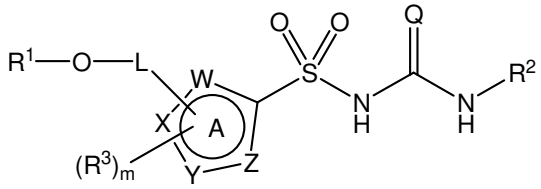
Claims

1. A compound of formula (I):



Formula (I)

wherein:

Q is selected from O or S;

W, X, Y and Z are each independently N, O, S, NH or CH, wherein at least one of W, X, Y and Z is N or NH;

L is a saturated or unsaturated hydrocarbylene group, wherein the hydrocarbylene group may be straight-chained or branched, or be or include cyclic groups, wherein the hydrocarbylene group may optionally be substituted, and wherein the hydrocarbylene group may optionally include one or more heteroatoms N, O or S in its carbon skeleton;

R^1 is hydrogen or a saturated or unsaturated hydrocarbyl group, wherein the hydrocarbyl group may be straight-chained or branched, or be or include cyclic groups, wherein the hydrocarbyl group may optionally be substituted, and wherein the hydrocarbyl group may optionally include one or more heteroatoms N, O or S in its carbon skeleton;

optionally L and R^1 together with the oxygen atom to which they are attached may form a 3- to 12-membered saturated or unsaturated cyclic group, wherein the cyclic group may optionally be substituted;

R^2 is a cyclic group substituted at the α-position, wherein R^2 may optionally be further substituted;

each R^3 is independently a halo, -OH, $-NO_2$, $-NH_2$, $-N_3$, -SH, or a saturated or unsaturated hydrocarbyl group, wherein the hydrocarbyl group may be straight-chained or branched, or be or include cyclic groups, wherein the hydrocarbyl group may optionally be substituted, and wherein the hydrocarbyl group may optionally include one or more heteroatoms N, O or S in its carbon skeleton;

m is 0, 1, 2 or 3; and

optionally any R^3, and any two adjacent W, X, Y or Z, may together form a 3- to 12-membered saturated or unsaturated cyclic group fused to ring A, wherein the cyclic group fused to ring A may optionally be substituted;

provided that any atom of L or R^1 that is directly attached to W, X, Y or Z is not the same atom of L or R^1 that is directly attached to the oxygen atom of R^1-O-L- , and that the oxygen atom of R^1-O-L- is not directly attached to a sp^2 hybridised carbon atom; and

provided that the compound is not a compound as described in Table 8, Table 9, Table 10 or Table 11 of US 4,802,908.

2. A compound as claimed in claim 1, wherein ring A is monocyclic.

3. A compound as claimed in claim 1 or claim 2, wherein W, X, Y and Z are each independently N, NH or CH.

4. A compound as claimed in any one of claims 1 to 3, wherein at least two of W, X, Y and Z are N or NH.

5. A compound as claimed in any one of claims 1 to 4, wherein the group R^1-O-L-, including any optional substituents, contains only atoms selected from the group consisting of carbon, hydrogen, oxygen and halogen atoms.

6. A compound as claimed in any one of claims 1 to 5, wherein:

(i) the oxygen atom of R^1-O-L- is not directly attached to a sp^2 hybridised atom; and/or

(ii) no oxygen atom within the group R^1-O-L- is directly attached to a sp^2 hybridised atom.

7. A compound as claimed in any one of claims 1 to 6, wherein L and R^1 together with the oxygen atom to which they are attached form a 3- to 12-membered saturated or unsaturated cyclic group, wherein the cyclic group may optionally be substituted.

8. A compound as claimed in any one of claims 1 to 7, wherein R^1-O-L- has the formula R^{10}-L^2-, wherein:

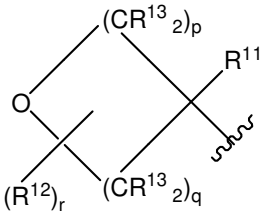
R^{10} is a 3- to 12-membered saturated or unsaturated heterocyclic group, wherein R^{10} includes at least one oxygen atom in the ring structure, wherein R^{10}

optionally includes one or more additional heteroatoms N, O or S in the ring structure, wherein R^{10} is optionally substituted; and

L^2 is a bond or a saturated or unsaturated hydrocarbylene group, wherein the hydrocarbylene group may be straight-chained or branched, or be or include cyclic groups, wherein the hydrocarbylene group may optionally be substituted, and wherein the hydrocarbylene group may optionally include one or more heteroatoms N, O or S in its carbon skeleton;

provided that at least one oxygen atom in the ring structure of R^{10} is not directly attached to the same atom of R^{10}-L^2- that is directly attached to W, X, Y or Z.

9. A compound as claimed in any one of claims 1 to 8, wherein R^1-O-L- has the formula:



wherein:

R^{11}- is selected from the group consisting of halo, -OH, $-NH_2$, $-R^{21}$, $-OR^{21}$, $-NHR^{21}$ and $-N(R^{21})_2$;

p is 1, 2 or 3 and q is 1, 2 or 3, provided that $p + q \leq 4$

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

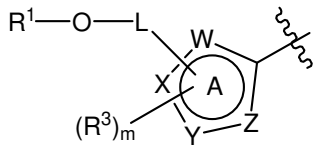
each R^{12} is independently selected from -CN, -OH, $-NH_2$, $-R^{22}$, $-OR^{22}$, $-NHR^{22}$ and $-N(R^{22})_2$;

each R^{13} is independently selected from hydrogen or halo group;

each R^{21} is independently selected from a C_1-C_4 alkyl, C_1-C_4 haloalkyl, C_3-C_4 cycloalkyl or C_3-C_4 halocycloalkyl group, or any two R^{21} directly attached to the same nitrogen atom may together form a C_2-C_5 alkylene or C_2-C_5 haloalkylene group; and

each R^{22} is independently selected from a C_1-C_4 alkyl, C_1-C_4 haloalkyl, C_3-C_4 cycloalkyl or C_3-C_4 halocycloalkyl group, or any two R^{22} directly attached to the same nitrogen atom may together form a C_2-C_5 alkylene or C_2-C_5 haloalkylene group.

10. A compound as claimed in any one of claims 1 to 9, wherein the group



contains from 8 to 16 atoms other than hydrogen or halogen.

11. A compound as claimed in any one of claims 1 to 10, wherein each R^3 is independently selected from halo; -CN; -NO_2; -N_3; -R^β; -OH; -OR^β; -R^α-halo; -R^α-CN; -R^α-NO_2; -R^α-N_3; -R^α-R^β; -R^α-OH; -R^α-OR^β; -SH; -SR^β; -SOR^β; -SO_2H; -SO_2R^β; -SO_2NH_2; -SO_2NHR^β; -$SO_2N(R^\beta)_2$; -R^α-SH; -R^α-SR^β; -R^α-SOR^β; -R^α-SO_2H; -R^α-SO_2R^β; -R^α-SO_2NH_2; -R^α-SO_2NHR^β; -R^α-$SO_2N(R^\beta)_2$; -NH_2; -NHR^β; -$N(R^\beta)_2$; -R^α-NH_2; -R^α-NHR^β; -R^α-$N(R^\beta)_2$; -CHO; -COR^β; -COOH; -$COOR^\beta$; -$OCOR^\beta$; -R^α-CHO; -R^α-COR^β; -R^α-COOH; -R^α-$COOR^\beta$; or -R^α-$OCOR^\beta$;

wherein each -R^α- is independently selected from an alkylene, alkenylene or alkynylene group, wherein the alkylene, alkenylene or alkynylene group contains from 1 to 6 atoms in its backbone, wherein one or more carbon atoms in the backbone of the alkylene, alkenylene or alkynylene group may optionally be replaced by one or more heteroatoms N, O or S, and wherein the alkylene, alkenylene or alkynylene group may optionally be substituted with one or more halo and/or -R^β groups; and

wherein each -R^β is independently selected from a C_1-C_6 alkyl, C_2-C_6 alkenyl, C_2-C_6 alkynyl or C_2-C_6 cyclic group, and wherein any -R^β may optionally be substituted with one or more C_1-C_4 alkyl, C_1-C_4 haloalkyl, C_3-C_7 cycloalkyl, -O(C_1-C_4 alkyl), -O(C_1-C_4 haloalkyl), -O(C_3-C_7 cycloalkyl), halo, -OH, -NH_2, -CN, -C≡CH, oxo (=O), or 4- to 6-membered heterocyclic group.

12. A compound as claimed in any one of claims 1 to 11, wherein R^2 is an aryl or a heteroaryl group, wherein the aryl or the heteroaryl group is substituted at the α-position, and wherein R^2 may optionally be further substituted.

13. A compound as claimed in claim 12, wherein R^2 is an aryl or a heteroaryl group, wherein the aryl or the heteroaryl group is substituted at the α and α' positions, and wherein R^2 may optionally be further substituted.

14. A compound as claimed in claim 13, wherein R^2 is a fused aryl or a fused heteroaryl group, wherein a first cycloalkyl, cycloalkenyl, non-aromatic heterocyclic, aryl or heteroaryl ring is fused to the aryl or heteroaryl group across the α,β positions

and a second cycloalkyl, cycloalkenyl, non-aromatic heterocyclic, aryl or heteroaryl ring is fused to the aryl or heteroaryl group across the α',β' positions, and wherein R^2 may optionally be further substituted.

15. A compound as claimed in any one of claims 1 to 11, wherein R^2 is a cyclic group substituted at the α-position with a monovalent heterocyclic group or a monovalent aromatic group, wherein a ring atom of the heterocyclic or aromatic group is directly attached to the α-ring atom of the cyclic group, wherein the heterocyclic or aromatic group may optionally be substituted, and wherein the cyclic group may optionally be further substituted.

16. A compound as claimed in any one of claims 1 to 11, wherein R^2 is a cyclic group substituted at the α and α' positions, wherein R^2 may optionally be further substituted.

17. A compound as claimed in claim 16, wherein each substituent at the α and α' positions comprises a carbon atom.

18. A compound as claimed in any one of claims 1 to 17, wherein Q is O.

19. A compound as claimed in claim 1, wherein:

Q is O;

W, X, Y and Z are each independently N, NH or CH, wherein at least one of W, X, Y and Z is N or NH;

R^1-O-L- is directly attached to X or Y;

m is 0, 1 or 2;

each R^3 is independently selected from a C_1-C_6 alkyl, C_2-C_6 alkenyl, C_2-C_6 alkynyl or C_2-C_6 cyclic group, wherein any C_1-C_6 alkyl, C_2-C_6 alkenyl, C_2-C_6 alkynyl or C_2-C_6 cyclic group may optionally be substituted with one or more halo groups;

R^2 is a phenyl or a 5- or 6-membered heteroaryl group, wherein:

(i) the phenyl or 5- or 6-membered heteroaryl group is substituted with a cycloalkyl, cycloalkenyl, non-aromatic heterocyclic, aryl or heteroaryl ring which is fused to the parent phenyl or 5- or 6-membered heteroaryl group across the α,β positions and which is optionally substituted with one or more halo groups; and

the phenyl or 5- or 6-membered heteroaryl group is further substituted at the α' position with a substituent selected from -R^4, -OR^4 and -COR^4, wherein

R^4 is selected from a C_1-C_6 alkyl, C_2-C_6 alkenyl, C_2-C_6 alkynyl or C_2-C_6 cyclic group and wherein R^4 is optionally substituted with one or more halo groups; and

optionally the phenyl or 5- or 6-membered heteroaryl group is further substituted with one or two substituents independently selected from halo, $-NO_2$, -CN, $-COOR^{45}$, $-CONH_2$, $-CONHR^{45}$ or $-CON(R^{45})_2$, wherein each $-R^{45}$ is independently selected from a C_1-C_4 alkyl or C_1-C_4 haloalkyl group; or

(ii) the phenyl or 5- or 6-membered heteroaryl group is substituted with a first cycloalkyl, cycloalkenyl, non-aromatic heterocyclic, aryl or heteroaryl ring which is fused to the parent phenyl or 5- or 6-membered heteroaryl group across the α,β positions and which is optionally substituted with one or more halo groups; and

the phenyl or 5- or 6-membered heteroaryl group is substituted with a second cycloalkyl, cycloalkenyl, non-aromatic heterocyclic, aryl or heteroaryl ring which is fused to the parent phenyl or 5- or 6-membered heteroaryl group across the α',β' positions and which is optionally substituted with one or more halo groups; and

optionally the phenyl group is further substituted with a substituent selected from halo, $-NO_2$, -CN, $-COOR^{45}$, $-CONH_2$, $-CONHR^{45}$ or $-CON(R^{45})_2$, wherein each $-R^{45}$ is independently selected from a C_1-C_4 alkyl or C_1-C_4 haloalkyl group; or

(iii) the phenyl or 5- or 6-membered heteroaryl group is substituted at the α-position with a monovalent heterocyclic group or a monovalent aromatic group selected from phenyl, pyridinyl, pyrimidinyl, pyrazolyl, imidazolyl, triazolyl or tetrahydropyranyl, wherein the monovalent heterocyclic or aromatic group may optionally be substituted with one or two substituents independently selected from halo, C_1-C_3 alkyl, C_1-C_3 haloalkyl, $-R^{42}$-OR^{43}, $-R^{42}$-$N(R^{43})_2$, $-R^{42}$-CN or $-R^{42}$-C≡CR^{43}, and wherein a ring atom of the monovalent heterocyclic or aromatic group is directly attached to the α-ring atom of the parent phenyl or 5- or 6-membered heteroaryl group; wherein each R^{42} is independently selected from a bond or a C_1-C_3 alkylene group; and each R^{43} is independently selected from hydrogen or a C_1-C_3 alkyl or C_1-C_3 haloalkyl group; and

the phenyl or 5- or 6-membered heteroaryl group is further substituted with a cycloalkyl, cycloalkenyl, non-aromatic heterocyclic, aryl or heteroaryl ring which is fused to the parent phenyl or 5- or 6-membered heteroaryl group

across the α',β' positions and which is optionally substituted with one or more halo groups; and

optionally the phenyl or 5- or 6-membered heteroaryl group is further substituted with one or two substituents independently selected from halo, $-NO_2$, -CN, $-COOR^{45}$, $-CONH_2$, $-CONHR^{45}$ or $-CON(R^{45})_2$, wherein each $-R^{45}$ is independently selected from a C_1-C_4 alkyl or C_1-C_4 haloalkyl group;

and

L is an alkylene group, wherein the alkylene group may be straight-chained or branched, wherein the alkylene group may optionally include one or two heteroatoms N or O in its carbon skeleton, and wherein the alkylene group may be optionally substituted with (i) one or more substituents independently selected from halo and -OH, and/or (ii) a divalent bridging substituent selected from -O- and C_1-C_3 alkylene, wherein the C_1-C_3 alkylene group may be straight-chained or branched, wherein the C_1-C_3 alkylene group may optionally be substituted with one or more substituents independently selected from halo and -OH, and wherein the C_1-C_3 alkylene group may optionally include one heteroatom N or O in its carbon skeleton; and

R^1 is hydrogen or a C_1-C_6 alkyl or C_3-C_6 cycloalkyl group, wherein the C_1-C_6 alkyl or C_3-C_6 cycloalkyl group is optionally substituted with one or more substituents independently selected from halo, -OH and $-NH_2$;

provided that L contains from 2 to 8 atoms other than hydrogen or halogen, and that the atom of L that is directly attached to X or Y is a carbon atom and is not the same atom of L that is directly attached to the oxygen atom of R^1-O-L-;

or

R^1-O-L- has the formula R^{10}-L^2-, wherein:

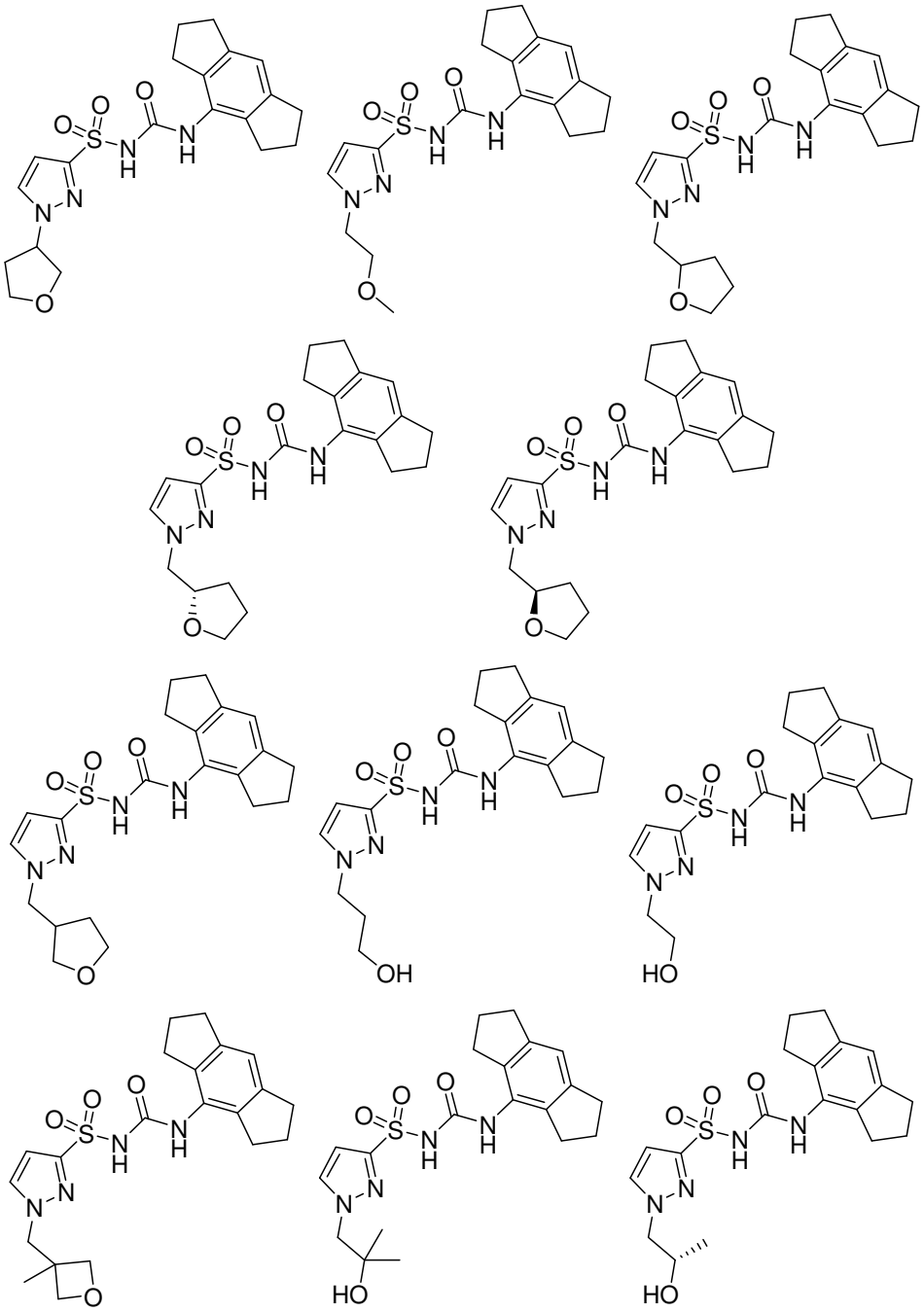
R^{10} is a 4- to 6-membered saturated monocyclic group, wherein R^{10} includes at least one oxygen atom in the ring structure, wherein R^{10} optionally includes one or two additional heteroatoms N or O in the ring structure, wherein R^{10} is optionally substituted with one or more substituents independently selected from halo, -OH, $-NH_2$, $-R^{20}$, $-OR^{20}$, $-NHR^{20}$ and $-N(R^{20})_2$, wherein each R^{20} is independently selected from a C_1-C_4 alkyl, C_1-C_4 haloalkyl, C_3-C_4 cycloalkyl or C_3-C_4 halocycloalkyl group, or any two R^{20} directly attached to the same nitrogen atom may together form a C_2-C_5 alkylene or C_2-C_5 haloalkylene group; and

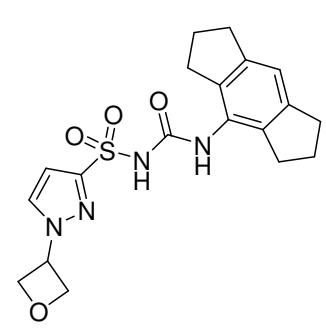
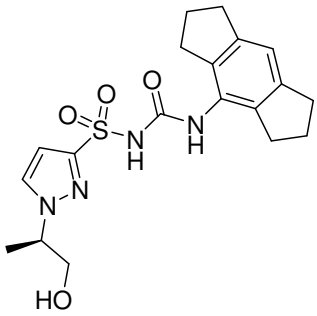
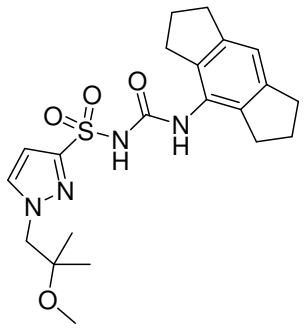
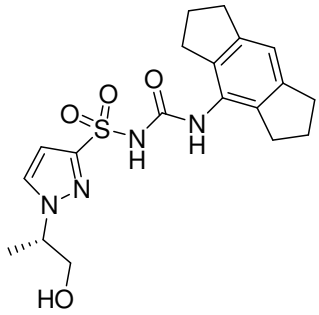
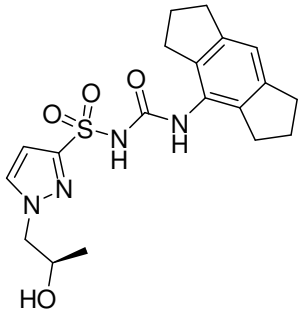
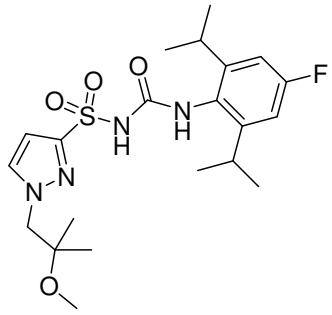
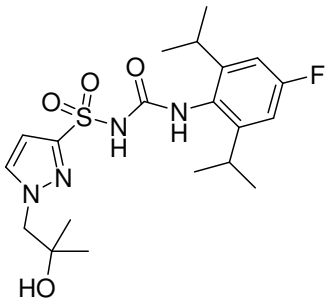
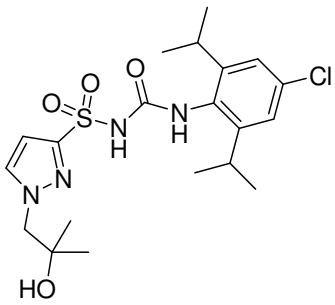
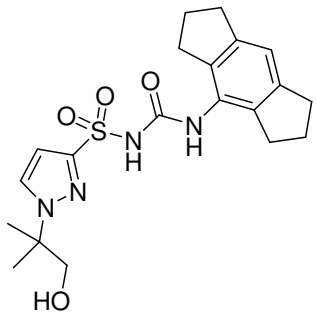
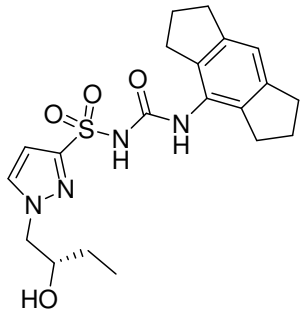
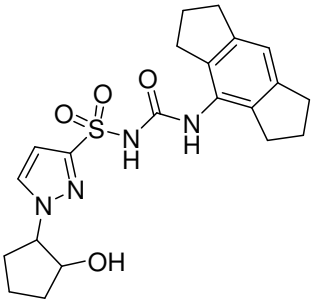
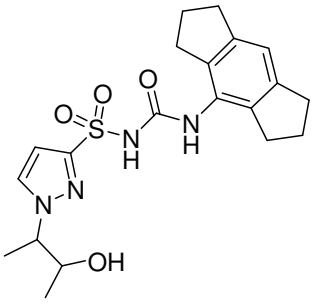
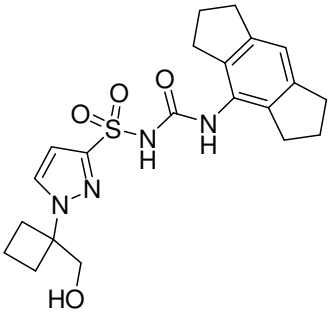
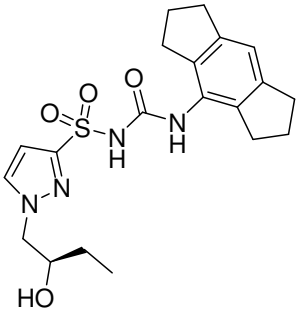
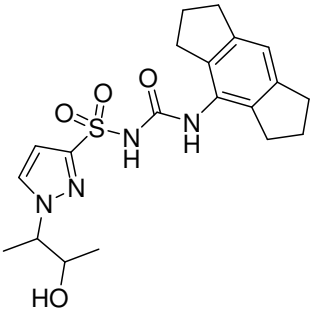
L^2 is a bond or a $-(C(R^{15})_2)_x$- group, wherein x is 1 or 2, and each R^{15} is independently selected from hydrogen or a halo, methyl or halomethyl group, or

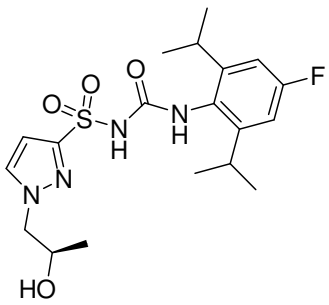
any two R^{15} directly attached to the same carbon atom may together form a C_2 alkylene or C_2 haloalkylene group;

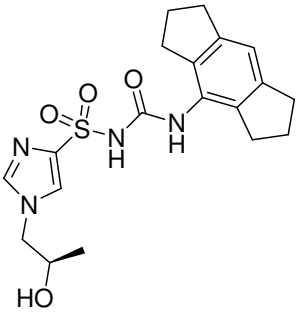
provided that the atom of R^{10}-L^2- that is directly attached to X or Y is a carbon atom and at least one oxygen atom in the ring structure of R^{10} is not directly attached to the same atom of R^{10}-L^2- that is directly attached to X or Y.

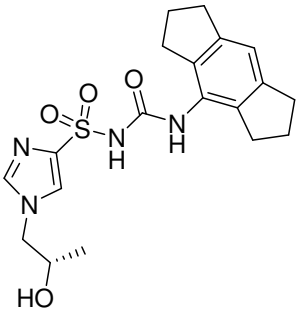
20. A compound selected from the group consisting of:

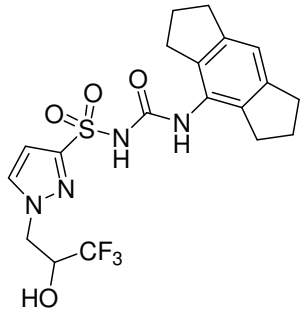


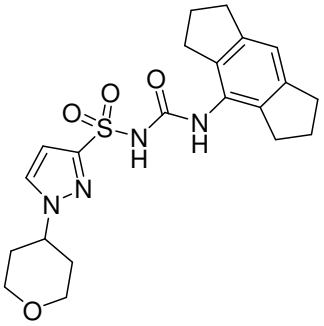
















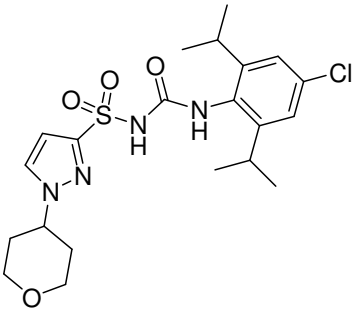


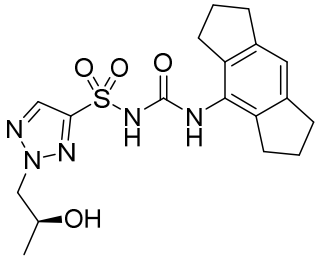


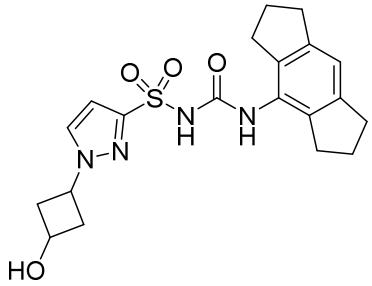


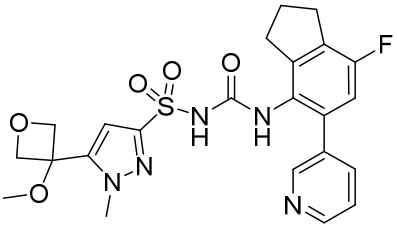


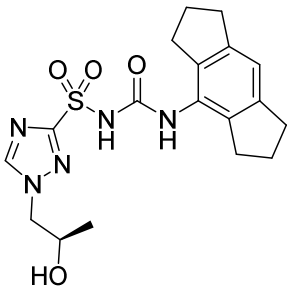


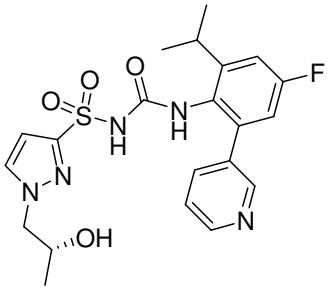


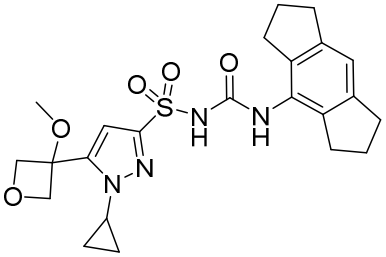


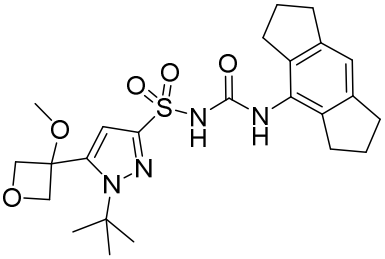


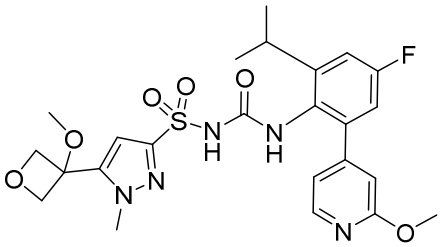


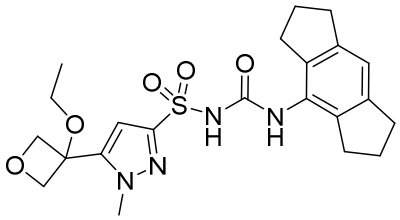


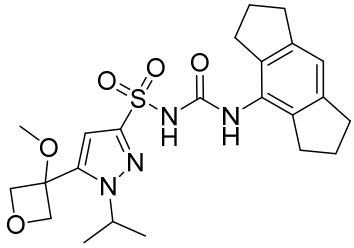


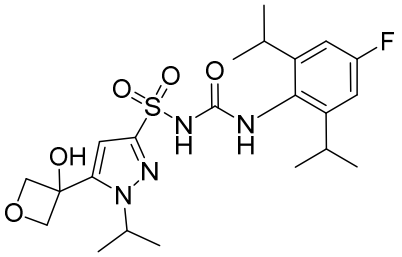


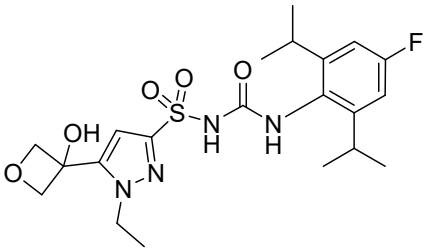


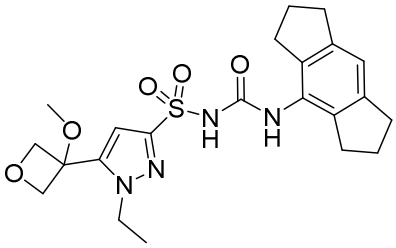


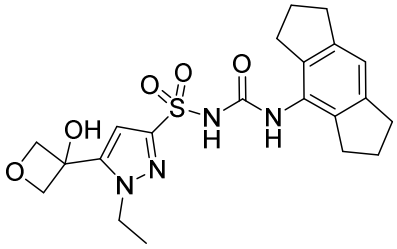


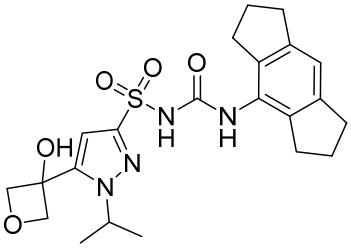


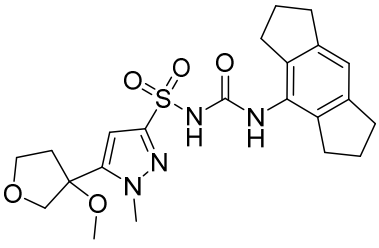


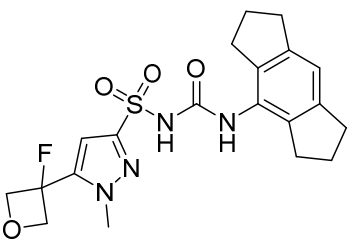


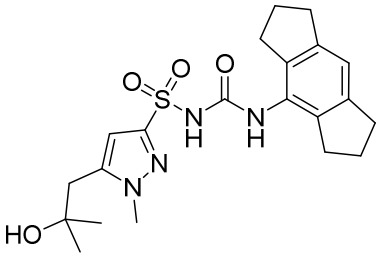


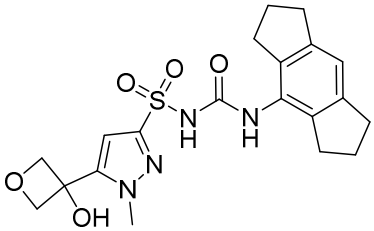


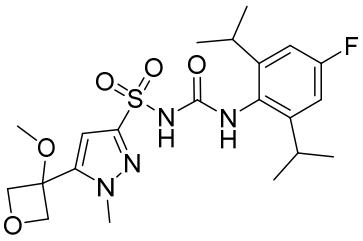


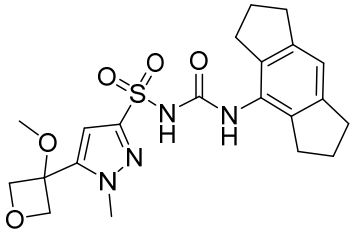


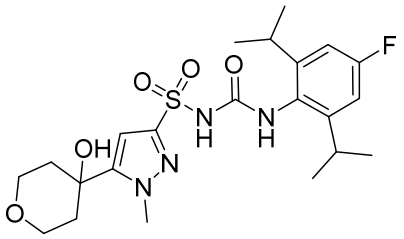


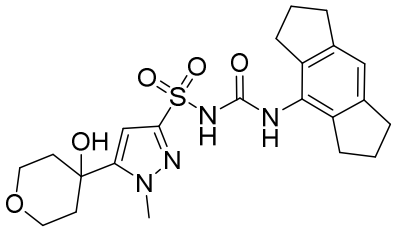


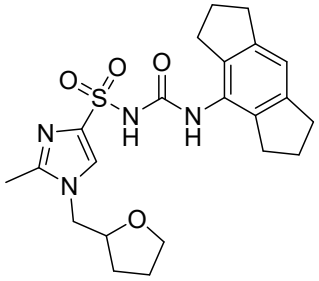


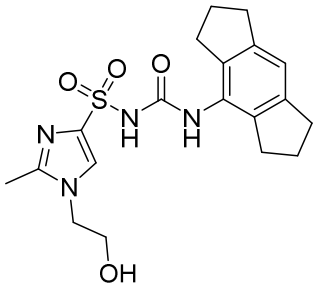


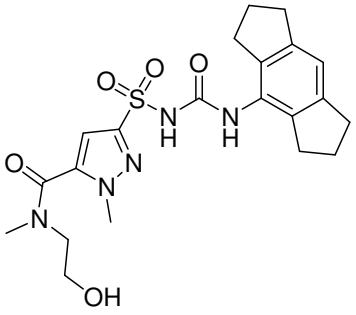


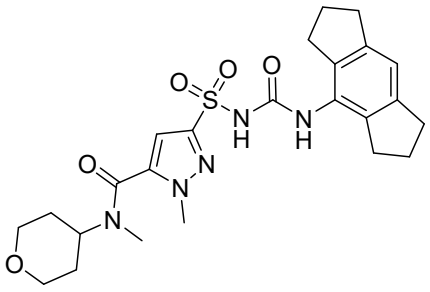


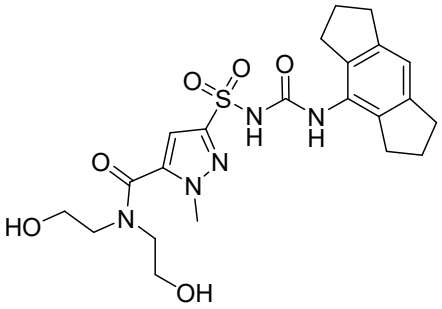


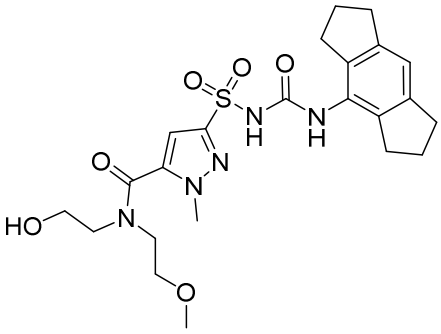


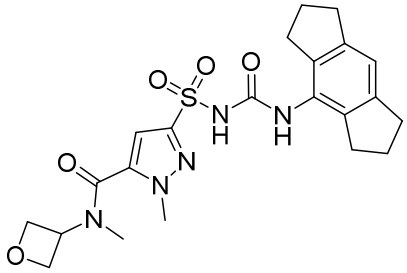


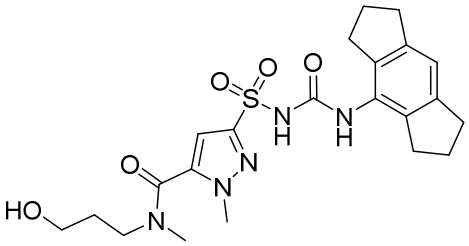


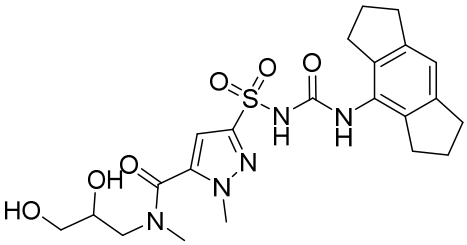


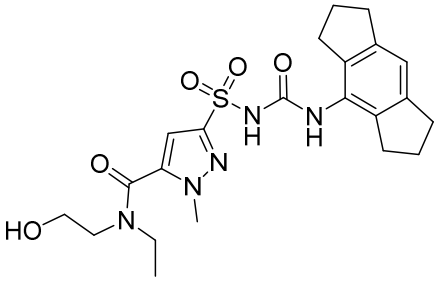


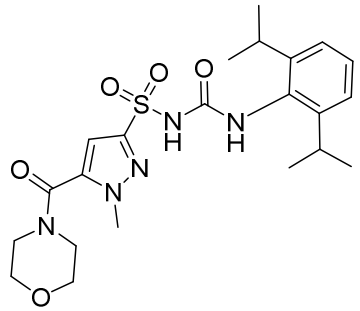


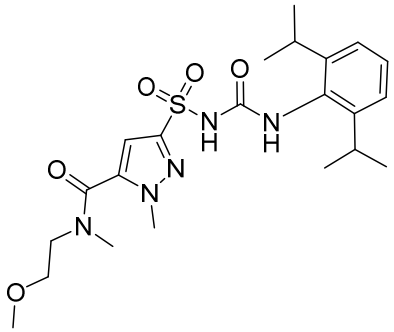


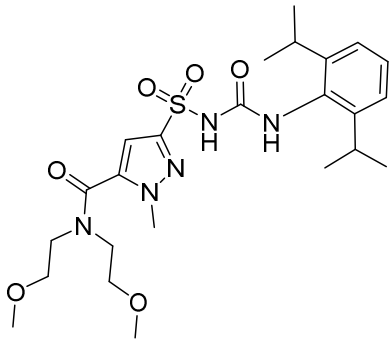


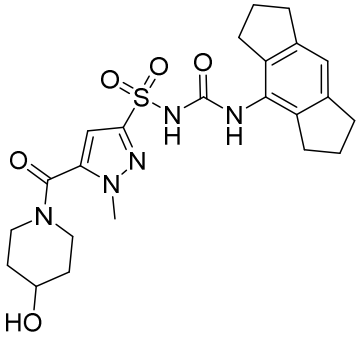


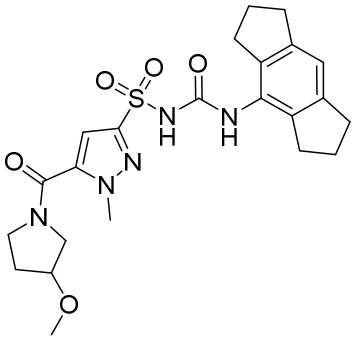


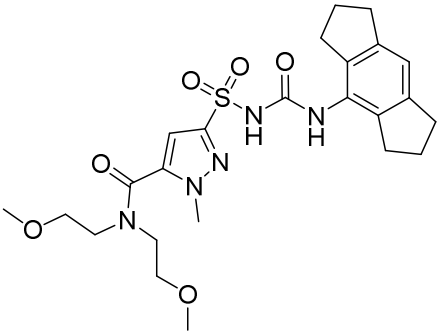


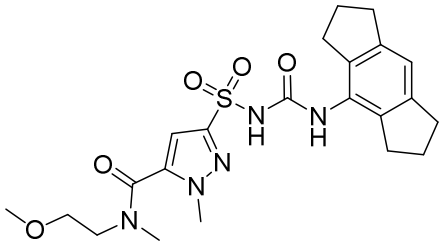


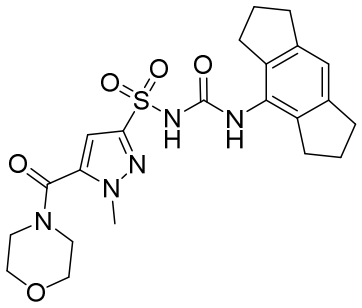


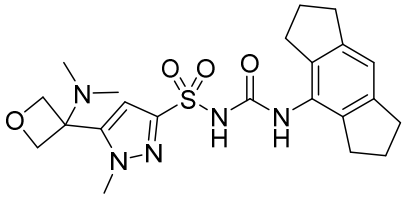


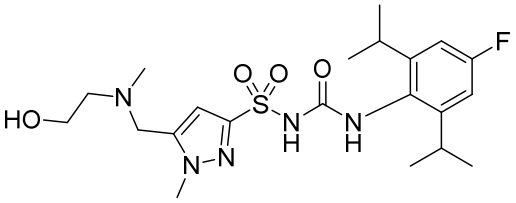


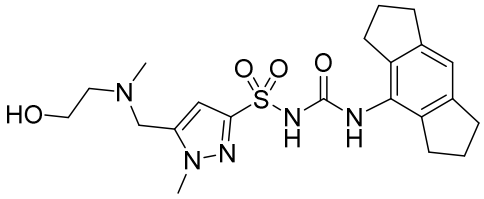


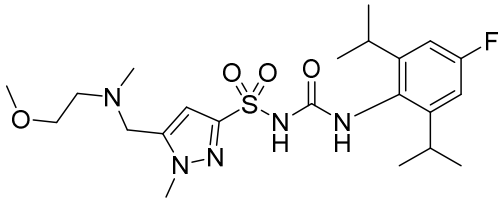


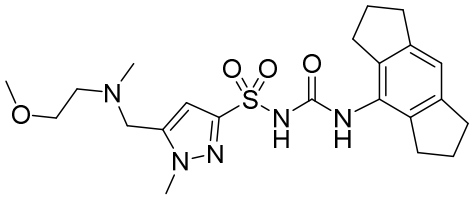


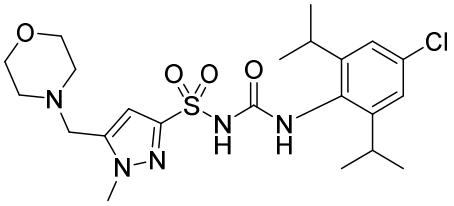


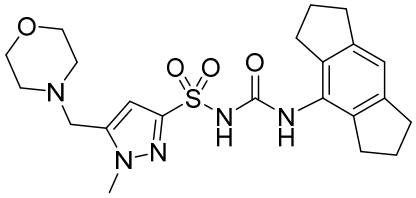


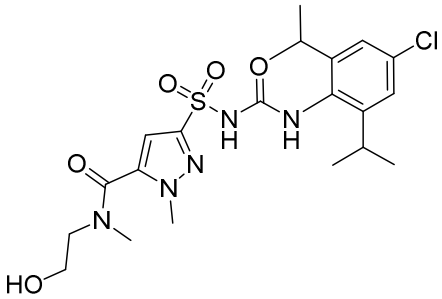


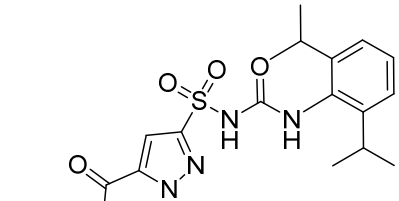


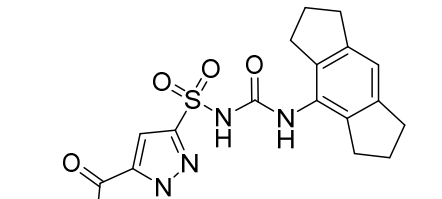


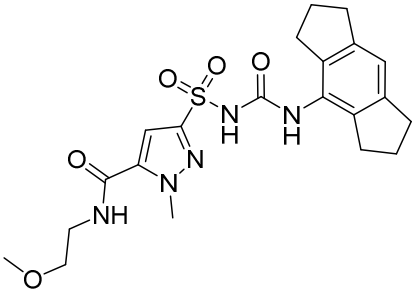


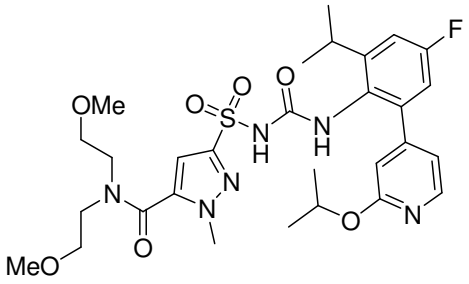


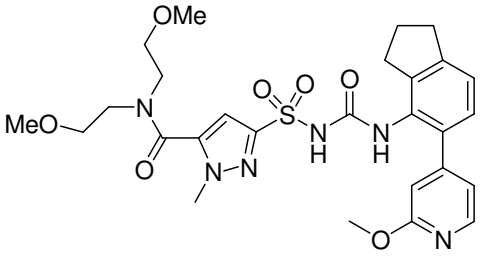


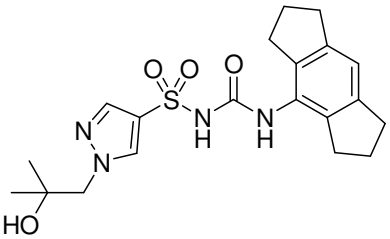


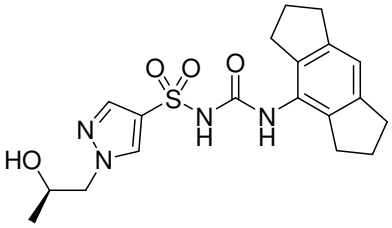


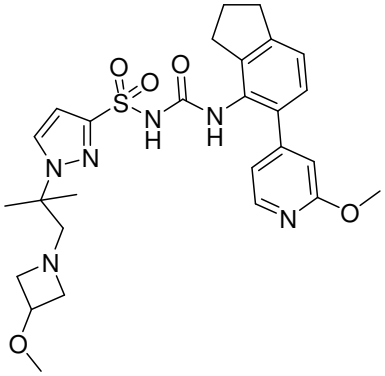


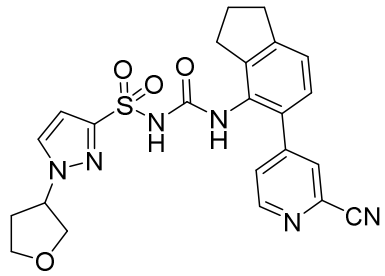


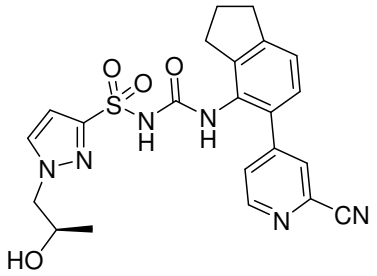


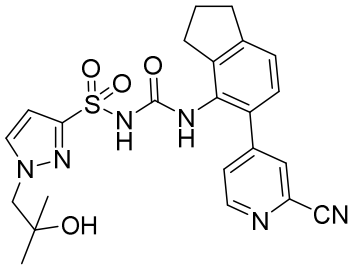


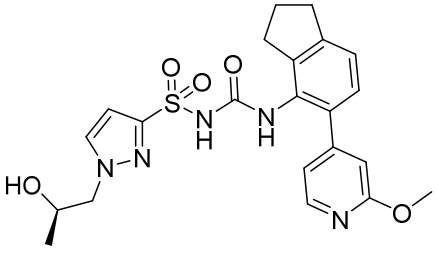


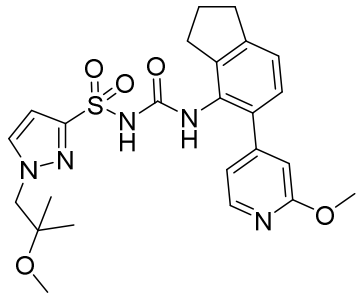


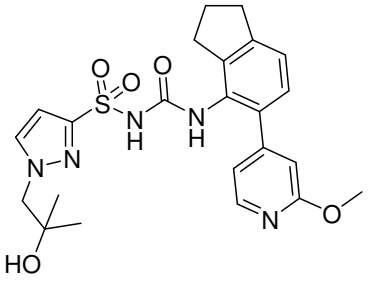


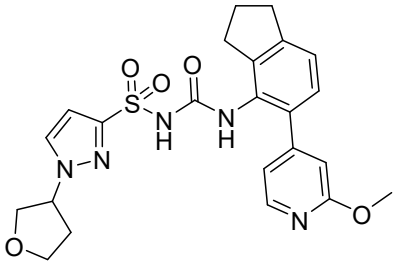


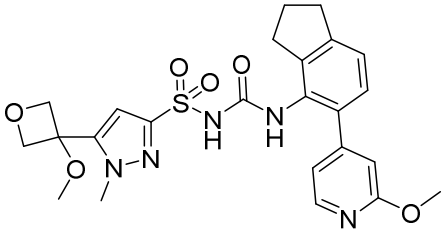


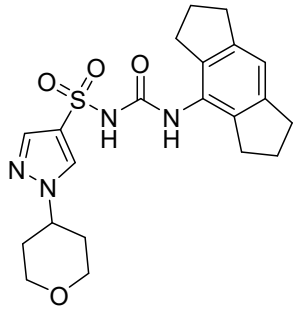


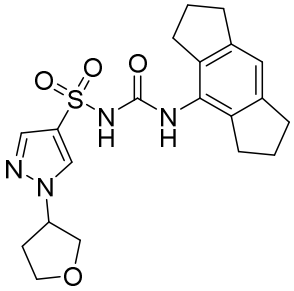


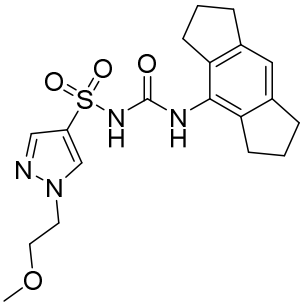


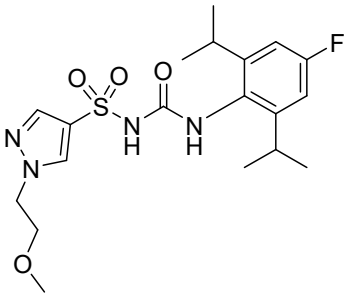


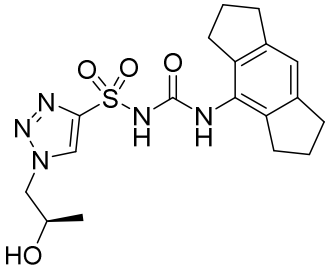


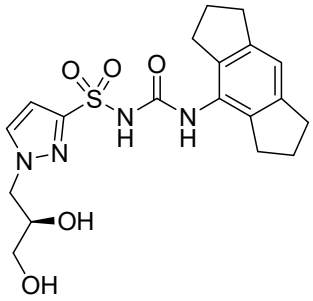


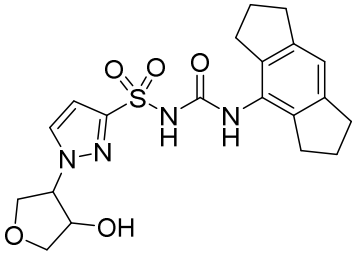


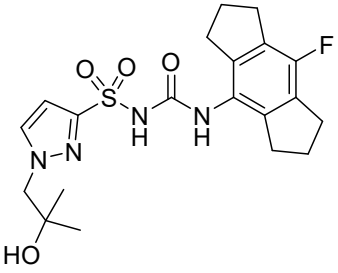


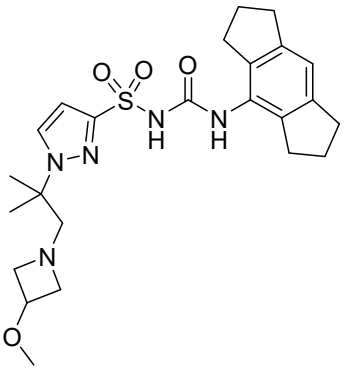






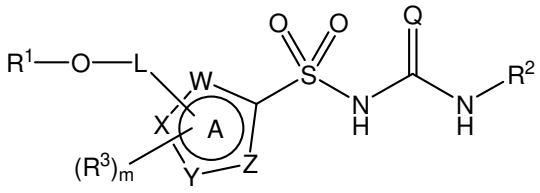




and  .

21. A pharmaceutically acceptable salt or solvate of a compound as claimed in any one of claims 1 to 20.

22. A pharmaceutically acceptable salt or solvate of a compound of formula (I):



Formula (I)

wherein:

Q is selected from O or S;

W, X, Y and Z are each independently N, O, S, NH or CH, wherein at least one of W, X, Y and Z is N or NH;

L is a saturated or unsaturated hydrocarbylene group, wherein the hydrocarbylene group may be straight-chained or branched, or be or include cyclic groups, wherein the hydrocarbylene group may optionally be substituted, and wherein the hydrocarbylene group may optionally include one or more heteroatoms N, O or S in its carbon skeleton;

R^1 is hydrogen or a saturated or unsaturated hydrocarbyl group, wherein the hydrocarbyl group may be straight-chained or branched, or be or include cyclic groups, wherein the hydrocarbyl group may optionally be substituted, and wherein the hydrocarbyl group may optionally include one or more heteroatoms N, O or S in its carbon skeleton;

optionally L and R^1 together with the oxygen atom to which they are attached may form a 3- to 12-membered saturated or unsaturated cyclic group, wherein the cyclic group may optionally be substituted;

R^2 is a cyclic group substituted at the α-position, wherein R^2 may optionally be further substituted;

each R^3 is independently a halo, -OH, $-NO_2$, $-NH_2$, $-N_3$, -SH, or a saturated or unsaturated hydrocarbyl group, wherein the hydrocarbyl group may be straight-chained or branched, or be or include cyclic groups, wherein the hydrocarbyl group may optionally be substituted, and wherein the hydrocarbyl group may optionally include one or more heteroatoms N, O or S in its carbon skeleton;

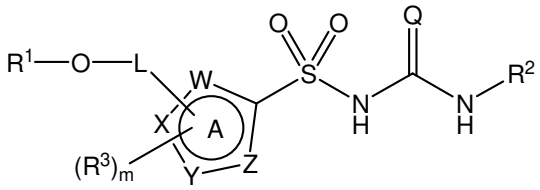
m is 0, 1, 2 or 3; and

optionally any R^3, and any two adjacent W, X, Y or Z, may together form a 3- to 12-membered saturated or unsaturated cyclic group fused to ring A, wherein the cyclic group fused to ring A may optionally be substituted;

provided that any atom of L or R^1 that is directly attached to W, X, Y or Z is not the same atom of L or R^1 that is directly attached to the oxygen atom of R^1-O-L- , and that the oxygen atom of R^1-O-L- is not directly attached to a *sp*^{2} hybridised carbon atom.

23. A pharmaceutical composition comprising a compound as claimed in any one of claims 1 to 20, or a pharmaceutically acceptable salt or solvate as claimed in claim 21 or claim 22, and a pharmaceutically acceptable excipient.

24. A pharmaceutical composition comprising a pharmaceutically acceptable excipient and a compound of formula (I):



Formula (I)

wherein:

Q is selected from O or S;

W, X, Y and Z are each independently N, O, S, NH or CH, wherein at least one of W, X, Y and Z is N or NH;

L is a saturated or unsaturated hydrocarbylene group, wherein the hydrocarbylene group may be straight-chained or branched, or be or include cyclic groups, wherein the hydrocarbylene group may optionally be substituted, and wherein

the hydrocarbylene group may optionally include one or more heteroatoms N, O or S in its carbon skeleton;

R^1 is hydrogen or a saturated or unsaturated hydrocarbyl group, wherein the hydrocarbyl group may be straight-chained or branched, or be or include cyclic groups, wherein the hydrocarbyl group may optionally be substituted, and wherein the hydrocarbyl group may optionally include one or more heteroatoms N, O or S in its carbon skeleton;

optionally L and R^1 together with the oxygen atom to which they are attached may form a 3- to 12-membered saturated or unsaturated cyclic group, wherein the cyclic group may optionally be substituted;

R^2 is a cyclic group substituted at the α-position, wherein R^2 may optionally be further substituted;

each R^3 is independently a halo, -OH, $-NO_2$, $-NH_2$, $-N_3$, -SH, or a saturated or unsaturated hydrocarbyl group, wherein the hydrocarbyl group may be straight-chained or branched, or be or include cyclic groups, wherein the hydrocarbyl group may optionally be substituted, and wherein the hydrocarbyl group may optionally include one or more heteroatoms N, O or S in its carbon skeleton;

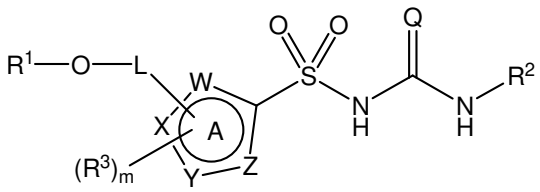
m is 0, 1, 2 or 3; and

optionally any R^3, and any two adjacent W, X, Y or Z, may together form a 3- to 12-membered saturated or unsaturated cyclic group fused to ring A, wherein the cyclic group fused to ring A may optionally be substituted;

provided that any atom of L or R^1 that is directly attached to W, X, Y or Z is not the same atom of L or R^1 that is directly attached to the oxygen atom of R^1-O-L- , and that the oxygen atom of R^1-O-L- is not directly attached to a *sp*² hybridised carbon atom.

25. A compound as claimed in any one of claims 1 to 20, or a pharmaceutically acceptable salt or solvate as claimed in claim 21 or claim 22, or a pharmaceutical composition as claimed in claim 23 or claim 24, for use in medicine.

26. A compound for use in medicine, wherein the compound is a compound of formula (I):



Formula (I)

wherein:

Q is selected from O or S;

W, X, Y and Z are each independently N, O, S, NH or CH, wherein at least one of W, X, Y and Z is N or NH;

L is a saturated or unsaturated hydrocarbylene group, wherein the hydrocarbylene group may be straight-chained or branched, or be or include cyclic groups, wherein the hydrocarbylene group may optionally be substituted, and wherein the hydrocarbylene group may optionally include one or more heteroatoms N, O or S in its carbon skeleton;

R^1 is hydrogen or a saturated or unsaturated hydrocarbyl group, wherein the hydrocarbyl group may be straight-chained or branched, or be or include cyclic groups, wherein the hydrocarbyl group may optionally be substituted, and wherein the hydrocarbyl group may optionally include one or more heteroatoms N, O or S in its carbon skeleton;

optionally L and R^1 together with the oxygen atom to which they are attached may form a 3- to 12-membered saturated or unsaturated cyclic group, wherein the cyclic group may optionally be substituted;

R^2 is a cyclic group substituted at the α-position, wherein R^2 may optionally be further substituted;

each R^3 is independently a halo, -OH, $-NO_2$, $-NH_2$, $-N_3$, -SH, or a saturated or unsaturated hydrocarbyl group, wherein the hydrocarbyl group may be straight-chained or branched, or be or include cyclic groups, wherein the hydrocarbyl group may optionally be substituted, and wherein the hydrocarbyl group may optionally include one or more heteroatoms N, O or S in its carbon skeleton;

m is 0, 1, 2 or 3; and

optionally any R^3, and any two adjacent W, X, Y or Z, may together form a 3- to 12-membered saturated or unsaturated cyclic group fused to ring A, wherein the cyclic group fused to ring A may optionally be substituted;

provided that any atom of L or R^1 that is directly attached to W, X, Y or Z is not the same atom of L or R^1 that is directly attached to the oxygen atom of R^1-O-L- , and that the oxygen atom of R^1-O-L- is not directly attached to a sp^2 hybridised carbon atom.

27. Use of a compound as claimed in any one of claims 1 to 20, or a pharmaceutically acceptable salt or solvate as claimed in claim 21 or claim 22, or a pharmaceutical composition as claimed in claim 23 or claim 24, in the manufacture of a medicament for the treatment or prevention of a disease, disorder or condition, wherein the disease, disorder or condition is selected from:

(i) inflammation;

(ii) an auto-immune disease;

(iii) cancer;

(iv) an infection;

(v) a central nervous system disease;

(vi) a metabolic disease;

(vii) a cardiovascular disease;

(viii) a respiratory disease;

(ix) a liver disease;

(x) a renal disease;

(xi) an ocular disease;

(xii) a skin disease;

(xiii) a lymphatic condition;

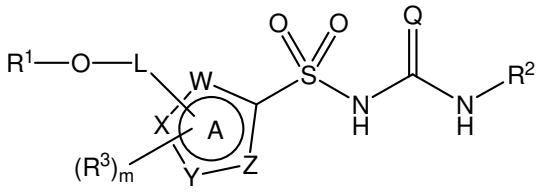
(xiv) a psychological disorder;

(xv) graft versus host disease;

(xvi) allodynia; and

(xvii) any disease where an individual has been determined to carry a germline or somatic non-silent mutation in NLRP3.

28. Use of a compound in the manufacture of a medicament for the treatment or prevention of a disease, disorder or condition, wherein the compound is a compound of formula (I):



Formula (I)

wherein:

Q is selected from O or S;

W, X, Y and Z are each independently N, O, S, NH or CH, wherein at least one of W, X, Y and Z is N or NH;

L is a saturated or unsaturated hydrocarbylene group, wherein the hydrocarbylene group may be straight-chained or branched, or be or include cyclic groups, wherein the hydrocarbylene group may optionally be substituted, and wherein the hydrocarbylene group may optionally include one or more heteroatoms N, O or S in its carbon skeleton;

R^1 is hydrogen or a saturated or unsaturated hydrocarbyl group, wherein the hydrocarbyl group may be straight-chained or branched, or be or include cyclic groups, wherein the hydrocarbyl group may optionally be substituted, and wherein the hydrocarbyl group may optionally include one or more heteroatoms N, O or S in its carbon skeleton;

optionally L and R^1 together with the oxygen atom to which they are attached may form a 3- to 12-membered saturated or unsaturated cyclic group, wherein the cyclic group may optionally be substituted;

R^2 is a cyclic group substituted at the α-position, wherein R^2 may optionally be further substituted;

each R^3 is independently a halo, -OH, $-NO_2$, $-NH_2$, $-N_3$, -SH, or a saturated or unsaturated hydrocarbyl group, wherein the hydrocarbyl group may be straight-chained or branched, or be or include cyclic groups, wherein the hydrocarbyl group may optionally be substituted, and wherein the hydrocarbyl group may optionally include one or more heteroatoms N, O or S in its carbon skeleton;

m is 0, 1, 2 or 3; and

optionally any R^3, and any two adjacent W, X, Y or Z, may together form a 3- to 12-membered saturated or unsaturated cyclic group fused to ring A, wherein the cyclic group fused to ring A may optionally be substituted;

provided that any atom of L or R^1 that is directly attached to W, X, Y or Z is not the same atom of L or R^1 that is directly attached to the oxygen atom of R^1-O-L- , and that the oxygen atom of R^1-O-L- is not directly attached to a sp^2 hybridised carbon atom;

and wherein the disease, disorder or condition is selected from:

(i) inflammation;

(ii) an auto-immune disease;

(iii) cancer;

(iv) an infection;

(v) a central nervous system disease;

(vi) a metabolic disease;
(vii) a cardiovascular disease;
(viii) a respiratory disease;
(ix) a liver disease;
(x) a renal disease;
(xi) an ocular disease;
(xii) a skin disease;
(xiii) a lymphatic condition;
(xiv) a psychological disorder;
(xv) graft versus host disease;
(xvi) allodynia; and
(xvii) any disease where an individual has been determined to carry a germline or somatic non-silent mutation in NLRP3.

29. The use as claimed in claim 27 or claim 28, wherein the disease, disorder or condition is selected from:

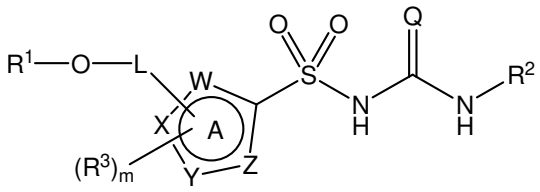
(i) inflammation;
(ii) an infection;
(iii) a cardiovascular disease;
(iv) a respiratory disease;
(v) a liver disease;
(vi) a renal disease;
(vii) an ocular disease;
(viii) a skin disease;
(ix) a psychological disorder;
(x) a lymphatic condition; and/or
(xi) any disease, disorder or condition in which an individual has been determined to carry a germline or somatic non-silent mutation in NLRP3.

30. Use of a compound as claimed in any one of claims 1 to 20, or a pharmaceutically acceptable salt or solvate as claimed in claim 21 or claim 22, or a pharmaceutical composition as claimed in claim 23 or claim 24, in the manufacture of a medicament for the treatment or prevention of a disease, disorder or condition, wherein the disease, disorder or condition is selected from:

(i) cryopyrin-associated periodic syndromes (CAPS);
(ii) Muckle-Wells syndrome (MWS);

(iii) familial cold autoinflammatory syndrome (FCAS);
(iv) neonatal onset multisystem inflammatory disease (NOMID);
(v) familial Mediterranean fever (FMF);
(vi) pyogenic arthritis, pyoderma gangrenosum and acne syndrome (PAPA);
(vii) hyperimmunoglobulinemia D and periodic fever syndrome (HIDS);
(viii) Tumour Necrosis Factor (TNF) Receptor-Associated Periodic Syndrome (TRAPS);
(ix) systemic juvenile idiopathic arthritis;
(x) adult-onset Still's disease (AOSD);
(xi) relapsing polychondritis;
(xii) Schnitzler's syndrome;
(xiii) Sweet's syndrome;
(xiv) Behcet's disease;
(xv) anti-synthetase syndrome;
(xvi) deficiency of interleukin 1 receptor antagonist (DIRA); and
(xvii) haploinsufficiency of A20 (HA20).

31. Use of a compound in the manufacture of a medicament for the treatment or prevention of a disease, disorder or condition, wherein the compound is a compound of formula (I):



Formula (I)

wherein:

Q is selected from O or S;

W, X, Y and Z are each independently N, O, S, NH or CH, wherein at least one of W, X, Y and Z is N or NH;

L is a saturated or unsaturated hydrocarbylene group, wherein the hydrocarbylene group may be straight-chained or branched, or be or include cyclic groups, wherein the hydrocarbylene group may optionally be substituted, and wherein the hydrocarbylene group may optionally include one or more heteroatoms N, O or S in its carbon skeleton;

R^1 is hydrogen or a saturated or unsaturated hydrocarbyl group, wherein the hydrocarbyl group may be straight-chained or branched, or be or include cyclic groups, wherein the hydrocarbyl group may optionally be substituted, and wherein the hydrocarbyl group may optionally include one or more heteroatoms N, O or S in its carbon skeleton;

optionally L and R^1 together with the oxygen atom to which they are attached may form a 3- to 12-membered saturated or unsaturated cyclic group, wherein the cyclic group may optionally be substituted;

R^2 is a cyclic group substituted at the α-position, wherein R^2 may optionally be further substituted;

each R^3 is independently a halo, -OH, $-NO_2$, $-NH_2$, $-N_3$, -SH, or a saturated or unsaturated hydrocarbyl group, wherein the hydrocarbyl group may be straight-chained or branched, or be or include cyclic groups, wherein the hydrocarbyl group may optionally be substituted, and wherein the hydrocarbyl group may optionally include one or more heteroatoms N, O or S in its carbon skeleton;

m is 0, 1, 2 or 3; and

optionally any R^3, and any two adjacent W, X, Y or Z, may together form a 3- to 12-membered saturated or unsaturated cyclic group fused to ring A, wherein the cyclic group fused to ring A may optionally be substituted;

provided that any atom of L or R^1 that is directly attached to W, X, Y or Z is not the same atom of L or R^1 that is directly attached to the oxygen atom of R^1-O-L- , and that the oxygen atom of R^1-O-L- is not directly attached to a sp^2 hybridised carbon atom;

and wherein the disease, disorder or condition is selected from:

(i) cryopyrin-associated periodic syndromes (CAPS);
(ii) Muckle-Wells syndrome (MWS);
(iii) familial cold autoinflammatory syndrome (FCAS);
(iv) neonatal onset multisystem inflammatory disease (NOMID);
(v) familial Mediterranean fever (FMF);
(vi) pyogenic arthritis, pyoderma gangrenosum and acne syndrome (PAPA);
(vii) hyperimmunoglobulinemia D and periodic fever syndrome (HIDS);
(viii) Tumour Necrosis Factor (TNF) Receptor-Associated Periodic Syndrome (TRAPS);
(ix) systemic juvenile idiopathic arthritis;
(x) adult-onset Still's disease (AOSD);
(xi) relapsing polychondritis;

(xii) Schnitzler's syndrome;

(xiii) Sweet's syndrome;

(xiv) Behcet's disease;

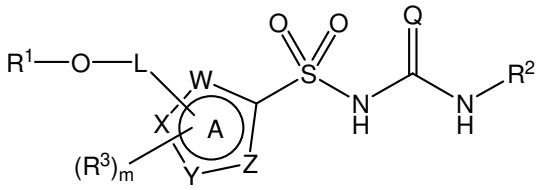
(xv) anti-synthetase syndrome;

(xvi) deficiency of interleukin 1 receptor antagonist (DIRA); and

(xvii) haploinsufficiency of A20 (HA20).

32. A method of inhibiting NLRP3 *ex vivo* or *in vitro*, the method comprising the use of a compound as claimed in any one of claims 1 to 20, or a pharmaceutically acceptable salt or solvate as claimed in claim 21 or claim 22, or a pharmaceutical composition as claimed in claim 23 or claim 24, to inhibit NLRP3.

33. A method of inhibiting NLRP3 *ex vivo* or *in vitro*, the method comprising the use of a compound to inhibit NLRP3, wherein the compound is a compound of formula (I):



Formula (I)

wherein:

Q is selected from O or S;

W, X, Y and Z are each independently N, O, S, NH or CH, wherein at least one of W, X, Y and Z is N or NH;

L is a saturated or unsaturated hydrocarbylene group, wherein the hydrocarbylene group may be straight-chained or branched, or be or include cyclic groups, wherein the hydrocarbylene group may optionally be substituted, and wherein the hydrocarbylene group may optionally include one or more heteroatoms N, O or S in its carbon skeleton;

R^1 is hydrogen or a saturated or unsaturated hydrocarbyl group, wherein the hydrocarbyl group may be straight-chained or branched, or be or include cyclic groups, wherein the hydrocarbyl group may optionally be substituted, and wherein the hydrocarbyl group may optionally include one or more heteroatoms N, O or S in its carbon skeleton;

optionally L and R^1 together with the oxygen atom to which they are attached may form a 3- to 12-membered saturated or unsaturated cyclic group, wherein the cyclic group may optionally be substituted;

R^2 is a cyclic group substituted at the α-position, wherein R^2 may optionally be further substituted;

each R^3 is independently a halo, -OH, $-NO_2$, $-NH_2$, $-N_3$, -SH, or a saturated or unsaturated hydrocarbyl group, wherein the hydrocarbyl group may be straight-chained or branched, or be or include cyclic groups, wherein the hydrocarbyl group may optionally be substituted, and wherein the hydrocarbyl group may optionally include one or more heteroatoms N, O or S in its carbon skeleton;

m is 0, 1, 2 or 3; and

optionally any R^3, and any two adjacent W, X, Y or Z, may together form a 3- to 12-membered saturated or unsaturated cyclic group fused to ring A, wherein the cyclic group fused to ring A may optionally be substituted;

provided that any atom of L or R^1 that is directly attached to W, X, Y or Z is not the same atom of L or R^1 that is directly attached to the oxygen atom of R^1-O-L- , and that the oxygen atom of R^1-O-L- is not directly attached to a sp^2 hybridised carbon atom.