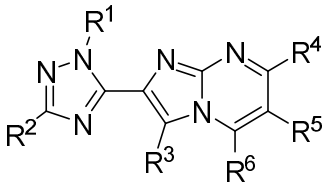
CLAIMS

1. A compound of Formula (I) or a tautomer thereof, or a pharmaceutically acceptable salt of said compound or tautomer thereof,



(I)

wherein

R^1 is hydrogen or a prodrug moiety;

R^2 is selected from the group consisting of hydrogen, halo, cyano, nitro, C_{1-3} alkyl, halo(C_{1-3})alkyl, halo(C_{1-3})alkoxy, -S(O)R^7, -SO_2R^7, -C(O)NR^7R^8, -NR^7C(O)R^8 -CO_2R^7, wherein C_{1-3} alkyl, halo(C_{1-3})alkyl, and halo(C_{1-3})alkoxy is optionally substituted by hydroxyl or -NR^7R^8;

R^3 is a 5- or 6-membered heteroaryl optionally substituted by C_{1-3} alkyl, -C(O)R^8 or a prodrug moiety;

each R^4, R^5 and R^6 is independently -L-Y;

each L is independently selected from a bond, -(CR^aR^b)$_n$-, -O-, (CR^aR^b)$_n$O-, -O(R^aR^b)$_n$-, or -(CR^aR^b)$_n$O(CR^aR^b)$_m$-;

wherein each n or m is independently 1, 2 or 3;

each R^a and R^b is independently selected from hydrogen, halo and methyl;

each Y is independently selected from the group consisting of hydrogen, halo, hydroxyl, cyano, C_{1-4} alkyl, C_{1-4} alkoxy, C_{3-7}cycloalkyl, C_{2-4} alkenyl, C_{1-4} thioalkyl, C_{1-6} hydroxyalkyl, C_{1-4} cyanoalkyl, halo(C_{1-4})alkyl, halo(C_{2-4})alkenyl, -NR^9R^{10}, -C(O)NR^9R^{10}, -CO_2R^{10}, -C(O)R^{10}, -SO_2R^{10}, -OSO_2R^{10}, -S(O)R^{10}, -SO_2NR^9R^{10}, -N(R^{10})SO_2R^{10}, -$CF_2CH_2OR^{10}$, phenyl, 5- or 6-membered heteroaryl, and 4- to 10-membered heterocycloalkyl ring containing one, two or three heteroatoms independently selected from N, O and S, wherein the C_{3-7}cycloalkyl, phenyl, heteroaryl and heterocycloalkyl groups are optionally substituted with one, two or three substituents independently selected from halo, hydroxyl, -C(O)R^{10}, oxo, C_{1-4} alkyl, halo(C_{1-4})alkyl and C_{1-4} hydroxyalkyl; or

R^4 and R^5 taken together with the carbon atoms to which they are attached form a 5- to 8-membered monocyclic or bicyclic ring which optionally contains one or two

heteroatoms independently selected from N, O and S, wherein the ring is optionally substituted with one, two or three substituents independently selected from halo, C_{1-4} alkyl, oxo, $-C(O)R^{10}$ and $-SO_2R^{10}$;

R^7 and R^8 are independently selected from hydrogen and C_{1-4} alkyl;

R^9 is independently selected from the group consisting of hydrogen, C_{1-4} alkyl, $-C(O)C_{1-4}$ alkyl and halo(C_{1-4})alkyl; and

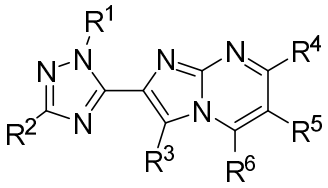
R^{10} is independently selected from hydrogen and C_{1-6} alkyl; or

wherein R^9 and R^{10} taken together with the nitrogen atom to which they are attached form a 5- to 8-membered heterocycloalkyl ring containing one or two heteroatoms independently selected from N, O and S, wherein the heterocycloalkyl is optionally substituted with oxo.

2. A compound or a tautomer thereof, or a pharmaceutically acceptable salt of said compound or tautomer thereof according to claim 1, wherein R^3 is a 5-membered heteroaryl.

3. A compound or a tautomer thereof, or a pharmaceutically acceptable salt of said compound or tautomer thereof according to claim 1, wherein R^3 is a 5-membered nitrogen containing heteroaryl.

4. A compound of Formula (I) or a tautomer thereof, or a pharmaceutically acceptable salt of said compound or tautomer thereof,



(I)

wherein

R^1 is hydrogen or a prodrug moiety;

R^2 is selected from the group consisting of hydrogen, halo, cyano, nitro, C_{1-3} alkyl, halo(C_{1-3})alkyl, halo(C_{1-3})alkoxy, $-S(O)R^7$, $-SO_2R^7$, $-C(O)NR^7R^8$, $-NR^7C(O)R^8$ $-CO_2R^7$, wherein C_{1-3} alkyl, halo(C_{1-3})alkyl, and halo(C_{1-3})alkoxy is optionally substituted by hydroxyl or $-NR^7R^8$;

R^3 is imidazolyl or pyrazolyl, where R^3 is optionally substituted by C_{1-3} alkyl, $-C(O)R^8$ or a prodrug moiety;

each R^4, R^5 and R^6 is independently -L-Y;

each L is independently selected from a bond, -(CR^aR^b)$_n$-, -O-, (CR^aR^b)$_n$O-, -O(R^aR^b)$_n$-, or -(CR^aR^b)$_n$O(CR^aR^b)$_m$-;

wherein each n or m is independently 1, 2 or 3;

each R^a and R^b is independently selected from hydrogen or methyl;

each Y is independently selected from the group consisting of hydrogen, halo, hydroxyl, cyano, C_{1-4} alkyl, C_{1-4} alkoxy, C_{3-7}cycloalkyl, C_{2-4} alkenyl, C_{1-4} thioalkyl, C_{1-6} hydroxyalkyl, C_{1-4} cyanoalkyl, halo(C_{1-4})alkyl, halo(C_{2-4})alkenyl, -NR^9R^{10}, -$C(O)NR^9R^{10}$, -CO_2R^{10}, -$C(O)R^{10}$, -SO_2R^{10}, -OSO_2R^{10}, -$S(O)R^{10}$, -$SO_2NR^9R^{10}$, -$N(R^{10})SO_2R^{10}$, -$CF_2CH_2OR^{10}$, phenyl, 5- or 6-membered heteroaryl, and 4- to 10-membered heterocycloalkyl ring containing one, two or three heteroatoms independently selected from N, O and S, wherein the C_{3-7}cycloalkyl, phenyl, heteroaryl and heterocycloalkyl groups are optionally substituted with one, two or three substituents independently selected from halo, hydroxyl, -$C(O)R^{10}$, oxo, C_{1-4} alkyl, halo(C_{1-4})alkyl and C_{1-4} hydroxyalkyl; or

R^4 and R^5 taken together with the carbon atoms to which they are attached form a 5- to 8-membered monocyclic or bicyclic ring which optionally contains one or two heteroatoms independently selected from N, O and S, wherein the ring is optionally substituted with one, two or three substituents independently selected from halo, C_{1-4} alkyl, oxo, -$C(O)R^{10}$ and -SO_2R^{10};

R^7 and R^8 are independently selected from hydrogen and C_{1-3} alkyl;

R^9 is independently selected from the group consisting of hydrogen, C_{1-4} alkyl, -$C(O)C_{1-4}$ alkyl and halo(C_{1-4})alkyl; and

R^{10} is independently selected from hydrogen and C_{1-6} alkyl; or

wherein R^9 and R^{10} taken together with the nitrogen atom to which they are attached form a 5- to 8-membered heterocycloalkyl ring containing one or two heteroatoms independently selected from N, O and S, wherein the heterocycloalkyl is optionally substituted with oxo.

5. A compound or a tautomer thereof, or a pharmaceutically acceptable salt of said compound or tautomer thereof according to any one of the preceding claims, wherein R^a and R^b are hydrogen.

6. A compound or a tautomer thereof, or a pharmaceutically acceptable salt of said compound or tautomer thereof according to any one of the preceding claims, wherein each prodrug moiety is independently selected from the group consisting of -CH_2O-$P(O)(OR^d)(OR^e)$, -CH_2O-$C(O)$-C_{1-6} alkylene-O-$P(O)(OR^d)(OR^e)$, -CH_2O-$C(O)$-C_{1-6}

alkylene-P(O)(OR^d)(OR^e), -CH_2O-C(O)-C_{1-6} alkylene-CO_2H, -CH_2O-C(O)R^d, -CH_2O-C(O)O- C_{1-6} alkylene-CO_2H, -CH_2O-C(O)-C_{1-6} alkylene-NR^dR^e, -CH_2O-C(O)O-C_{1-6} alkylene-NR^dR^e, -C(O)R^d, -CH_2O-C(O)-C_{1-6} alkylene-heterocycloalkyl, -CH_2O-C(O)-C_{1-6} alkylene-heterocycloalkyl and -CR^dR^e-O-(C(O)-NR^d-heteroarylene-CH_2O-C(O)-CH_2-NR^dR^e;

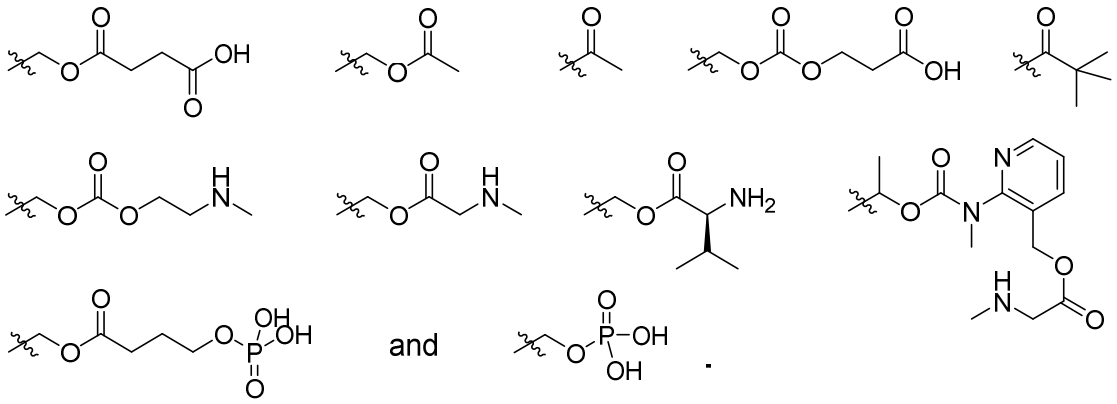
wherein R^d and R^e are each independently hydrogen or C_{1-6} alkyl;

each heterocycloalkyl is 4- to 6-membered and contains one or two heteroatoms independently selected from N, O and S; and

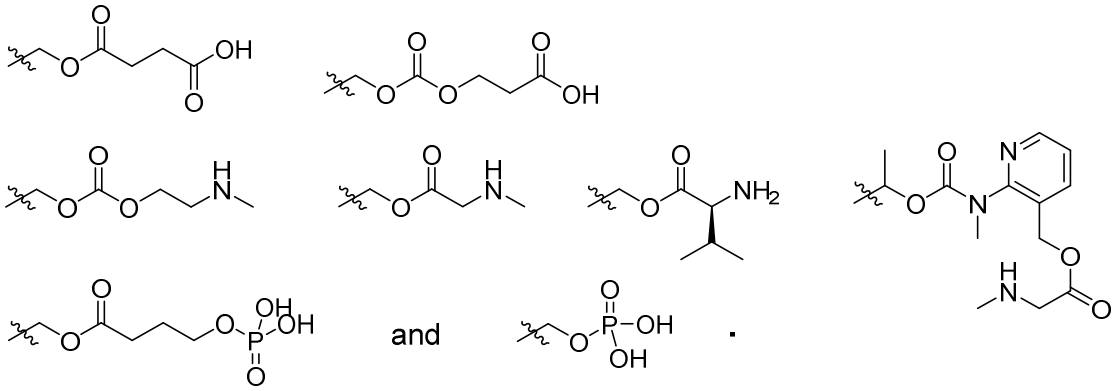
each heteroarylene is 5- or 6-membered and contains one or two heteroatoms independently selected from N, O and S.

7. A compound or a tautomer thereof, or a pharmaceutically acceptable salt of said compound or tautomer thereof according to claim 6, wherein each prodrug moiety is independently selected from -CH_2O-P(O)(OR^d)(OR^e), -CH_2O-C(O)-C_{1-6} alkylene-O-P(O)(OR^d)(OR^e), -CH_2O-C(O)-C_{1-6} alkylene-P(O)(OR^d)(OR^e), -CH_2O-C(O)-C_{1-6} alkylene-CO_2H, -CH_2O-C(O)R^d, -CH_2O-C(O)O- C_{1-6} alkylene-CO_2H, -CH_2O-C(O)-C_{1-6} alkylene-NR^dR^e, -CH_2O-C(O)O-C_{1-6} alkylene-NR^dR^e and -C(O)R^d.

8. A compound or a tautomer thereof, or a pharmaceutically acceptable salt of said compound or tautomer thereof according to claim 6, wherein each prodrug moiety is independently selected from

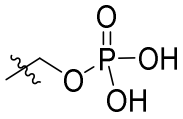


9. A compound or a tautomer thereof, or a pharmaceutically acceptable salt of said compound or tautomer thereof according to claim 8, wherein each prodrug moiety is independently selected from



10. A compound or a tautomer thereof, or a pharmaceutically acceptable salt of said compound or tautomer thereof according to any one of claims 1 to 7, wherein each prodrug moiety is $-CH_2O-P(O)(OR^d)(OR^e)$.

11. A compound or a tautomer thereof, or a pharmaceutically acceptable salt of said compound or tautomer thereof according to claim 10, wherein each prodrug moiety is



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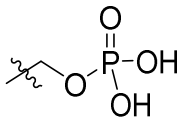
12. A compound or a tautomer thereof, or a pharmaceutically acceptable salt of said compound or tautomer thereof according to any one of the preceding claims, wherein R^3 is imidazolyl.

13. A compound or a tautomer thereof, or a pharmaceutically acceptable salt of said compound or tautomer thereof according to any one of the preceding claims, wherein R^1 is a prodrug moiety and R^3 is imidazolyl.

14. A compound or a tautomer thereof, or a pharmaceutically acceptable salt of said compound or tautomer thereof according to claim 13, wherein R^1 is



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15. A compound or a tautomer thereof, or a pharmaceutically acceptable salt of said compound or tautomer thereof according to any one of claims 1 to 4, wherein R^1 is hydrogen and R^3 is imidazolyl.

16. A compound or a tautomer thereof, or a pharmaceutically acceptable salt of said compound or tautomer thereof according to any one of the preceding claims, wherein R^2 is selected from the group consisting of Br, cyano, $-C(O)NH_2$, $-CF_2CH_2NH_2$, $-CF_2CH_2OH$, $-CH_2F$, $-CHF_2$, $-CF_3$, $-CF_2CF_3$, $-CF_2CH_3$, $-CF_2CHF_2$, $-OCHF_2$ and $-S(O)CH_3$.

17. A compound or a tautomer thereof, or a pharmaceutically acceptable salt of said compound or tautomer thereof according to claim 16, wherein R^2 is $-CF_3$.

18. A compound or a tautomer thereof, or a pharmaceutically acceptable salt of said compound or tautomer thereof according to any one of the preceding claims, wherein each L is a bond.

19. A compound or a tautomer thereof, or a pharmaceutically acceptable salt of said compound or tautomer thereof according to claim 18, wherein each Y is independently selected from the group consisting of hydrogen, halo, cyano, C_{1-4} alkyl, C_{1-4} alkoxy, C_{3-7}cycloalkyl, C_{1-4} thioalkyl, C_{1-6} hydroxyalkyl, C_{1-4} cyanoalkyl, halo(C_{1-4})alkyl, $-NR^9R^{10}$, $-CO_2R^{10}$, $-C(O)R^{10}$, $-CF_2CH_2OR^{10}$, and 4- to 10-membered heterocycloalkyl ring containing one or two heteroatoms independently selected from N, O and S where the heterocycloalkyl and C_{3-7}cycloalkyl are optionally substituted with up to three substituents independently selected from halo, hydroxyl, $-C(O)R^{10}$, oxo, C_{1-4} alkyl, halo(C_{1-4})alkyl and C_{1-4} hydroxyalkyl; or

    R^4 and R^5 taken together with the carbon atoms to which they are attached form a 5- to 8-membered monocyclic or bicyclic ring which optionally contains one or two heteroatoms independently selected from N, O and S, wherein the ring is optionally substituted with up to three substituents independently selected from halo, C_{1-4} alkyl, oxo, $-C(O)R^{10}$ and $-SO_2R^{10}$.

20. A compound or a tautomer thereof, or a pharmaceutically acceptable salt of said compound or tautomer thereof according to any one of the preceding claims, wherein each Y is independently selected from hydrogen, halogen, CO_2R^{10} and halo(C_{1-4})alkyl.

21. A compound or a tautomer thereof, or a pharmaceutically acceptable salt of said compound or tautomer thereof according to any one of the preceding claims, wherein R^6 is hydrogen.

22. A compound or a tautomer thereof, or a pharmaceutically acceptable salt of said compound or tautomer thereof according to any one of the preceding claims, wherein R^4 and R^6 are hydrogen and R^5 is fluoro.

23. A compound or a tautomer thereof, or a pharmaceutically acceptable salt of said compound or tautomer thereof selected from the group consisting of:

    5-[3-(1H-imidazol-4-yl)imidazo[1,2-a]pyrimidin-2-yl]-3-(trifluoromethyl)-1H-1,2,4-triazole;

5-[6-fluoro-3-(1H-imidazol-5-yl)imidazo[1,2-a]pyramidin-2-yl]-3-(trifluoromethyl)-1H-1,2,4-triazole;

5-[3-(1H-imidazol-5-yl)-7-(trifluoromethyl)imidazo[1,2-a]pyrimidin-2-yl]-3-(trifluoromethyl)-1H-1,2,4-triazole;

5-[6-chloro-3-(1H-imidazol-4-yl)imidazo[1,2-a]pyrimidin-2-yl]-3-(difluoromethyl)-1H-1,2,4-triazole;

3-(difluoromethyl)-5-[6-fluoro-3-(1H-imidazol-4-yl)imidazo[1,2-a]pyrimidin-2-yl]-1H-1,2,4-triazole;

5-[7-chloro-3-(1H-imidazol-5-yl)imidazo[1,2-a]pyrimidin-2-yl]-3-(trifluoromethyl)-1H-1,2,4-triazole;

3-(difluoromethyl)-5-[7-(difluoromethyl)-3-(1H-imidazol-5-yl)imidazo[1,2-a]pyrimidin-2-yl]-1H-1,2,4-triazole;

5-[3-(1H-pyrazol-4-yl)imidazo[1,2-a]pyrimidin-2-yl]-3-(trifluoromethyl)-1H-1,2,4-triazole;

{4-oxo-4-[(4-{2-[3-(trifluoromethyl)-1H-1,2,4-triazol-5-yl]imidazo[1,2-a]pyrimidin-3-yl}-1H-imidazol-1-yl)methoxy]butoxy}phosphonic acid;

{4-oxo-4-[(5-{3-[1-({[4-(phosphonooxy)butanoyl]oxy}methyl)-1H-imidazol-4-yl]imidazo[1,2-a]pyrimidin-2-yl}-3-(trifluoromethyl)-1H-1,2,4-triazol-1-yl)methoxy]butoxy}phosphonic acid;

({5-[6-fluoro-3-(1H-imidazol-5-yl)imidazo[1,2-a]pyrimidin-2-yl]-3-(trifluoromethyl)-1H-1,2,4-triazol-1-yl}methoxy)phosphonic acid;

methyl 2-(3-bromo-1H-1,2,4-triazol-5-yl)-3-(1H-pyrazol-4-yl)imidazo[1,2-a]pyrimidine-7-carboxylate;

methyl 2-(3-bromo-1H-1,2,4-triazol-5-yl)-3-(1H-imidazol-4-yl)imidazo[1,2-a]pyrimidine-7-carboxylate;

3-bromo-5-[3-(1H-imidazol-4-yl)imidazo[1,2-a]pyrimidin-2-yl]-1H-1,2,4-triazole;

5-[6-fluoro-3-(1H-pyrazol-4-yl)imidazo[1,2-a]pyrimidin-2-yl]-3-(trifluoromethyl)-1H-1,2,4-triazole;

5-[6-chloro-3-(1H-imidazol-5-yl)imidazo[1,2-a]pyrimidin-2-yl]-3-(trifluoromethyl)-1H-1,2,4-triazole;

3-(difluoromethyl)-5-[3-(1H-imidazol-5-yl)imidazo[1,2-a]pyrimidin-2-yl]-1H-1,2,4-triazole;

5-[3-(1H-imidazol-5-yl)-6-(trifluoromethyl)imidazo[1,2-a]pyrimidin-2-yl]-3-(trifluoromethyl)-1H-1,2,4-triazole;

5-[6-bromo-3-(1H-imidazol-5-yl)imidazo[1,2-a]pyrimidin-2-yl]-3-(trifluoromethyl)-1H-1,2,4-triazole;

3-(difluoromethyl)-5-[3-(1H-imidazol-5-yl)-7-(trifluoromethyl)imidazo[1,2-a]pyrimidin-2-yl]-1H-1,2,4-triazole;

3-bromo-5-[3-(1H-imidazol-5-yl)-7-(trifluoromethyl)imidazo[1,2-a]pyrimidin-2-yl]-1H-1,2,4-triazole;

5-[3-(1H-pyrazol-4-yl)-7-(trifluoromethyl)imidazo[1,2-a]pyrimidin-2-yl]-3-(trifluoromethyl)-1H-1,2,4-triazole;

5-[7-(difluoromethyl)-3-(1H-imidazol-5-yl)imidazo[1,2-a]pyrimidin-2-yl]-3-(trifluoromethyl)-1H-1,2,4-triazole;

5-[3-(1H-imidazol-5-yl)-7-(trifluoromethyl)imidazo[1,2-a]pyrimidin-2-yl]-1H-1,2,4-triazole;

5-[3-(1H-imidazol-5-yl)-7-(trifluoromethyl)imidazo[1,2-a]pyrimidin-2-yl]-3-methyl-1H-1,2,4-triazole;

methyl 3-(1H-imidazol-4-yl)-2-[3-(trifluoromethyl)-1H-1,2,4-triazol-5-yl]imidazo[1,2-a]pyrimidine-7-carboxylate;

3-(1H-imidazol-4-yl)-2-[3-(trifluoromethyl)-1H-1,2,4-triazol-5-yl]imidazo[1,2-a]pyrimidine-7-carboxylic acid;

3-(difluoromethoxy)-5-[3-(1H-imidazol-5-yl)imidazo[1,2-a]pyrimidin-2-yl]-1H-1,2,4-triazole;

5-[6-(difluoromethyl)-3-(1H-imidazol-4-yl)imidazo[1,2-a]pyrimidin-2-yl]-3-(trifluoromethyl)-1H-1,2,4-triazole;

5-[6-fluoro-3-(1H-imidazol-5-yl)-7-(trifluoromethyl)imidazo[1,2-a]pyrimidin-2-yl]-3-(trifluoromethyl)-1H-1,2,4-triazole;

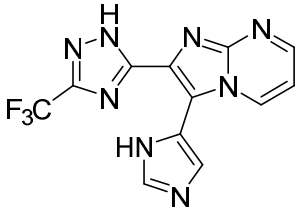
5-[6-chloro-3-(1H-imidazol-5-yl)-7-(trifluoromethyl)imidazo[1,2-a]pyrimidin-2-yl]-3-(trifluoromethyl)-1H-1,2,4-triazole;

5-[3-(2-methyl-1H-imidazol-4-yl)imidazo[1,2-a]pyrimidin-2-yl]-3-(trifluoromethyl)-1H-1,2,4-triazole;

5-[3-(1-methyl-1H-pyrazol-4-yl)imidazo[1,2-a]pyrimidin-2-yl]-3-(trifluoromethyl)-1H-1,2,4-triazole; and

3-bromo-5-[6-fluoro-3-(1H-imidazol-4-yl)imidazo[1,2-a]pyrimidin-2-yl]-1H-1,2,4-triazole.

24. A compound according to claim 1 or claim 4, which is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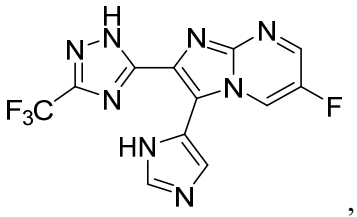
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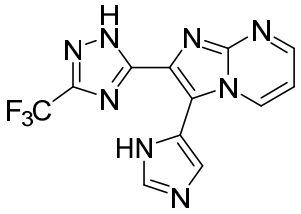
or a tautomer thereof, or a pharmaceutically acceptable salt of said compound or tautomer thereof.

25. A compound according to claim 1 or claim 4, which is a prodrug of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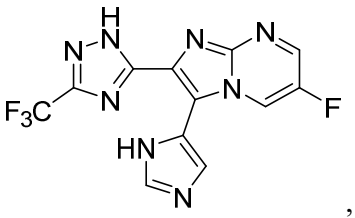
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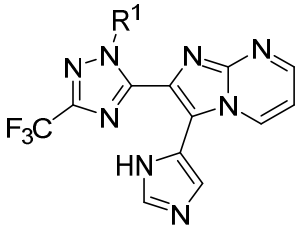
or a tautomer thereof, or a pharmaceutically acceptable salt of said compound or tautomer thereof.

26. A compound according to claim 25, which is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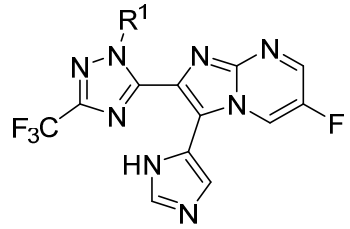
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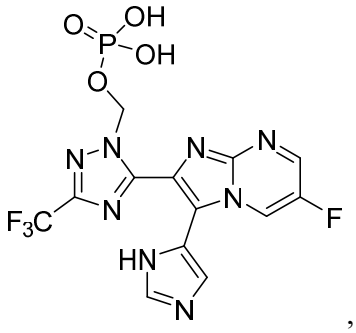
wherein R^1 is a prodrug moiety;

or a tautomer thereof, or a pharmaceutically acceptable salt of said compound or tautomer thereof.

27. A compound according to claim 26, which is



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or a tautomer thereof, or a pharmaceutically acceptable salt of said compound or tautomer thereof.

28. A compound according to any one of claims 1 to 27.

29. A pharmaceutical composition comprising (a) a compound or a tautomer thereof, or a pharmaceutically acceptable salt of said compound or tautomer thereof as defined in any one of claims 1 to 28; and (b) a pharmaceutically acceptable excipient.

30. A compound or a tautomer thereof, or a pharmaceutically acceptable salt of said compound or tautomer thereof as defined in any one of claims 1 to 28 for use in therapy.

31. A compound or a tautomer thereof, or a pharmaceutically acceptable salt of said compound or tautomer thereof as defined in any one of claims 1 to 28, for use in the treatment of an autoimmune, autoinflammatory or immune-mediated condition.

32. Use of a compound or a tautomer thereof, or a pharmaceutically acceptable salt of said compound or tautomer thereof as defined in any one of claims 1 to 28 in the manufacture of a medicament for use in the treatment of autoimmune, autoinflammatory or immune-mediated condition.

33. The use according to claim 32 wherein the condition is selected from the group consisting of systemic lupus erythematosus (SLE), cutaneous lupus erythematosus (CLE), lupus nephritis, Sjogren's syndrome, dematomyositis, scleroderma, amyotrophic lateral sclerosis (ALS), Parkinson's disease (PD) and Alzheimer's disease (AD), acute kidney injury, chronic kidney disease, diabetic kidney injury, myocardial infarction, stroke, heart hypertrophy / heart failure, nonalcoholic steatohepatitis (NASH) and nonalcoholic fatty liver disease (NAFLD).

34. The use according to claim 33, wherein the condition is systemic lupus erythematosus or lupus nephritis.

35. A combination of (i) a compound or a tautomer thereof, or a pharmaceutically acceptable salt of said compound or tautomer thereof as defined in any one of claims 1 to 28; and (ii) an immune modulatory agent.