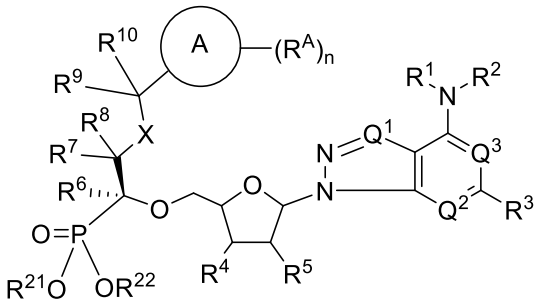
CLAIMS

WHAT IS CLAIMED IS:

1. A compound of Formula (I), or a pharmaceutically acceptable salt, solvate, stereoisomer, or an isotopic variant thereof:



Formula (I);

wherein:

Q^1 is N or CW;

Q^2 and Q^3 are independently N or CW;

each W is independently hydrogen, halogen, -CN, $-OR^b$, NR^cR^d, C_1-C_6 alkyl, C_1-C_6 haloalkyl, or C_1-C_6 hydroxyalkyl;

R^1 and R^2 are independently hydrogen, C_1-C_6 alkyl, C_1-C_6 haloalkyl, C_1-C_6 hydroxyalkyl, C_2-C_6 alkenyl, C_2-C_6 alkynyl, cycloalkyl, heterocycloalkyl, aryl, heteroaryl, C_1-C_6 alkyl(aryl), C_1-C_6 alkyl(heteroaryl), C_1-C_6 alkyl(cycloalkyl), or C_1-C_6 alkyl(heterocycloalkyl); wherein each alkyl, alkenyl, alkynyl, cycloalkyl, heterocycloalkyl, aryl, and heteroaryl is independently optionally substituted with one, two, or three R^{1a};

or R^1 and R^2 are taken together with the nitrogen atom to which they are attached to form a heterocycloalkyl optionally substituted with one, two, or three R^{1b};

each R^{1a} and R^{1b} is independently oxo, halogen, -CN, $-OR^b$, $-SR^b$, $-S(=O)R^a$, $-NO_2$, $-NR^cR^d$, $-S(=O)_2R^a$, $-NR^bS(=O)_2R^a$, $-S(=O)_2NR^cR^d$, $-C(=O)R^a$, $-OC(=O)R^a$, $-C(=O)OR^b$, $-OC(=O)OR^b$, $-C(=O)NR^cR^d$, $-OC(=O)NR^cR^d$, $-NR^bC(=O)NR^cR^d$, $-NR^bC(=O)R^a$, $-NR^bC(=O)OR^b$, C_1-C_6 alkyl, C_1-C_6 fluoroalkyl, C_1-C_6 hydroxyalkyl, C_2-C_6 alkenyl, C_2-C_6 alkynyl, cycloalkyl, heterocycloalkyl, aryl, heteroaryl, C_1-C_6 alkyl(aryl), C_1-C_6 alkyl(heteroaryl), C_1-C_6 alkyl(cycloalkyl), or C_1-C_6 alkyl(heterocycloalkyl);

R^3 is hydrogen, halogen, -CN, $-OR^b$, $-SR^b$, $-NR^cR^d$, C_1-C_6 alkyl, C_2-C_6 alkenyl, C_2-C_6 alkynyl, C_1-C_6 haloalkyl, C_1-C_6 hydroxyalkyl, C_1-C_6 heteroalkyl, cycloalkyl, heterocycloalkyl, aryl, heteroaryl, C_1-C_6 alkyl(aryl), C_1-C_6 alkyl(heteroaryl), C_1-C_6 alkyl(cycloalkyl), or C_1-C_6 alkyl(heterocycloalkyl); wherein the alkyl, alkenyl, alkynyl, cycloalkyl, heterocycloalkyl, aryl, and heteroaryl is independently optionally substituted with one, two, or three R^{3a};

each R^{3a} is independently oxo, halogen, -CN, -OR^b, -NR^cR^d, -$C(=O)R^a$, -$C(=O)OR^b$, -$C(=O)NR^cR^d$, C_1-C_6 alkyl, C_1-C_6 fluoroalkyl, C_1-C_6 hydroxyalkyl, C_2-C_6 alkenyl, C_2-C_6 alkynyl, cycloalkyl, heterocycloalkyl, aryl, or heteroaryl;

R^4 and R^5 are independently hydrogen, halogen, -OR^b, C_1-C_6 alkyl, C_1-C_6 haloalkyl, C_1-C_6 hydroxyalkyl, C_2-C_6 alkenyl, C_2-C_6 alkynyl, cycloalkyl, heterocycloalkyl, aryl, or heteroaryl;

R^6 is hydrogen, deuterium, halogen, -CN, -OR^{13}, -SR^{13}, -$S(=O)R^{14}$, -NO_2, -$NR^{15}R^{16}$, -$S(=O)_2R^{14}$, -$NR^{13}S(=O)_2R^{14}$, -$S(=O)_2NR^{15}R^{16}$, -$C(=O)R^{14}$, -$OC(=O)R^{14}$, -$C(=O)OR^{13}$, -$OC(=O)OR^{13}$, -$C(=O)NR^{15}R^{16}$, -$OC(=O)NR^{15}R^{16}$, -$NR^{13}C(=O)NR^{15}R^{16}$, -$NR^{13}C(=O)R^{14}$, -$NR^{13}C(=O)OR^{13}$, C_1-C_6 alkyl, C_1-C_6 haloalkyl, C_1-C_6 deuteroalkyl, C_1-C_6 hydroxyalkyl, C_2-C_6 alkenyl, C_2-C_6 alkynyl, C_1-C_6 heteroalkyl, cycloalkyl, heterocycloalkyl, aryl, heteroaryl, C_1-C_6 alkyl(aryl), C_1-C_6 alkyl(heteroaryl), C_1-C_6 alkyl(cycloalkyl), or C_1-C_6 alkyl(heterocycloalkyl); wherein the alkyl, alkenyl, alkynyl, cycloalkyl, heterocycloalkyl, aryl, and heteroaryl is independently optionally substituted with one, two, or three R^{6a};

each R^{6a} is oxo, halogen, -CN, -OR^{13}, -SR^{13}, -$S(=O)R^{14}$, -NO_2, -$NR^{15}R^{16}$, -$S(=O)_2R^{14}$, -$NR^{13}S(=O)_2R^{14}$, -$S(=O)_2NR^{15}R^{16}$, -$C(=O)R^{14}$, -$OC(=O)R^{14}$, -$C(=O)OR^{13}$, -$OC(=O)OR^{13}$, -$C(=O)NR^{15}R^{16}$, -$OC(=O)NR^{15}R^{16}$, -$NR^{13}C(=O)NR^{15}R^{16}$, -$NR^{13}C(=O)R^{14}$, -$NR^{13}C(=O)OR^{13}$, C_1-C_6 alkyl, C_1-C_6 haloalkyl, C_1-C_6 deuteroalkyl, C_2-C_6 alkenyl, C_2-C_6 alkynyl, C_1-C_6 hydroxyalkyl, C_1-C_6 heteroalkyl, cycloalkyl, heterocycloalkyl, aryl, or heteroaryl;

R^7, R^8, R^9, and R^{10} are independently hydrogen, deuterium, halogen, -CN, -OR^b, -SR^b, -NR^cR^d, C_1-C_6 alkyl, C_2-C_6 alkenyl, C_2-C_6 alkynyl, C_1-C_6 haloalkyl, C_1-C_6 hydroxyalkyl, C_1-C_6 heteroalkyl, cycloalkyl, or heterocycloalkyl;

X is -S-, -O-, or -NR^N-;

R^N is hydrogen, C_1-C_6 alkyl, C_1-C_6 haloalkyl, C_1-C_6 hydroxyalkyl, cycloalkyl, or heterocycloalkyl;

Ring A is cycloalkyl, heterocycloalkyl, aryl, or heteroaryl;

each R^A is independently oxo, halogen, -CN, -OR^b, -SR^b, -$S(=O)R^a$, -NO_2, -NR^cR^d, -$S(=O)_2R^a$, -$NR^bS(=O)_2R^a$, -$S(=O)_2NR^cR^d$, -$C(=O)R^a$, -$OC(=O)R^a$, -$C(=O)OR^b$, -$OC(=O)OR^b$, -$C(=O)NR^cR^d$, -$OC(=O)NR^cR^d$, -$NR^bC(=O)NR^cR^d$, -$NR^bC(=O)R^a$, -$NR^bC(=O)OR^b$, C_1-C_6 alkyl, C_1-C_6 haloalkyl, C_1-C_6 hydroxyalkyl, C_2-C_6 alkenyl, C_2-C_6 alkynyl, cycloalkyl, heterocycloalkyl, aryl, or heteroaryl;

n is 0, 1, 2, 3, or 4;

each R^{13} is independently hydrogen, C_1-C_6 alkyl, C_1-C_6 haloalkyl, C_1-C_6 deuteroalkyl, C_2-C_6 alkenyl, C_2-C_6 alkynyl, C_1-C_6 heteroalkyl, cycloalkyl, heterocycloalkyl, aryl, or heteroaryl; wherein each alkyl, alkenyl, alkynyl, cycloalkyl, heterocycloalkyl, aryl, and heteroaryl is independently optionally substituted with one, two, or three R^{13a};

each R^{14} is independently C_1-C_6 alkyl, C_1-C_6 haloalkyl, C_2-C_6 alkenyl, C_2-C_6 alkynyl, C_1-C_6 heteroalkyl, cycloalkyl, heterocycloalkyl, aryl, or heteroaryl; wherein each alkyl, alkenyl, alkynyl, cycloalkyl, heterocycloalkyl, aryl, and heteroaryl is independently optionally substituted with one, two, or three R^{14a};

each R^{15} and R^{16} is independently hydrogen, C_1-C_6 alkyl, C_1-C_6 haloalkyl, C_2-C_6 alkenyl, C_2-C_6 alkynyl, C_1-C_6 heteroalkyl, cycloalkyl, heterocycloalkyl, aryl, or heteroaryl; wherein each alkyl, alkenyl, alkynyl, cycloalkyl, heterocycloalkyl, aryl, and heteroaryl is independently optionally substituted with one, two, or three R^{15a};

or R^{15} and R^{16} are taken together with the nitrogen atom to which they are attached to form a heterocycloalkyl optionally substituted with one, two, or three R^{15b};

each R^{13a}, R^{14a}, R^{15a}, and R^{15b} is independently oxo, halogen, -CN, -OR^b, -SR^b, -$S(=O)R^a$, -NO_2, -NR^cR^d, -$S(=O)_2R^a$, -$NR^bS(=O)_2R^a$, -$S(=O)_2NR^cR^d$, -$C(=O)R^a$, -$OC(=O)R^a$, -$C(=O)OR^b$, -$OC(=O)OR^b$, -$C(=O)NR^cR^d$, -$OC(=O)NR^cR^d$, -$NR^bC(=O)NR^cR^d$, -$NR^bC(=O)R^a$, -$NR^bC(=O)OR^b$, C_1-C_6 alkyl, C_1-C_6 haloalkyl, C_2-C_6 alkenyl, C_2-C_6 alkynyl, cycloalkyl, heterocycloalkyl, aryl, heteroaryl, C_1-C_6 alkyl(aryl), C_1-C_6 alkyl(heteroaryl), C_1-C_6 alkyl(cycloalkyl), or C_1-C_6 alkyl(heterocycloalkyl);

R^{21} and R^{22} are independently hydrogen, C_1-C_{20} alkyl, cycloalkyl, heterocycloalkyl, aryl, heteroaryl, C_1-C_6 alkyl(aryl), C_1-C_6 alkyl(heteroaryl), C_1-C_6 alkyl(cycloalkyl), C_1-C_6 alkyl(heterocycloalkyl); wherein each alkyl, cycloalkyl, heterocycloalkyl, aryl, and heteroaryl is independently optionally substituted with one, two, or three R^{21a};

or R^{21} and R^{22} are taken together with the atoms to which they are attached to form a heterocycloalkyl optionally substituted with one, two, or three R^{21b};

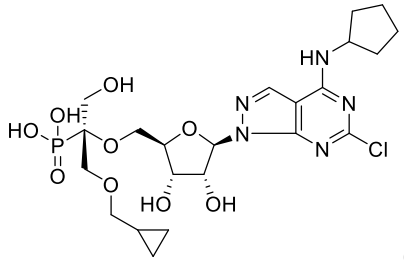
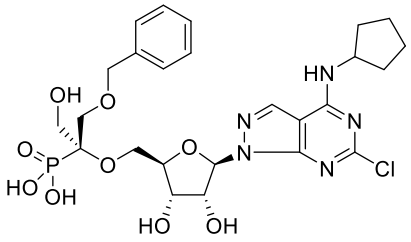
each R^{21a} and R^{21b} is independently oxo, halogen, -CN, -OR^b, -SR^b, -$S(=O)R^a$, -NO_2, -NR^cR^d, -$S(=O)_2R^a$, -$NR^bS(=O)_2R^a$, -$S(=O)_2NR^cR^d$, -$C(=O)R^a$, -$OC(=O)R^a$, -$C(=O)OR^b$, -$OC(=O)OR^b$, -$C(=O)NR^cR^d$, -$OC(=O)NR^cR^d$, -$NR^bC(=O)NR^cR^d$, -$NR^bC(=O)R^a$, -$NR^bC(=O)OR^b$, C_1-C_6 alkyl, C_1-C_6 hydroxyalkyl, C_2-C_6 alkenyl, C_2-C_6 alkynyl, cycloalkyl, heterocycloalkyl, aryl, heteroaryl, C_1-C_6 alkyl(aryl), C_1-C_6 alkyl(heteroaryl), C_1-C_6 alkyl(cycloalkyl), or C_1-C_6 alkyl(heterocycloalkyl);

each R^a is independently C_1-C_6 alkyl, C_1-C_6 haloalkyl, C_1-C_6 hydroxyalkyl, C_2-C_6 alkenyl, C_2-C_6 alkynyl, C_1-C_6 heteroalkyl, cycloalkyl, heterocycloalkyl, aryl, or heteroaryl; wherein the alkyl, alkenyl, alkynyl, heteroalkyl, cycloalkyl, heterocycloalkyl, aryl, and heteroaryl is independently optionally substituted with one, two, or three oxo, halogen, -OH, C_1-C_6 alkyl, or C_1-C_6 haloalkyl;

each R^b is independently hydrogen, C_1-C_6 alkyl, C_1-C_6 haloalkyl, C_1-C_6 hydroxyalkyl, C_2-C_6 alkenyl, C_2-C_6 alkynyl, C_1-C_6 heteroalkyl, cycloalkyl, heterocycloalkyl, aryl, or heteroaryl; wherein the alkyl, alkenyl, alkynyl, heteroalkyl, cycloalkyl, heterocycloalkyl, aryl, and heteroaryl is independently optionally substituted with one, two, or three oxo, halogen, -OH, C_1-C_6 alkyl, or C_1-C_6 haloalkyl; and

each R^c and R^d is independently hydrogen, C_1-C_6 alkyl, C_1-C_6 haloalkyl, C_1-C_6 hydroxyalkyl, C_2-C_6 alkenyl, C_2-C_6 alkynyl, C_1-C_6 heteroalkyl, cycloalkyl, heterocycloalkyl, aryl, or heteroaryl; wherein the alkyl, alkenyl, alkynyl, heteroalkyl, cycloalkyl, heterocycloalkyl, aryl, and heteroaryl is independently optionally substituted with one, two, or three oxo, halogen, -OH, C_1-C_6 alkyl, or C_1-C_6 haloalkyl;

or R^c and R^d are taken together with the nitrogen atom to which they are attached to form a heterocycloalkyl optionally substituted with one, two, or three oxo, halogen, C_1-C_6 alkyl, C_1-C_6 haloalkyl, or C_1-C_6 hydroxyalkyl;

provided that the compound is not  or .

2. The compound of claim 1, or a pharmaceutically acceptable salt thereof, wherein Q^1 is CW.
3. The compound of claim 1 or 2, or a pharmaceutically acceptable salt thereof, wherein Q^2 is N and Q^3 is N.
4. The compound of claim 1 or 2, or a pharmaceutically acceptable salt thereof, wherein each W is hydrogen.
5. The compound of any one of claims 1 to 4, or a pharmaceutically acceptable salt thereof, wherein R^3 is halogen.
6. The compound of any one of claims 1 to 5, or a pharmaceutically acceptable salt thereof, wherein R^1 is cycloalkyl.
7. The compound of any one of claims 1 to 6, or a pharmaceutically acceptable salt thereof, wherein R^2 is hydrogen or C_1-C_6 alkyl.
8. The compound of claim 7, or a pharmaceutically acceptable salt thereof, wherein R^2 is hydrogen.
9. The compound of any one of claims 1 to 8, or a pharmaceutically acceptable salt thereof, wherein R^4 and R^5 are -OH.

10. The compound of any one of claims 1 to 9, or a pharmaceutically acceptable salt thereof, wherein X is -O-.

11. The compound of any one of claims 1 to 10, or a pharmaceutically acceptable salt thereof, wherein R^7, R^8, R^9, and R^{10} are hydrogen.

12. The compound of any one of claims 1 to 11, or a pharmaceutically acceptable salt thereof, wherein Ring A is heteroaryl.

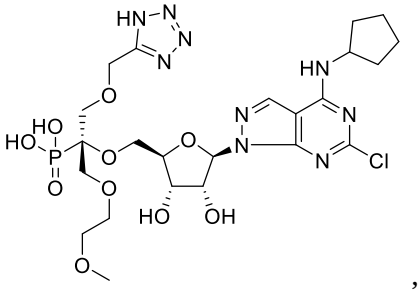
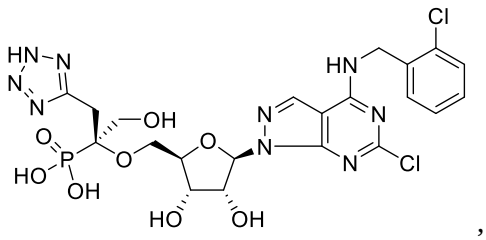
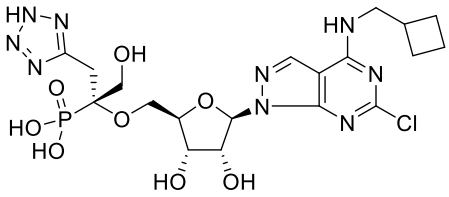
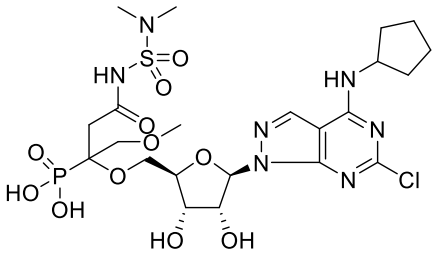
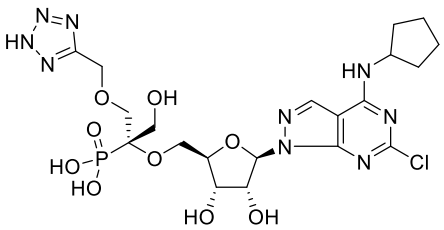
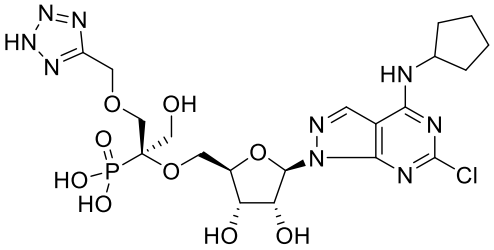
13. The compound of any one of claims 1 to 12, or a pharmaceutically acceptable salt thereof, wherein n is 0.

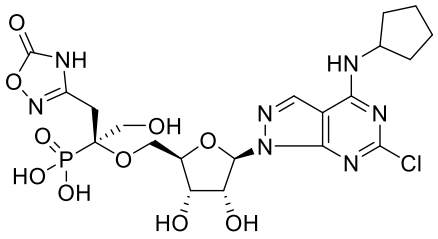
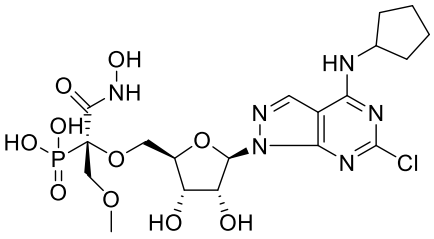
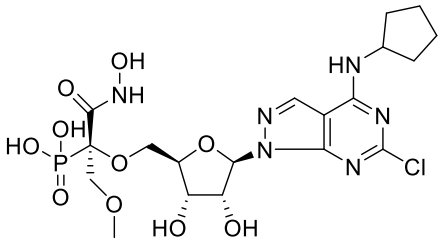
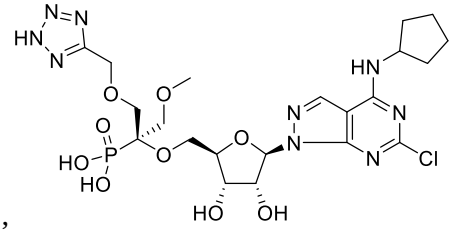
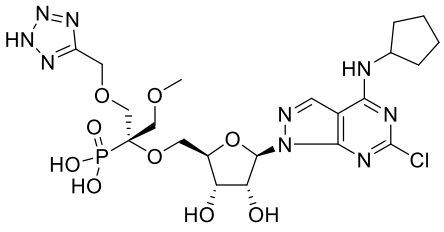
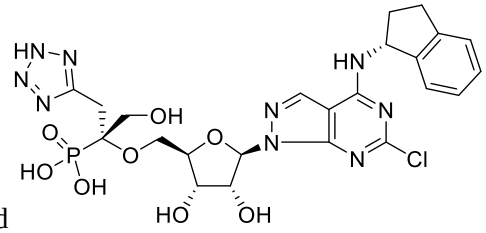
14. The compound of any one of claims 1 to 13, or a pharmaceutically acceptable salt thereof, wherein R^6 is C_1-C_6 alkyl, C_1-C_6 haloalkyl, C_1-C_6 hydroxyalkyl, C_1-C_6 heteroalkyl, or C_1-C_6 alkyl(heteroaryl); wherein the alkyl, and heteroaryl is independently optionally substituted with one, two, or three R^{6a}.

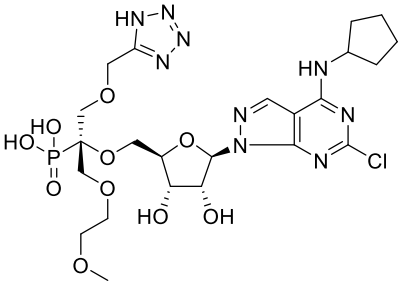
15. The compound of claim 14, or a pharmaceutically acceptable salt, solvate, stereoisomer, or isotopic variant thereof, wherein R^6 is C_1-C_6 hydroxyalkyl.

16. The compound of any one of claims 1 to 15, or a pharmaceutically acceptable salt thereof, wherein R^{21} and R^{22} are hydrogen.

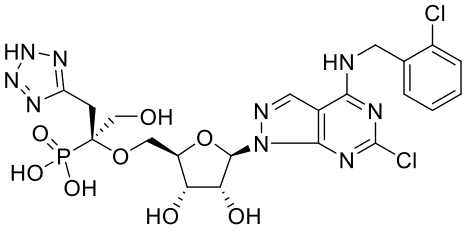
17. A compound selected from:


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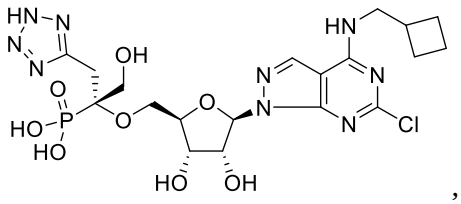

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, and

, or a pharmaceutically acceptable salt thereof.

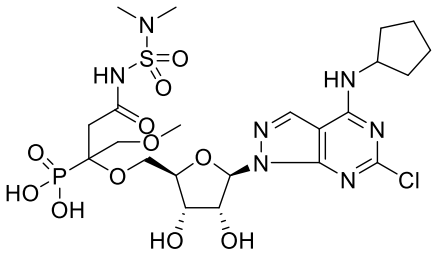


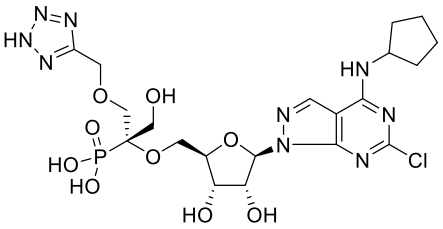
18. The compound of claim 17, wherein the compound is , or a pharmaceutically acceptable salt thereof.

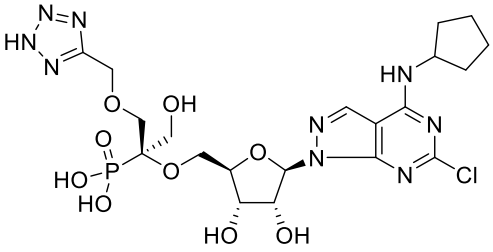


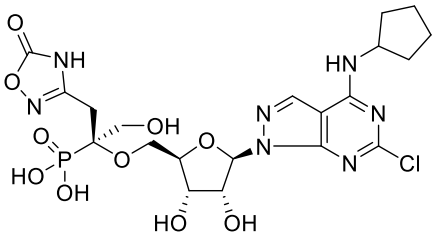
19. The compound of claim 17, wherein the compound is , or a pharmaceutically acceptable salt thereof.

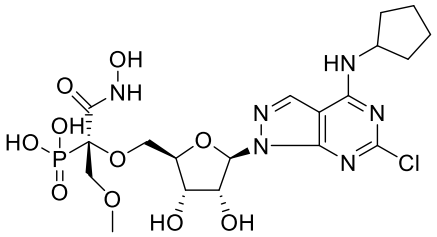
20. The compound of claim 17, wherein the compound is , or a pharmaceutically acceptable salt thereof.

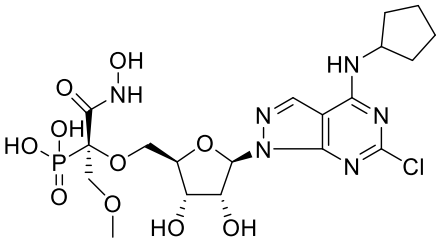
21. The compound of claim 1, wherein the compound is , or a pharmaceutically acceptable salt thereof.

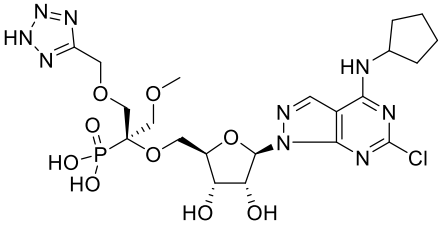
22. The compound of claim 17, wherein the compound is , or a pharmaceutically acceptable salt thereof.

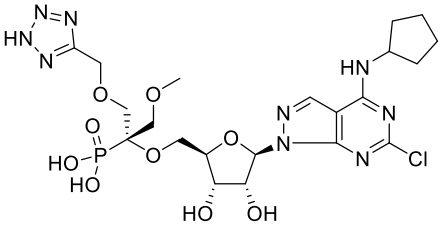
23. The compound of claim 17, wherein the compound is , or a pharmaceutically acceptable salt thereof.

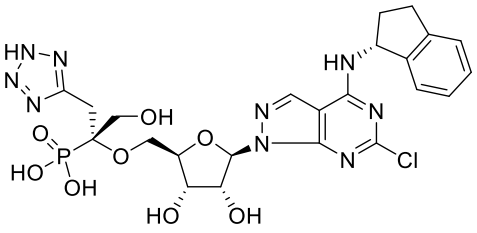
24. The compound of claim 17, wherein the compound is , or a pharmaceutically acceptable salt thereof.

25. The compound of claim 1, wherein the compound is , or a pharmaceutically acceptable salt thereof.

26. The compound of claim 17, wherein the compound is , or a pharmaceutically acceptable salt thereof.

27. The compound of claim 17, wherein the compound is , or a pharmaceutically acceptable salt thereof.

28. The compound of claim 17, wherein the compound is , or a pharmaceutically acceptable salt thereof.

29. The compound of claim 17, wherein the compound is , or a pharmaceutically acceptable salt thereof.

30. A pharmaceutical composition comprising a compound of any one of claims 1 to 29, or a pharmaceutically acceptable salt thereof, and a pharmaceutically acceptable excipient.

31. The compound of any one of claims 1 to 29, or a pharmaceutically acceptable salt thereof, for use as a medicament.

32. Use of a compound of any one of claims 1 to 29, or a pharmaceutically acceptable salt thereof, or the pharmaceutical composition of claim 30, in the manufacture of a medicament for the treatment of cancer in a subject.
33. The use of claim 32, wherein the cancer in the subject is lung cancer, melanoma, breast cancer, ovarian cancer, colorectal cancer, gastric cancer, gallbladder cancer, prostate cancer, renal cancer, lymphoma, or multiple myeloma.
34. The use of claim 33, wherein the cancer in the subject is lymphoma.
35. The use of claim 34, wherein the lymphoma is Hodgkin's lymphoma or non-Hodgkin's lymphoma.
36. The use of claim 33, wherein the cancer in the subject is multiple myeloma.
37. The use of claim 36, wherein the multiple myeloma is moldering multiple myeloma, non-secretory myeloma, osteosclerotic myeloma, plasma cell leukemia, or solitary plasmacytoma.