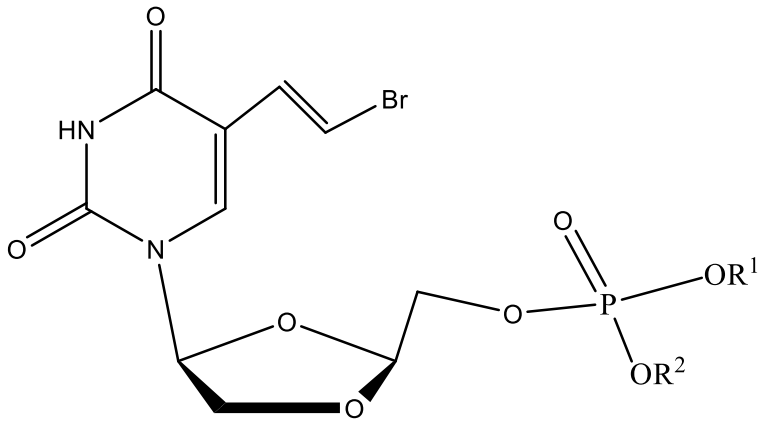
Claims:

1. A prodrug compound of L-BHDU according to the chemical structure **I**:



Where R^1 is a $-(CH_2)_n-O-R^{1a}$ group or a $-(CH_2)_j-O-C(O)O_k-R^{2a}$ group;

R^2 is H, a $-(CH_2)_n-O-R^{1a}$ group or a $-(CH_2)_j-O-C(O)O_k-R^{2a}$ group;

R^{1a} is independently a C_6-C_{30} alkyl group, often a C_{12}-C_{22} alkyl group, often a C_{14}-C_{20} alkyl group or a C_{16}-C_{18} alkyl group, often a C_{16} or C_{18} alkyl group;

R^{2a} is independently a C_1-C_{12} alkyl group, often a C_2-C_6 alkyl group, a C_3-C_4 alkyl group, an isopropyl, t-butyl or sec-butyl group, or an isopropyl or t-butyl group;

Each j is independently 1-6, 1-3, often 1 or 2;

Each k is 0 or 1;

Each n is independently 1-6; or

A pharmaceutically acceptable salt, solute or polymorph thereof.

2. The compound according to claim 1 wherein R^1 is a $-(CH_2)_n-O-R^{1a}$ group and n is 2 or 3.

3. The compound according to claim 2 wherein R^{1a} is a C_{14}-C_{20} alkyl or C_{16}-C_{18} alkyl group and n is 2 or 3.

4. The compound according to claim 3 wherein R^{1a} is C_{16} or C_{18} and R^2 is H.

5. The compound according to claim 4 wherein R^{1a} is C_{18} and n is 2.

6. The compound according to claim 4 wherein R^{1a} is C_{16} and n is 2.

7. The compound according to claim 1, wherein R^1 is a $-(CH_2)_n-O-R^{1a}$ group and R^2 is H or $-(CH_2)_n-O-R^{1a}$.

8. The compound according to claim 1 wherein R^2 is H or a $-(CH_2)_j-O-C(O)O_k-R^{2a}$ group.

9. The compound according to claim 8 wherein R^2 is a $-(CH_2)_j-O-C(O)O_k-R^{2a}$ group and j is 1-4.

10. The compound according to claim 9 wherein j is 1 or 2 and R^{2a} is a C_1-C_{12} alkyl group.

11. The compound according to claim 10 wherein j is 1 or 2 and R^{2a} is a C_2-C_6 alkyl group.

12. The compound according to claim 11 wherein j is 1 and R^{2a} is a C_3 or C_4 alkyl group.

13. The compound according to claim 11 wherein j is 2 and R^{2a} is a C_3 or C_4 alkyl group.

14. The compound according to claim 1 wherein R^1 is $-(CH_2)_j-O-C(O)O_k-R^{2a}$.

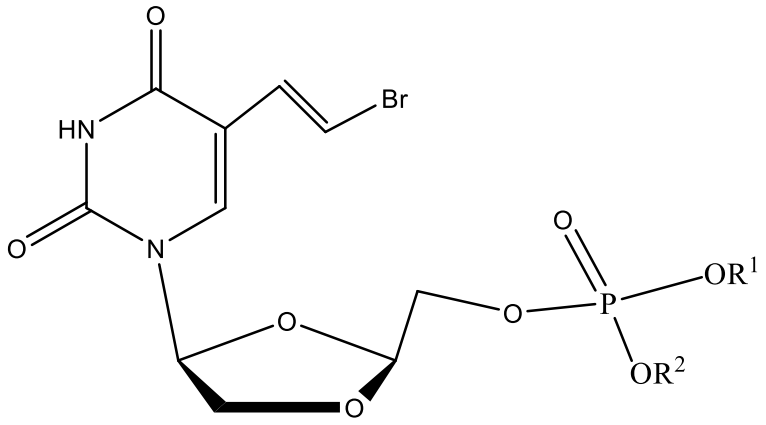
15. The compound according to claim 14 wherein j is 1.

16. The compound according to claim 15 wherein k is 0.

17. The compound according to claim 15 wherein k is 1.

18. The compound according to claim 8 wherein R^1 and R^2 are the same.

19. A compound according to the chemical structure:

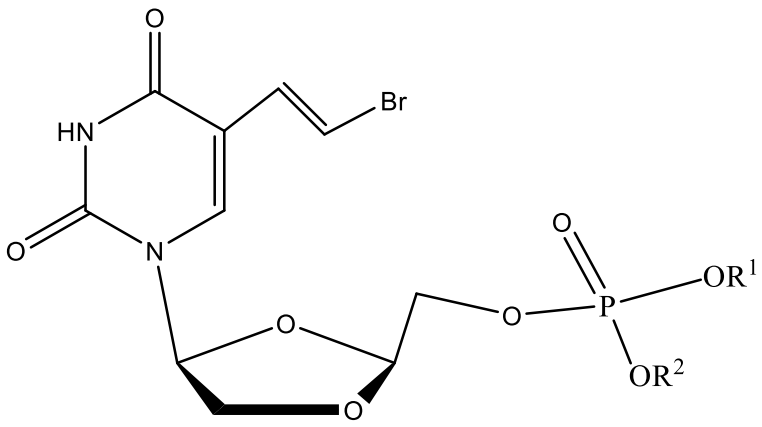


Wherein R^1 is a $-(CH_2)_n-O-R^{1a}$ group, n is 2 or 3, R^{1a} is a C_{16} or C_{18} alkyl group and R_2 is H, or a pharmaceutically acceptable salt, solvate or polymorph thereof.

20. The compound according to claim 19 wherein n is 2 and R^{1a} is a C_{18} alkyl group.

21. The compound according to claim 19 wherein n is 3 and R^{1a} is a C_{16} alkyl group.

22. A compound according to the chemical structure:



Wherein R^1 and R^2 are each a $-(CH_2)_j-O-C(O)O_k-R^{2a}$ group;
R^{2a} is independently an isopropyl or a t-butyl group;
Each j is independently 1 or 2;
Each k is 0 or 1; or
A pharmaceutically acceptable salt, solute or polymorph thereof.

23. The compound according to claim 22 wherein R^1 and R^2 are identical, j is 1, k is 1 and R^{2a} is an isopropyl group.

24. The compound according to claim 22 wherein R^1 and R^2 are identical, j is 1, k is 0 and R^{2a} is a tert-butyl group.

25. A pharmaceutical composition comprising an effective amount of a compound according to claim 1 in combination with a pharmaceutically acceptable carrier, additive or excipient.

26. The composition according to claim 25 further including an additional bioactive agent.

27. The composition according to claim 26 wherein said bioactive agent is acyclovir, brivudine, foscarnet, cidofovir (CDV), valacyclovir, famciclovir, zoster-immune globulin (ZIG), vidarabine or a mixture thereof.

28. The composition according to claim 26 wherein said bioactive agent is 5-fluoro uracil.

29. The composition according to claim 27 wherein said bioactive agent is foscarnet, cidovovir or a mixture thereof.

30. A method of treating a viral infection in a patient in need comprising administering to said patient an effective amount of a composition according to claim 25, wherein the viral infection is a varicella zoster virus (VZV) infection, a herpes simplex virus I (HSV-1) infection or a herpes simplex virus II (HSV-2) infection.

31. The method according to claim 30 wherein said virus infection is a VZV infection.

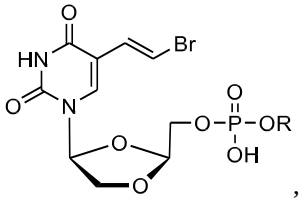
32. The method according to claim 31 wherein said virus infection is caused by wild type VZV or mutant VZV (TK-, TS- or TK-TS-).

33. The method according to claim 30 wherein said virus infection is a HSV-1 infection.

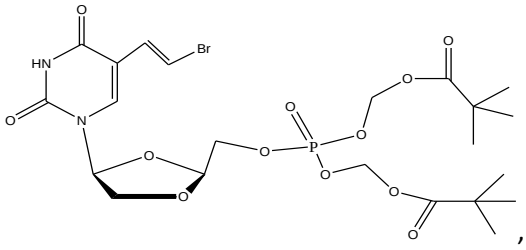
34. The method according to claim 30 wherein said virus infection is a HSV-2 infection.

35. A method of treating a viral infection in a patient in need comprising administering to said patient an effective amount of a compound according to claim 1, wherein the viral infection is a varicella zoster virus (VZV) infection, a herpes simplex virus I (HSV-1) infection or a herpes simplex virus II (HSV-2) infection.

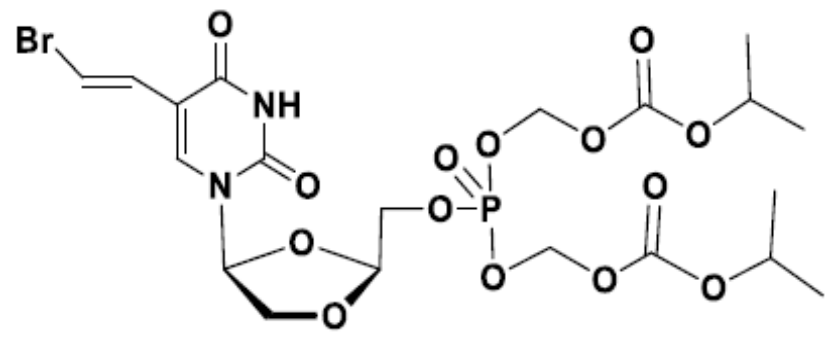
36. The method according to claim 35 wherein said compound is



, where R is $C_{18}H_{37}O(CH_2)_2$- ,



,



, or

A pharmaceutically acceptable salt thereof.

37. A method of reducing the likelihood of a viral infection in a patient in need comprising administering to said patient an effective amount of a composition according to claim 25, wherein the viral infection is a varicella zoster virus (VZV) infection, a herpes simplex virus I (HSV-1) infection or a herpes simplex virus II (HSV-2) infection.

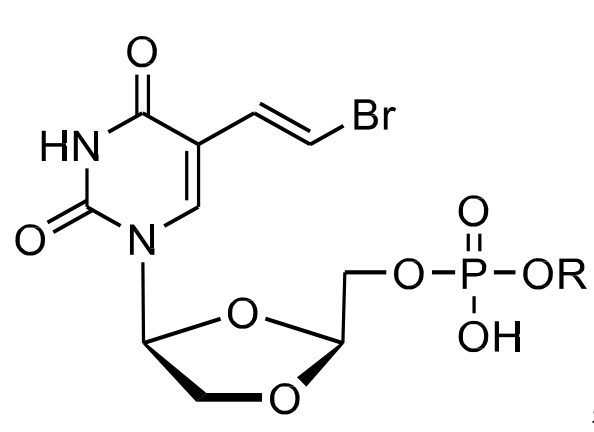
38. The method according to claim 37 wherein said virus infection is a VZV infection.

39. The method according to claim 37 wherein said virus infection is a HSV-1 infection.

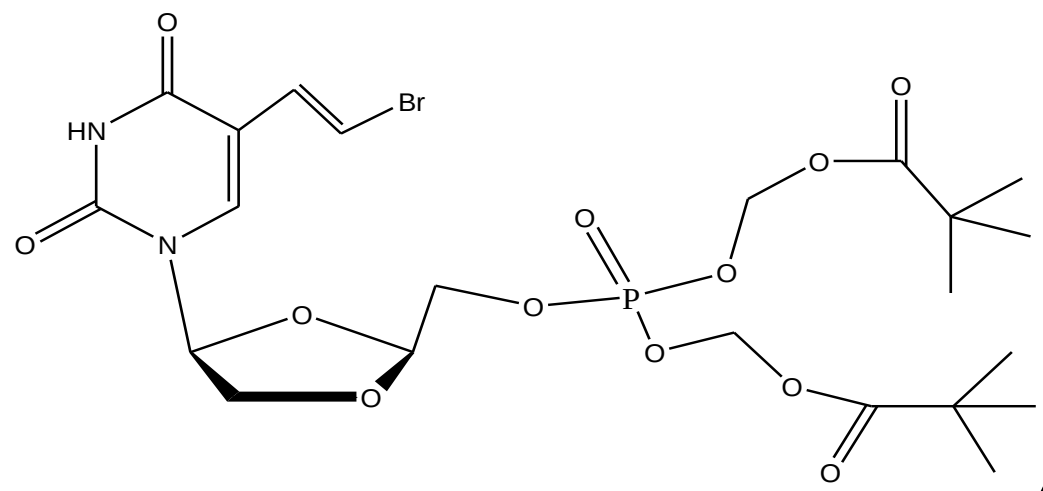
40. The method according to claim 37 wherein said virus infection is a HSV-2 infection.

41. A method of inhibiting or resolving complications of a VZV infection in a patient or subject in need, wherein said complications are postherpetic neuralgia, zoster multiplex, myelitis, herpes ophthalmicus, or zoster sine herpete, the method comprising administering a compound according to claim 1 to said patient or subject in need.

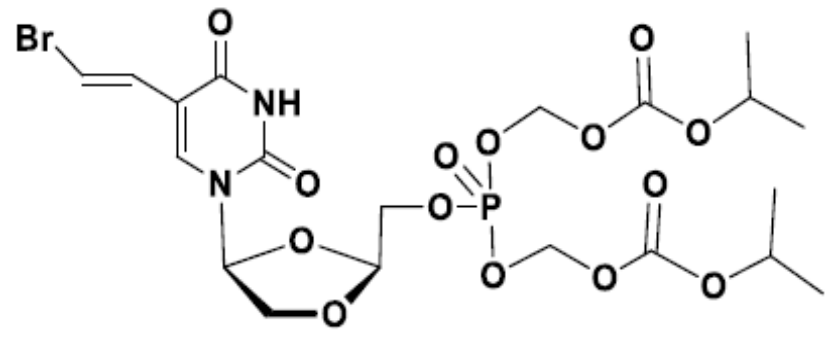
42. The method according to claim 41 wherein said compound is



, where R is $C_{18}H_{37}O(CH_2)_2$- ,



,

 , or

A pharmaceutically acceptable salt thereof.