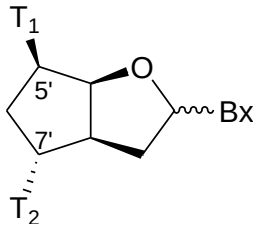
CLAIMS

1. A compound of formula (I):



(I)

wherein

T_1 and T_2 are each independently selected from the group consisting of OR_1 and OR_2; and wherein

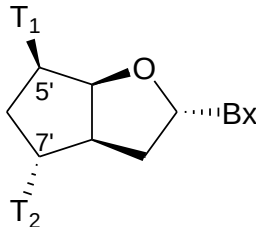
R_1 is H or a hydroxyl protecting group, and

R_2 is a phosphorus moiety; and wherein

Bx is a nucleobase.

2. The compound of claim 1, wherein the nucleobase is selected from the group consisting of a purine base and a pyrimidine base.

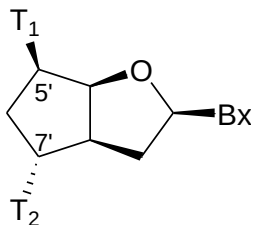
3. The compound of claim 1 or claim 2, having the structure of formula (II)



(II)

wherein T_1 and T_2 are each independently selected from the group consisting of OR_1 and OR_2.

4. The compound of claim 1 or claim 2, having the structure of formula (III)

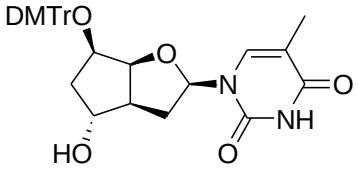


(III)

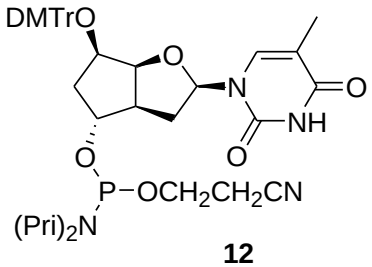
Wherein T_1 and T_2 are each independently selected from the group consisting of OR_1 and OR_2.

5. The compound of any of the claims 1 to 4, wherein said phosphorus moiety R_2 is selected from the group consisting of a phosphate moiety, a phosphoramidate moiety and a phosphoramidite moiety.

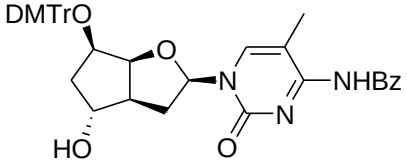
6. The compound of claim 1, having the structure selected from the group consisting of:



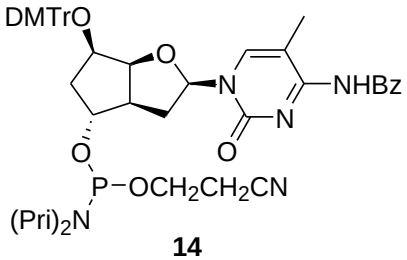
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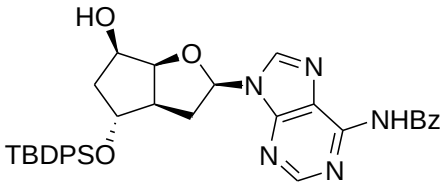
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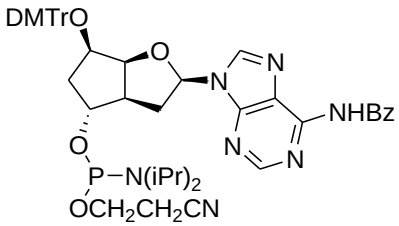
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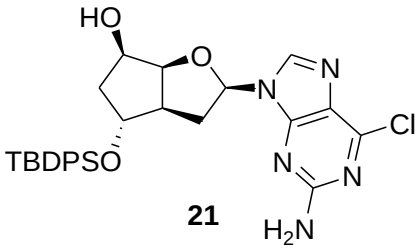
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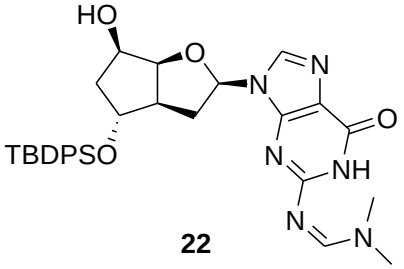
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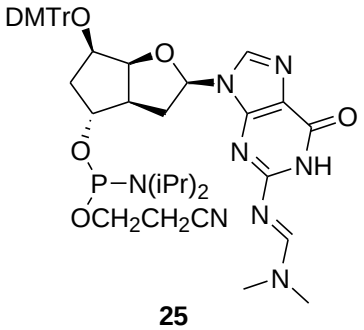
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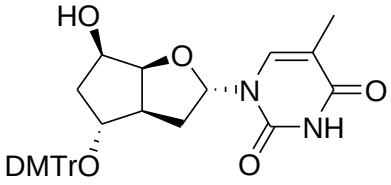
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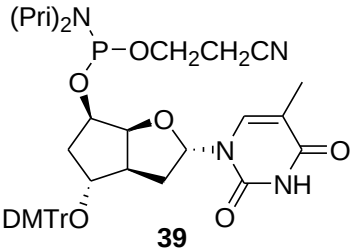
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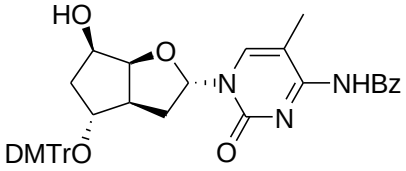
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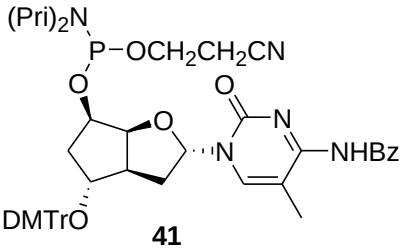
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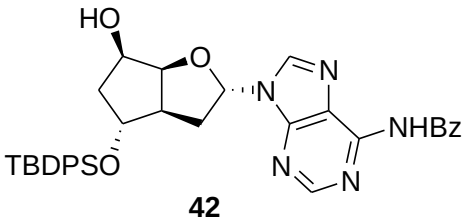
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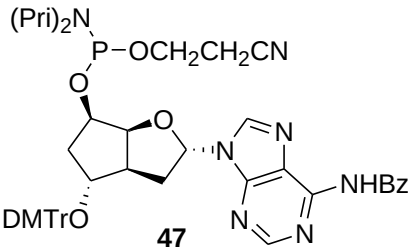
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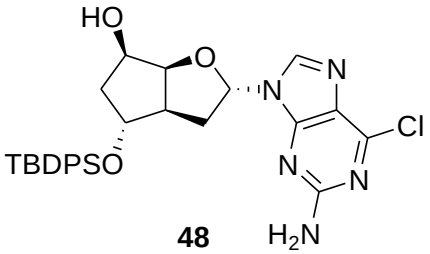
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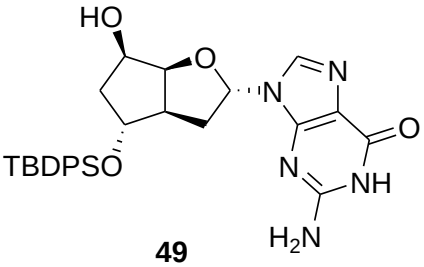
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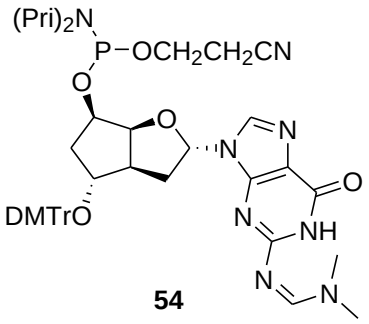
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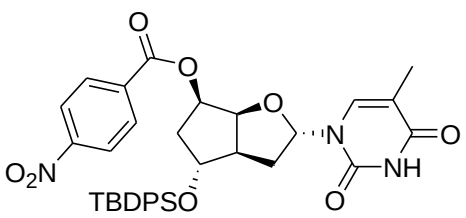
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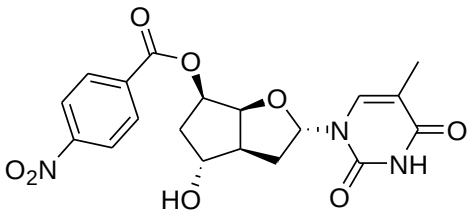
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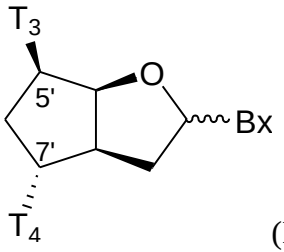


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7. An oligomer comprising at least at least one monomer subunit as a compound of formula (IV)



(IV)

wherein either T_3 or T_4 are independently a nucleosidic linkage group; and

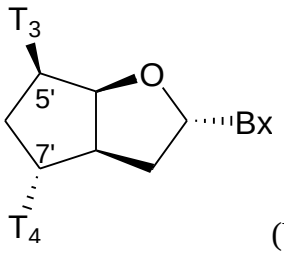
when T_3 is a nucleosidic linkage group, T_4 is selected from the group consisting of OR_1, OR_2, a 5' terminal group, a 7' terminal group and a nucleosidic linkage group, and when T_4 is a nucleosidic linkage group, T_3 is selected from the group consisting of OR_1, OR_2, a 5' terminal group, a 7' terminal group and a nucleosidic linkage group; and

wherein R_1 is selected from H and a hydroxyl protecting group, and R_2 is a phosphorus moiety; and

Bx is a nucleobase.

8. The oligomer of claim 7, wherein the nucleobase is selected from the group consisting of a purine base and a pyrimidine base.

9. The oligomer of claim 7 or claim 8, having the structure of formula (V):



(V)

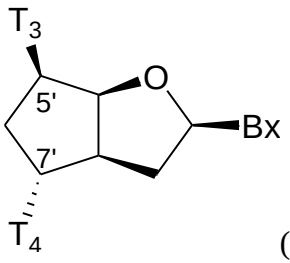
wherein:

(i) when T_3 is a nucleosidic linkage group, T_4 is selected from the group consisting of a 7' terminal group, OR_1, and OR_2; or

(ii) when T_3 is selected from the group consisting of a 5' terminal group, OR_1, and OR_2, T_4 is a nucleosidic linkage group; or

(iii) T_3 and T_4 are independently of each other a nucleosidic linkage group.

10. The oligomer of claim 7 or claim 8, having the structure of formula (VI):



(VI)

wherein:

(i) when T_3 is a nucleosidic linkage group, T_4 is selected from the group consisting of a 7' terminal group, OR_1, and OR_2; or

(ii) when T_3 is selected from the group consisting of a 5' terminal group, OR_1, and OR_2, T_4 is a nucleosidic linkage group; or

(iii) T_3 and T_4 are independently of each other a nucleosidic linkage group.

11. The oligomer of any one of claims 7 to 10, wherein each nucleosidic linkage group is independently selected from the group consisting of a phosphodiester linkage group, a phosphotriester linkage group, a phosphorothioate linkage group, a phosphorodithioate linkage group, a phosphonate linkage group, a phosphonothioate linkage group, a phosphinate linkage group, a phosphorthioamidate linkage and a phosphoramidate linkage group.

12. The oligomer of any one of claims 7 to 10, wherein each nucleosidic linkage group is independently selected from the group consisting a phosphodiester linkage group and a phosphorothioate linkage group.

13. The oligomer of any one of claims 7 to 10, wherein each nucleosidic linkage group is a phosphorothioate linkage group.

14. The oligomer of any one of claims 7 to 10, wherein each nucleosidic linkage group is a phosphodiester linkage group.

15. The oligomer of any one of claims 7 to 14 comprising at least two contiguous monomer

subunits of compounds of formula (IV), wherein each of the contiguous subunit of compound of formula (IV) is independently linked to the adjacent contiguous subunit of compound of formula (IV) by the nucleosidic linkage group, wherein the nucleosidic linkage group links a 5’ terminus and a 7’ terminus of the two contiguous subunits of compounds of formula (IV).

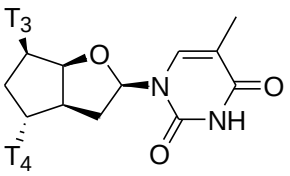
16. The oligomer of any one of claims 7 to 15, wherein said oligomer comprises at least one nucleic acid sequence, wherein said nucleic acid sequence comprises said at least one monomer subunit of compound of formula (IV), and wherein said nucleic acid sequence is selected from the group consisting of the SEQ ID NO: 1 to 24.

17. The oligomer of claim 16, wherein the nucleic acid sequence is SEQ ID NO: 24.

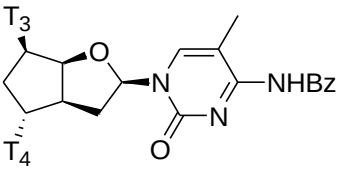
18. The oligomer of any one of claims 7 to 9 and 11 to 17, wherein the oligomer comprises a nucleic acid sequence, wherein said nucleic acid sequence consists of at least two contiguous monomer subunits of compounds of formula (V), wherein said nucleic acid sequence is flanked on its 5’ terminus and on its 7’ terminus by at least one nucleotide or nucleoside that is different from the compound of formula (IV),
wherein the 5’ terminus of said nucleic acid sequence is linked to a 5’ terminus of the nucleotide or nucleoside that is different from the compound of formula (IV), and wherein the 7’ terminus of said nucleic acid sequence is linked to a 3’ terminus of the nucleotide or nucleoside that is different from the compound of formula (IV).

19. The oligomer of any one of claims 7, 8, and 10 to 17, wherein the oligomer comprises a nucleic acid sequence, wherein said nucleic acid sequence consists of at least two contiguous monomer subunits of compounds of formula (VI), wherein said nucleic acid sequence is flanked on its 5’ terminus and on its 7’ terminus each by at least one nucleotide or nucleoside that is different from the compound of formula (IV),
wherein the 5’ terminus of said nucleic acid sequence is linked to a 3’ terminus of the nucleotide or nucleoside that is different from the compound of formula (IV), and wherein the 7’ terminus of said nucleic acid sequence is linked to a 5’ terminus of the nucleotide or nucleoside that is different from the compound of formula (IV).

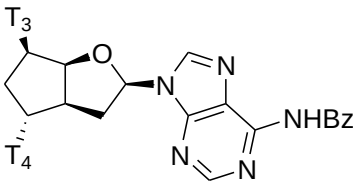
20. The oligomer of any one of the claims 7 to 19, wherein said monomer subunit of compound of formula (IV) is selected from the group consisting of:



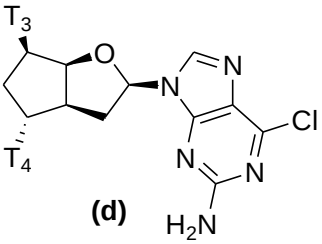
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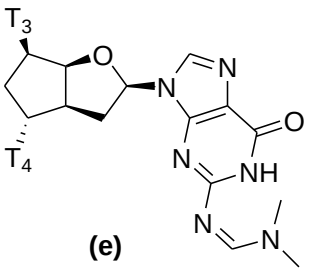
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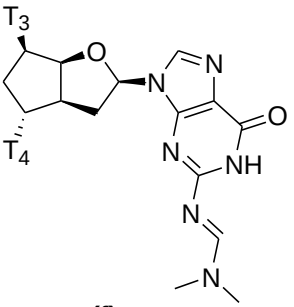
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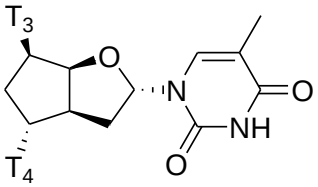
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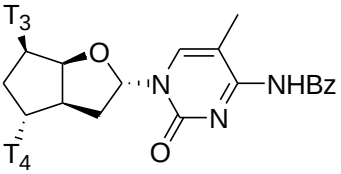
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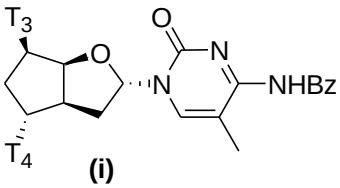
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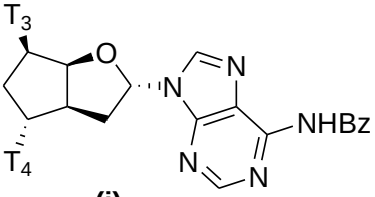
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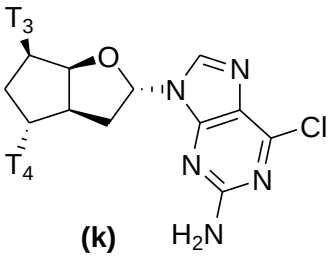
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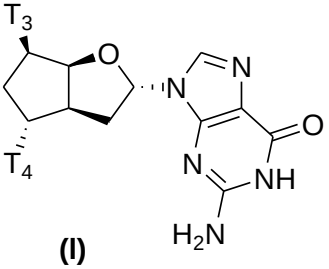
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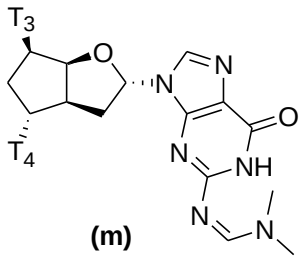
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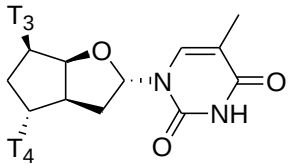
(k)



(l)



(m)



(n)