, or for which a copy thereof is attached.

2. From: Pharmasset, Inc. To: Gilead Pharmasset LLC
The document was recorded in the United States Patent and Trademark Office at
Reel 031157, Frame 0296, or for which a copy thereof is attached.

STATEMENT UNDER 37 CFR 3.73(c)

3. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at
Reel _____, Frame _____, or for which a copy thereof is attached.

4. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at
Reel _____, Frame _____, or for which a copy thereof is attached.

5. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at
Reel _____, Frame _____, or for which a copy thereof is attached.

6. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at
Reel _____, Frame _____, or for which a copy thereof is attached.☐ Additional documents in the chain of title are listed on a supplemental sheet(s).☒ As required by 37 CFR 3.73(c)(1)(i), the documentary evidence of the chain of title from the original owner to the assignee was, or concurrently is being, submitted for recordation pursuant to 37 CFR 3.11.

[NOTE: A separate copy (i.e., a true copy of the original assignment document(s)) must be submitted to Assignment Division in accordance with 37 CFR Part 3, to record the assignment in the records of the USPTO. See MPEP 302.08]

The undersigned (whose title is supplied below) is authorized to act on behalf of the assignee.

/Neeta C. Thakur/ Reg. No. 59,123 for
Signature_____
September 19, 2017
Date_____
Lorna L. Tanner (Reg. No. 50,782)
Printed or Typed Name_____
Attorney for Applicant
Title or Registration Number

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Application Data Sheet 37 CFR 1.76		Attorney Docket Number	~~09950-050800-9~~ 37JD-199059-US4
		Application Number	14/013,237
Title of Invention	NUCLEOSIDE PHOSPHORAMIDATE PRODRUGS		
The application data sheet is part of the provisional or nonprovisional application for which it is being submitted. The following form contains the bibliographic data arranged in a format specified by the United States Patent and Trademark Office as outlined in 37 CFR 1.76. This document may be completed electronically and submitted to the Office in electronic format using the Electronic Filing System (EFS) or the document may be printed and included in a paper filed application.			

Secrecy Order 37 CFR 5.2

☐ Portions or all of the application associated with this Application Data Sheet may fall under a Secrecy Order pursuant to 37 CFR 5.2 (Paper filers only. Applications that fall under Secrecy Order may not be filed electronically.)
--

Inventor Information:

Inventor 1					Remove		
Legal Name							
Prefix	Given Name		Middle Name		Family Name		Suffix
	Jinfa				Du		
Residence Information (Select One) ☒ US Residency ☐ Non US Residency ☐ Active US Military Service							
City	Redwood City		State/Province	CA	Country of Residence i		US
Mailing Address of Inventor:							
Address 1		c/o Gilead Sciences, Inc.					
Address 2		333 Lakeside Drive					
City	Foster City		State/Province	CA			
Postal Code	94404		Country i	US			
Inventor 2					Remove		
Legal Name							
Prefix	Given Name		Middle Name		Family Name		Suffix
	Dhanapalan				Nagarathnam		
Residence Information (Select One) ☒ US Residency ☐ Non US Residency ☐ Active US Military Service							
City	Bethany		State/Province	CT	Country of Residence i		US
Mailing Address of Inventor:							
Address 1		c/o Gilead Sciences, Inc.					
Address 2		333 Lakeside Drive					
City	Foster City		State/Province	CA			
Postal Code	94404		Country i	US			
Inventor 3					Remove		
Legal Name							
Prefix	Given Name		Middle Name		Family Name		Suffix
	Michael		Joseph		Sofia		
Residence Information (Select One) ☒ US Residency ☐ Non US Residency ☐ Active US Military Service							

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	~~03056-050000-0~~ 37JD-199059-US4
	Application Number	14/013,237
Title of Invention		
NUCLEOSIDE PHOSPHORAMIDATE PRODRUGS		

City	Doylestown	State/Province	PA	Country of Residence i	US
------	------------	----------------	----	------------------------	----

Mailing Address of Inventor:

Address 1	c/o Gilead Sciences, Inc.				
Address 2	333 Lakeside Drive				
City	Foster City	State/Province	CA		
Postal Code	94404	Country i	US		
Inventor 4					Remove

Legal Name

Prefix	Given Name	Middle Name	Family Name	Suffix	
	Peiyuan		Wang		
Residence Information (Select One) ☒ US Residency ☐ Non US Residency ☐ Active US Military Service					
City	Totowa	State/Province	NJ	Country of Residence i	US

Mailing Address of Inventor:

Address 1	c/o Gilead Sciences, Inc.				
Address 2	333 Lakeside Drive				
City	Foster City	State/Province	CA		
Postal Code	94404	Country i	US		
All Inventors Must Be Listed - Additional Inventor Information blocks may be generated within this form by selecting the Add button.					Add

Correspondence Information:

Enter either Customer Number or complete the Correspondence Information section below.
For further information see 37 CFR 1.33(a).

☐ An Address is being provided for the correspondence information of this application.

Customer Number	~~04500~~ 117796		
Email Address	svipdocketing@sheppardmullin.com	Add Email	Remove Email

Application Information:

Title of the Invention	NUCLEOSIDE PHOSPHORAMIDATE PRODRUGS		
Attorney Docket Number	~~03056-050000-0~~ 37JD-199059-US4	Small Entity Status Claimed	☐
Application Type	Nonprovisional		
Subject Matter	Utility		
Total Number of Drawing Sheets (if any)	0	Suggested Figure for Publication (if any)	

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	~~00000-000000-0~~ 37JD-199059-US4
	Application Number	14/013,237
Title of Invention		
NUCLEOSIDE PHOSPHORAMIDATE PRODRUGS		

Publication Information:

☐	Request Early Publication (Fee required at time of Request 37 CFR 1.219)
☐	Request Not to Publish. I hereby request that the attached application not be published under 35 U.S.C. 122(b) and certify that the invention disclosed in the attached application has not and will not be the subject of an application filed in another country, or under a multilateral international agreement, that requires publication at eighteen months after filing.

Representative Information:

Representative information should be provided for all practitioners having a power of attorney in the application. Providing this information in the Application Data Sheet does not constitute a power of attorney in the application (see 37 CFR 1.32). Either enter Customer Number or complete the Representative Name section below. If both sections are completed the customer Number will be used for the Representative Information during processing.			
Please Select One:	☒ Customer Number	☐ US Patent Practitioner	☐ Limited Recognition (37 CFR 11.9)
Customer Number	~~404500~~ 117796		

Domestic Benefit/National Stage Information:

This section allows for the applicant to either claim benefit under 35 U.S.C. 119(e), 120, 121, or 365(c) or indicate National Stage entry from a PCT application. Providing this information in the application data sheet constitutes the specific reference required by 35 U.S.C. 119(e) or 120, and 37 CFR 1.78.					
Prior Application Status		Pending		Remove	
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)		
14/013,237	Continuation of	13609614	2012-09-11		
Prior Application Status		Patented		Remove	
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)	Patent Number	Issue Date (YYYY-MM-DD)
13609614	Continuation of	13099671	2011-05-03	8334270	2012-12-18
Prior Application Status		Patented		Remove	
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)	Patent Number	Issue Date (YYYY-MM-DD)
13099671	Continuation of	12053015	2008-03-21	7964580	2011-06-21
Prior Application Status		Expired		Remove	
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)		
12053015	non provisional of	60982309	2007-10-24		
Prior Application Status		Expired		Remove	
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)		
12053015	non provisional of	60909315	2007-03-30		

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	~~09959-050800-0~~ 37JD-199059-US4
	Application Number	14/013,237
Title of Invention		
NUCLEOSIDE PHOSPHORAMIDATE PRODRUGS		

Additional Domestic Benefit/National Stage Data may be generated within this form by selecting the **Add** button.

Add

Foreign Priority Information:

This section allows for the applicant to claim priority to a foreign application. Providing this information in the application data sheet constitutes the claim for priority as required by 35 U.S.C. 119(b) and 37 CFR 1.55(d). When priority is claimed to a foreign application that is eligible for retrieval under the priority document exchange program (PDX) the information will be used by the Office to automatically attempt retrieval pursuant to 37 CFR 1.55(h)(1) and (2). Under the PDX program, applicant bears the ultimate responsibility for ensuring that a copy of the foreign application is received by the Office from the participating foreign intellectual property office, or a certified copy of the foreign priority application is filed, within the time period specified in 37 CFR 1.55(g)(1).

Remove			
Application Number	Country ⁱ	Filing Date (YYYY-MM-DD)	Access Code (if applicable)
Additional Foreign Priority Data may be generated within this form by selecting the Add button.			

Add

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications

☐ This application (1) claims priority to or the benefit of an application filed before March 16, 2013 and (2) also contains, or contained at any time, a claim to a claimed invention that has an effective filing date on or after March 16, 2013.

Authorization to Permit Access:

☐ Authorization to Permit Access to the Instant Application by the Participating Offices

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	~~03656-050000-0~~ 37JD-199059-US4
	Application Number	14/013,237
Title of Invention NUCLEOSIDE PHOSPHORAMIDATE PRODRUGS		

If checked, the undersigned hereby grants the USPTO authority to provide the European Patent Office (EPO), the Japan Patent Office (JPO), the Korean Intellectual Property Office (KIPO), the World Intellectual Property Office (WIPO), and any other intellectual property offices in which a foreign application claiming priority to the instant patent application is filed access to the instant patent application. See 37 CFR 1.14(c) and (h). This box should not be checked if the applicant does not wish the EPO, JPO, KIPO, WIPO, or other intellectual property office in which a foreign application claiming priority to the instant patent application is filed to have access to the instant patent application.

In accordance with 37 CFR 1.14(h)(3), access will be provided to a copy of the instant patent application with respect to: 1) the instant patent application-as-filed; 2) any foreign application to which the instant patent application claims priority under 35 U.S.C. 119(a)-(d) if a copy of the foreign application that satisfies the certified copy requirement of 37 CFR 1.55 has been filed in the instant patent application; and 3) any U.S. application-as-filed from which benefit is sought in the instant patent application.

In accordance with 37 CFR 1.14(c), access may be provided to information concerning the date of filing this Authorization.

Applicant Information:

Providing assignment information in this section does not substitute for compliance with any requirement of part 3 of Title 37 of CFR to have an assignment recorded by the Office.

Applicant 1			Remove
If the applicant is the inventor (or the remaining joint inventor or inventors under 37 CFR 1.45), this section should not be completed. The information to be provided in this section is the name and address of the legal representative who is the applicant under 37 CFR 1.43; or the name and address of the assignee, person to whom the inventor is under an obligation to assign the invention, or person who otherwise shows sufficient proprietary interest in the matter who is the applicant under 37 CFR 1.46. If the applicant is an applicant under 37 CFR 1.46 (assignee, person to whom the inventor is obligated to assign, or person who otherwise shows sufficient proprietary interest) together with one or more joint inventors, then the joint inventor or inventors who are also the applicant should be identified in this section.			
Clear			
☒ Assignee	☐ Legal Representative under 35 U.S.C. 117	☐ Joint Inventor	
☐ Person to whom the inventor is obligated to assign.		☐ Person who shows sufficient proprietary interest	

If applicant is the legal representative, indicate the authority to file the patent application, the inventor is:

Name of the Deceased or Legally Incapacitated Inventor:	

If the Applicant is an Organization check here. ☒

Organization Name	Gilead Pharmasset LLC
-------------------	-----------------------

Mailing Address Information:

Address 1	c/o Gilead Sciences, Inc.		
Address 2	333 Lakeside Drive		
City	Foster City	State/Province	CA
Country	US	Postal Code	94404
Phone Number		Fax Number	

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	~~03956 053800 3~~ 37JD-199059-US4
		Application Number	14/013,237
Title of Invention	NUCLEOSIDE PHOSPHORAMIDATE PRODRUGS		
Email Address			
Additional Applicant Data may be generated within this form by selecting the Add button.		Add	

Non-Applicant Assignee Information:

Providing assignment information in this section does not substitute for compliance with any requirement of part 3 of Title 37 of CFR to have an assignment recorded by the Office.

Assignee 1			
Complete this section only if non-applicant assignee information is desired to be included on the patent application publication in accordance with 37 CFR 1.215(b). Do not include in this section an applicant under 37 CFR 1.46 (assignee, person to whom the inventor is obligated to assign, or person who otherwise shows sufficient proprietary interest), as the patent application publication will include the name of the applicant(s).			
			Remove
If the Assignee is an Organization check here. ☒			
Organization Name	Gilead Pharmasset LLC		
Mailing Address Information:			
Address 1	c/o Gilead Sciences, Inc.		
Address 2	333 Lakeside Drive		
City	Foster City	State/Province	CA
Country i	US	Postal Code	94404
Phone Number		Fax Number	
Email Address			
Additional Assignee Data may be generated within this form by selecting the Add button.			Add

Signature:

NOTE: This form must be signed in accordance with 37 CFR 1.33. See 37 CFR 1.4 for signature requirements and certifications			
Signature	/Neeta C. Thakur/ Reg. No. 59,123 for	Date (YYYY-MM-DD)	2017-09-19
First Name	Lorna L.	Last Name	Tanner
		Registration Number	50,782
Additional Signature may be generated within this form by selecting the Add button.			Add

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	~~09959-050000-0~~ 37JD-199059-US4
		Application Number	14/013,237
Title of Invention	NUCLEOSIDE PHOSPHORAMIDATE PRODRUGS		

This collection of information is required by 37 CFR 1.76. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 23 minutes to complete, including gathering, preparing, and submitting the completed application data sheet form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Electronic Acknowledgement Receipt	
EFS ID:	30414351
Application Number:	14013237
International Application Number:	
Confirmation Number:	7005
Title of Invention:	NUCLEOSIDE PHOSPHORAMIDATE PRODRUGS
First Named Inventor/Applicant Name:	Jinfa Du
Customer Number:	124963
Filer:	Lorna Lea Tanner/Joannah Laluces
Filer Authorized By:	Lorna Lea Tanner
Attorney Docket Number:	37JD-199059-US4
Receipt Date:	19-SEP-2017
Filing Date:	29-AUG-2013
Time Stamp:	20:24:39
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no
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File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Power of Attorney	37JD-199059-US4_Power_of_Attorney_AIA80.PDF	193476 99ef835a87075cae1cc0ad5e967a1058e10205a	no	2

Warnings:

The page size in the PDF is too large. The pages should be 8.5 x 11 or A4. If this PDF is submitted, the pages will be resized upon entry into the Image File Wrapper and may affect subsequent processing

Information:

2	Assignee showing of ownership per 37 CFR 3.73	37JD-199059- US4_Statement373c.pdf	84017	no	2
			06129810ef7c96cd862c27101d1c5d3109562ad		

Warnings:

Information:

3	Application Data Sheet	37JD-199059- US4_Corrected_Application_Data_Sheet.pdf	636594	no	8
			ca1d1e9acac073c8a35f86d3d093d721c3f22636		

Warnings:

Information:

This is not an USPTO supplied ADS fillable form

Total Files Size (in bytes):

914087

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
14/013,237	08/29/2013	Jinfa Du	37ID-199059-US4

CONFIRMATION NO. 7005
POA ACCEPTANCE LETTER

117796
Gilead Sciences, Inc.
c/o Sheppard Mullin Richter & Hampton LLP
379 Lytton Avenue
Palo Alto, CA 94301



Date Mailed: 09/25/2017

NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 09/19/2017.

The Power of Attorney in this application is accepted. Correspondence in this application will be mailed to the above address as provided by 37 CFR 1.33.

Questions about the contents of this notice and the requirements it sets forth should be directed to the Office of Data Management, Application Assistance Unit, at (571) 272-4000 or (571) 272-4200 or 1-888-786-0101.

/vnguyen/



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
14/013,237	08/29/2013	Jinfa Du	37ID-199059-US4

124963
Gilead Pharmasset LLC
c/o Gilead Sciences, Inc.
333 Lakeside Drive
Foster City, CA 94404

CONFIRMATION NO. 7005
POWER OF ATTORNEY NOTICE



Date Mailed: 09/25/2017

NOTICE REGARDING CHANGE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 09/19/2017.

- The Power of Attorney to you in this application has been revoked by the assignee who has intervened as provided by 37 CFR 3.71. Future correspondence will be mailed to the new address of record(37 CFR 1.33).

Questions about the contents of this notice and the requirements it sets forth should be directed to the Office of Data Management, Application Assistance Unit, at (571) 272-4000 or (571) 272-4200 or 1-888-786-0101.

/vnguyen/

AO 120 (Rev. 08/10)

TO:	Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK
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In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the **U.S. District Court for the District of New Jersey** on the following:
 _____ Trademarks or **X** Patents. (_____ the patent action involves 35 U.S.C. § 292.)

DOCKET NO. 3:18-cv-04273-PGS-TJB	DATE FILED 3/27/2018	U.S. DISTRICT COURT TRENTON, NJ
PLAINTIFF GILEAD SCIENCES, INC.		DEFENDANT TEVA PHARMACEUTICALS USA, INC.

PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 7,964,580 B2	06/21/2011	PHARMASSET, INC.
2 8,334,270 B2	12/18/2012	GILEAD PHARMASSET LLC
3 8,580,765 B2	10/12/2013	GILEAD PHARMASSET LLC
4 9,085,573 B2	07/21/2015	GILEAD PHARMASSET LLC
5 7,429,572 B2	9/30/2008	PHARMASSET, INC.

In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY _____ Amendment _____ Answer _____ Cross Bill _____ Other Pleading
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK
1	
2	
3	
4	
5	

In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT

CLERK William T. Walsh	(BY) DEPUTY CLERK s/ John Moller	DATE 3/27/2018
---------------------------	-------------------------------------	-------------------

Copy 1—Upon initiation of action, mail this copy to Director Copy 3—Upon termination of action, mail this copy to Director
 Copy 2—Upon filing document adding patent(s), mail this copy to Director Copy 4—Case file copy

AO 120 (Rev. 08/10)

TO: Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK
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In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been
filed in the U.S. District Court _____ of Delaware _____ on the following

☐ Trademarks or ☒ Patents. (☐ the patent action involves 35 U.S.C. § 292.);

DOCKET NO.	DATE FILED	U.S. DISTRICT COURT _____ of Delaware
PLAINTIFF GILEAD SCIENCES, INC. and GILEAD PHARMASSET LLC		DEFENDANT TEVA PHARMACEUTICALS USA, INC. and TEVA PHARMACEUTICAL INDUSTRIES LTD.
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 7,964,580	6/21/2011	Gilead Pharmasset LLC
2 8,334,270	12/18/2012	Gilead Pharmasset LLC
3 8,580,765	11/12/2013	Gilead Pharmasset LLC
4 9,085,573	7/21/2015	Gilead Pharmasset LLC
5 7,429,572	9/30/2008	Gilead Pharmasset LLC

See attached for additional patents

In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY ☐ Amendment ☐ Answer ☐ Cross Bill ☐ Other Pleading	
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1		
2		
3		
4		
5		

In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT

CLERK	(BY) DEPUTY CLERK	DATE
-------	-------------------	------

Copy 1—Upon initiation of action, mail this copy to Director Copy 3—Upon termination of action, mail this copy to Director
Copy 2—Upon filing document adding patent(s), mail this copy to Director Copy 4—Case file copy

PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
8,415,322	4/9/2013	Gilead Pharmasset LLC
8,633,309	1/21/2014	Gilead Pharmasset LLC
9,284,342	3/15/2016	Gilead Pharmasset LLC
8,618,076	12/31/2013	Gilead Pharmasset LLC
8,889,159	11/18/2014	Gilead Pharmasset LLC
9,549,941	1/24/2017	Gilead Pharmasset LLC
8,629,263	1/14/2014	Gilead Pharmasset LLC
8,735,569	5/27/2014	Gilead Pharmasset LLC
9,637,512	5/2/2017	Gilead Pharmasset LLC
8,642,756	2/4/2014	Gilead Pharmasset LLC
9,206,217	12/8/2015	Gilead Pharmasset LLC
9,340,568	5/17/2016	Gilead Pharmasset LLC