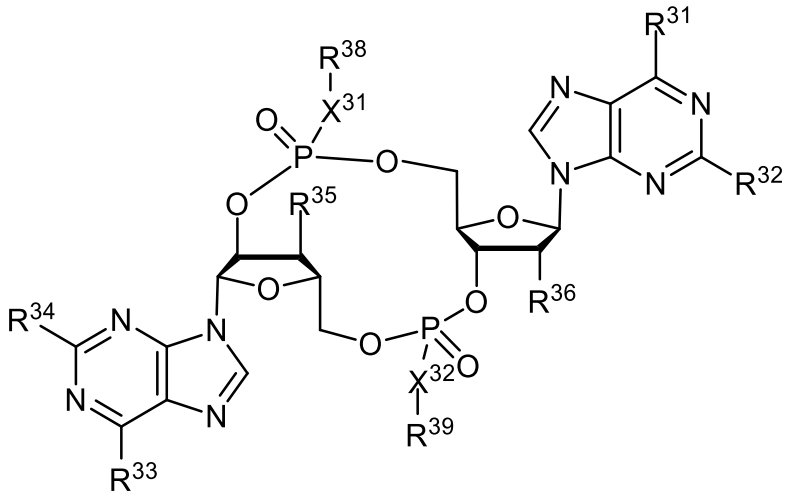
CLAIMS

1 A compound of Formula (IV):



(IV)

wherein:

X^{31} is S;

X^{32} is O;

R^{31} is OH and R^{32} is NH_2 or R^{31} is NH_2 and R^{32} is H;

R^{33} is OH and R^{34} is NH_2 or R^{33} is NH_2 and R^{34} is H;

R^{35} is selected from: F, OH, and $OC(O)R^{37}$;

R^{36} is selected from: F, OH, and $OC(O)R^{37}$;

provided: at least one of R^{35} and R^{36} is F; and

R^{38} and R^{39} are independently selected from: H, $CH_2OC(O)R^{37}$, $CH_2OCO_2R^{37}$,

$CH_2CH_2SC(O)R^{37}$, and $CH_2CH_2SSCH_2R^{37}$;

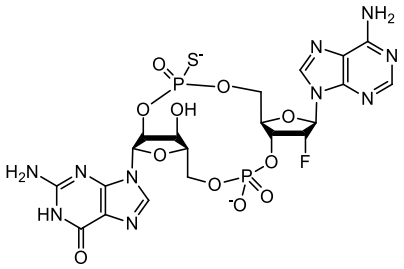
where R^{37} is selected from: aryl, heteroaryl, heterocycloalkyl, cycloalkyl, C_{1-20}alkyl and C_{1-20}alkyl substituted with one to 5 substituents independently selected from: aryl, cycloalkyl, hydroxy and F;

or a pharmaceutically acceptable salt thereof.

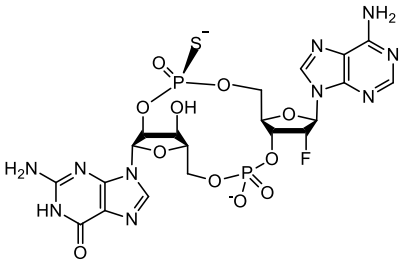
2. A compound of Claim 1, or a pharmaceutically acceptable salt thereof, wherein:
R^{35} is selected from: F and OH; and
R^{36} is selected from: F and OH;
provided: at least one of R^{35} and R^{36} is F.

3. A compound of Claim 1, or a pharmaceutically acceptable salt thereof, wherein:
R^{35} is OH; and
R^{36} is F.

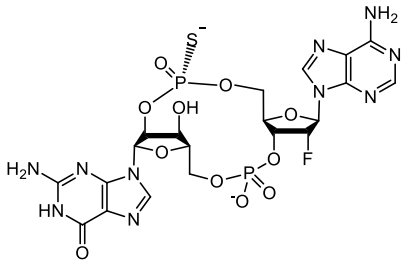
4. A compound of Claim 1 selected from:



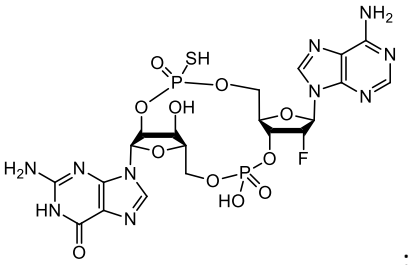
or a pharmaceutically acceptable salt thereof;



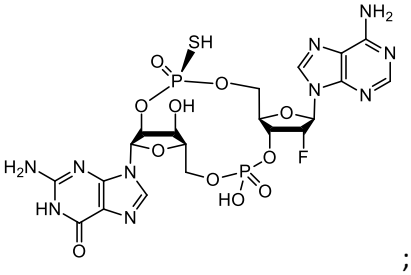
or a pharmaceutically acceptable salt thereof;



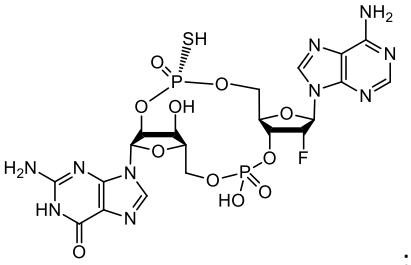
or a pharmaceutically acceptable salt thereof;



;

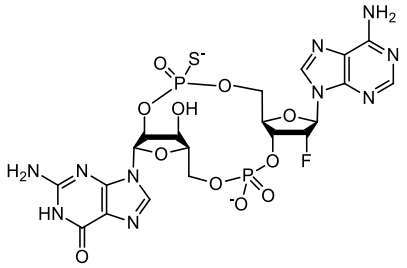


;



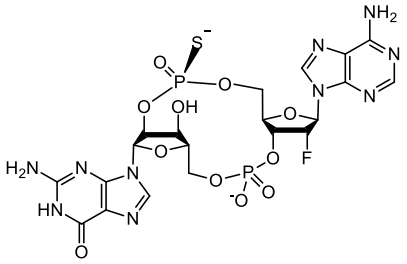
;

a pharmaceutically acceptable salt of



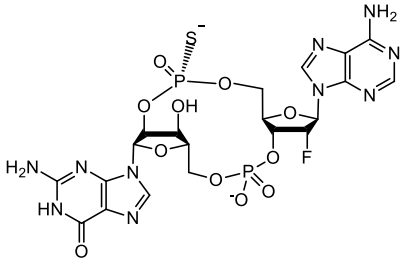
;

a pharmaceutically acceptable salt of

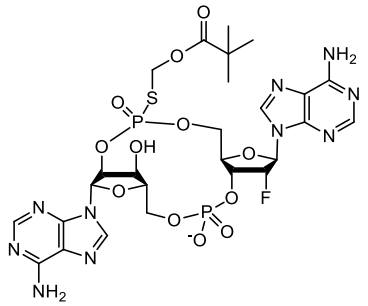


;

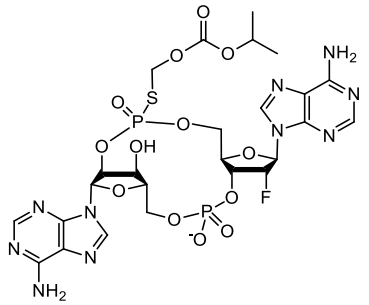
a pharmaceutically acceptable salt of



;



or a pharmaceutically acceptable salt thereof; and



or a pharmaceutically acceptable salt thereof.

5. A pharmaceutical composition comprising a compound of Claim 1, or a pharmaceutically acceptable salt thereof, and one or more of pharmaceutically acceptable excipients.

6. A compound of Formula IV, or a pharmaceutically acceptable salt thereof, as described in Claim 1, for use in the treatment of inflammation, allergic diseases, autoimmune diseases, human immunodeficiency virus (HIV), infectious diseases, cancer, and pre-cancerous syndromes, in a mammal in need thereof.

7. A composition comprising a compound of Claim 1, or a pharmaceutically acceptable salt thereof, and an antigen or antigen composition.

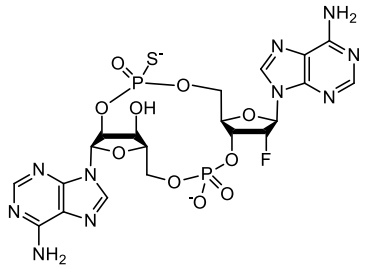
8. A vaccine composition comprising an antigen or antigen composition and a compound of Claim 1, or a pharmaceutically acceptable salt thereof.

9. An immugenic composition comprising an antigen or antigen composition and a compound of Claim 1, or a pharmaceutically acceptable salt thereof.

10. A composition comprising a compound of Claim 1, or a pharmaceutically acceptable salt thereof, and one or more immunostimulatory agents.

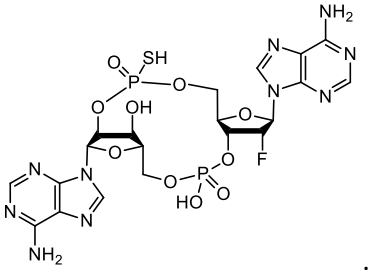
11. A compound, or a pharmaceutically acceptable salt thereof, as described in Claim 1, for use in the treatment of HBV, HCV, influenza, skin warts, multiple sclerosis, and allergic inflammation, in a human in need thereof.

12. A compound having the following structure:



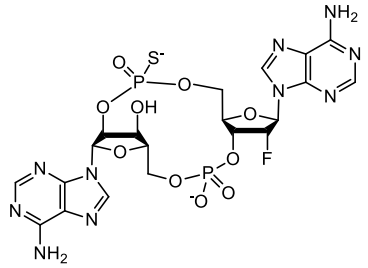
or a pharmaceutically acceptable salt thereof.

13. A compound which is:



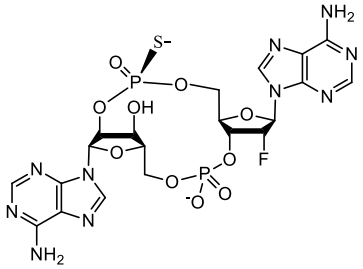
.

14. A pharmaceutically acceptable salt of a compound of Claim 12 which is:



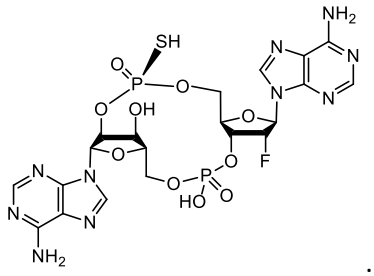
.

15. A compound of Claim 12 which is:



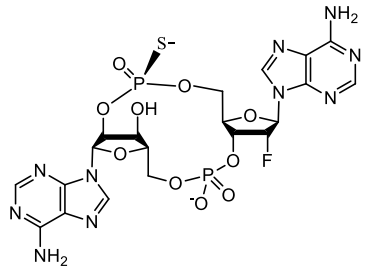
or a pharmaceutically acceptable salt thereof.

16. A compound which is:

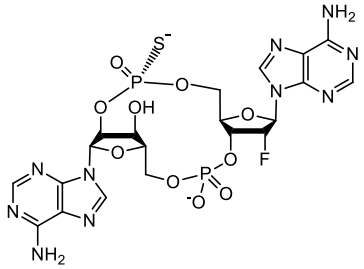


.

17. A pharmaceutically acceptable salt of a compound of Claim 12 which is:

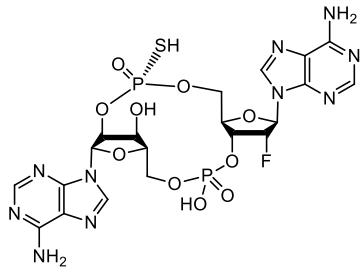


18. A compound of Claim 12 which is:

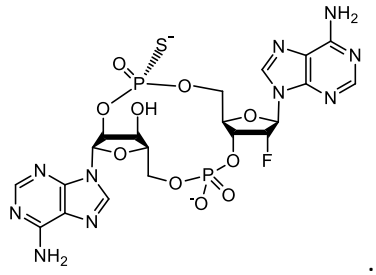


or a pharmaceutically acceptable salt thereof.

19. A compound which is:



20. A pharmaceutically acceptable salt of a compound of Claim 12 which is:



.

21. A pharmaceutical composition comprising a compound of Claim 12, or a pharmaceutically acceptable salt thereof, and one or more of pharmaceutically acceptable excipients.

22. A compound or a pharmaceutically acceptable salt thereof, as described in Claim 12, for use in the treatment of inflammation, allergic diseases, autoimmune diseases, human immunodeficiency virus (HIV), infectious diseases, cancer, and pre-cancerous syndromes, in a mammal in need thereof.

23. A composition comprising a compound of Claim 12, or a pharmaceutically acceptable salt thereof, and an antigen or antigen composition.

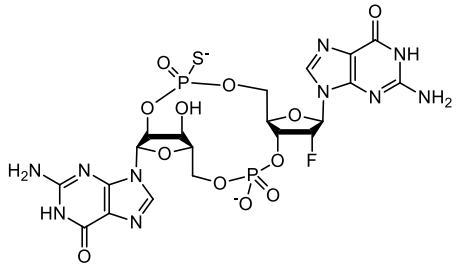
24. A vaccine composition comprising an antigen or antigen composition and a compound of Claim 12, or a pharmaceutically acceptable salt thereof.

25. An immugenic composition comprising an antigen or antigen composition and a compound of Claim 12, or a pharmaceutically acceptable salt thereof.

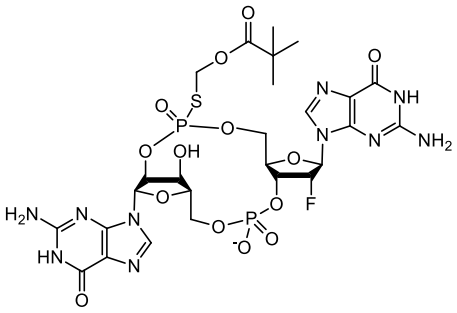
26. A composition comprising a compound of Claim 12, or a pharmaceutically acceptable salt thereof, and one or more immunostimulatory agents.

27. A compound, or a pharmaceutically acceptable salt thereof, as described in Claim 12, for use in the treatment of HBV, HCV, influenza, skin warts, multiple sclerosis, and allergic inflammation, in a human in need thereof.

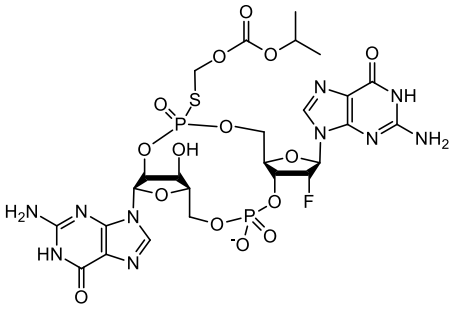
28. A compound of claim 1 selected from:



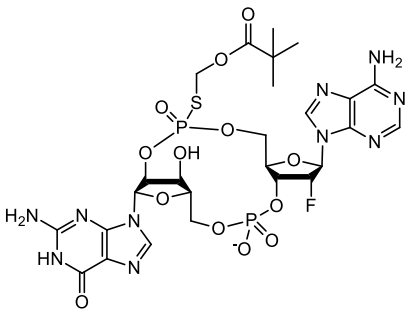
or a pharmaceutically acceptable salt thereof;



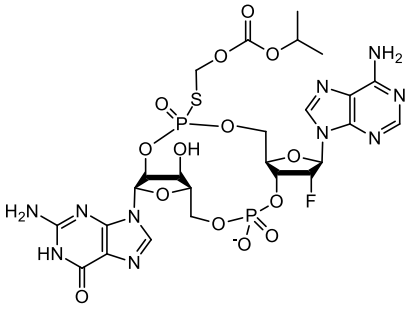
or a pharmaceutically acceptable salt thereof;



or a pharmaceutically acceptable salt thereof;



or a pharmaceutically acceptable salt thereof; and



or a pharmaceutically acceptable salt thereof.

29. A compound of Claim 1, or a pharmaceutically acceptable salt thereof, wherein: R^{38} and R^{39} are H.