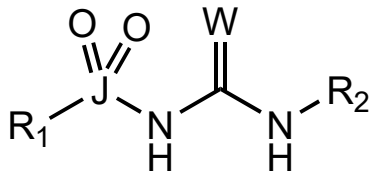
CLAIMS

1. A compound of formula (I), or a pharmaceutically acceptable salt , ~~or~~ solvate ~~or prodrug~~ thereof:



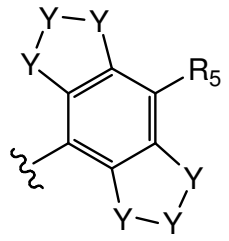
Formula (I)

wherein, W is selected from O, S and Se;

J is selected from S and Se;

R_1 is selected from the group consisting of ~~cycloalkyl, aryl, heteroaryl and~~ 5-membered and 6-membered heterocyclyl, all of which may be optionally substituted;

R_2 is selected from ~~the group consisting of cycloalkyl, aryl, heteroaryl and heterocyclyl, all of which may be optionally substituted;~~a 2,6-dialkylphenyl, a 2,6-dialkyl-4-halophenyl, a 2,6-dicycloalkylphenyl, a 2,6-dicycloalkyl-4-halophenyl, ~~and~~:



wherein each incidence of Y is independently selected from C, N, S and O, which may be optionally substituted;

R_5 is selected from the group consisting of hydrogen, halo, cyano, amide, sulphonamide, acyl, hydroxyl, C_1-C_6 alkyl, C_1-C_6 haloalkyl, C_3-C_5 cycloalkyl and C_1-C_6 alkoxy, all of which groups may be optionally substituted with halo, cyano or C_1-C_6 alkoxy; and

both R_1 is directly bonded to J and R_2 is directly bonded to the adjacent nitrogen, via a carbon atom.

2. The compound of claim 1 wherein R_1 is ~~selected from the group consisting of C_5 or C_6 cycloalkyl, 5-membered or 6-membered heteroaryl, bicyclic heteroaryl wherein at least one ring is heteroaryl, phenyl, biphenyl, phenylheterocyclyl, 5-membered or~~ 6-membered heterocyclyl, ~~and heterocyclylcycloalkyl,~~ all of which may be optionally substituted.

3. The compound of any one of the preceding claims, wherein R_1 is a fully saturated heterocyclyl, all of which may be optionally substituted.

4. The compound of any one of the preceding claims, wherein R_1 is a nitrogen heterocyclyl, all of which may be optionally substituted.

~~3.~~5. The compound of any of the preceeding claims, ~~1 or claim 2~~ wherein R_1 is selected from the group consisting of ~~pyrazole, furan,~~ tetrahydrofuran, tetrahydropyran, pyran, pyrrolidine, ~~pyrrole, triazole, tetrazole, imidazole, pyridine,~~ morpholine, piperazine and~~,~~ piperidine,~~ substituted phenyl, phenylheteroaryl, phenylheterocyclyl, biphenyl, quinoline, isoquinoline, naphthyl, pyrazine and pyrimidine,~~ all of which may be optionally substituted ~~as appropriate.~~

6. The compound of any one of the preceding claims, wherein R_1 is selected from the group consisting of tetrahydrofuran, tetrahydropyran, pyrrolidine, morpholine, piperazine and piperidine, all of which may be optionally substituted.

7. The compound of any one of the preceding claims, wherein R_1 is selected from the group consisting of pyrrolidine, piperazine and piperidine, all of which may be optionally substituted.

8. The compound of any one of the preceding claims, wherein R_1 is optionally substituted piperidine.

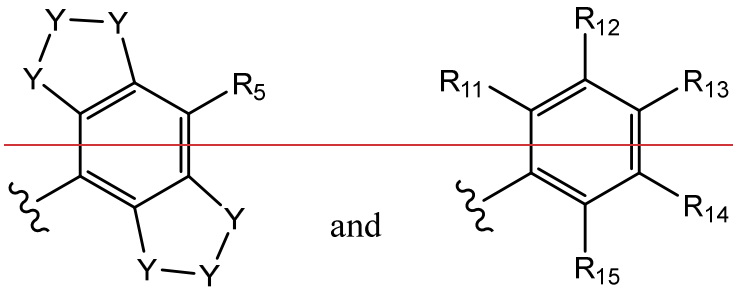
4. The compound of any one of the preceding claims wherein R_1 is 5-membered heterocyclyl or heteroaryl, each of which may be optionally substituted, comprising at least one ring heteroatom selected from N, O and S.

5. The compound of claim 4 wherein R_1 is 5-membered nitrogen heterocyclyl or 5-membered nitrogen heteroaryl, each of which may be optionally substituted.

6. The compound of claim 4 or claim 5 wherein R_1 is 5-membered heterocyclyl or 5-membered heteroaryl, each of which may be optionally substituted, comprising at least two ring nitrogen atoms.

7. The compound of any one of the preceding claims wherein R_2 is selected from the group consisting of bicyclic and tricyclic hydrocarbons, 5-, 6- and 7-membered heterocycles or heteroaryls, each of which may be optionally substituted, and substituted phenyl.

8. The compound of any one of the preceding claims wherein R_2 is selected from:



wherein, each incidence of Y is independently selected from C, N, S and O, which may be optionally substituted as appropriate;

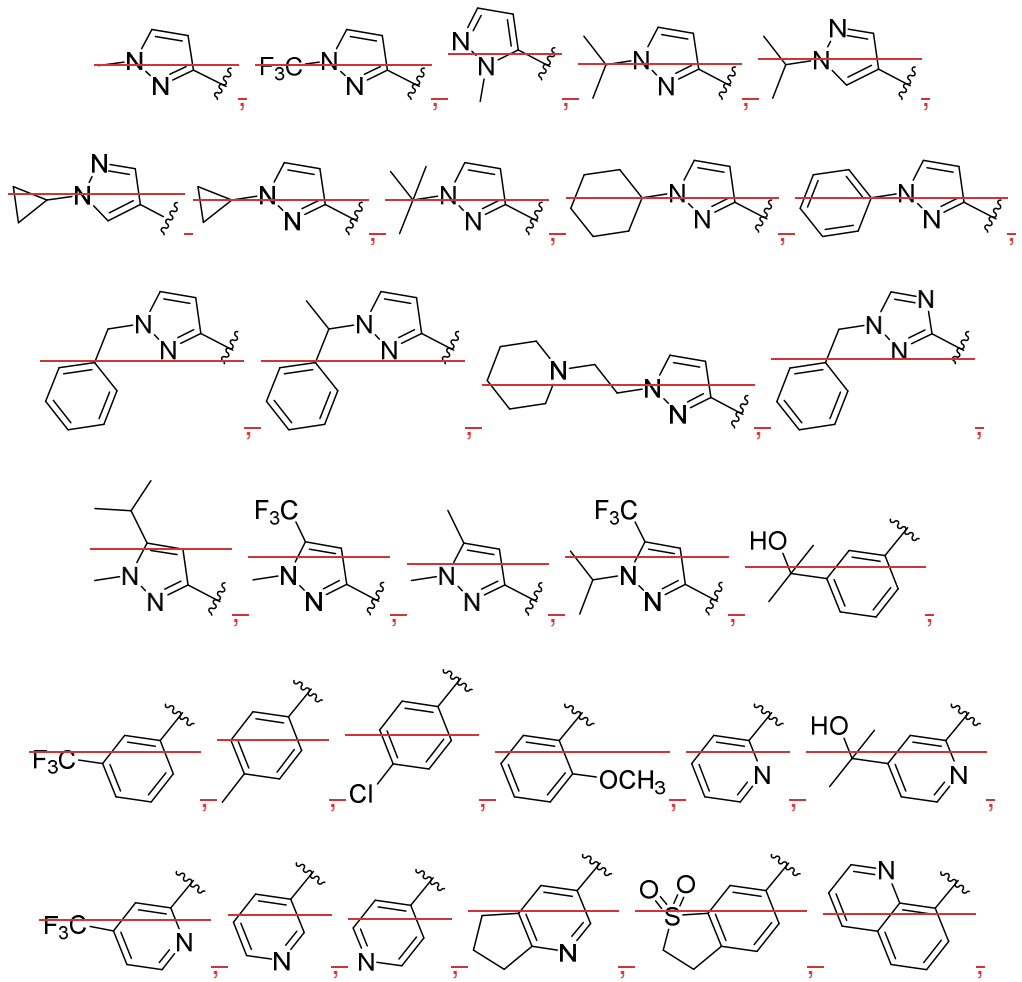
R_5, R_{11}, R_{12}, R_{13}, R_{14} and R_{15} are independently selected from the group consisting of hydrogen, halo, cyano, amide, sulphonamide, acyl, hydroxyl, C_1-C_6 alkyl, C_1-C_6 haloalkyl, C_3-C_5 cyloalkyl, C_1-C_6 alkoxy all of which groups may be optionally substituted, as appropriate, with halo, cyano or C_1-C_6 alkoxy; and

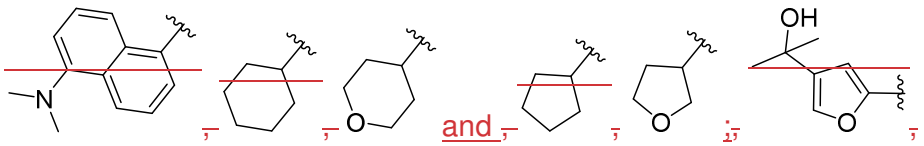
~~wherein R_{11} and R_{12} may combine to form phenyl, a 5- or 6-membered oxygen heterocycle or a 5- or 6-membered nitrogen heteroaryl, each of which may be optionally substituted;~~

~~R_{12} and R_{13} may combine to form a 5- or 6-membered nitrogen heteroaryl, which may be optionally substituted; and~~

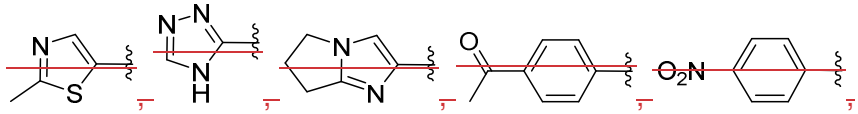
~~R_{14} and R_{15} may combine to form a 5- or 6-membered cycloalkyl ring, phenyl, a 5- or 6-membered oxygen heterocycle or a 5- or 6-membered nitrogen heteroaryl, each of which may be optionally substituted.~~

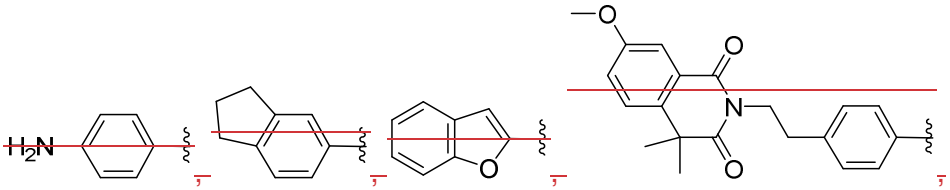
9. The compound of any one of ~~the preceding~~ claims 1, 2, 3. 5 or 6 wherein R_1 is selected from the group consisting of:

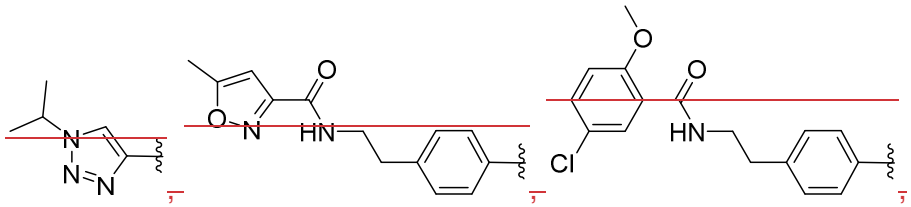


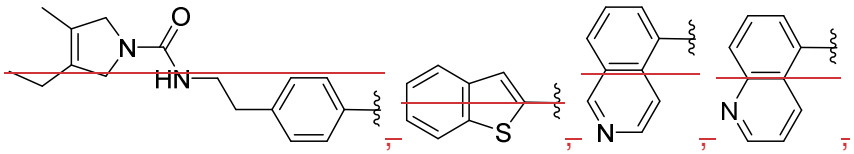


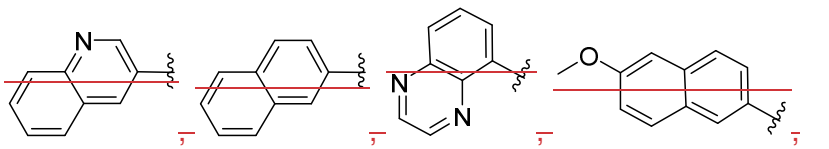
and

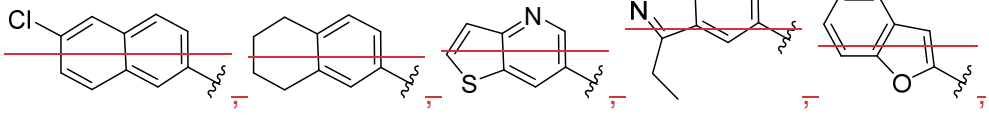


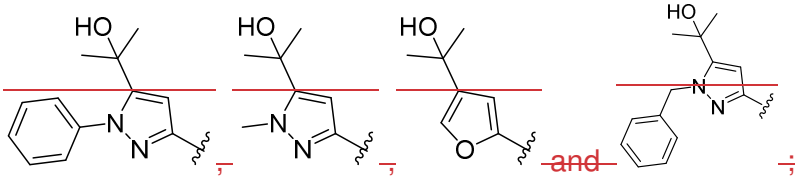






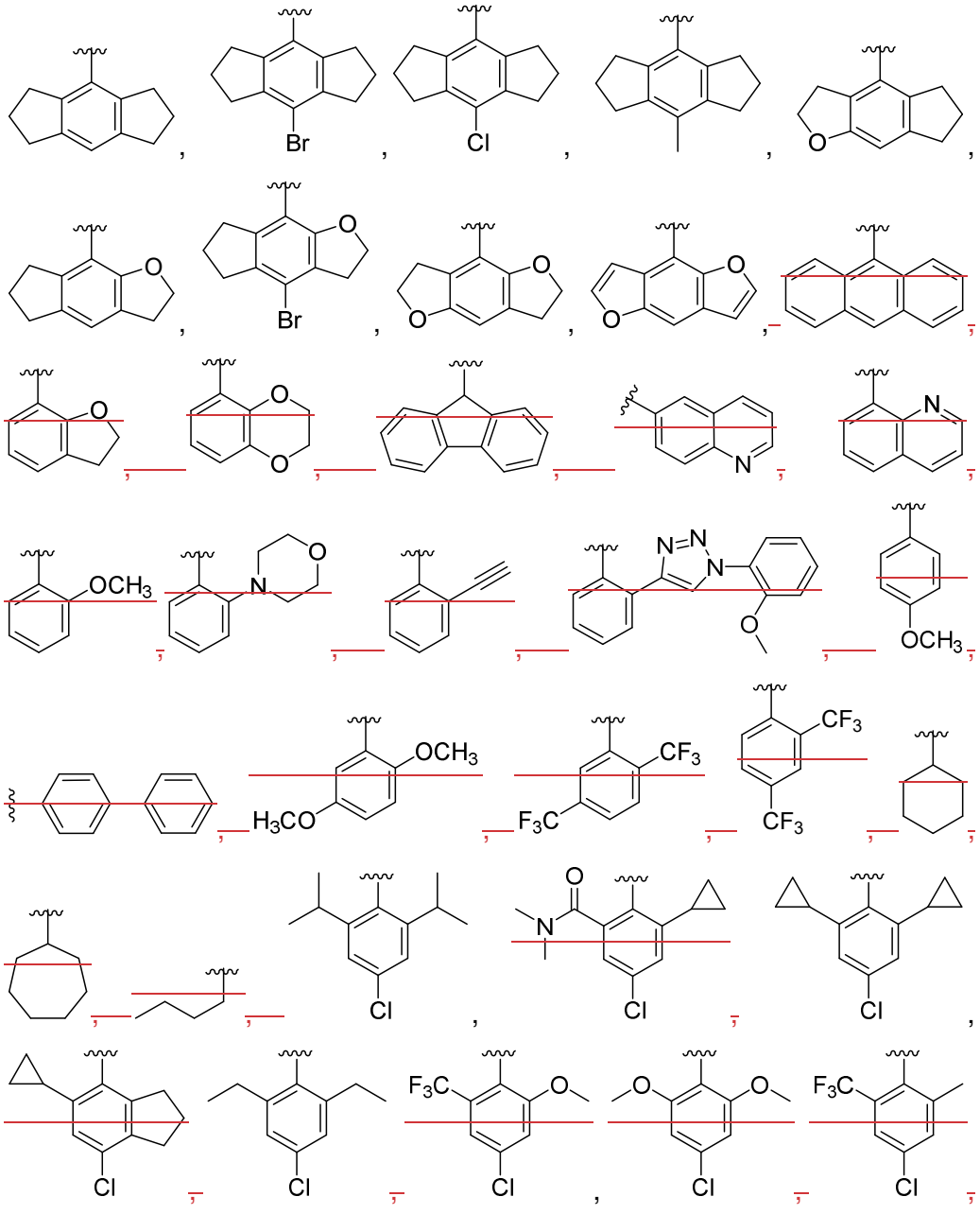


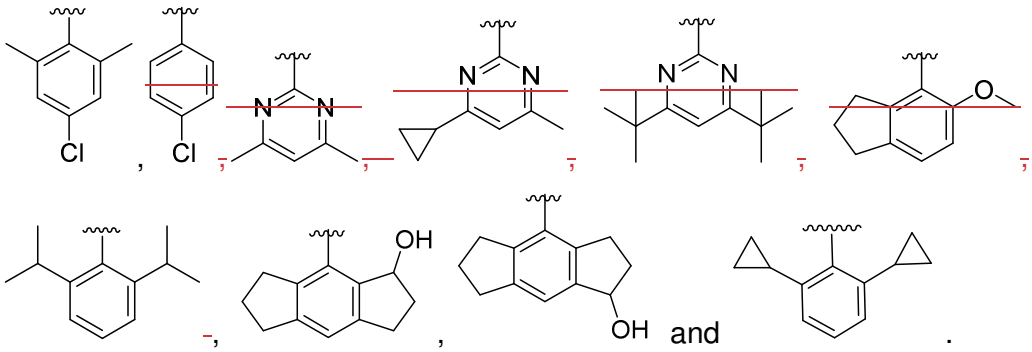




and

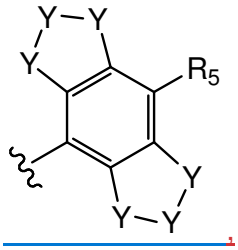
and in combination with each such R_1 group, R_2 is ~~may be~~ independently selected from the group consisting of:





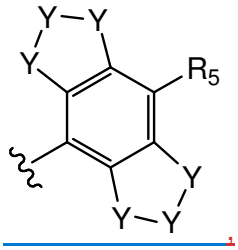
and .

10. The compound of any one of the preceeding claims, wherein wherein R_2 is selected from:



wherein Y and R_5 are as defined in any one of the preceding claims.

11. The compound of any one of the preceding claims, wherein R_2 is selected from:



wherein each incidence of Y is a carbon and R_5 is hydrogen or halo.

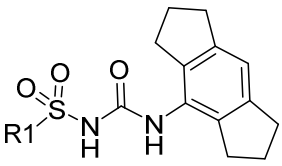
~~10.~~12. The compound of any one of the preceding claims wherein R_2 is selected from a substituted or hydrogenated indacene, a 2,6-dialkylphenyl, a 2,6-dialkyl-4-halophenyl, 2,6-dicycloalkylphenyl, and a 2,6-dicycloalkyl-4-halophenyl.

~~11.~~13. The compound of any one of the preceding claims wherein R_2 is selected from hexahydroindacene, 2,6-diisopropylphenyl, 2,6-diisopropyl-4-chlorophenyl, 2,6-dicyclopropylphenyl and 2,6-dicyclopropyl-4-chlorophenyl.

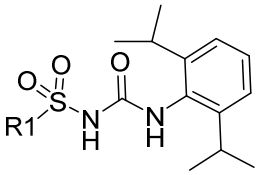
~~12.~~14. The compound of any one of the preceding claims wherein J is a sulphur atom.

~~13.~~15. The compound of any one of the preceding claims wherein W is an oxygen atom.

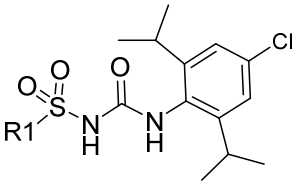
~~14.~~16. The compound of any one of the preceding claims wherein the compound is a compound of formula (Ia), (Ib) or (Ic), or a pharmaceutically acceptable salt or ~~,~~ solvate ~~or prodrug~~ thereof:



formula (Ia)



formula (Ib)

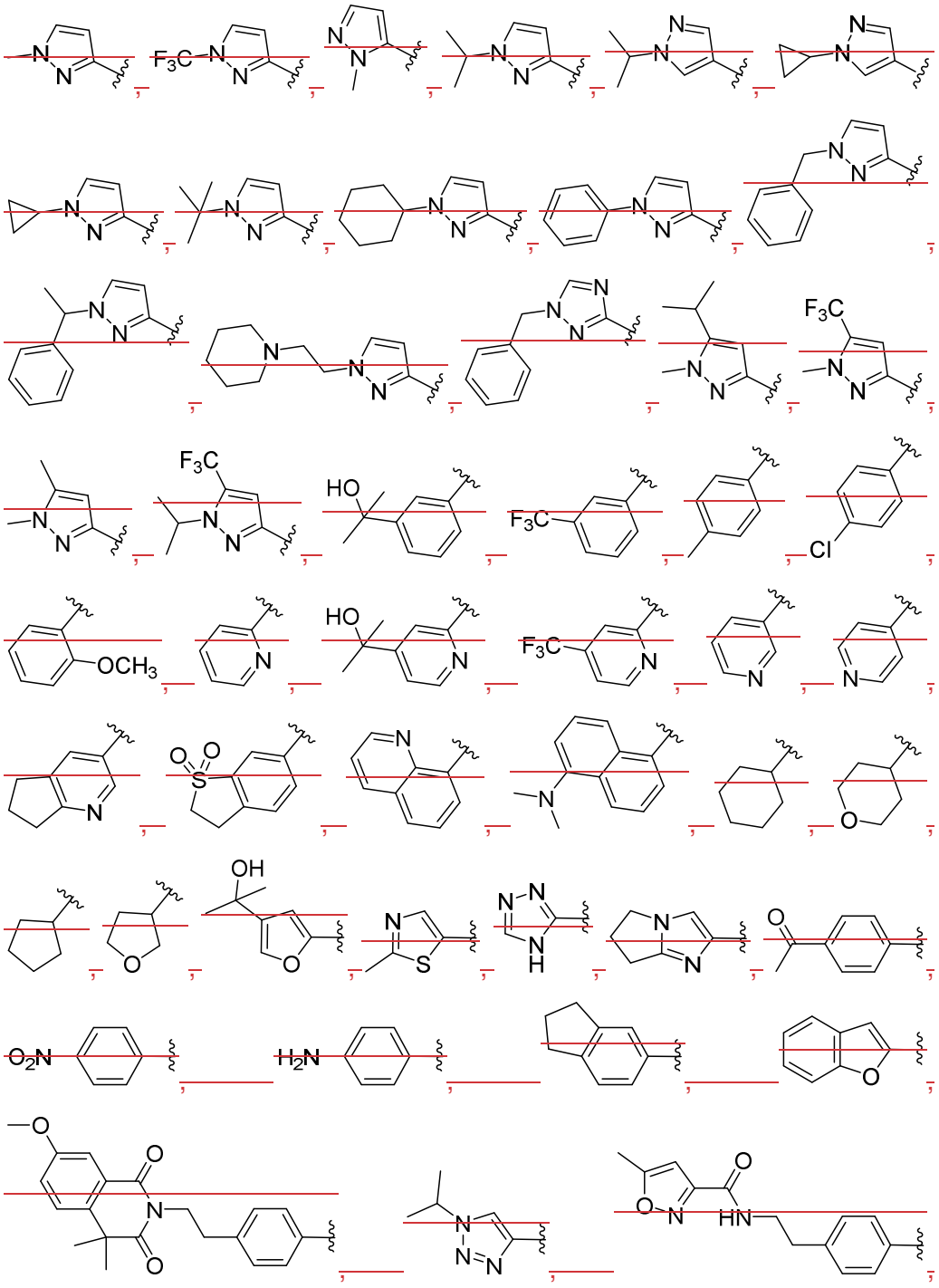


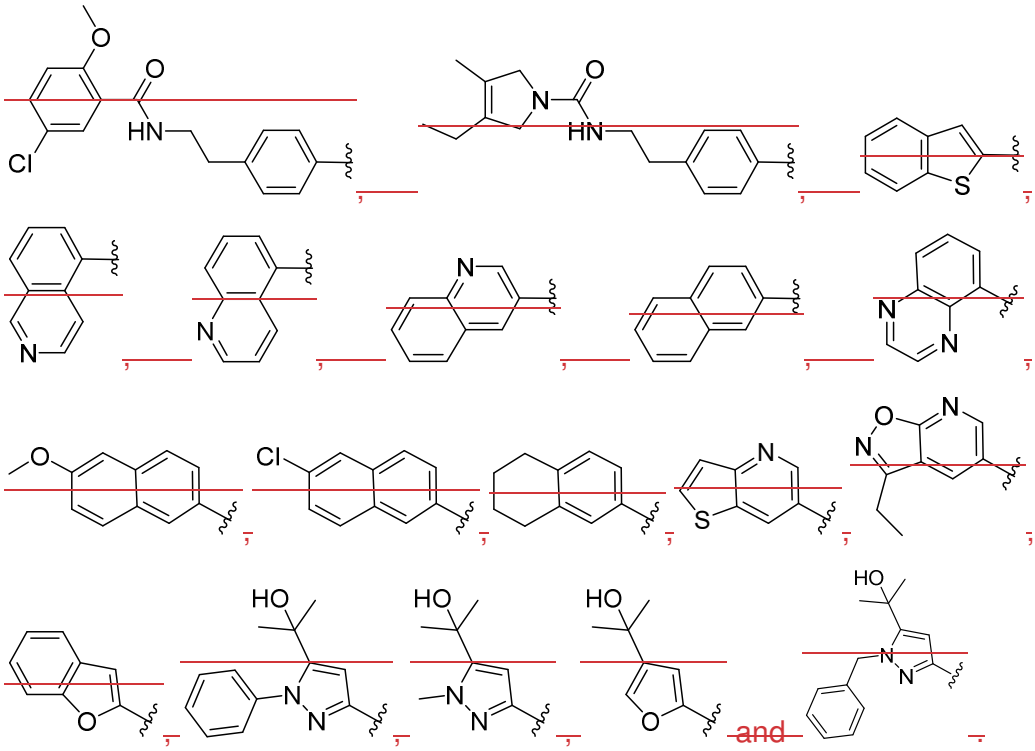
formula (Ic)

wherein, R_1 is as defined in any one of the preceding claims.

~~15. The compound of claim 14 wherein R_1 is selected from the group consisting of pyrazole, furan, tetrahydrofuran, tetrahydropyran, pyran, pyrrolidine, pyrrole, triazole, tetrazole, imidazole, pyridine, morpholine, piperazine, piperidine, substituted phenyl, phenylheteroaryl, phenylheterocyclyl, biphenyl, quinoline, isoquinoline, naphthyl, pyrazine and pyrimidine, all of which may be optionally substituted as appropriate.~~

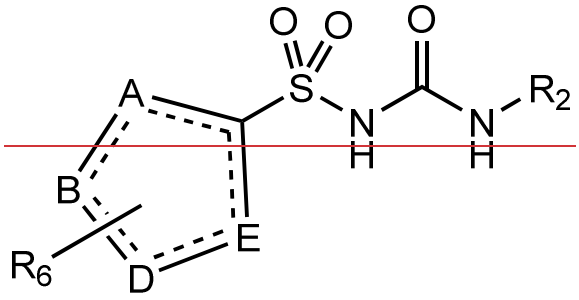
~~16. The compound of claim 14 or claim 15 wherein R_1 is selected from the group consisting of:~~





17. The compound of any one of the preceding claims, wherein any optional substituent is independently selected from the group consisting of C_1-C_{10} alkyl; C_3-C_6 cycloalkyl; hydroxyalkyl; C_1-C_{10} alkoxy; C_2-C_{10} alkenyl; C_2-C_{10} alkynyl; C_6-C_{12} aryl; aryloxy; heteroaryl; heterocyclyl; halo; hydroxyl; halogenated alkyl; amino; alkylamino; arylamino; acyl; amido; CN; NO_2; N_3; CH_2OH; $CONH_2$; $CONR_{24}R_{25}$; CO_2R_{24}; CH_2OR_{24}; $NHCOR_{24}$; $NHCO_2R_{24}$; C_1-C_3 alkylthio; sulfate; sulfonic acid; sulfonate esters; phosphonic acid; phosphate; phosphonate; mono-, di-, or triphosphate esters; trityl; monomethoxytrityl; $R_{24}SO$; $R_{24}SO_2$; CF_3S; CF_3SO_2; and trialkylsilyl; wherein R_{24} and R_{25} are each independently selected from H and C_1-C_{10} alkyl.

~~17. The compound of any one of the preceding claims wherein the compound is a compound of formula (II), or a pharmaceutically acceptable salt, solvate or prodrug thereof:~~



Formula (II)

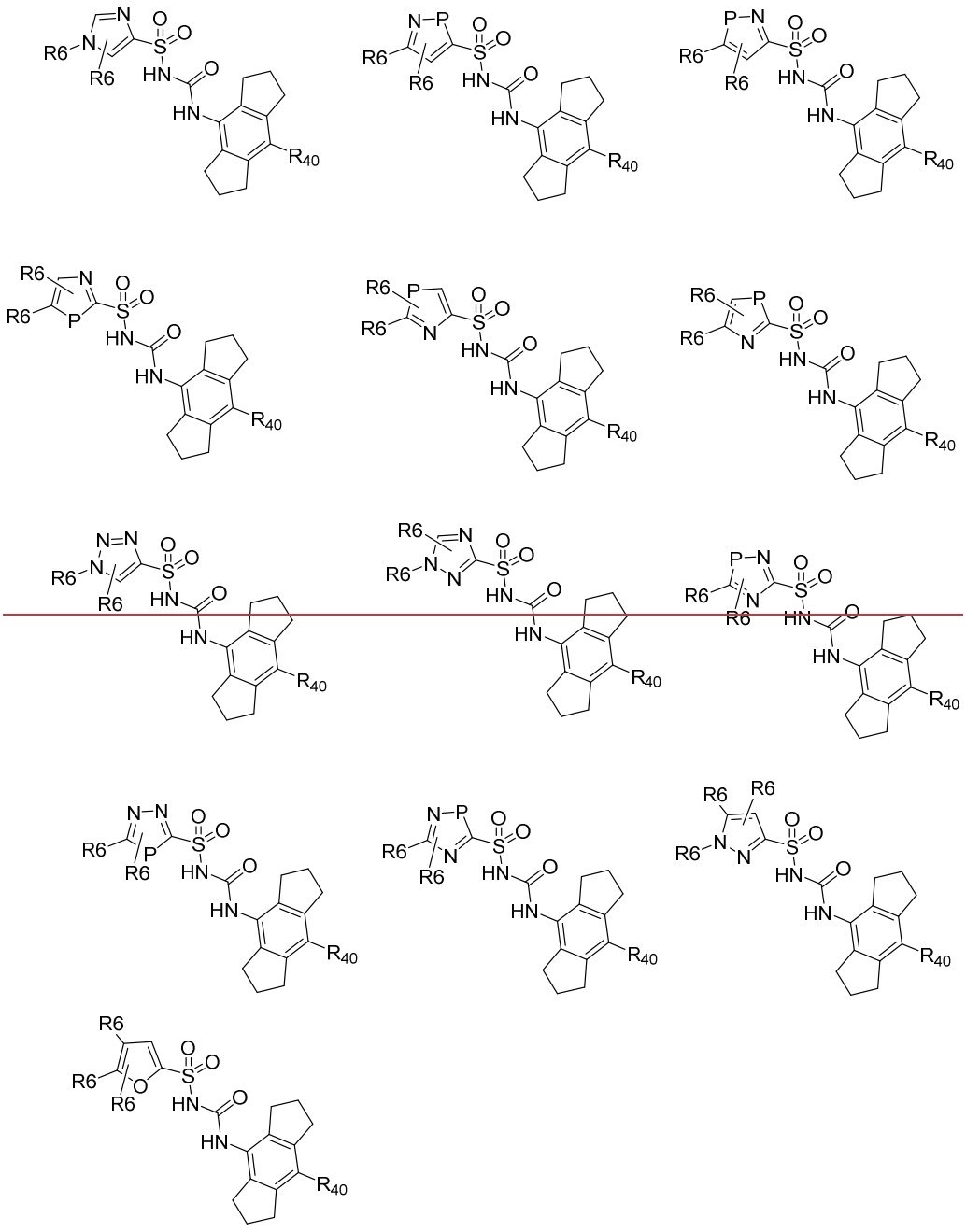
wherein, A, B, D and E are independently selected from C, N, O, S and Se, but at least one thereof is C;

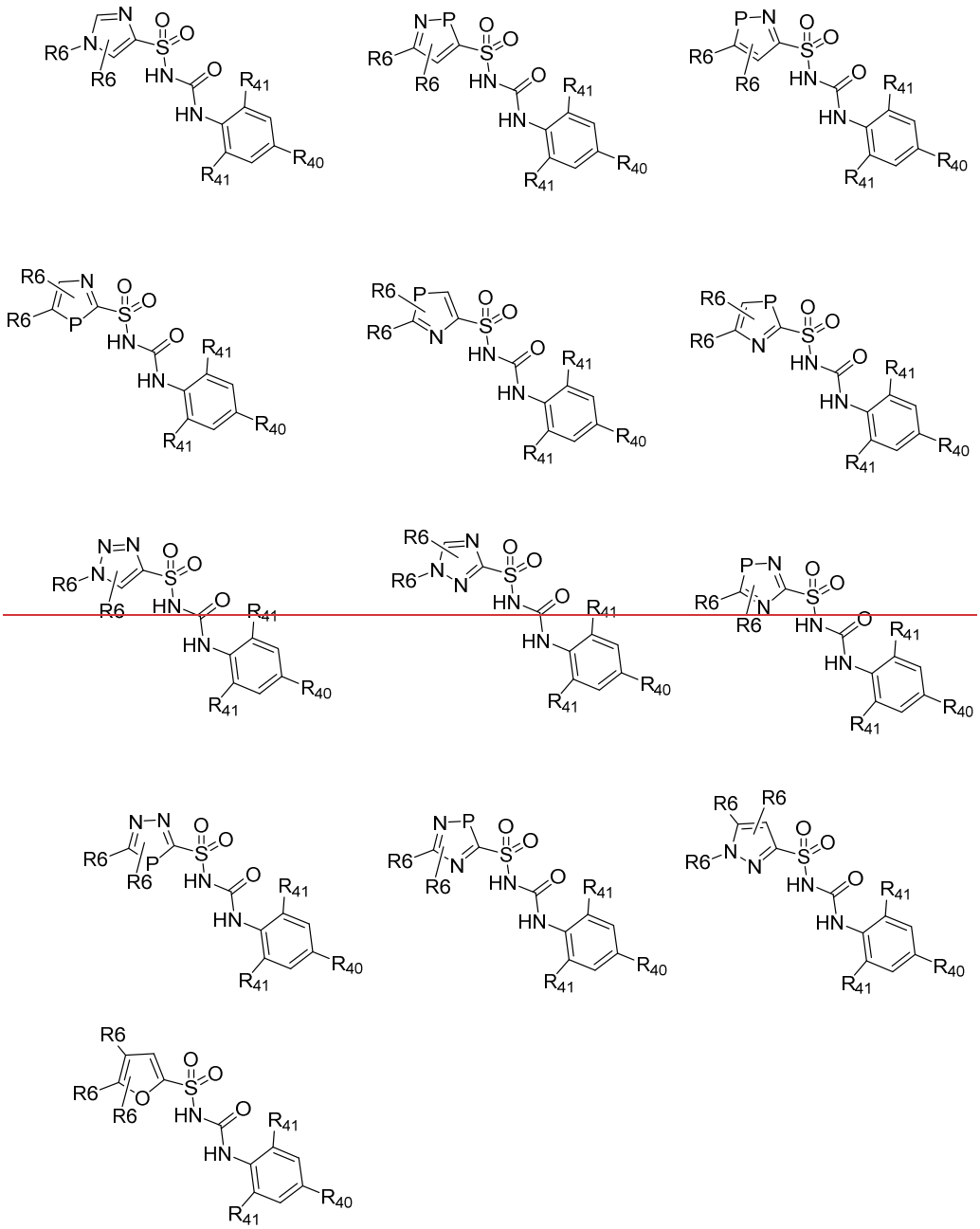
each dashed line may represent a bond

R_2 is as defined in any one of the preceding claims or R_2 may be a fluorescent group;

each incidence of R_6 is independently selected from the group consisting of hydrogen, halide, cyano, C_1-C_6 alkyl, C_1-C_6 alkylamino, C_1-C_6 alkylhydroxy, C_3-C_6 cycloalkyl, alkylphenyl, phenyl, benzyl, C_1-C_6 ester, C_2-C_6 alkenyl, C_1-C_6 trifluoroalkyl and C_1-C_6 alkoxy, each of which may be optionally substituted, as appropriate, or R_6 may be a fluorescent group.

18. The compound of claim 17 wherein the compound of formula (II), is selected from the group consisting of:





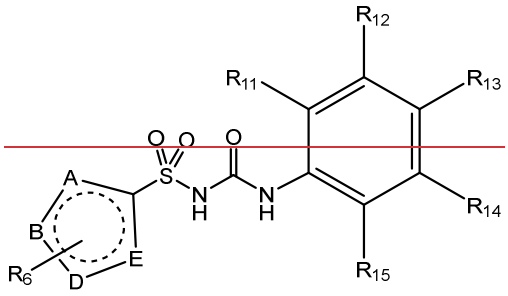
wherein, R_{40} is selected from H, alkyl and halo;

R_{41} is selected from H, alkyl and cycloalkyl;

each incidence of P is independently selected from C, O or S; and

wherein each incidence of R_6, when present, is independently selected from those groups defined in claim 17.

19. The compound of any one of the preceding claims wherein the compound is selected from a compound of formula (IIa), or a pharmaceutically acceptable salt, solvate or prodrug thereof:



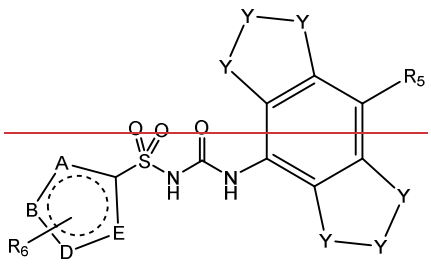
Formula (IIa)

wherein R_{11}, R_{12}, R_{13}, R_{14} and R_{15} are as defined in any one of claim 8 to claim 11;

A, B, D and E are selected from N and C and at least two of A, B, D, and E are N;

each incidence of R_6 is independently selected from the group consisting of hydrogen, halide, cyano, C_1-C_6 alkyl, C_1-C_6 alkylamino, C_1-C_6 alkylhydroxy, C_3-C_6 cycloalkyl, alkylphenyl, phenyl, benzyl, C_1-C_6 ester, C_2-C_6 alkenyl, C_1-C_6 trifluoroalkyl and C_1-C_6 alkoxy, each of which may be optionally substituted.

20. The compound of any one of the preceding claims wherein the compound is a compound of formula (IIb), or a pharmaceutically acceptable salt, solvate or prodrug thereof:



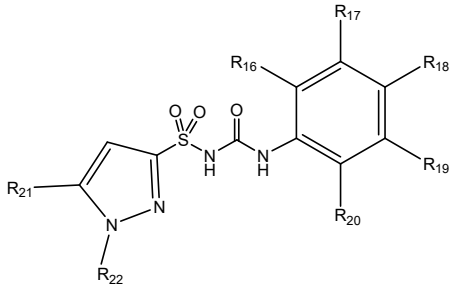
Formula (IIb)

wherein Y and R_5 are as defined in any one of claim 8 to claim 11;

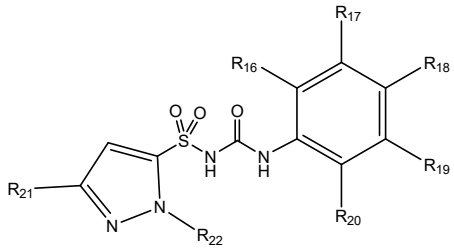
A, B, D and E are selected from N and C and at least two of A, B, D, and E are N;

each incidence of R_6 is independently selected from the group consisting of hydrogen, halide, cyano, C_1-C_6 alkyl, C_1-C_6 alkylamino, C_1-C_6 alkylhydroxy, C_3-C_6 cycloalkyl, alkylphenyl, phenyl, benzyl, C_1-C_6 ester, C_2-C_6 alkenyl, C_1-C_6 trifluoroalkyl and C_1-C_6 alkoxy, each of which may be optionally substituted.

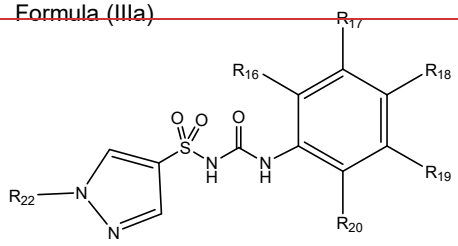
21. The compound of any one of the preceding claims wherein the compound is a compound of formula (IIIa), (IIIb) or (IIIc), or a pharmaceutically acceptable salt, solvate or prodrug thereof:



Formula (IIIa)



Formula (IIIb)



Formula (IIIc)

wherein, R_{21} is selected from H, alkyl, perhaloalkyl or hydroxylalkyl;

R_{22} is selected from H, alkyl, perhaloalkyl, C_3-C_6 cycloalkyl, phenyl or benzyl;

R_{18} is H or halogen;

R_{16} and R_{17} are H, alkyl or cycloalkyl; or R_{16} and R_{17}, together with the carbon atoms to which they are attached, form a 5 or 6 membered ring, said

ring being saturated, partially unsaturated or unsaturated, said ring optionally comprising one or two heteroatoms selected from N, O and S;

R_{19} and R_{20} are H or alkyl; or R_{19} and R_{20}, together with the carbon atoms to which they are attached, form a 5 or 6 membered ring, said ring being saturated, partially unsaturated or unsaturated, said ring optionally comprising one or two heteroatoms selected from N, O and S;

provided that R_{21} and R_{22} are not both H; and

provided that R_{16}, R_{17}, R_{18}, R_{19} and R_{20} are not all H.

22. The compound of claim 21 wherein:

R_{21} is selected from H, alkyl, perhaloalkyl or hydroxylalkyl;

R_{22} is selected from H, alkyl, perhaloalkyl, C_3-C_6 cycloalkyl, phenyl or benzyl;

R_{16} and R_{17}, together with the atoms to which they are attached, form a cyclopentyl ring;

R_{19} and R_{20}, together with the atoms to which they are attached, form a cyclopentyl ring;

R_{18} is H or halogen; and

provided that R_{21} and R_{22} are not both H.

23. The compound of claim 21 wherein:

R_{21} is selected from H, alkyl, perhaloalkyl or hydroxylalkyl;

R_{22} is selected from H, alkyl, perhaloalkyl, C_3-C_6 cycloalkyl, phenyl and benzyl;

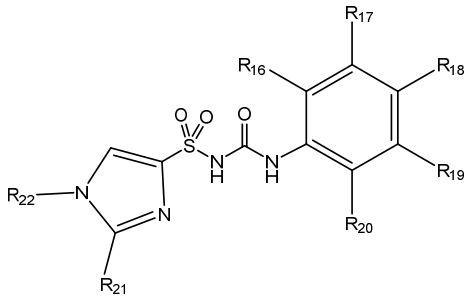
R_{16} and R_{20} are C_{1-6} alkyl or C_{3-5} cycloalkyl;

R_{17} and R_{19} are H,

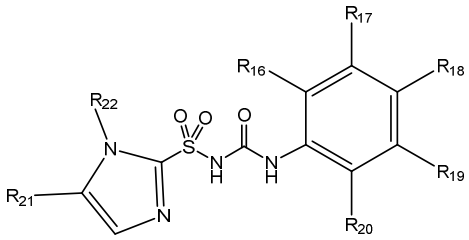
R_{18} is H or halogen; and

provided that R_{21} and R_{22} are not both H.

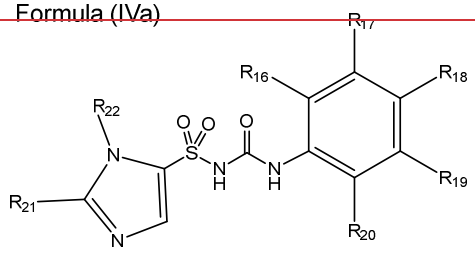
24. The compound of any one of the preceding claims wherein the compound is a compound of formula (IVa), (IVb) or (IVc), or a pharmaceutically acceptable salt, solvate or prodrug thereof:



Formula (IVa)



Formula (IVb)



Formula (IVc)

wherein, R_{21} and R_{22} are selected from H, alkyl, perhaloalkyl, hydroxylalkyl, C_3-C_6 cycloalkyl, phenyl and benzyl or R_{21} and R_{22}, together with the carbon atoms to which they are attached, may form a cyclopentyl or a cyclohexyl ring;

R_{18} is H or halogen;

R_{16} and R_{17} are H, alkyl or cycloalkyl; or R_{16} and R_{17}, together with the carbon atoms to which they are attached, form a 5 or 6 membered ring, said ring being saturated, partially unsaturated or unsaturated, said ring optionally comprising one or two heteroatoms selected from N, O and S;

R_{19} and R_{20} are H or alkyl; or R_{19} and R_{20}, together with the carbon atoms to which they are attached, form a 5 or 6 membered ring, said ring being saturated, partially unsaturated or unsaturated, said ring optionally comprising one or two heteroatoms selected from N, O and S;

provided that R_{21} and R_{22} are not both H; and

provided that R_{16}, R_{17}, R_{18}, R_{19} and R_{20} are not all H.

25. The compound of claim 24 wherein:

R_{21} and R_{22} are selected from H, alkyl, perhaloalkyl, hydroxylalkyl, C_3-C_6

~~cycloalkyl, phenyl and benzyl;~~

~~R_{16} and R_{17}, together with the atoms to which they are attached, form a cyclopentyl ring;~~

~~R_{19} and R_{20}, together with the atoms to which they are attached, form a cyclopentyl ring;~~

~~R_{18} is H or halogen; and~~

~~provided that R_{21} and R_{22} are not both H.~~

~~26. The compound of claim 24 wherein:~~

~~R_{21} and R_{22} are selected from H, alkyl, perhaloalkyl, hydroxylalkyl, C_3-C_6 cycloalkyl, phenyl and benzyl; preferably the perhaloalkyl and hydroxylalkyl are C_{1-6} perhaloalkyl and hydroxylalkyl;~~

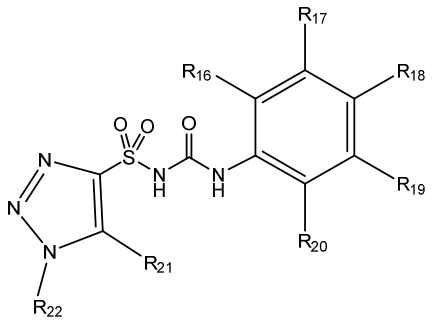
~~R_{16} and R_{20} are C_{1-6} alkyl or C_{3-5} cycloalkyl;~~

~~R_{17} and R_{19} are H,~~

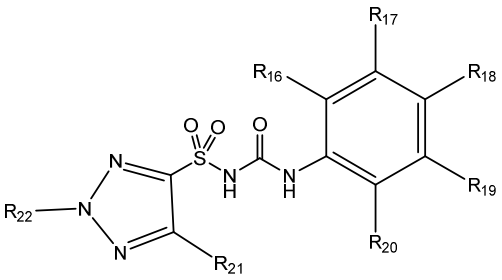
~~R_{18} is H or halogen;~~

~~provided that R_{21} and R_{22} are not both H.~~

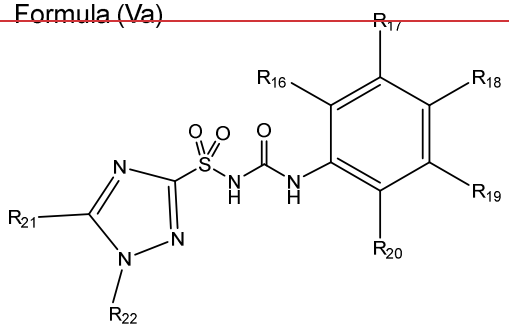
~~27. The compound of any one of the preceding claims wherein the compound is a compound of formula (Va), (Vb) or (Vc), or a pharmaceutically acceptable salt, solvate or prodrug thereof:~~



Formula (Va)



Formula (Vb)



Formula (Vc)

~~wherein, R_{21} and R_{22} are selected from H, alkyl, perhaloalkyl, hydroxylalkyl, C_3-C_6 cycloalkyl, phenyl and benzyl;~~

~~R_{18} is H or halogen;~~

~~R_{16} and R_{17} are H, alkyl or cycloalkyl; or R_{16} and R_{17}, together with the carbon atoms to which they are attached, form a 5 or 6 membered ring, said ring being saturated, partially unsaturated or unsaturated, said ring optionally comprising one or two heteroatoms selected from N, O and S;~~

~~R_{19} and R_{20} are H or alkyl; or R_{19} and R_{20}, together with the carbon atoms to which they are attached, form a 5 or 6 membered ring, said ring being saturated, partially unsaturated or unsaturated, said ring optionally comprising one or two heteroatoms selected from N, O and S;~~

~~provided that R_{21} and R_{22} are not both H; and~~

~~provided that R_{16}, R_{17}, R_{18}, R_{19} and R_{20} are not all H.~~

~~28. The compound of claim 27 wherein:~~

~~R_{21} and R_{22} are selected from H, alkyl, perhaloalkyl, hydroxylalkyl, C_3-C_6 cycloalkyl, phenyl and benzyl;~~

R_{16} and R_{17}, together with the atoms to which they are attached, form a cyclopentyl ring;

R_{19} and R_{20}, together with the atoms to which they are attached, form a cyclopentyl ring;

R_{18} is H or halogen; and

provided that R_{21} and R_{22} are not both H.

29. The compound of claim 27 wherein:

R_{21} and R_{22} are selected from H, alkyl, perhaloalkyl, hydroxylalkyl, C_3-C_6 cycloalkyl, phenyl and benzyl;

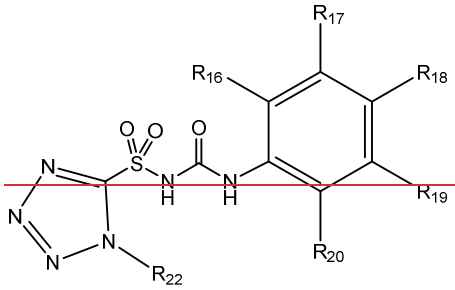
R_{16} and R_{20} are C_{1-6} alkyl or C_{3-5} cycloalkyl;

R_{17} and R_{19} are H;

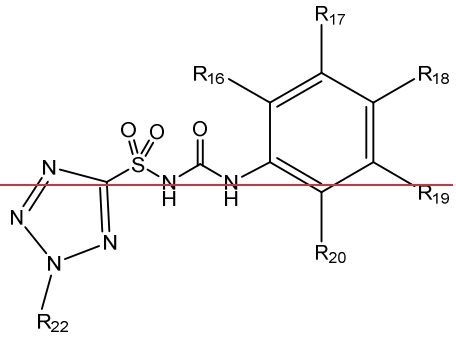
R_{18} is H or halogen; and

provided that R_{21} and R_{22} are not both H.

30. The compound of any one of the preceding claims wherein the compound is a compound of formula (VIa) or (VIb), or a pharmaceutically acceptable salt, solvate or prodrug thereof:



Formula (VIa)



Formula (VIb)

wherein, R_{22} is selected from alkyl, perhaloalkyl, hydroxylalkyl, C_3-C_6 cycloalkyl, phenyl and benzyl;

R_{18} is H or halogen;

R_{16} and R_{17} are H, alkyl or cycloalkyl; or R_{16} and R_{17}, together with the carbon atoms to which they are attached, form a 5 or 6 membered ring, said ring being saturated, partially unsaturated or unsaturated, said ring optionally

~~comprising one or two heteroatoms selected from N, O and S;~~

~~R_{19} and R_{20} are H or alkyl; or R_{19} and R_{20}, together with the carbon atoms to which they are attached, form a 5 or 6 membered ring, said ring being saturated, partially unsaturated or unsaturated, said ring optionally comprising one or two heteroatoms selected from N, O and S; and~~

~~provided that R_{16}, R_{17}, R_{18}, R_{19} and R_{20} are not all H.~~

~~31. The compound of claim 30 wherein:~~

~~R_{22} is selected from alkyl, perhaloalkyl, hydroxylalkyl, C_3-C_6-cycloalkyl, phenyl and benzyl;~~

~~R_{16} and R_{17}, together with the atoms to which they are attached, form a cyclopentyl ring;~~

~~R_{19} and R_{20}, together with the atoms to which they are attached, form a cyclopentyl ring; and~~

~~R_{18} is H or halogen.~~

~~32. The compound of claim 30 wherein:~~

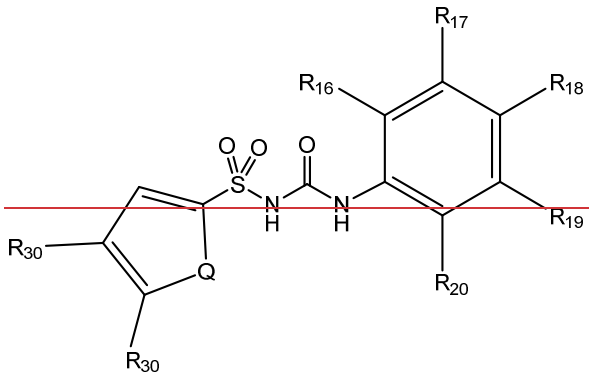
~~R_{22} is selected from alkyl, perhaloalkyl, hydroxylalkyl, C_3-C_6-cycloalkyl, phenyl and benzyl;~~

~~R_{16} and R_{20} are C_{1-6} alkyl or C_{3-5} cycloalkyl, preferably isopropyl or cyclopentyl;~~

~~R_{17} and R_{19} are H; and~~

~~R_{18} is H or halogen.~~

~~33. The compound of any one of the preceding claims wherein the compound is a compound of formula (VII), or a pharmaceutically acceptable salt, solvate or prodrug thereof:~~



Formula (VII)

~~wherein, Q is O or S;~~

~~each incidence of R_{30} is independently selected from alkyl, perhaloalkyl, hydroxylalkyl, C_3-C_6 cycloalkyl, and alkylamino;~~

~~R_{18} is H or halogen;~~

~~R_{16} and R_{17} are H or alkyl; or R_{16} and R_{17}, together with the carbon atoms to which they are attached, form a 5 or 6 membered ring, said ring being saturated, partially unsaturated or unsaturated, said ring optionally comprising one or two heteroatoms selected from N, O and S;~~

~~R_{19} and R_{20} are H or alkyl; or R_{19} and R_{20}, together with the carbon atoms to which they are attached, form a 5 or 6 membered ring, said ring being saturated, partially unsaturated or unsaturated, said ring optionally comprising one or two heteroatoms selected from N, O and S;~~

~~provided that R_{16}, R_{17}, R_{18}, R_{19} and R_{20} are not all H; and~~

~~provided that when Q is O and R_{16} and R_{17}, and separately R_{19} and R_{20}, together with the respective carbon atoms to which they are attached, form a cyclopentyl ring then R_{30} is not C_3 hydroxylalkyl.~~

~~34. The compound of claim 33 wherein:~~

~~Q is O or S;~~

~~each incidence of R_{30} is independently selected from alkyl, perhaloalkyl, hydroxylalkyl, C_3-C_6 cycloalkyl, and alkylamino;~~

R_{16} and R_{17}, together with the atoms to which they are attached, form a cyclopentyl ring;

R_{19} and R_{20}, together with the atoms to which they are attached, form a cyclopentyl ring; and

R_{18} is H or halogen; and

provided that when Q is O then R_{30} is not C_{-3} hydroxylalkyl.

35. The compound of claim 33 or claim 34 wherein:

Q is O or S;

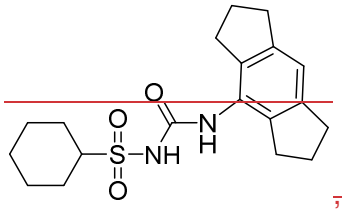
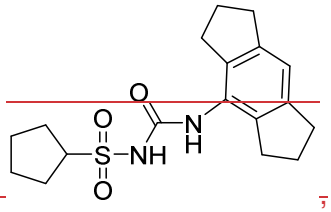
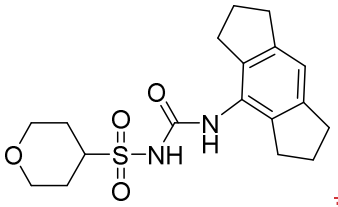
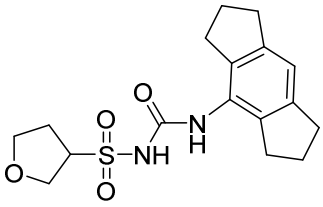
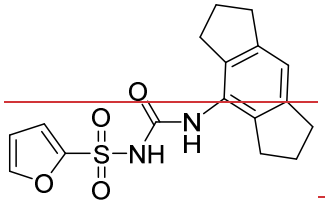
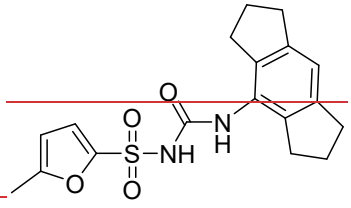
each incidence of R_{30} is independently selected from alkyl, perhaloalkyl, hydroxylalkyl, C_3-C_6 cycloalkyl, and alkylamino;

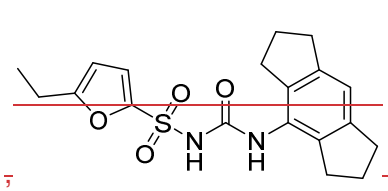
R_{16} and R_{20} are C_{1-6} alkyl, preferably isopropyl;

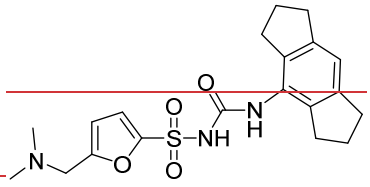
R_{17} and R_{19} are H; and

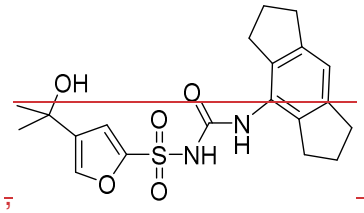
R_{18} is H or halogen.

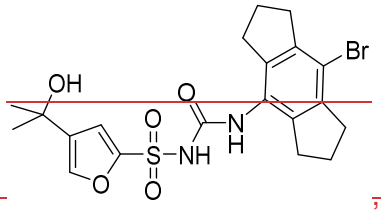
36.18. The compound of any one of the preceding claims 1-3, 5-6 or 9-17, wherein the compound is selected from the group consisting of:

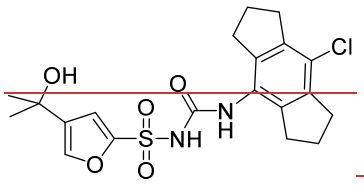




and



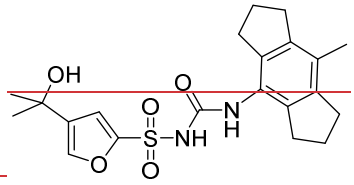


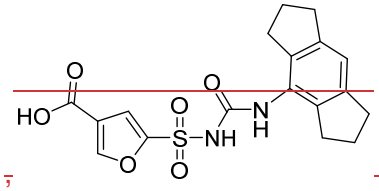


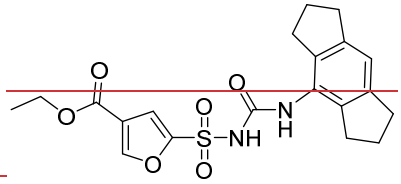


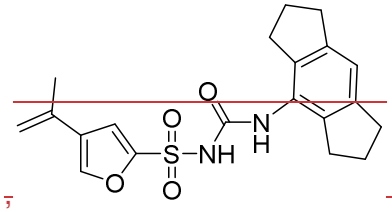


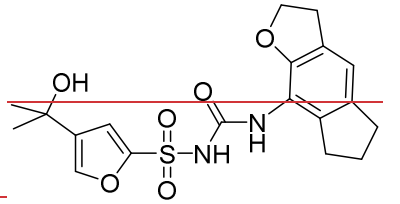


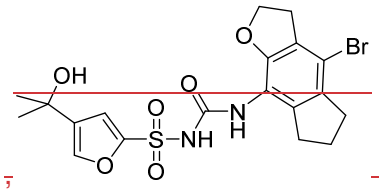


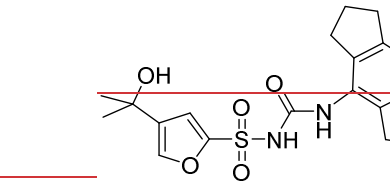


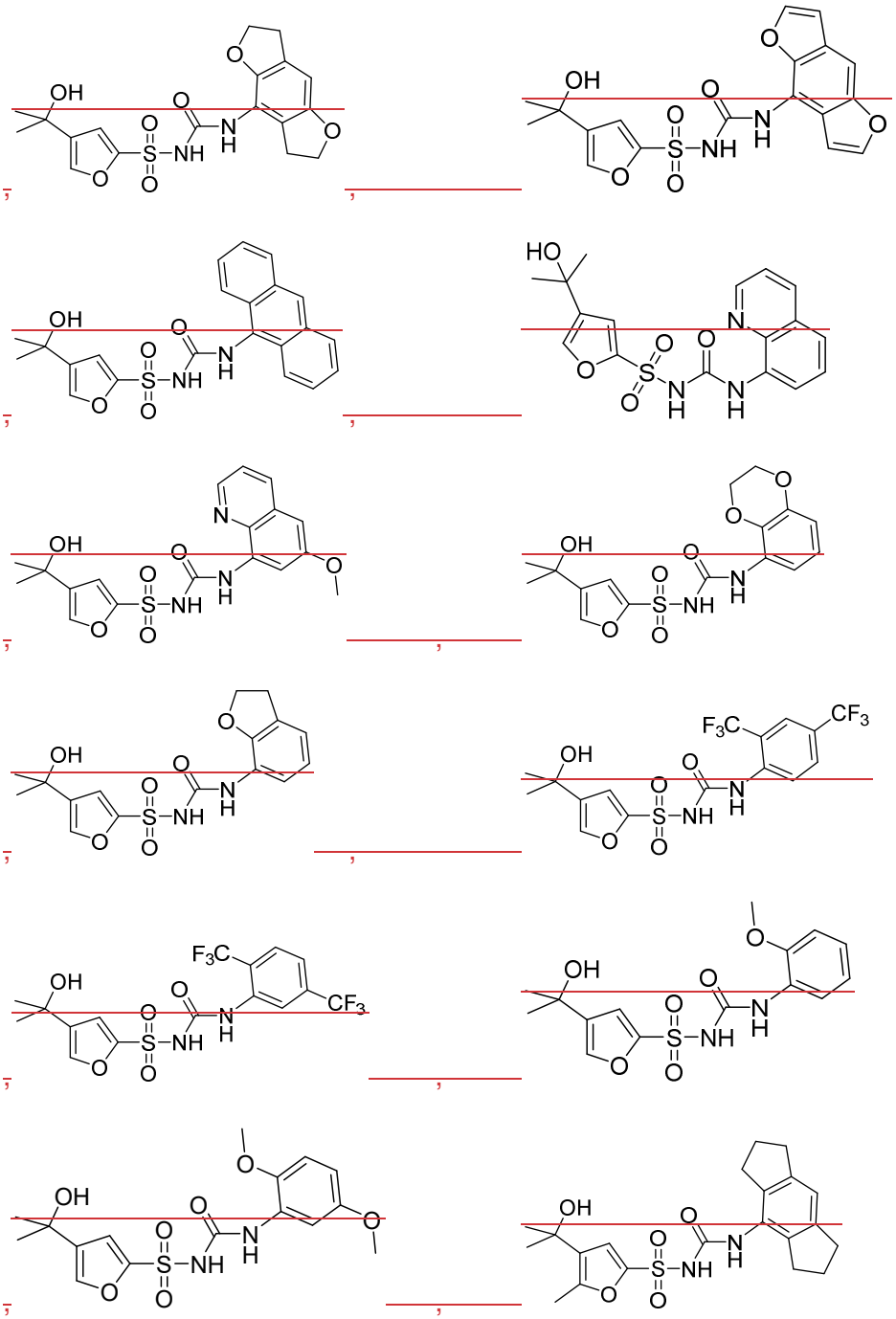


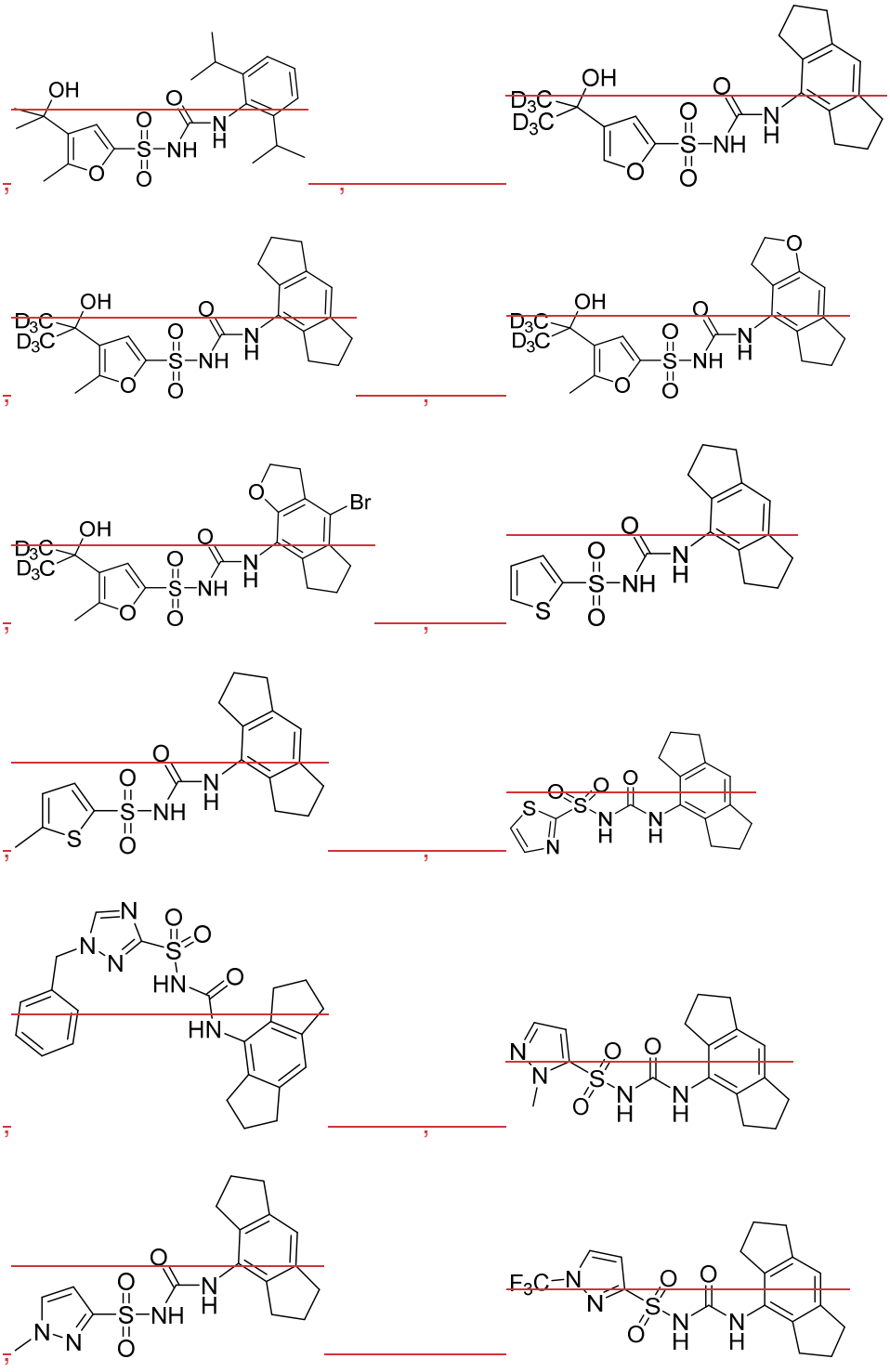


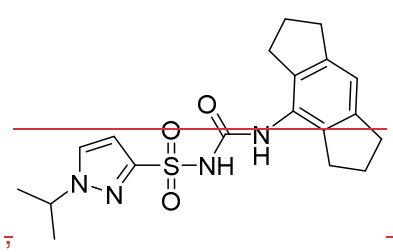


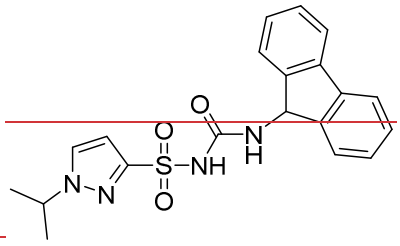


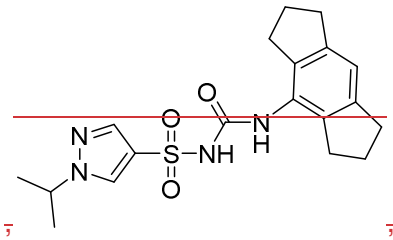


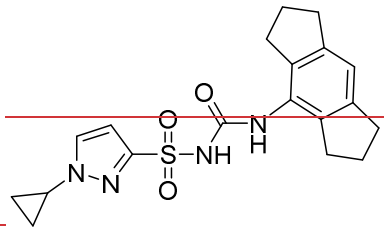


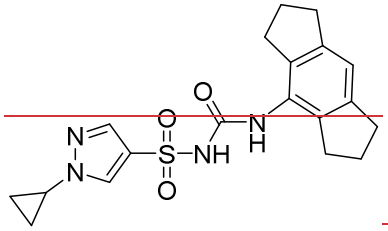


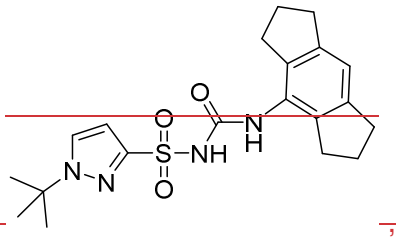


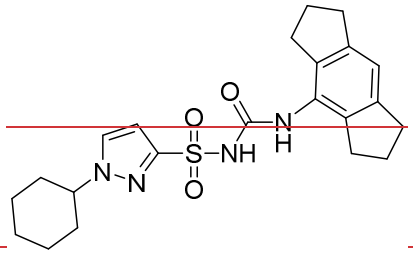


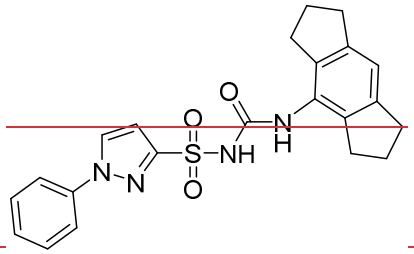


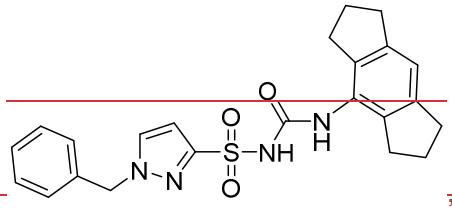


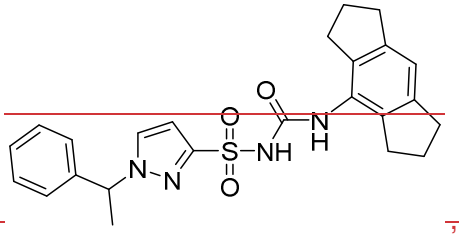


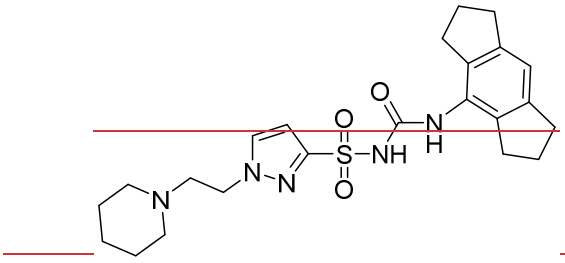
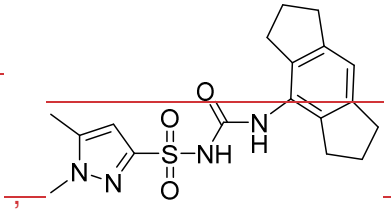
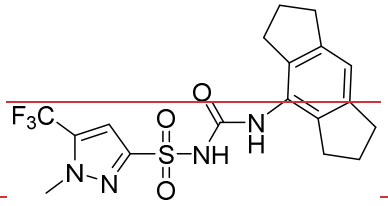
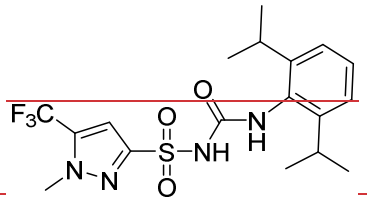
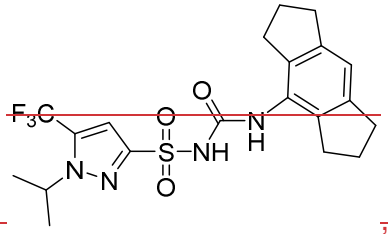
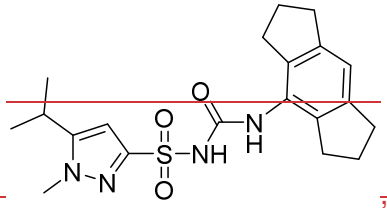
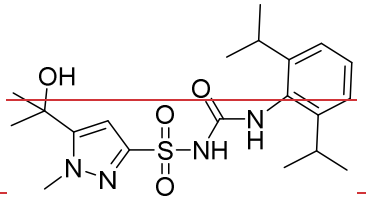
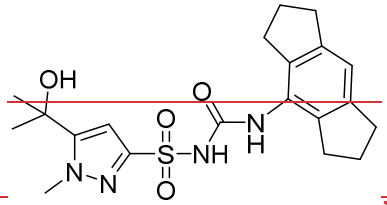
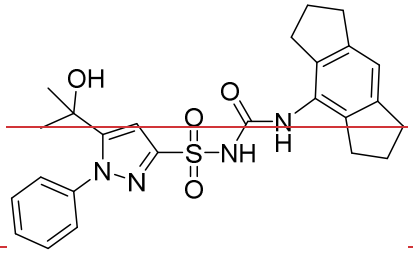
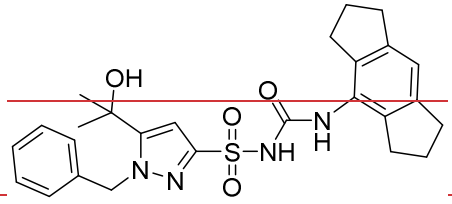
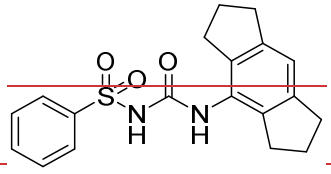
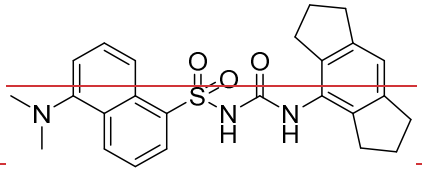


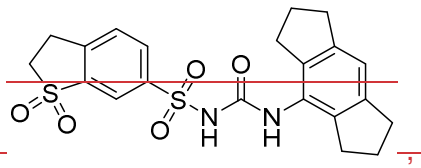
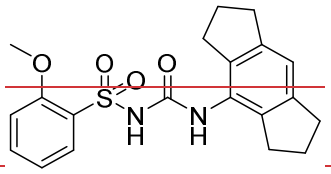
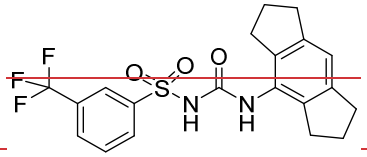
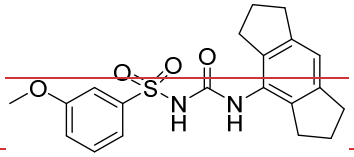
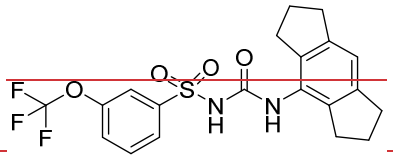
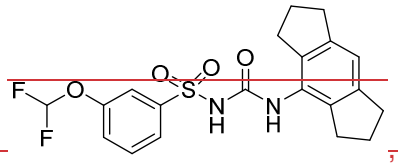
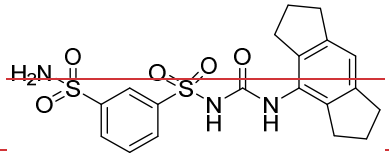
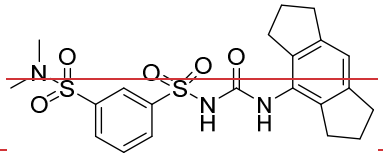
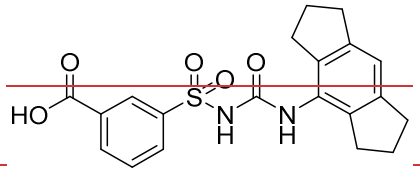
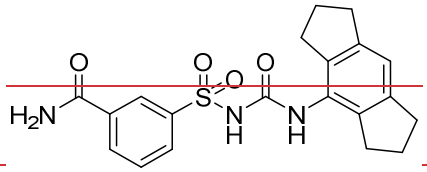
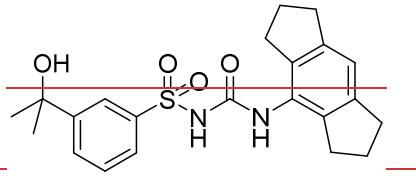
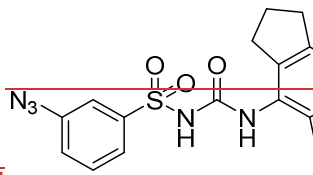
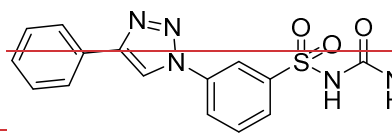






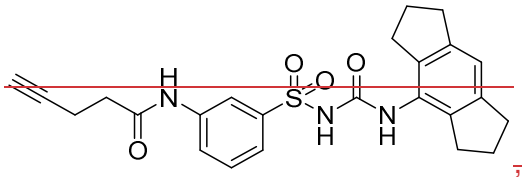


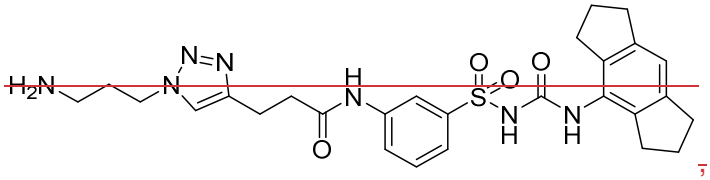

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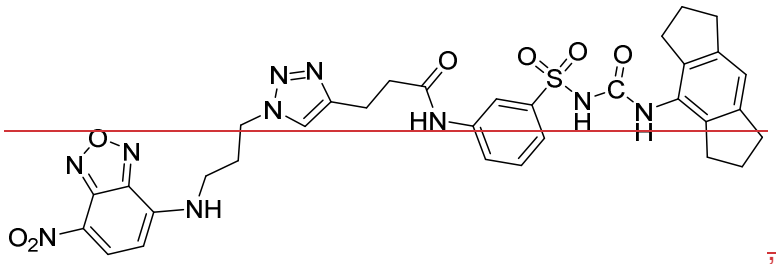

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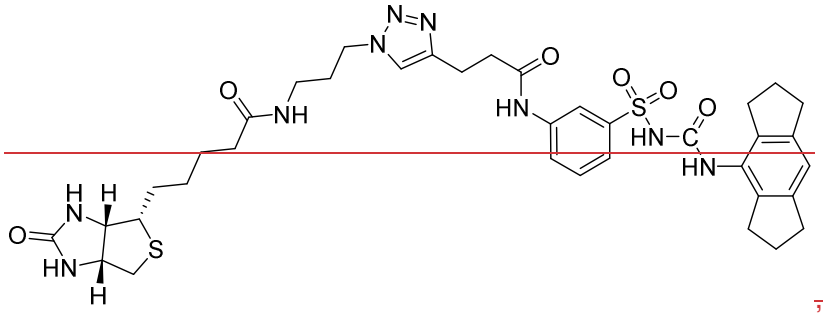
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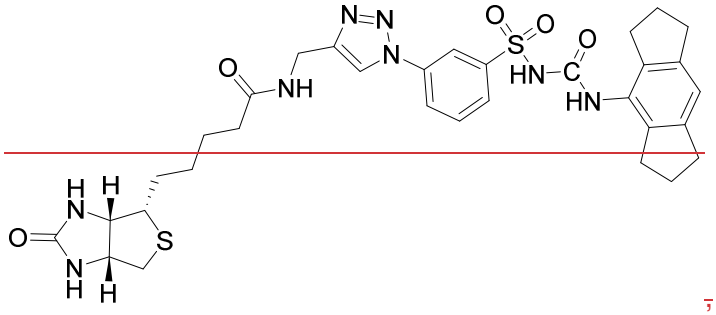
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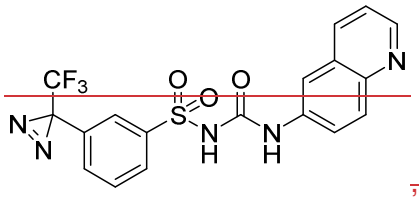


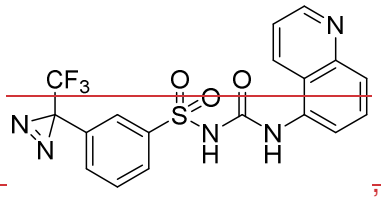


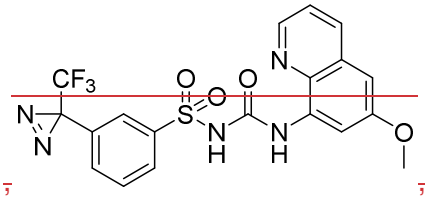


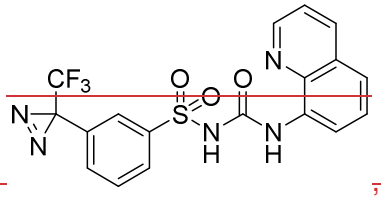


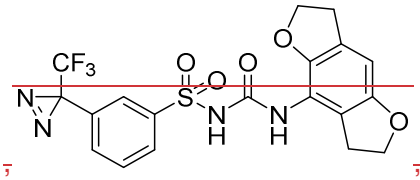


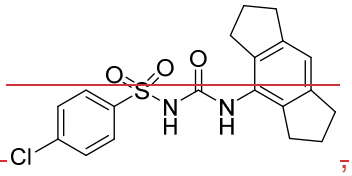


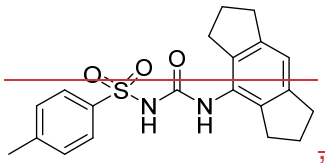


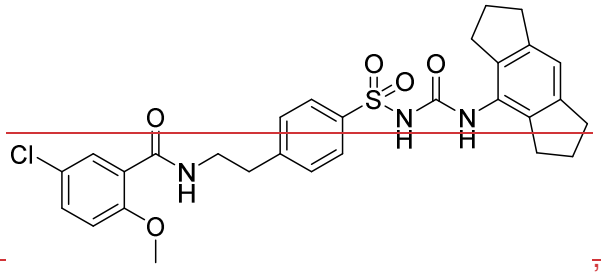


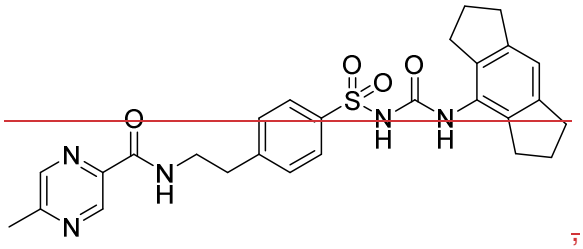


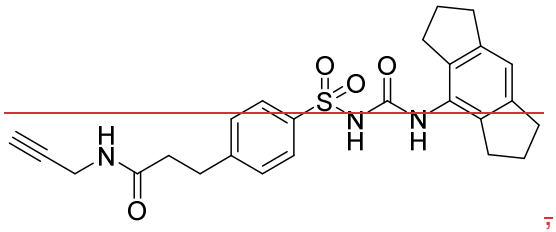


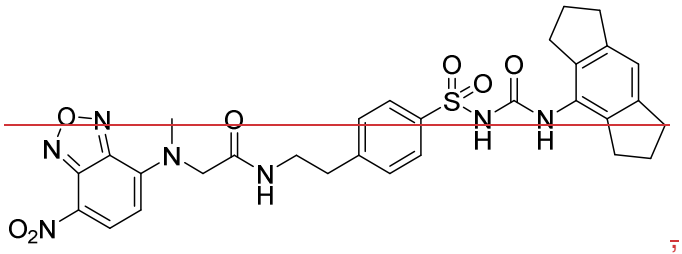




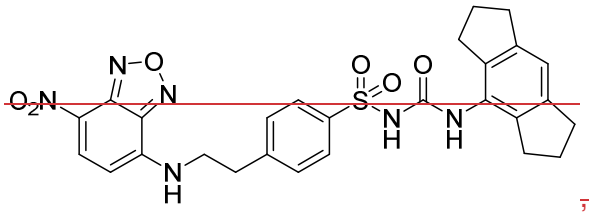




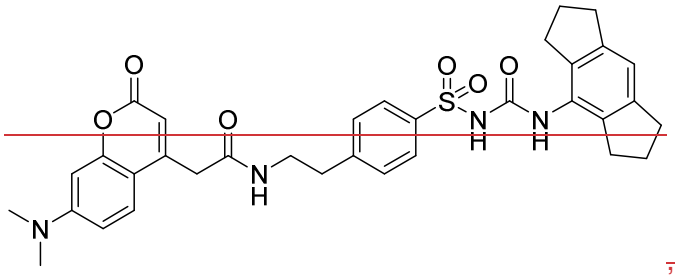




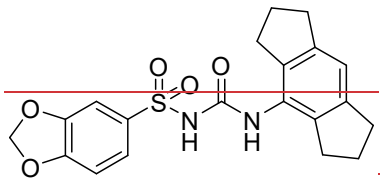
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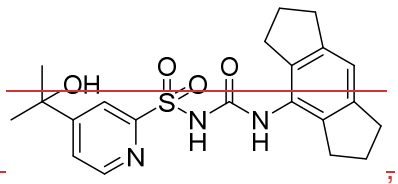
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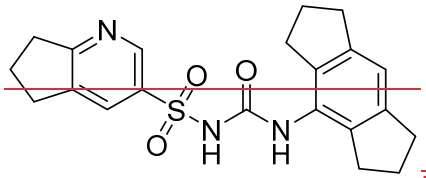
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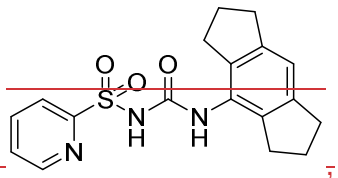
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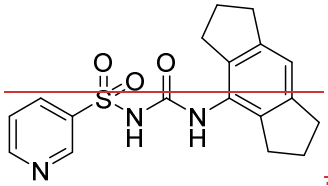
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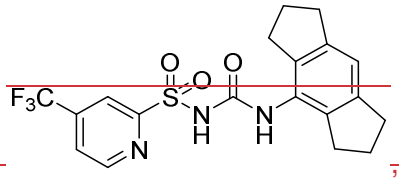
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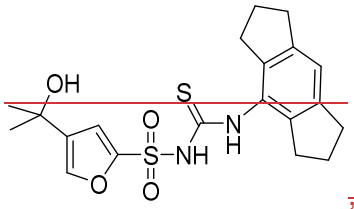
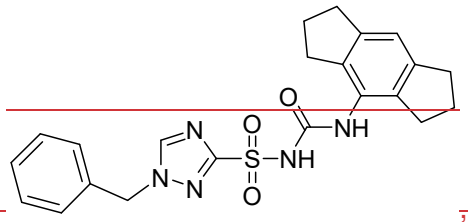
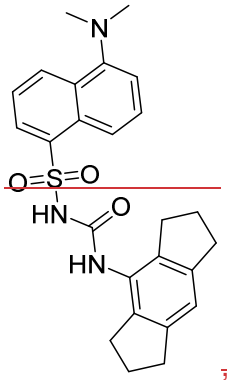
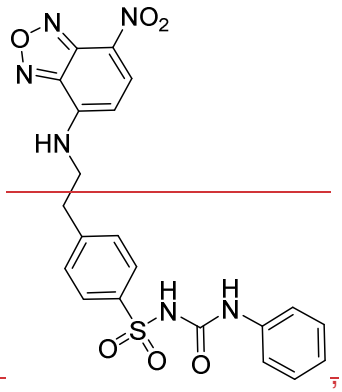
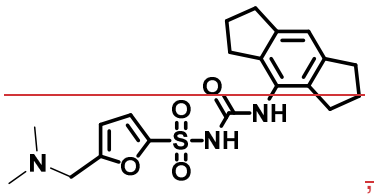
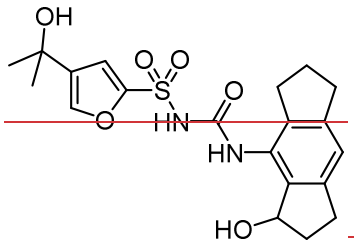
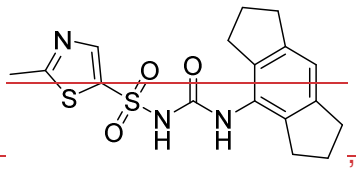
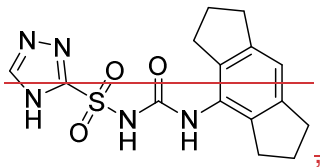
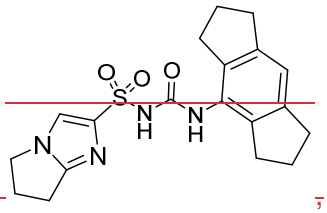
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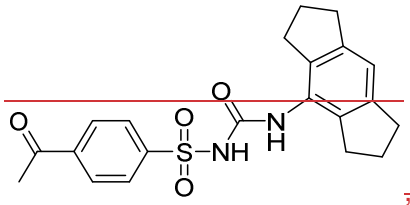


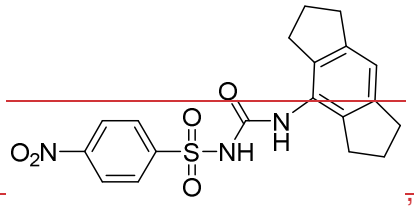
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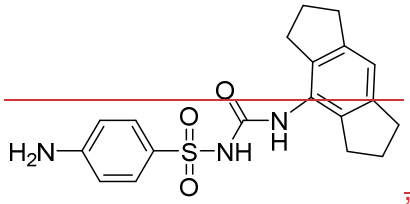


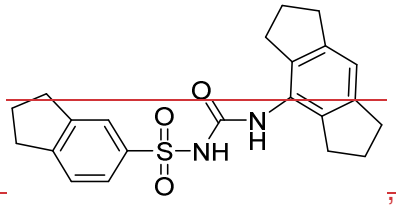
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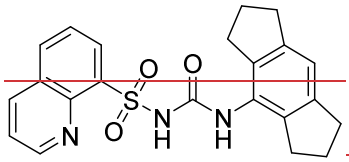










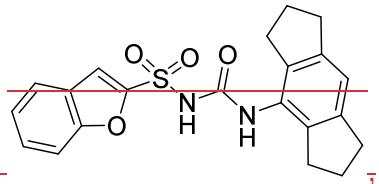


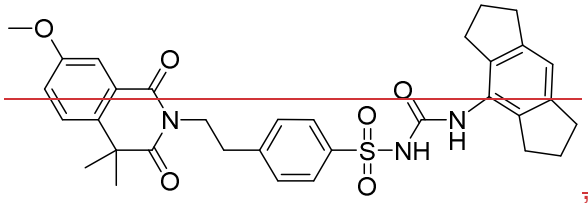


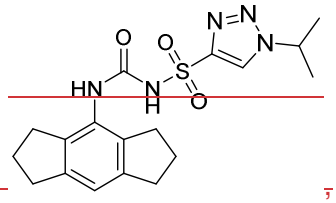


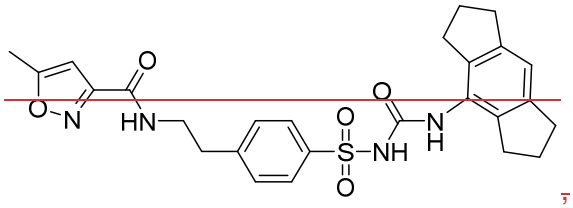


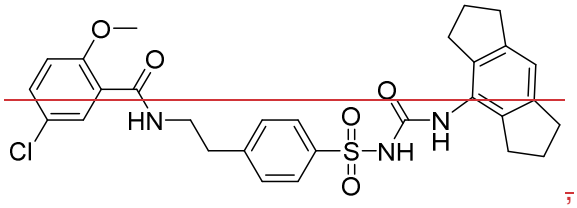


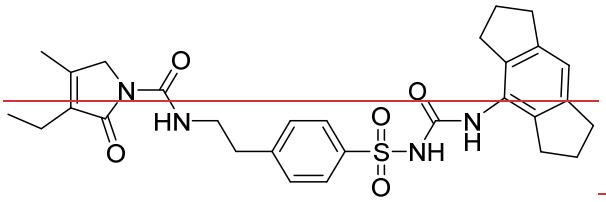




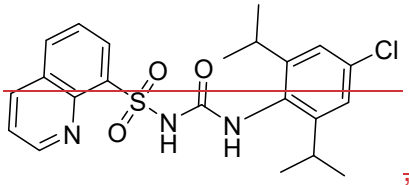




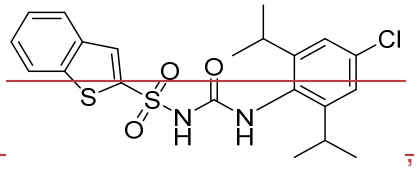




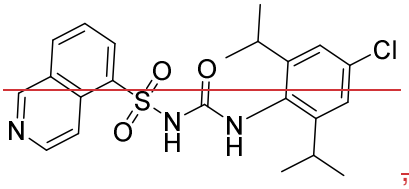
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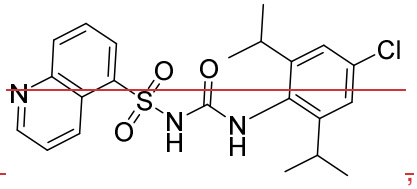
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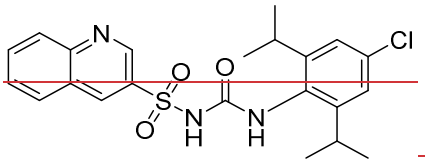
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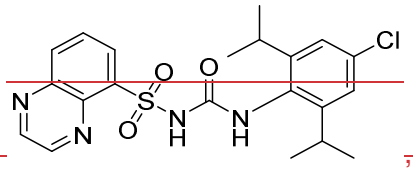
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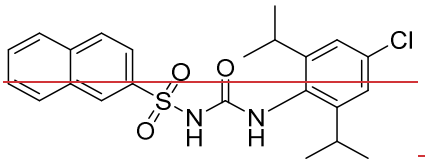
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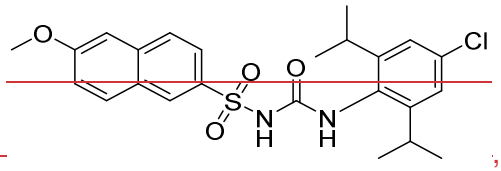
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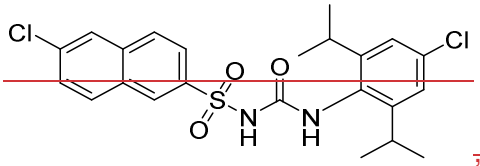
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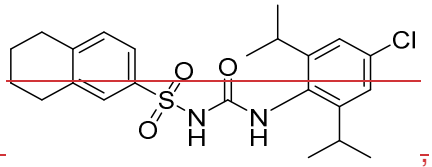
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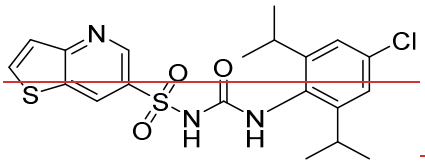
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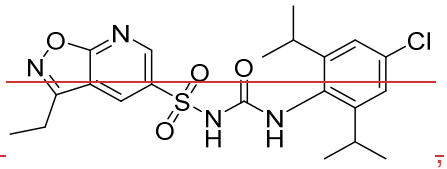
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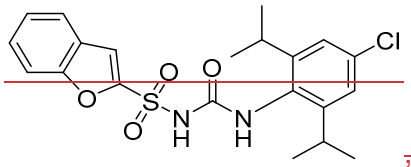
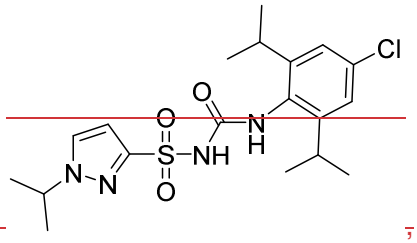
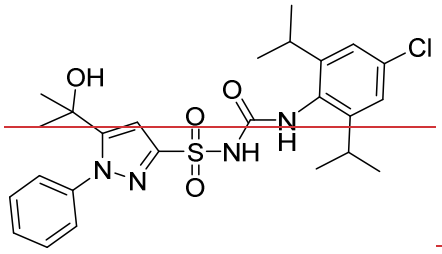
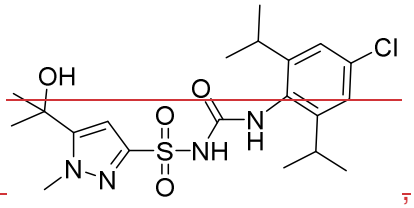
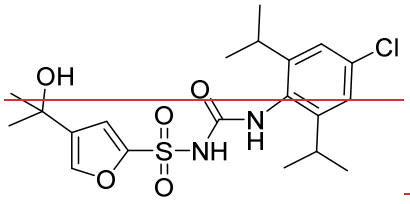
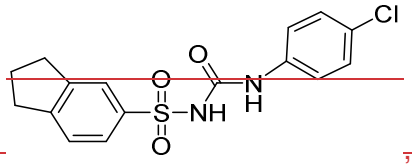
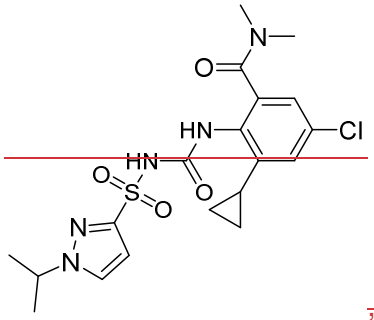
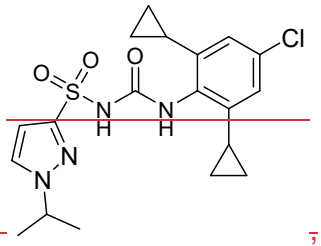
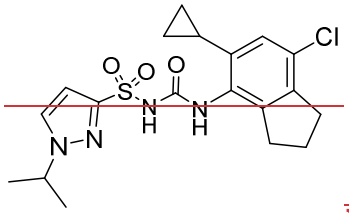
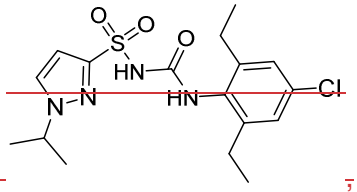
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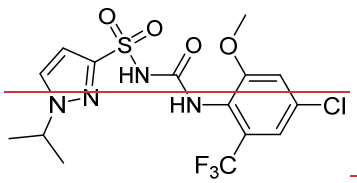
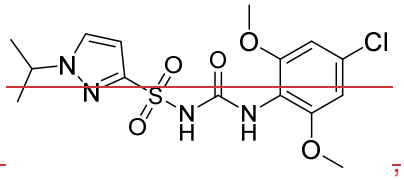
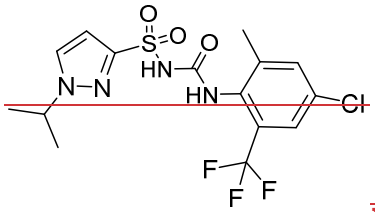
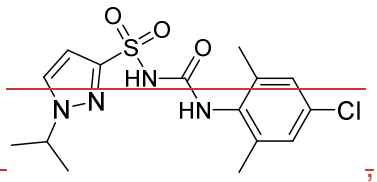
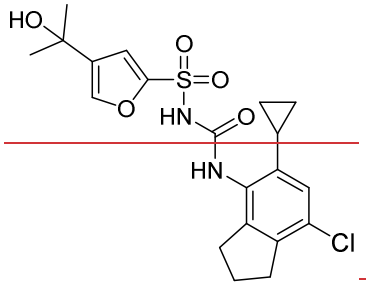
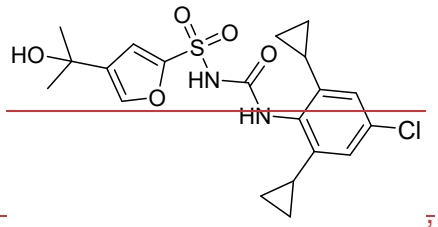
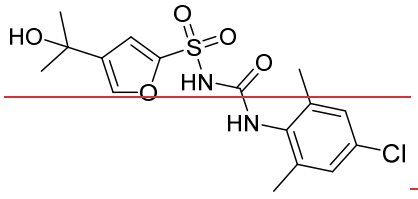
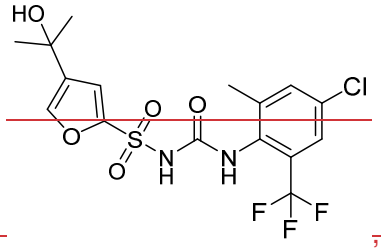
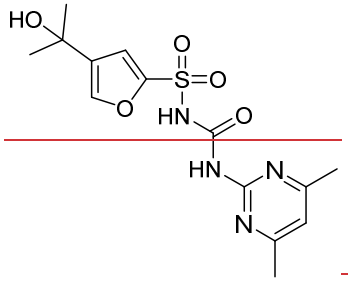
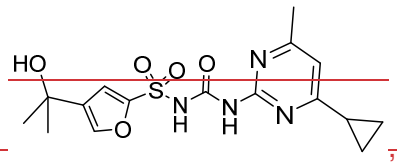


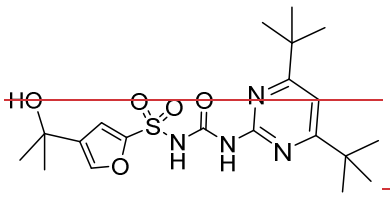
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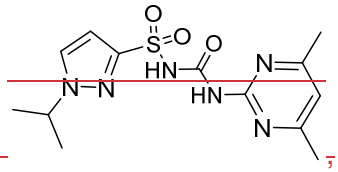
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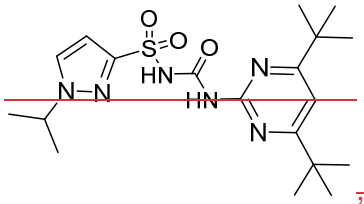













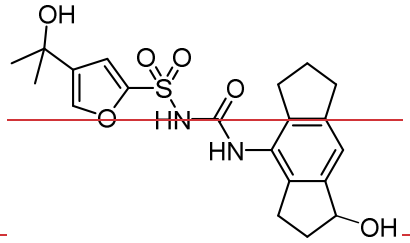
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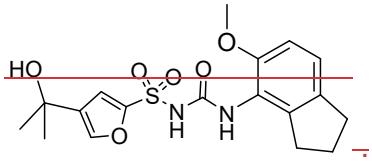
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and pharmaceutically acceptable salts and solvates thereof.

37.19. The compound or the pharmaceutically acceptable salt or solvate of any one of the preceding claims, wherein the compound, or the pharmaceutically effectiveacceptable salt ,or solvate or prodrug thereof, is an inhibitor of the NLRP3 inflammasome.

38.20. A pharmaceutical composition comprising a compound of any one of claim 1 to claim 1937, or a pharmaceutically acceptable salt, or solvate or prodrug thereof, and a pharmaceutically acceptable carrier, diluent and/or excipient.

21. The compound or the pharmaceutically acceptable salt or solvate of any of claim 1 to claim 19, for use in medicine.

39.22. A method of treatment or prevention of a disease, disorder or condition including the step of administering an effective amount of a The compound or

the pharmaceutically acceptable salt or solvate of any one of claim 1 to claim 1937, for use in ~~or a pharmaceutically effective salt, solvate or prodrug thereof, or the pharmaceutical composition of claim 38, to thereby~~ treating or preventing: ~~the disease disorder or condition.~~

~~40. The method of claim 39 wherein the disease, disorder or condition is one which is~~(a) a disease, disorder or condition responsive to inhibition of activation of the NLRP3 inflammasome~~.~~; and/or

~~41. The method of claim 39 or claim 40 wherein the disease, disorder or condition is~~ (b) a disease, disorder or condition responsive to modulation of one or more of IL-1β, IL-17, IL-18, IL-1α, IL-37, IL-33 and Th17 cells; and or~~.~~

~~42. The method of any one of claim 39 to claim 41 wherein the disease, disorder or condition is~~ (c) a disease, disorder or condition of the immune system; and/or~~.~~

~~43. The method of any one of claim 39 to claim 41 wherein the disease, disorder or condition is~~ (d) an inflammatory disease disorder or condition or an autoimmune disease disorder or condition; and/or~~.~~

~~44. The method of any one of claim 39 to claim 41 wherein the disease, disorder or condition is~~ (e) a disease, disorder or condition of the skin; and/or~~.~~

~~45. The method of any one of claim 39 to claim 41 wherein the disease, disorder or condition is~~ (f) a disease, disorder or condition of the cardiovascular system; and/or~~.~~

~~46. The method of any one of claim 39 to claim 41 wherein the disease, disorder or condition is~~ (g) a cancer, tumour or other malignancy; and/or~~.~~

~~47. The method of any one of claim 39 to claim 41 wherein the disease, disorder or condition is~~ (h) a disease, disorder or condition is of the renal system; and/or~~.~~

~~48. The method of any one of claim 39 to claim 41 wherein the disease, disorder or condition is~~ (i) a disease, disorder or condition is of the gastro-intestinal tract; and/or~~.~~

~~49. The method of any one of claim 39 to claim 41 wherein the disease, disorder or condition is~~ (j) a disease, disorder or condition is of the respiratory system; and/or~~.~~

~~50. The method of any one of claim 39 to claim 41 wherein the disease, disorder or condition is~~ (k) a disease, disorder or condition is of the endocrine system; and/or~~.~~

~~51. The method of any one of claim 39 to claim 41 wherein the disease, disorder or condition is~~ (l) a disease, disorder or condition is of the central nervous system (CNS); and/or~~.~~

~~52. The method of any one of claim 39 to claim 41 wherein the disease, disorder or condition is~~ (m) a disease, disorder or condition selected from the group consisting of constitutive inflammation including the cryopyrin-associated periodic syndromes (CAPS): Muckle-Wells syndrome (MWS), familial cold autoinflammatory syndrome (FCAS) and neonatal-onset multisystem inflammatory disease (NOMID); including autoinflammatory diseases: familial Mediterranean fever (FMF), TNF receptor associated periodic syndrome (TRAPS), mevalonate kinase deficiency (MKD), hyperimmunoglobulinemia D and periodic fever syndrome (HIDS), deficiency of interleukin 1 receptor (DIRA) antagonist, Majeed syndrome, pyogenic arthritis, pyoderma gangrenosum and acne (PAPA), haploinsufficiency of A20 (HA20), pediatric granulomatous arthritis (PGA), PLCG2-associated antibody deficiency and immune dysregulation (PLAID), PLCG2-associated autoinflammation, antibody deficiency and immune dysregulation (APLAID), sideroblastic anemia with B-cell immunodeficiency, periodic fevers, and developmental delay (SIFD); Sweet's syndrome, chronic nonbacterial osteomyelitis (CNO), chronic recurrent multifocal osteomyelitis (CRMO) and synovitis, acne, pustulosis, hyperostosis,

osteitis syndrome (SAPHO); autoimmune diseases including multiple sclerosis (MS), type-1 diabetes, psoriasis, rheumatoid arthritis, Behcet's disease, Sjogren's syndrome and Schnitzler syndrome; respiratory diseases including chronic obstructive pulmonary disorder (COPD), steroid-resistant asthma, asbestosis, silicosis and cystic fibrosis; central nervous system diseases including Parkinson's disease, Alzheimer's disease, motor neuron disease, Huntington's disease, cerebral malaria and brain injury from pneumococcal meningitis; metabolic diseases including Type 2 diabetes, atherosclerosis, obesity, gout, pseudo-gout; ocular diseases including those of the ocular epithelium, age-related macular degeneration (AMD), corneal infection, uveitis and dry eye; kidney disease including chronic kidney disease, oxalate nephropathy and diabetic nephropathy; liver disease including non-alcoholic steatohepatitis and alcoholic liver disease; inflammatory reactions in skin including contact hypersensitivity and sunburn; inflammatory reactions in the joints including osteoarthritis, systemic juvenile idiopathic arthritis, adult-onset Still's disease, relapsing polychondritis; viral infections including alpha virus including Chikungunya and Ross River, and flavivirus including Dengue and Zika viruses, flu, HIV; hidradenitis suppurativa (HS) and other cyst-causing skin diseases; cancers including lung cancer metastasis, pancreatic cancers, gastric cancers, myelodisplastic syndrome, leukemia; polymyositis; stroke; myocardial infarction; Graft versus Host Disease; hypertension; colitis; helminth infection; bacterial infection; abdominal aortic aneurism; wound healing; depression, psychological stress; pericarditis including Dressler's syndrome, ischaemia reperfusion injury; and any disease where an individual has been determined to carry a germline or somatic non-silent mutation in NLRP3.

~~53. The method of any one of claim 39 to claim 52 wherein the treatment or prevention of the disease, disorder or condition is performed on a mammal.~~

~~54. The method of claim 53 wherein the mammal is a human subject.~~

~~55.~~23. ~~A method of~~ The compound or the pharmaceutically acceptable salt or solvate of any one of claim 1 to claim 19, for use in diagnosing a disease,

disorder or condition, wherein the compound or the pharmaceutically acceptable salt or solvate is ~~in a mammal including the step of administering~~ a labelled compound of any one of claim 1 to claim 19~~37~~, or a pharmaceutically acceptable~~effective~~ salt or ~~,~~ solvate ~~or prodrug~~ thereof, or metal ion chelate complex thereof~~, to the mammal or to a biological sample obtained from the mammal to facilitate diagnosis of the disease disorder or condition in the mammal~~.

24. Use of the compound or the pharmaceutically acceptable salt or solvate of any one of claim 1 to claim 19, in the manufacture of a medicament for treating or preventing:

(a) a disease, disorder or condition responsive to inhibition of activation of the NLRP3 inflammasome; and/or

(b) a disease, disorder or condition responsive to modulation of one or more of IL-1β, IL-17, IL-18, IL-1α, IL-37, IL-33 and Th17 cells; and/or

(c) a disease, disorder or condition of the immune system; and/or

(d) an inflammatory disease, disorder or condition or an autoimmune disease, disorder or condition; and/or

(e) a disease, disorder or condition of the skin; and/or

(f) a disease, disorder or condition of the cardiovascular system; and/or

(g) a cancer, tumour or other malignancy; and/or

(h) a disease, disorder or condition of the renal system; and/or

(i) a disease, disorder or condition of the gastro-intestinal tract; and/or

(j) a disease, disorder or condition of the respiratory system; and/or

(k) a disease, disorder or condition of the endocrine system; and/or

(l) a disease, disorder or condition of the central nervous system (CNS); and/or

(m) a disease, disorder or condition selected from the group consisting of constitutive inflammation including the cryopyrin-associated periodic syndromes (CAPS): Muckle-Wells syndrome (MWS), familial cold autoinflammatory syndrome (FCAS) and neonatal-onset multisystem inflammatory disease (NOMID); including autoinflammatory diseases: familial Mediterranean fever (FMF), TNF receptor associated periodic syndrome (TRAPS), mevalonate kinase deficiency (MKD), hyperimmunoglobulinemia D and periodic fever syndrome (HIDS), deficiency of interleukin 1 receptor (DIRA) antagonist, Majeed syndrome, pyogenic arthritis, pyoderma gangrenosum and acne (PAPA), haploinsufficiency of A20 (HA20), pediatric granulomatous arthritis (PGA), PLCG2-associated antibody deficiency and immune dysregulation (PLAID), PLCG2-associated autoinflammation, antibody deficiency and immune dysregulation (APLAID), sideroblastic anemia with B-cell immunodeficiency, periodic fevers, and developmental delay (SIFD); Sweet's syndrome, chronic nonbacterial osteomyelitis (CNO), chronic recurrent multifocal osteomyelitis (CRMO) and synovitis, acne, pustulosis, hyperostosis, osteitis syndrome (SAPHO); autoimmune diseases including multiple sclerosis (MS), type-1 diabetes, psoriasis, rheumatoid arthritis, Behcet's disease, Sjogren's syndrome and Schnitzler syndrome; respiratory diseases including chronic obstructive pulmonary disorder (COPD), steroid-resistant asthma, asbestosis, silicosis and cystic fibrosis; central nervous system diseases including Parkinson's disease, Alzheimer's disease, motor neuron disease, Huntington's disease, cerebral malaria and brain injury from pneumococcal meningitis; metabolic diseases including Type 2 diabetes, atherosclerosis, obesity, gout, pseudo-gout; ocular diseases including those of the ocular epithelium, age-related macular degeneration (AMD), corneal infection, uveitis and dry eye; kidney disease including chronic kidney disease, oxalate nephropathy and diabetic nephropathy; liver disease including non-alcoholic steatohepatitis and alcoholic liver disease; inflammatory reactions in skin including contact hypersensitivity and sunburn; inflammatory reactions in the joints including osteoarthritis,

systemic juvenile idiopathic arthritis, adult-onset Still's disease, relapsing polychondritis; viral infections including alpha virus including Chikungunya and Ross River, and flavivirus including Dengue and Zika viruses, flu, HIV; hidradenitis suppurativa (HS) and other cyst-causing skin diseases; cancers including lung cancer metastasis, pancreatic cancers, gastric cancers, myelodisplastic syndrome, leukemia; polymyositis; stroke; myocardial infarction; Graft versus Host Disease; hypertension; colitis; helminth infection; bacterial infection; abdominal aortic aneurism; wound healing; depression, psychological stress; pericarditis including Dressler's syndrome; ischaemia reperfusion injury; and any disease where an individual has been determined to carry a germline or somatic non-silent mutation in NLRP3.

25. Use of the compound or the pharmaceutically acceptable salt or solvate of any one of claim 1 to claim 19, in the manufacture of a medicament for diagnosing a disease, disorder or condition, wherein the medicament comprises a labelled compound of any one of claim 1 to claim 19, or a pharmaceutically acceptable salt or solvate thereof, or metal ion chelate complex thereof.

~~56. A method of modulating the activity of a biological target comprising the step of exposing the biological target to a compound of any one of claim 1 to claim 37, or a pharmaceutically effective salt, solvate or prodrug thereof.~~

~~57. The method of claim 56 wherein the biological target may be selected from the group consisting of the NLRP3 inflammasome, IL-1β, IL-17, IL-18, IL-1α, IL-37, IL-33 and Th17 cells.~~