dimethyl sulfoxide (DMSO), although these agents have limited potency and are nonspecific.

Current treatments for NLRP3-related diseases include biologic agents that target IL-1. These are the recombinant IL-1 receptor antagonist anakinra, the neutralizing IL-1β antibody canakinumab and the soluble decoy IL-1 receptor rilonacept. These approaches have proven successful in the treatment of CAPS, and these biologic agents have been used in clinical trials for other IL-1β-associated diseases.

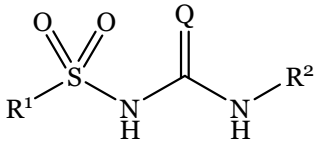
Some diarylsulfonylurea-containing compounds have been identified as cytokine release inhibitory drugs (CRIDs) (Perregaux *et al.*; J. Pharmacol. Exp. Ther. 299, 187-197, 2001). CRIDs are a class of diarylsulfonylurea-containing compounds that inhibit the post-translational processing of IL-1β. Post-translational processing of IL-1β is accompanied by activation of caspase-1 and cell death. CRIDs arrest activated monocytes so that caspase-1 remains inactive and plasma membrane latency is preserved.

Certain sulfonylurea-containing compounds are also disclosed as inhibitors of NLRP3 (see for example, Baldwin *et al.*, J. Med. Chem., 59(5), 1691-1710, 2016; and WO 2016/131098 A1, WO 2017/129897 A1, WO 2017/140778 A1, WO 2017/184604 A1, WO 2017/184623 A1, WO 2017/184624 A1, WO 2018/015445 A1 and WO 2018/136890 A1).

There is a need to provide compounds with improved pharmacological and/or physiological and/or physicochemical properties and/or those that provide a useful alternative to known compounds.

Summary

In one aspect, the present disclosure refers to a compound of formula (I):



Formula (I)

wherein:

Q is selected from O or S;

R^1 is 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; and 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 a 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.

In another aspect, the present disclosure refers to a pharmaceutically acceptable salt, solvate or prodrug of a compound as disclosed herein.

In another aspect the present disclosure refers to a pharmaceutical composition comprising a compound as disclosed herein, or a pharmaceutically acceptable salt, solvate or prodrug as disclosed herien, and a pharmaceutically acceptable excipient.

In another aspect, the present disclosure refers to a compound as disclosed herein, or a pharmaceutically acceptable salt, solvate or prodrug as disclosed herein, or a pharmaceutical composition as disclosed herein, for use in medicine.

In yet another aspect, the present disclosure refers to a compound as disclosed herein, or a pharmaceutically acceptable salt, solvate or prodrug as disclosed herein, or a pharmaceutical composition as disclosed herein, for use in inhibiting NLRP3.

In yet another aspect, the present disclosure refers to a use of a compound as disclosed herein, or a pharmaceutically acceptable salt, solvate or prodrug as disclosed herein, or a pharmaceutical composition as disclosed herein, in the manufacture of a medicament for treating or preventing a disease, disorder or condition selected from:

(i) inflammation;
(ii) an auto-immune disease;
(iii) cancer;
(iv) an infection;
(v) a central nervous system disease;
(vi) a metabolic disease;

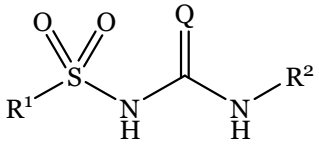
(vii) a cardiovascular disease;
(viii) a respiratory disease;
(ix) a liver disease;
(x) a renal disease;
(xi) an ocular disease;
(xii) a skin disease;
(xiii) a lymphatic condition;
(xiv) a psychological disorder;
(xv) graft versus host disease;
(xvi) allodynia; and
(xvii) any disease where an individual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

In yet another aspect, the present disclosure refers to a use of a compound as claimed in any one of claims 1 to 10, or a pharmaceutically acceptable salt, solvate or prodrug as claimed in claim 11, or a pharmaceutical composition as claimed in claim 12 or 13, in the manufacture of a medicament for treating or preventing a disease, disorder or condition 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).

Detailed Description

A first aspect of the invention provides a compound of formula (I):



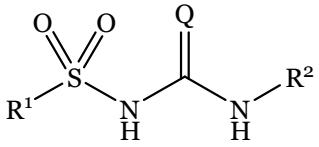
Formula (I)

wherein:

Q is selected from O or S;

Claims

1. A compound of formula (I):



Formula (I)

wherein:

Q is selected from O or S;

R^1 is 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; and

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 a 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.

2. A compound as claimed in claim 1, wherein R^1 is a 4- to 10-membered cyclic group, wherein the cyclic group may optionally be substituted.

3. A compound as claimed in claim 1, wherein R^1 is a C_1-C_{15} alkyl, C_2-C_{15} alkenyl or C_2-C_{15} alkynyl group, all of which may optionally be substituted, and all of which may optionally include one, two or three heteroatoms N, O or S in their carbon skeleton.

4. A compound as claimed in any one of claims 1 to 3, wherein R^1 is substituted with one, two or three substituents independently selected from halo; -CN; $-N_3$; $-R^\beta$; -OH; $-OR^\beta$; $-SO_2R^\beta$; $-NH_2$; $-NHR^\beta$; $-N(R^\beta)_2$; $-R^\alpha-NH_2$; $-R^\alpha-NHR^\beta$; $-R^\alpha-N(R^\beta)_2$; $-COR^\beta$; $-COOR^\beta$; $-OCOR^\beta$; $-R^\alpha-COR^\beta$; $-R^\alpha-COOR^\beta$; $-R^\alpha-OCOR^\beta$; $-CONH_2$; $-CONHR^\beta$; $-CON(R^\beta)_2$; or oxo (=O);

wherein each $-R^\alpha-$ is independently selected from a C_1-C_6 alkylene group, wherein one or two carbon atoms in the backbone of the alkylene group may optionally be replaced by one or two heteroatoms N, O or S, and wherein the alkylene group may optionally be substituted with one or two halo and/or $-R^\beta$ 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, two or three 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 or oxo (=O) groups.

5. A compound as claimed in any one of claims 1 to 4, wherein the α-substituted cyclic group of R^2 is a 5- or 6-membered cyclic group, wherein the cyclic group may optionally be further substituted.

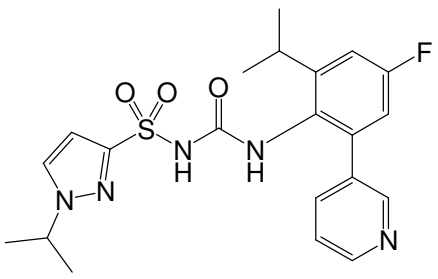
6. A compound as claimed in any one of claims 1 to 5, wherein the monovalent heterocyclic or aromatic group at the α-position of the cyclic group of R^2 is phenyl or a 5- or 6-membered heterocyclic group, all of which may optionally be substituted.

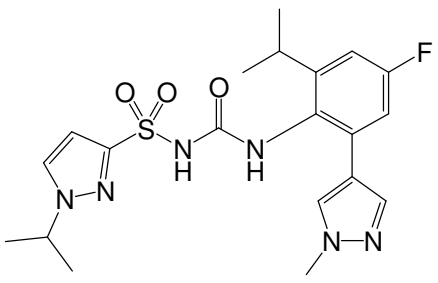
7. A compound as claimed in any one of claims 1 to 6, wherein the monovalent heterocyclic or aromatic group at the α-position of the cyclic group of R^2 is phenyl, pyridinyl, pyrimidinyl or pyrazolyl, all of which may optionally be substituted with one or two substituents independently selected from halo, -OH, -NH_2, -CN, C_1-C_3 alkyl or -O(C_1-C_3 alkyl) groups.

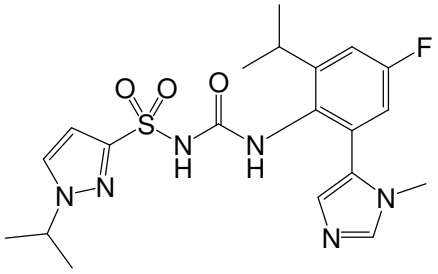
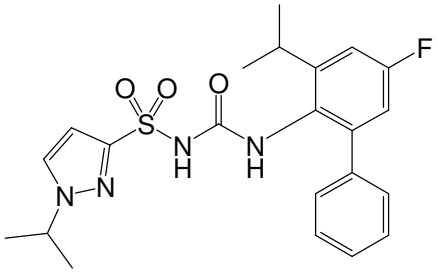
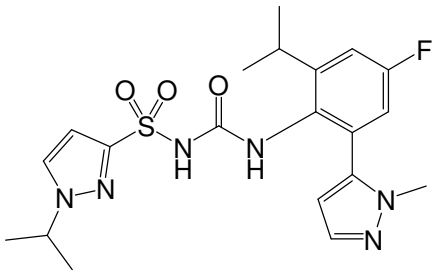
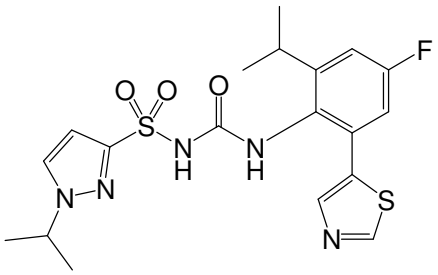
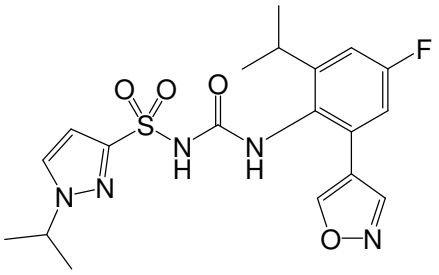
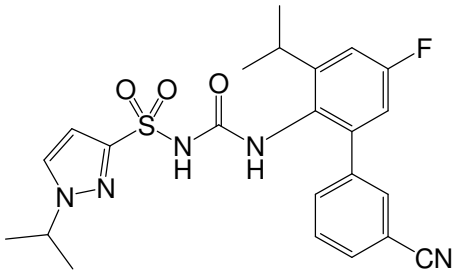
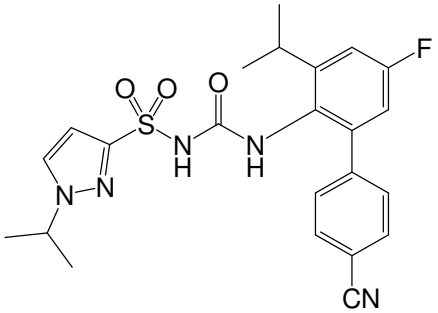
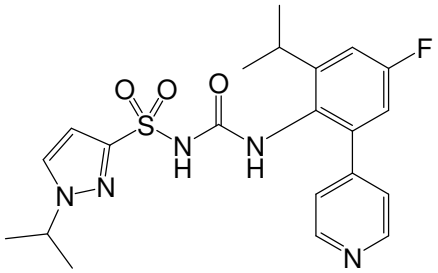
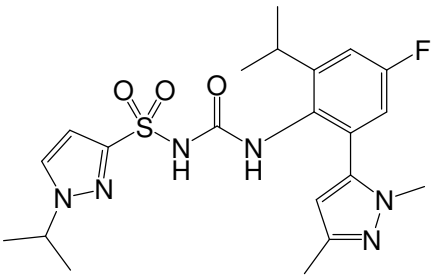
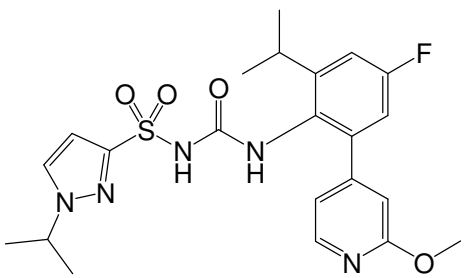
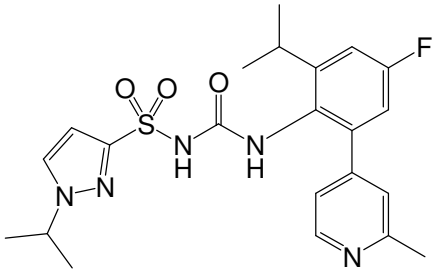
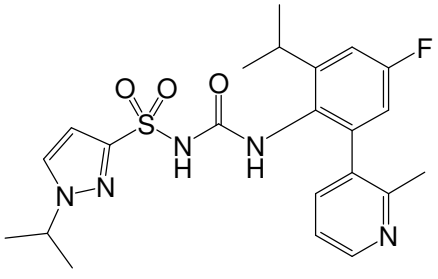
8. A compound as claimed in any one of claims 1 to 7, wherein the cyclic group of R^2 is further substituted with one or two substituents independently selected from halo, -R^{δ}, -OR^{δ} or -COR^{δ} groups, wherein each R^{δ} is independently selected from a C_1-C_6 alkyl, C_2-C_6 alkenyl, C_2-C_6 alkynyl or C_2-C_6 cyclic group, and wherein each R^{δ} is optionally further substituted with one or more halo groups.

9. A compound as claimed in any one of claims 1 to 8, wherein Q is O.

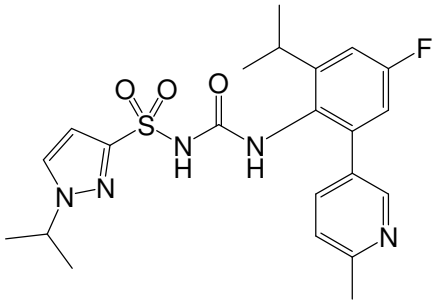
10. A compound selected from the group consisting of:

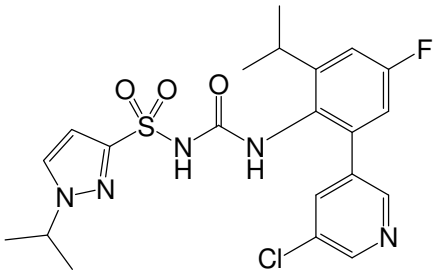


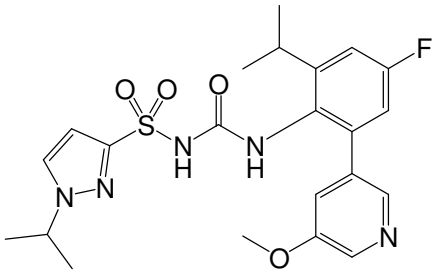


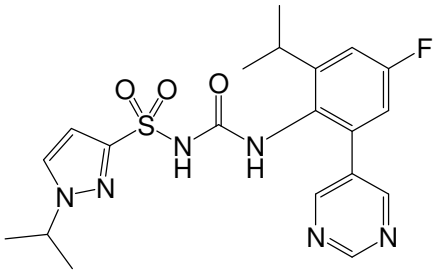













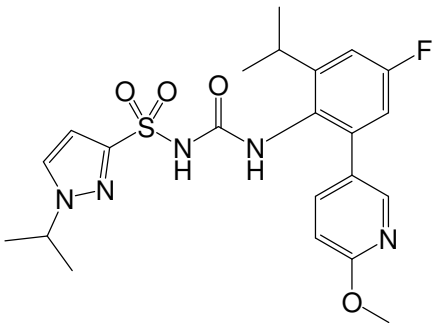
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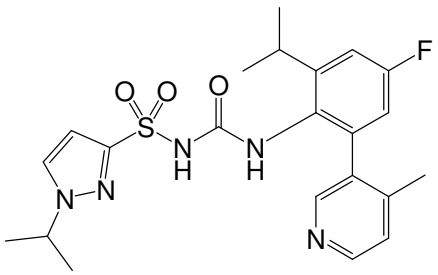


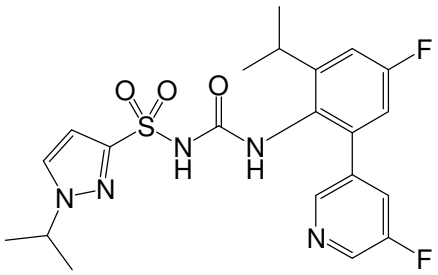


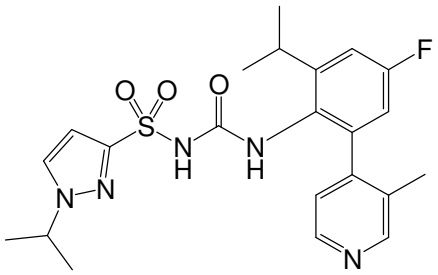


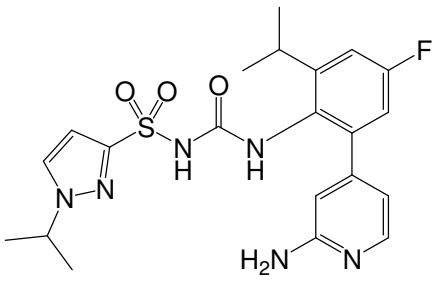


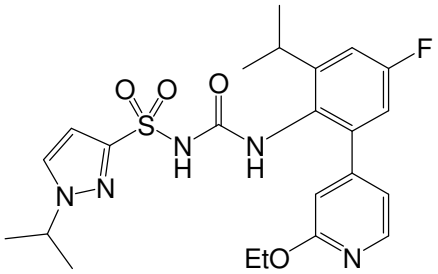




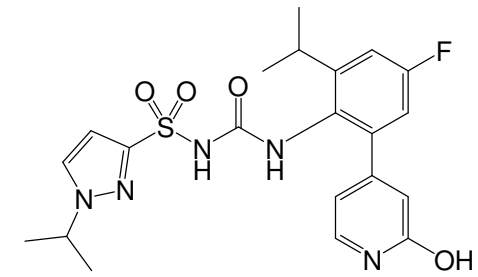


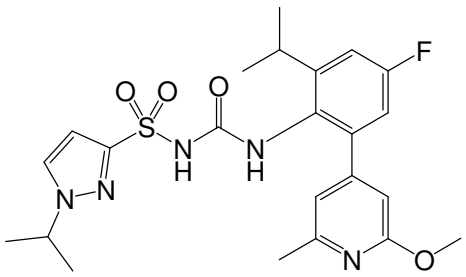


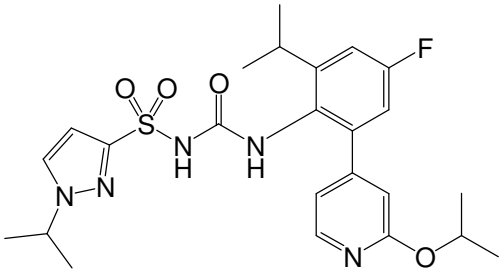


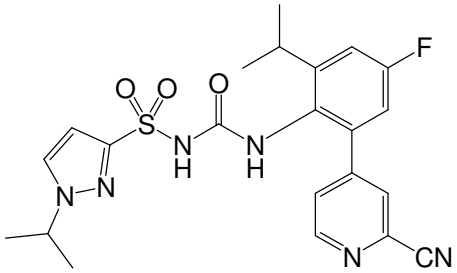


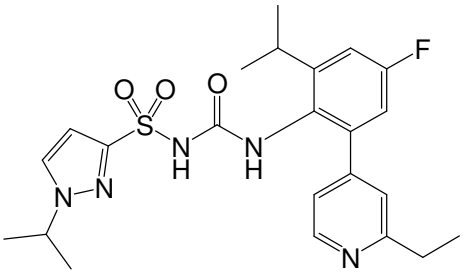
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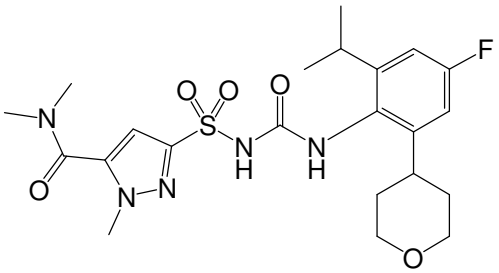


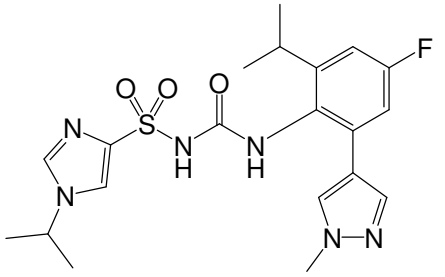


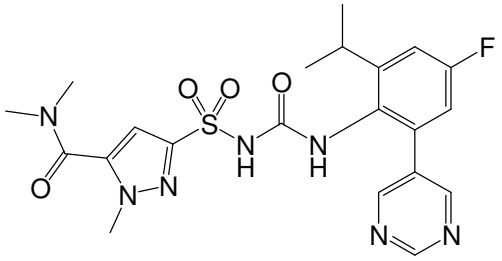


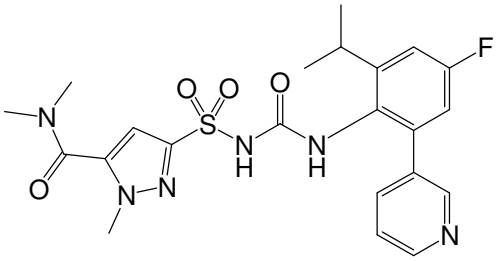


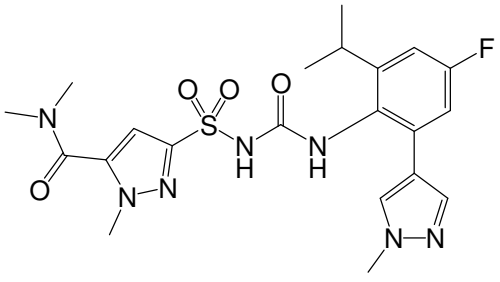


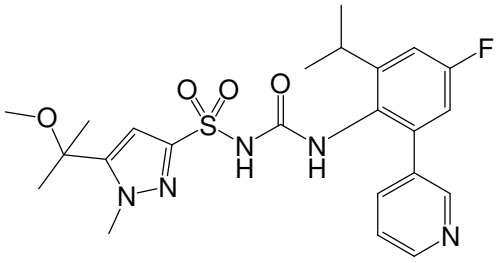


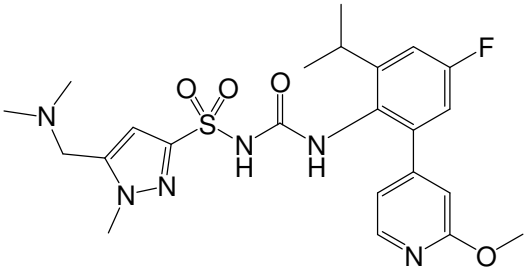




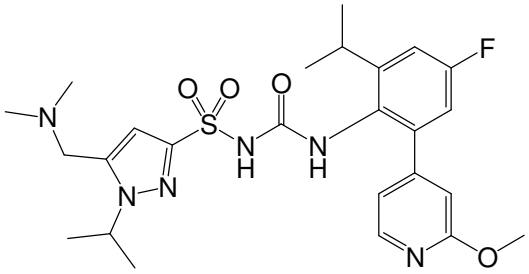


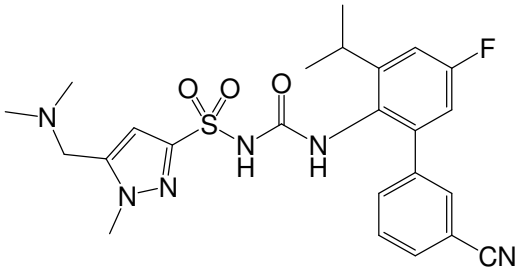


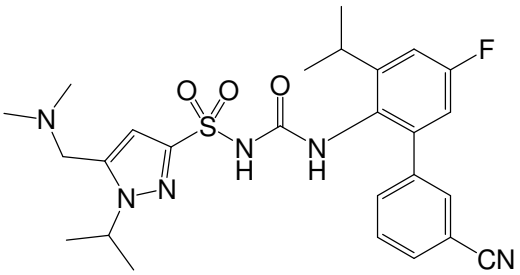


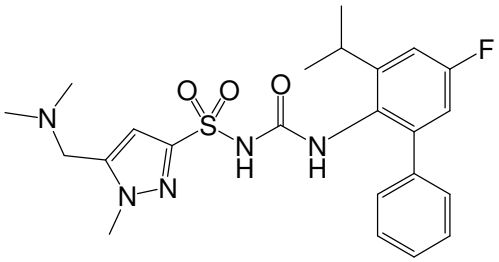


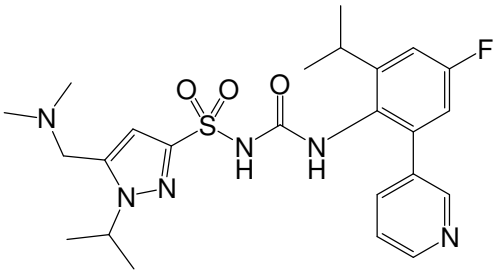
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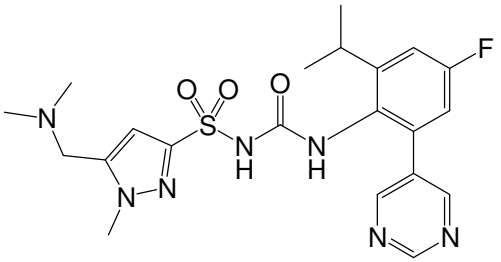


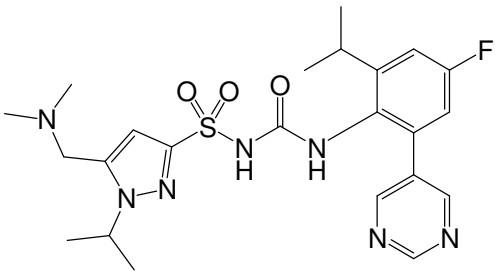


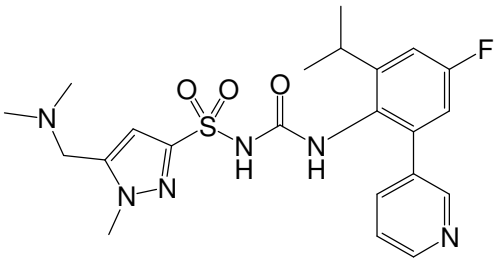


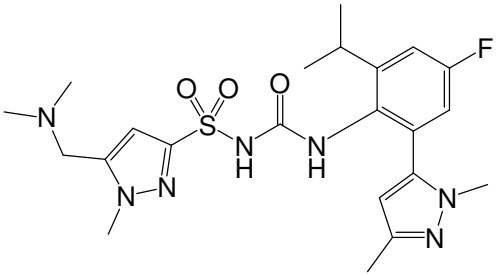


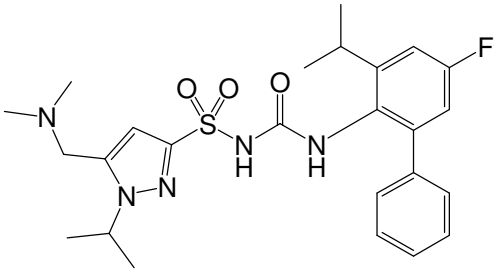




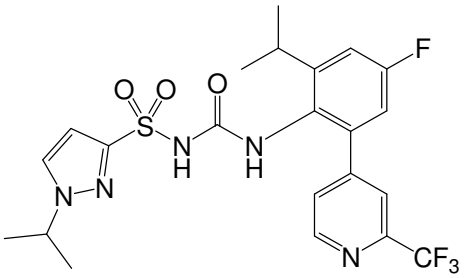


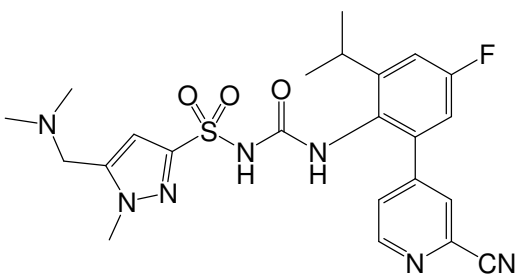


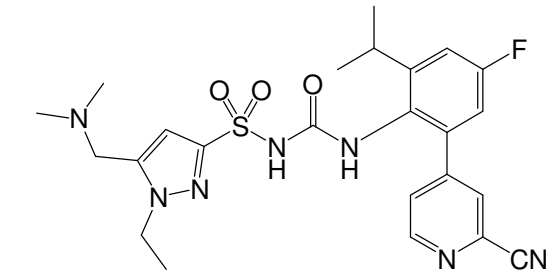


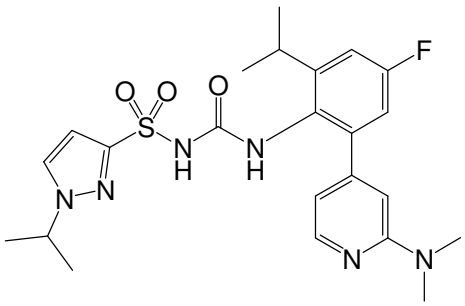


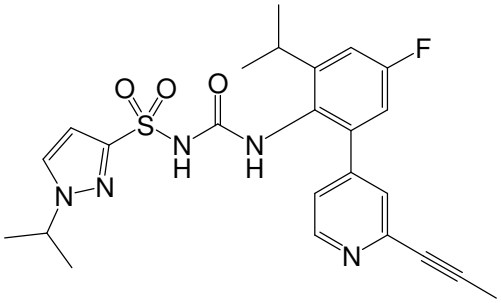
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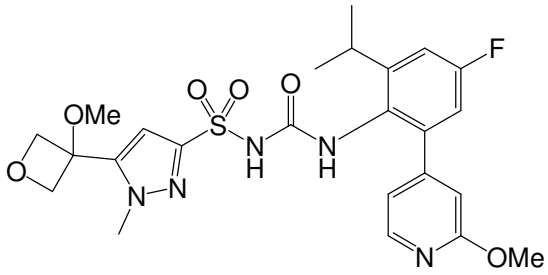


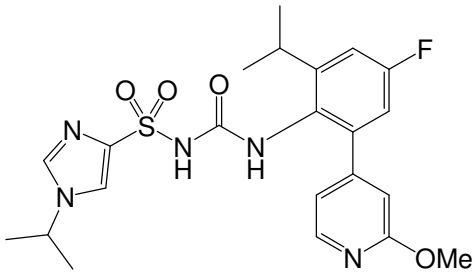


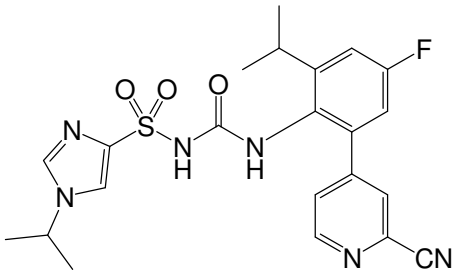


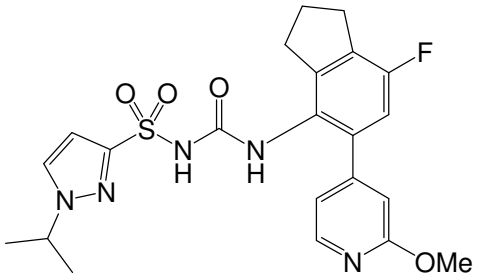


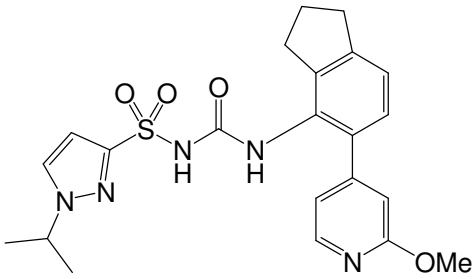


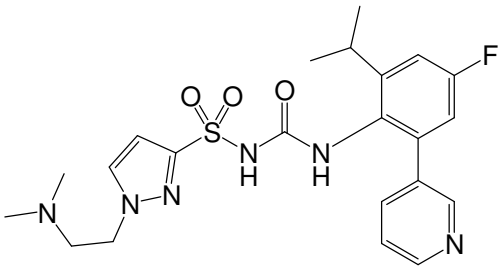


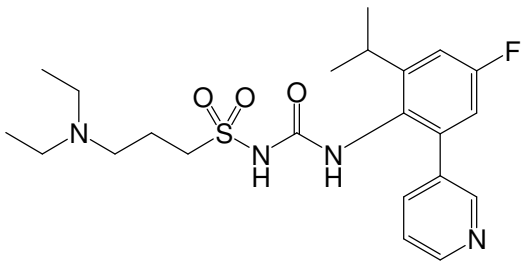




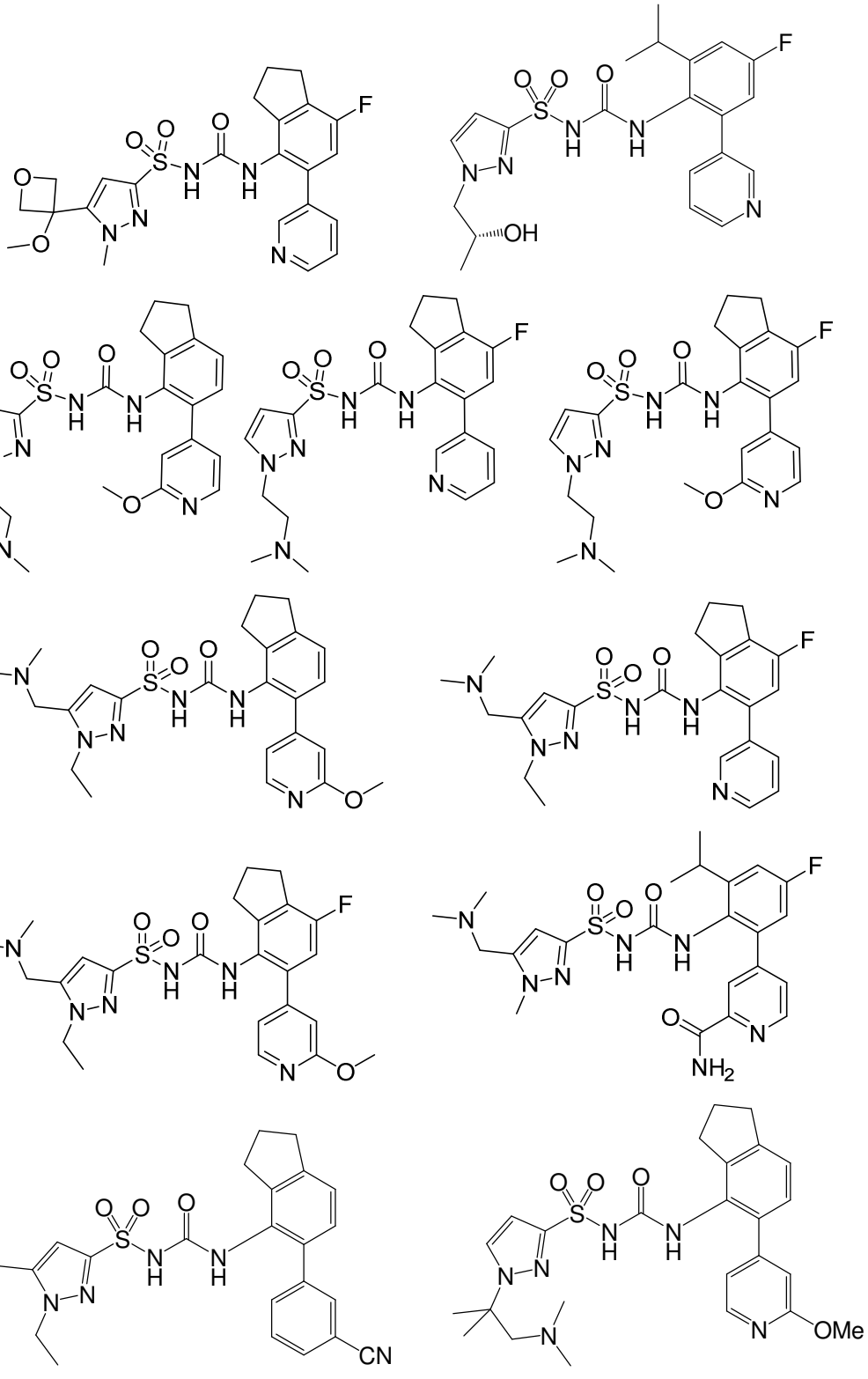




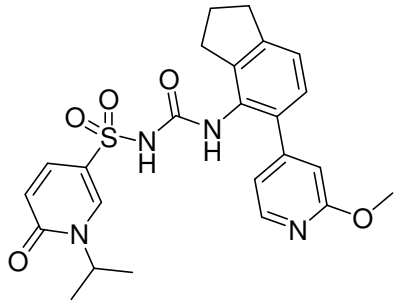


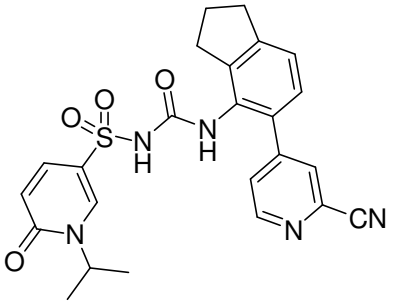


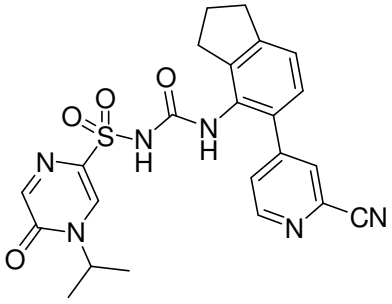
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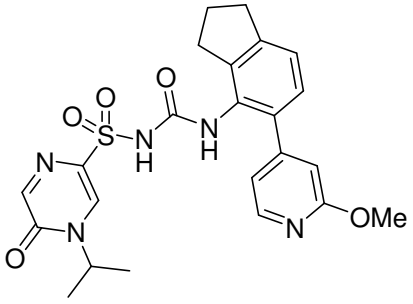

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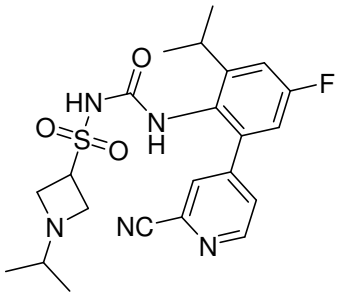
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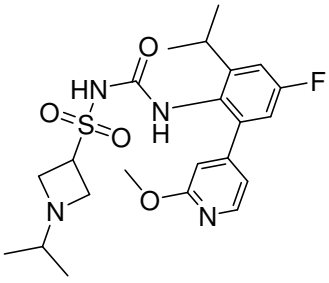


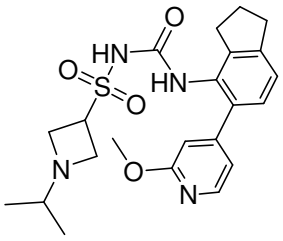


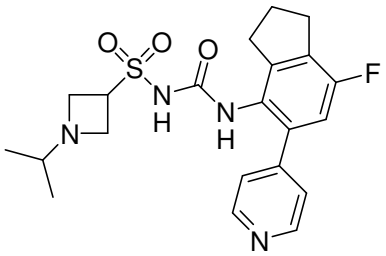


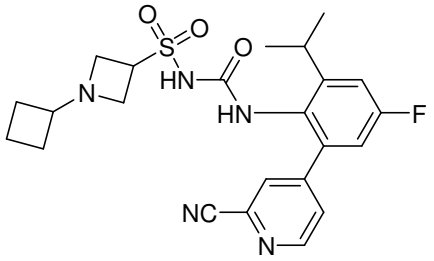


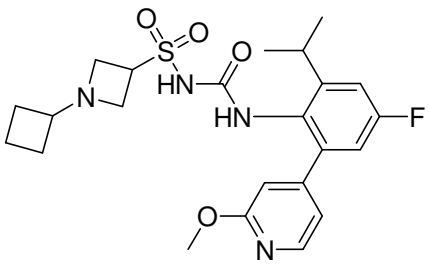


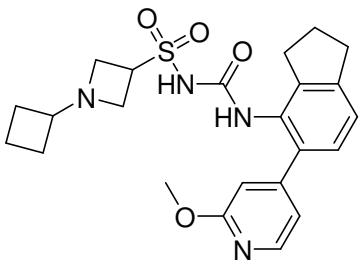




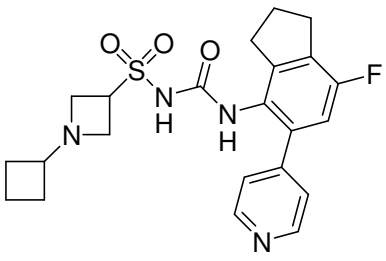


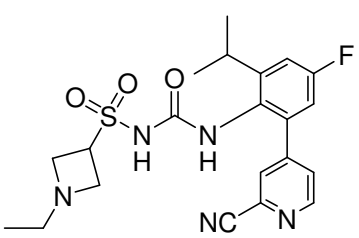


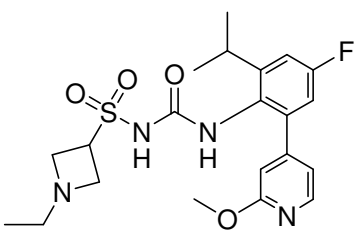


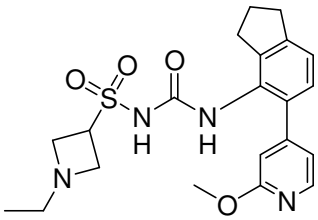


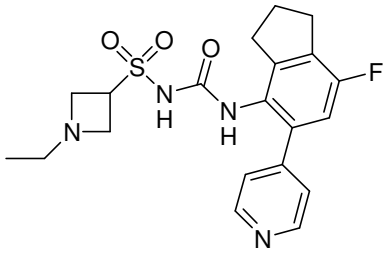
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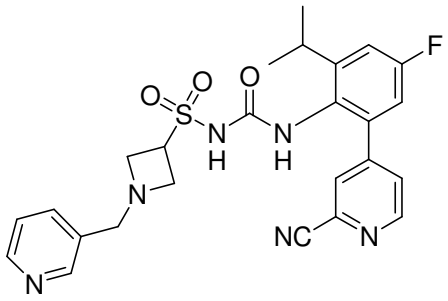


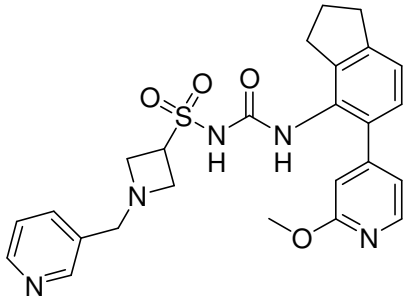


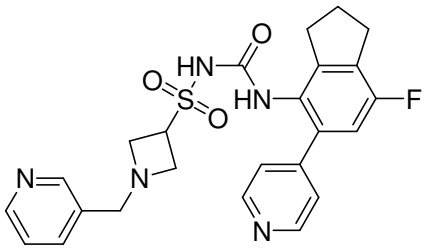


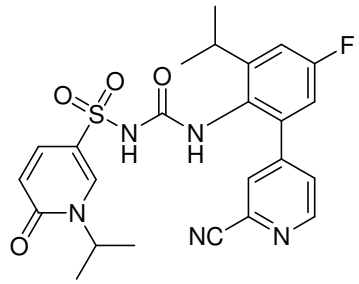


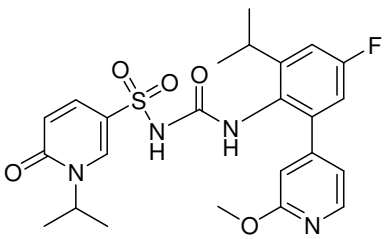


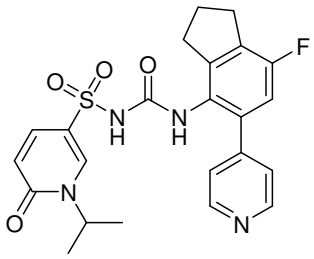


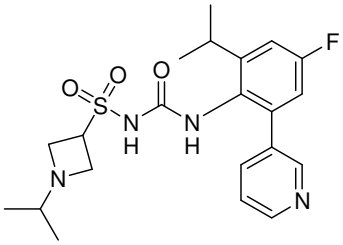


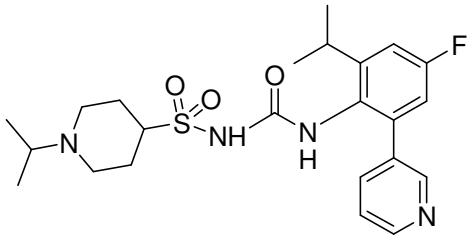


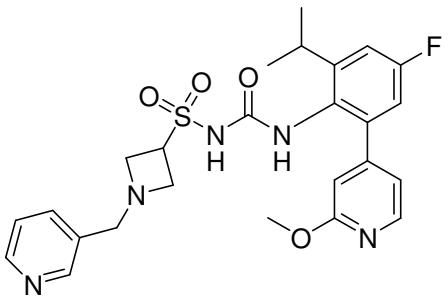




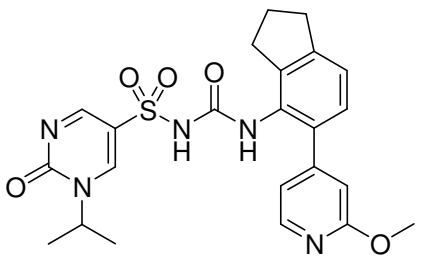


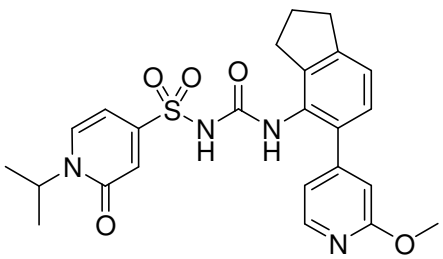


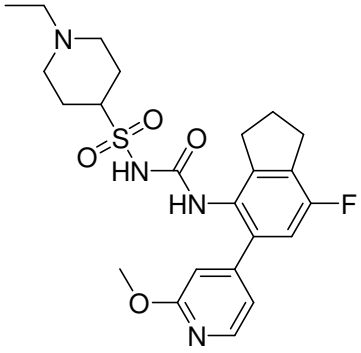


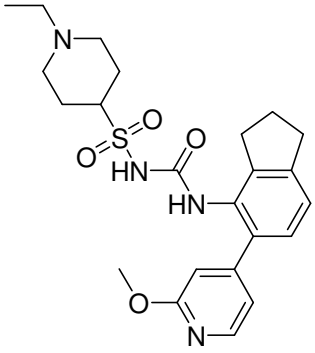


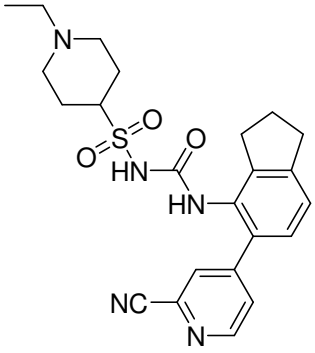
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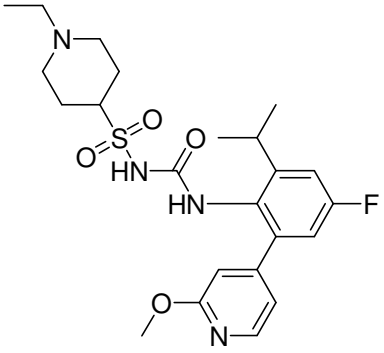


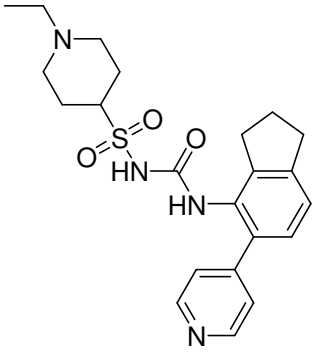


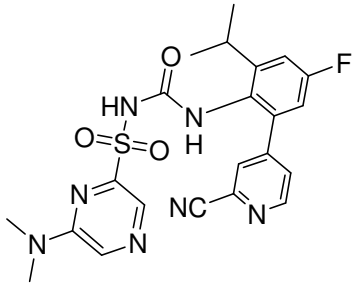


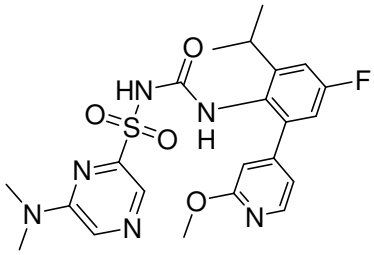


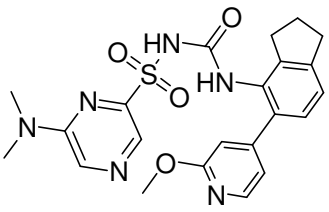


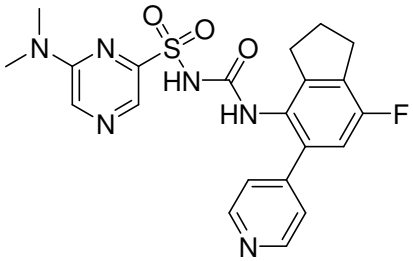


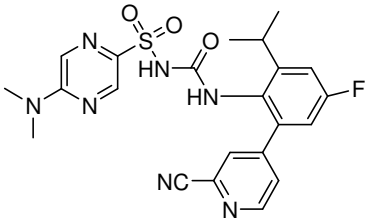


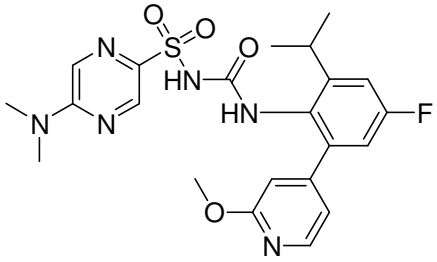


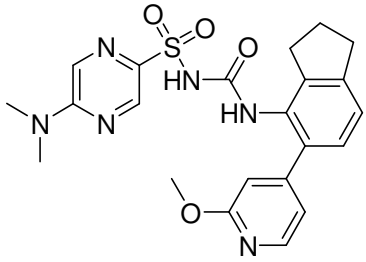




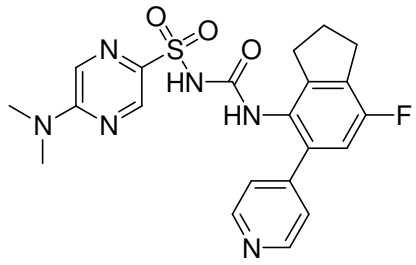


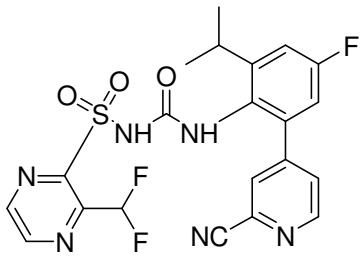


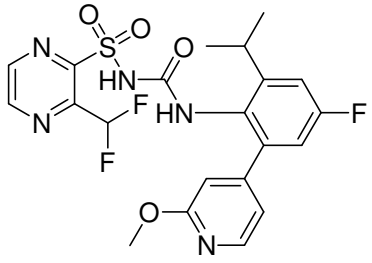


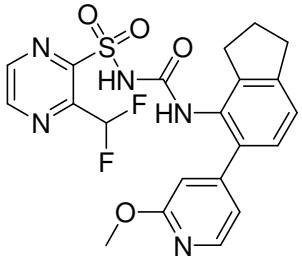


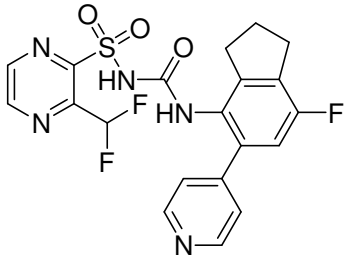
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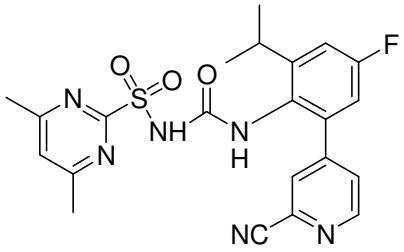


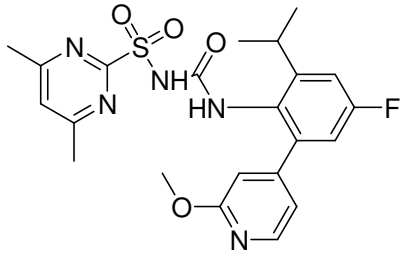


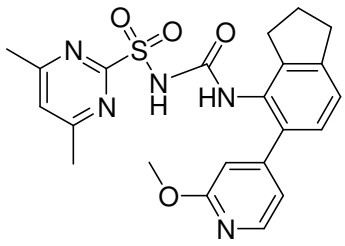


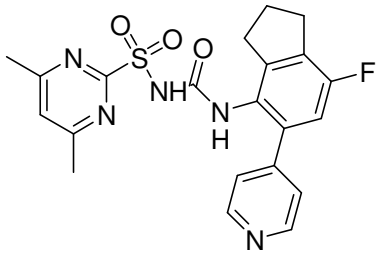


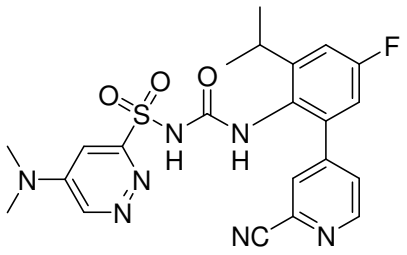


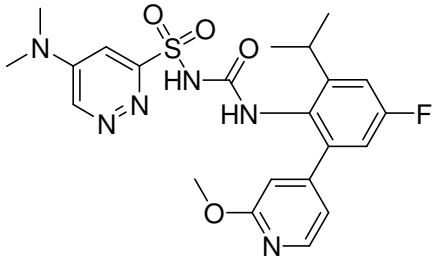


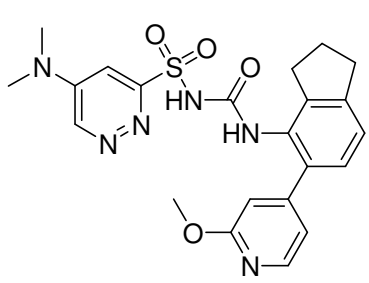


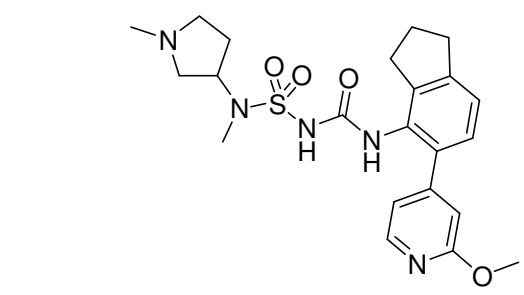


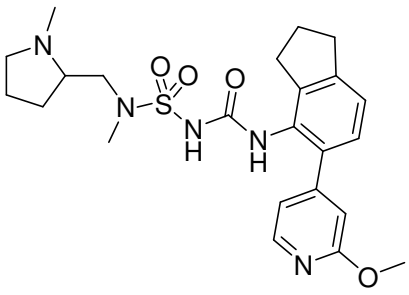


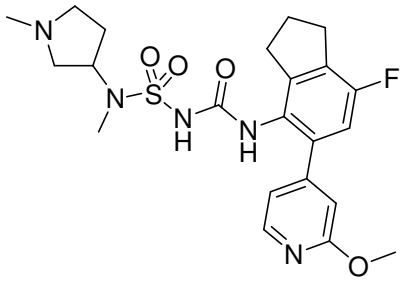


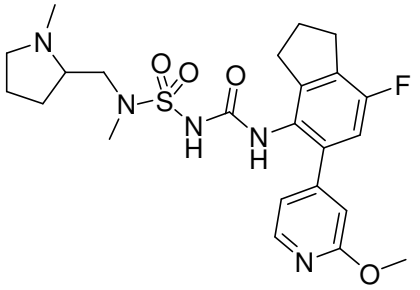


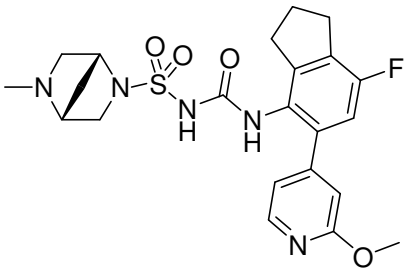


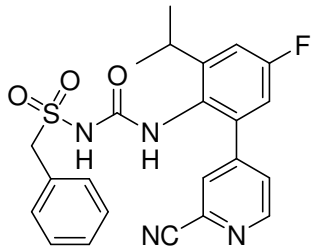


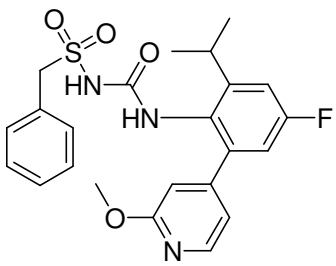


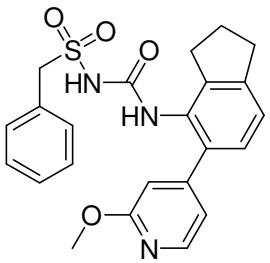


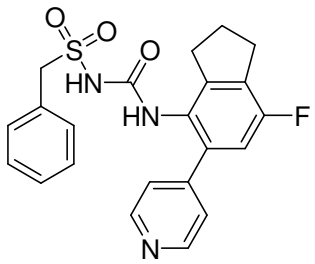


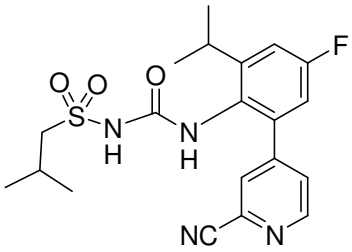


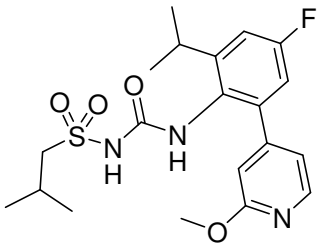


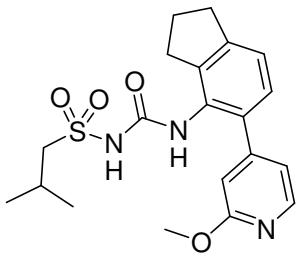


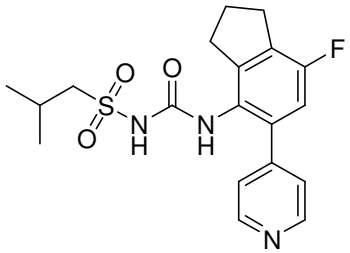




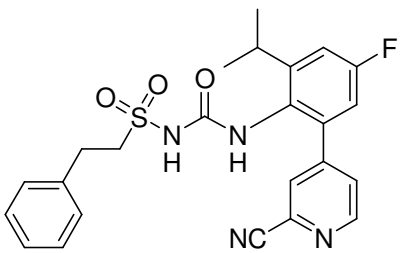


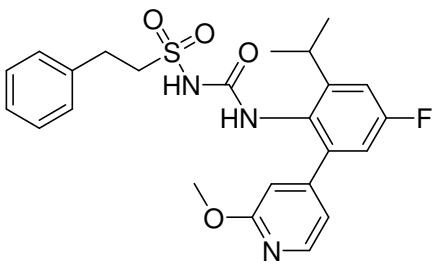


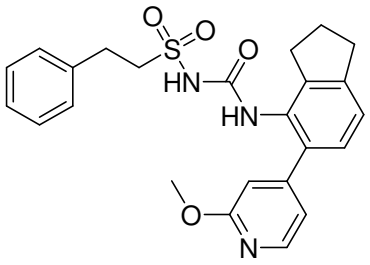


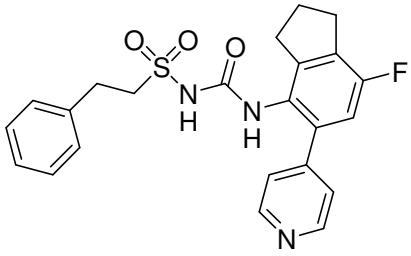


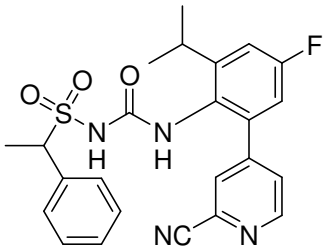
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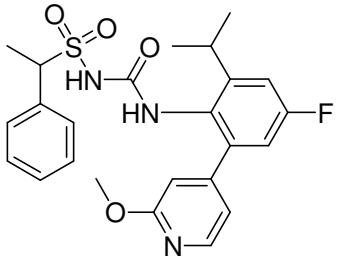


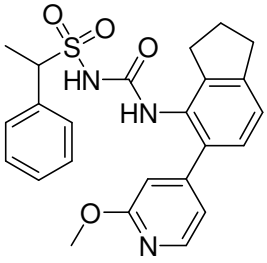


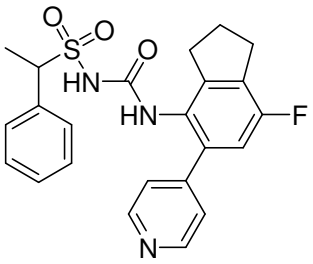


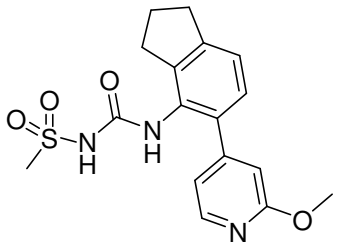


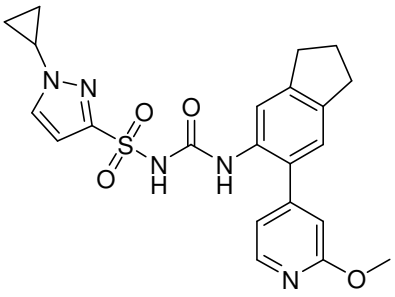


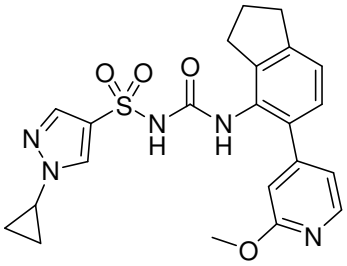


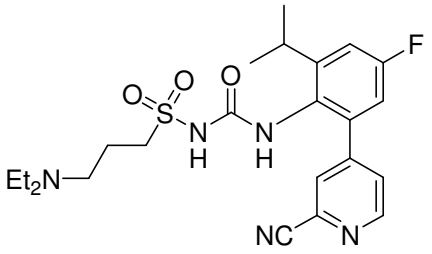


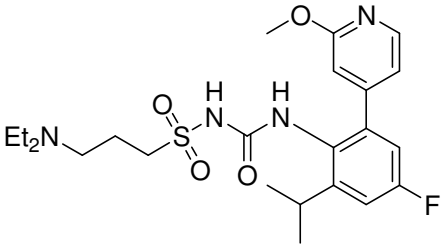


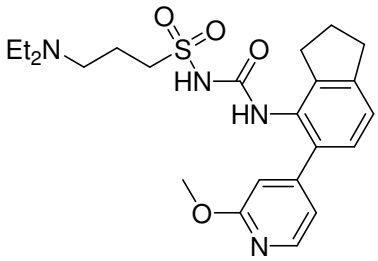


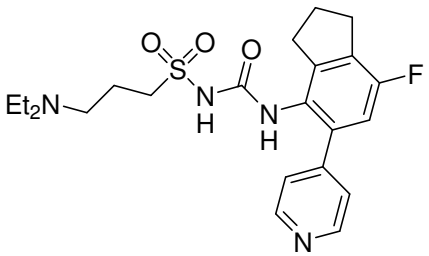


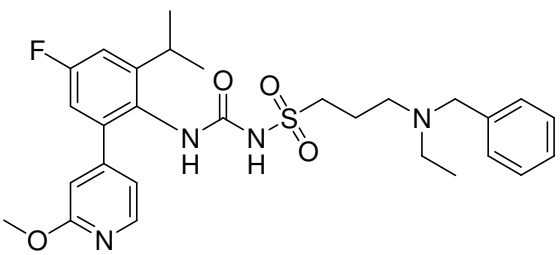


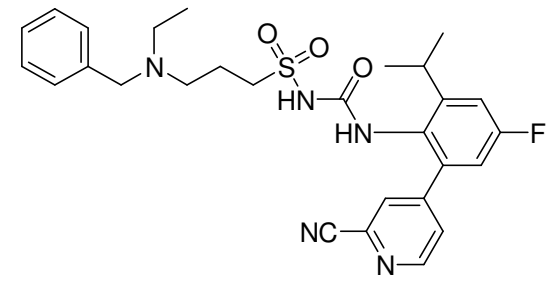


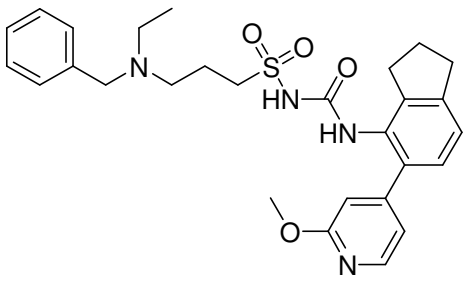


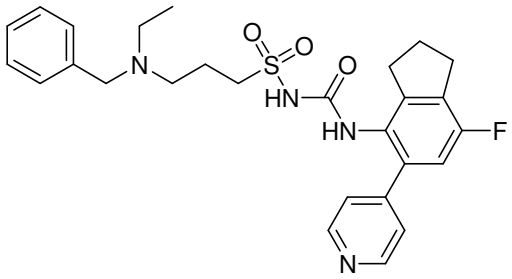


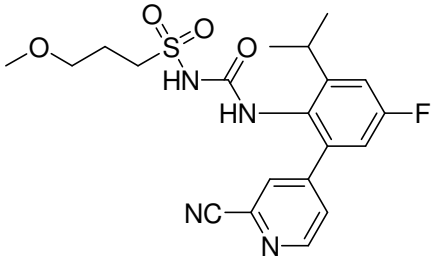


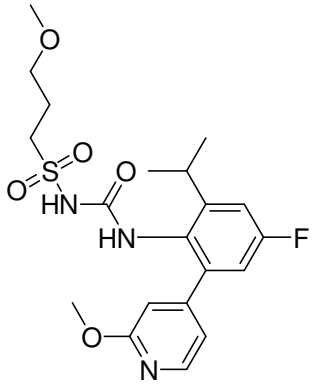


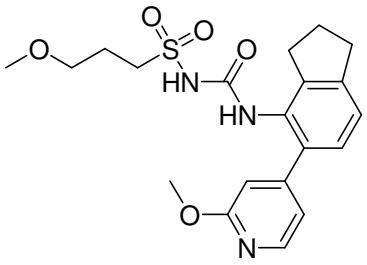


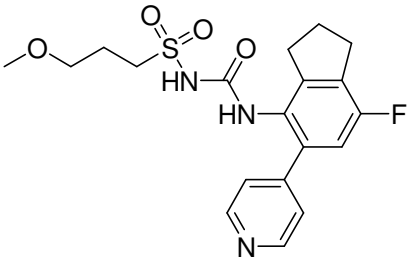


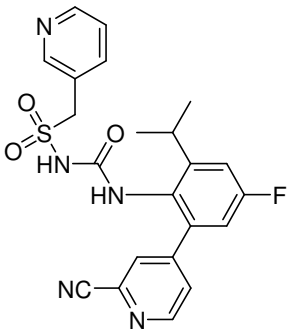


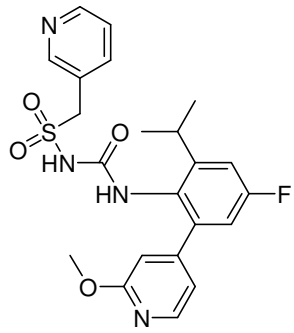


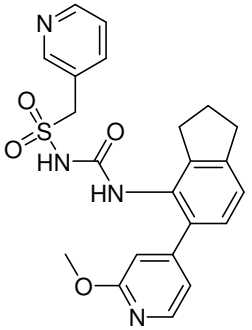


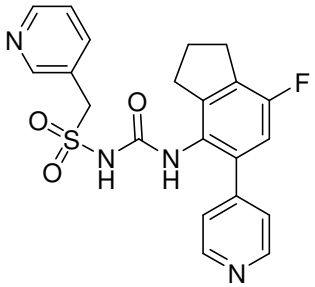


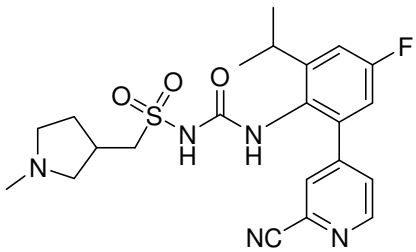




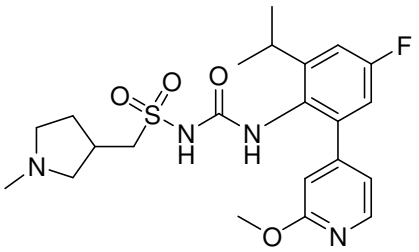


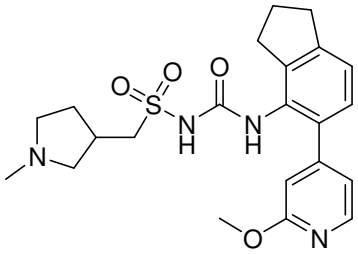


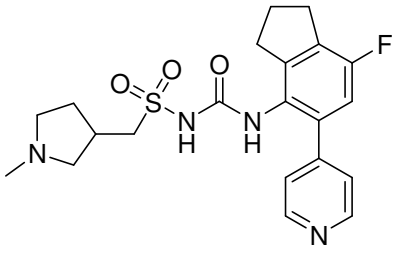


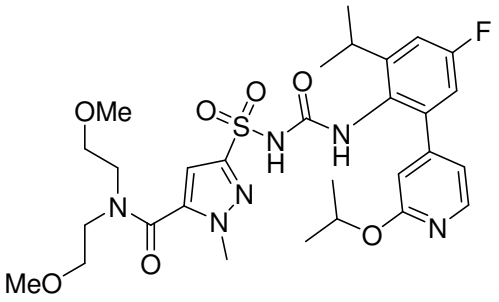


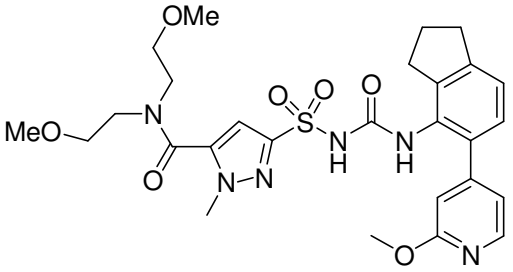
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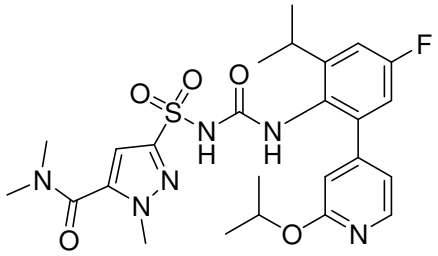


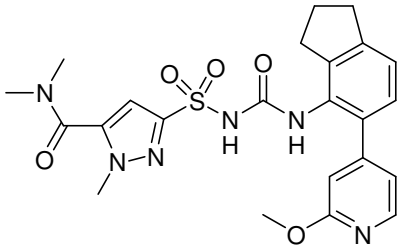


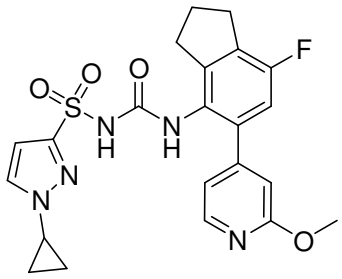


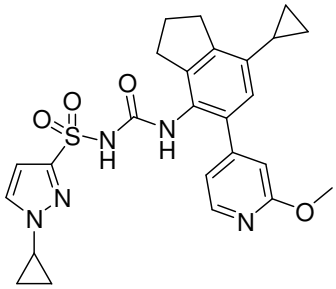


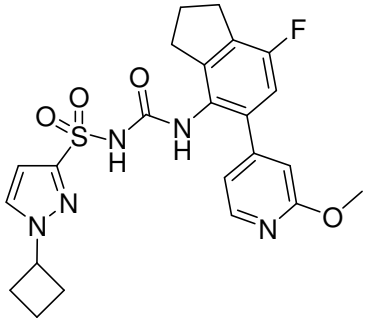


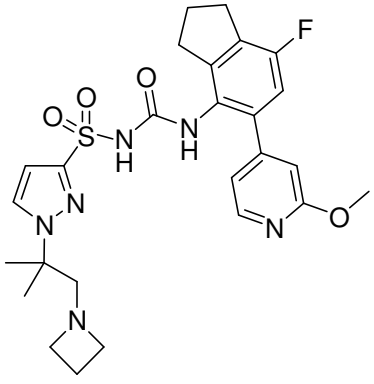




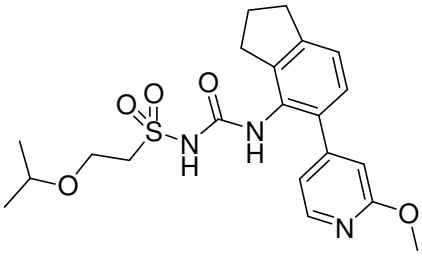


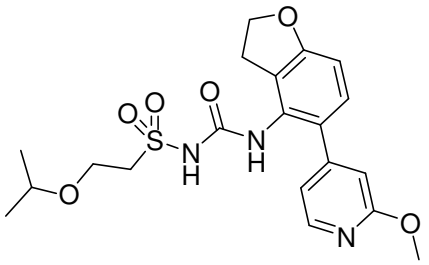


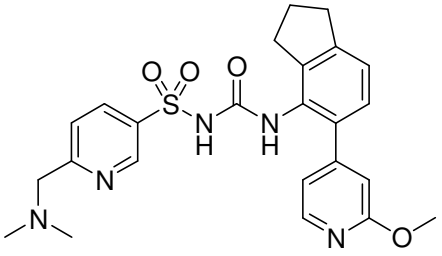


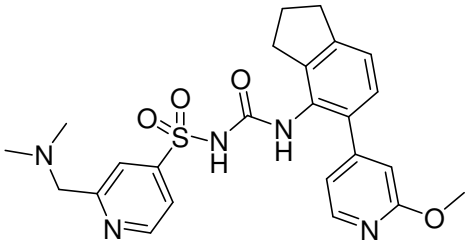


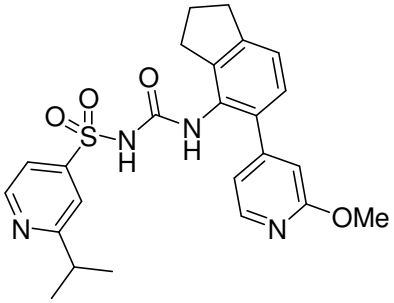
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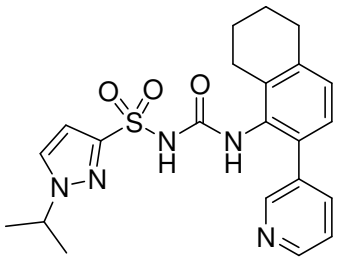


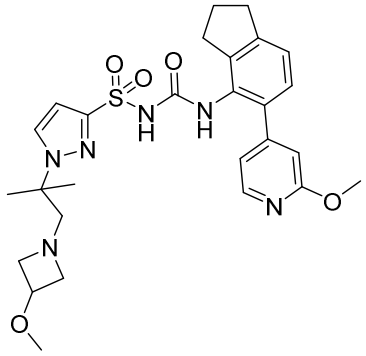


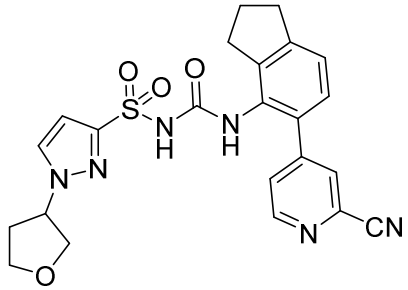


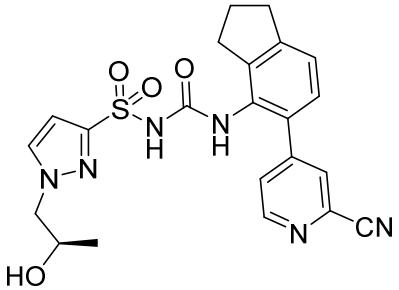


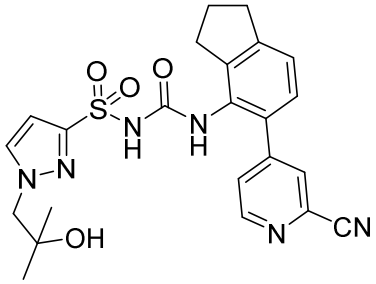


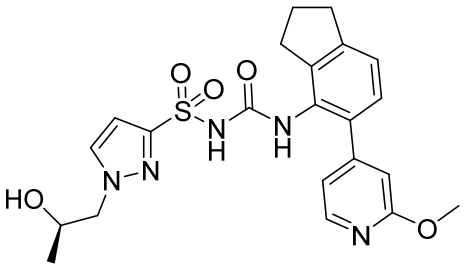




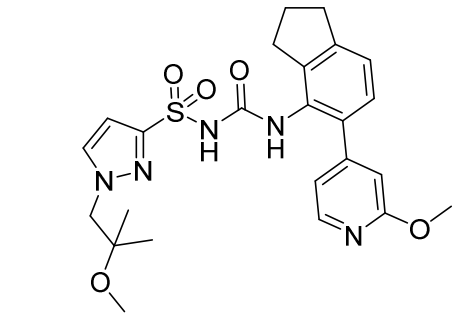


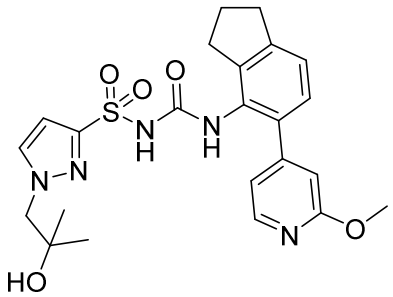


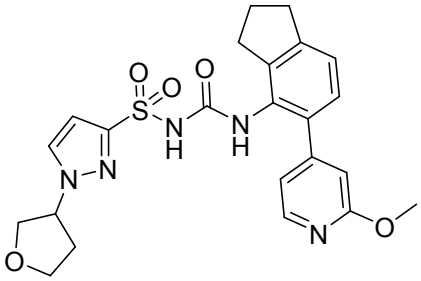


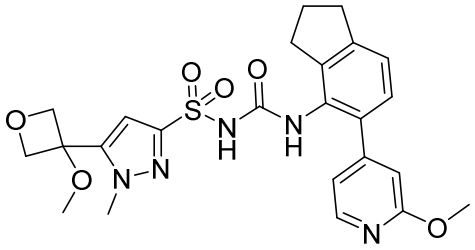


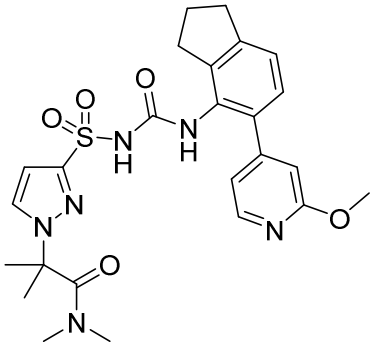
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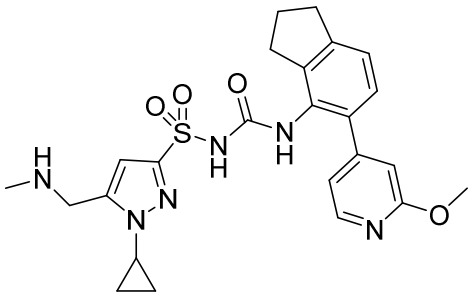


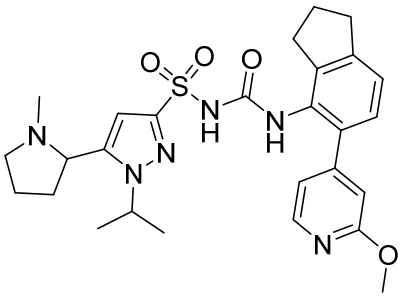


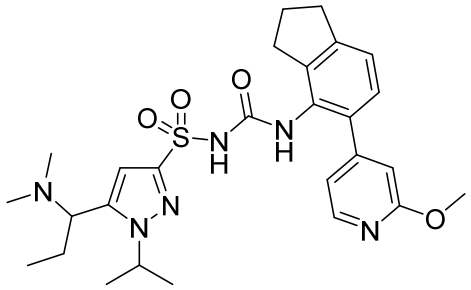


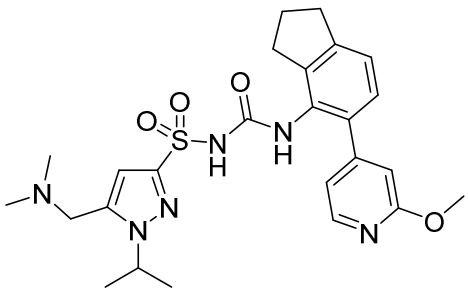


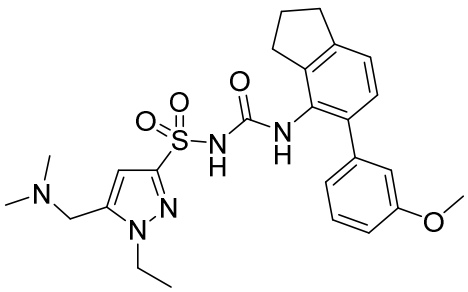




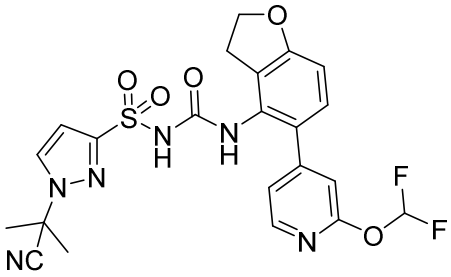


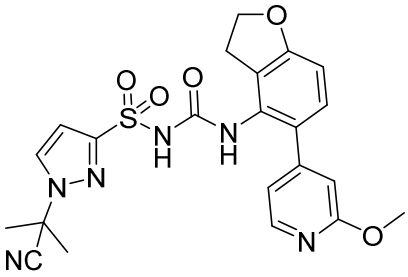


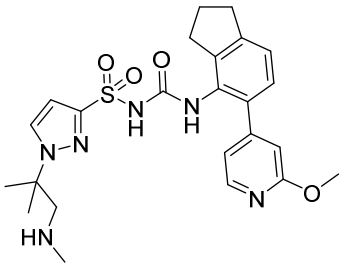


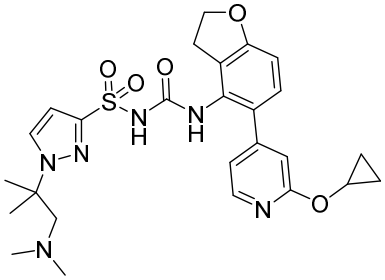


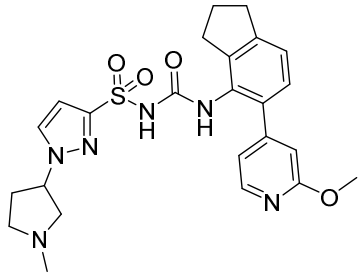
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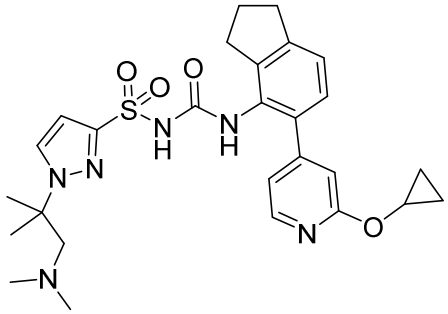


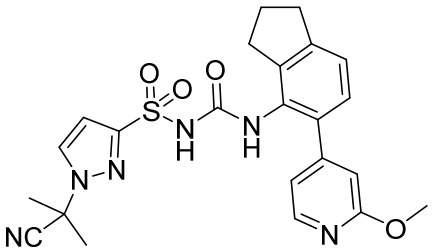


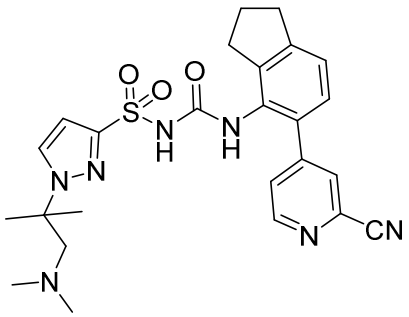


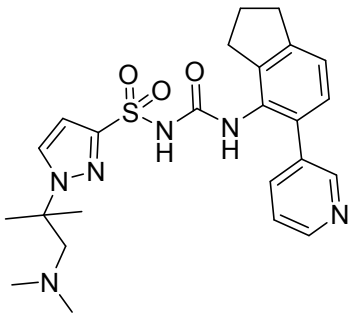


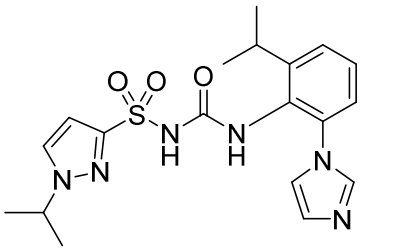


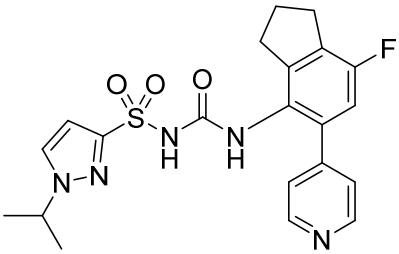




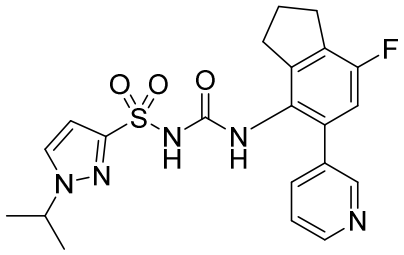


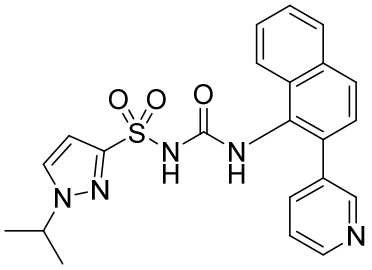


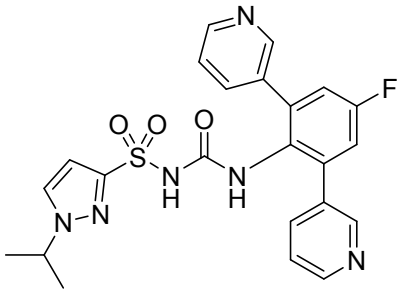


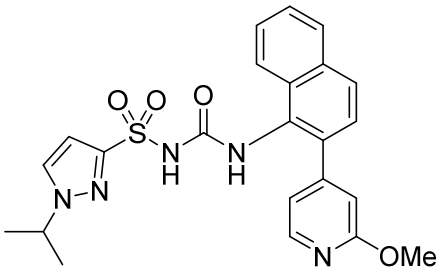


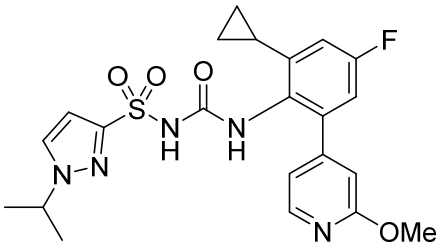
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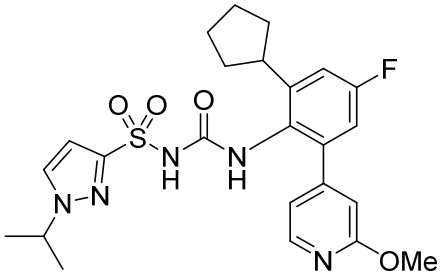


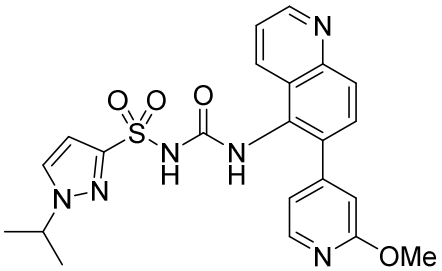


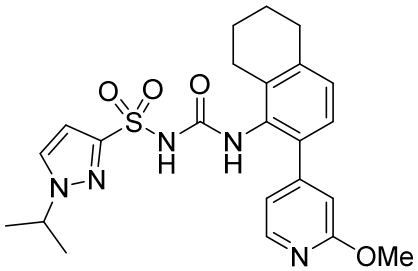


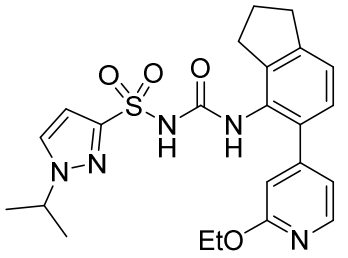


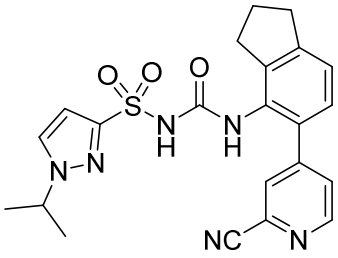


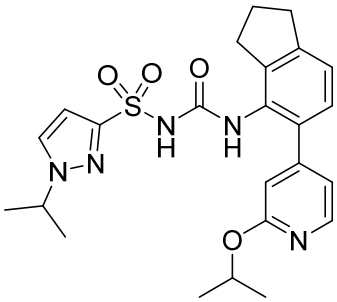


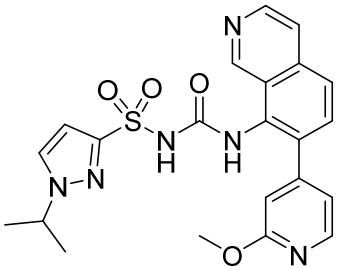


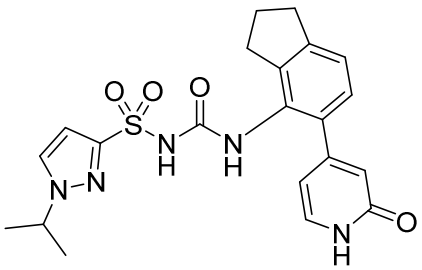


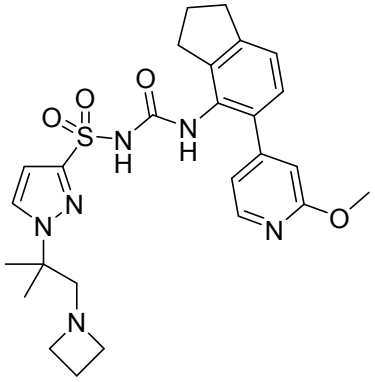


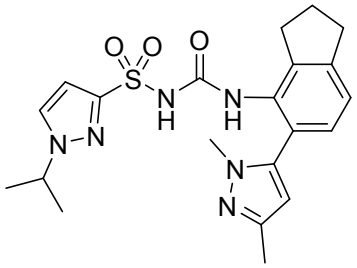


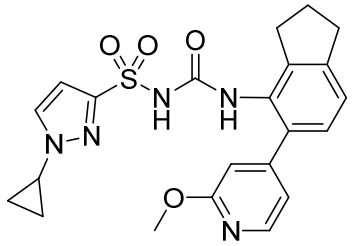


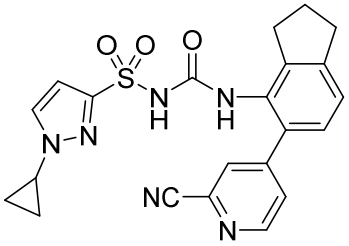


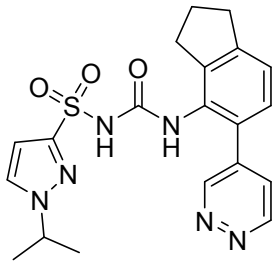


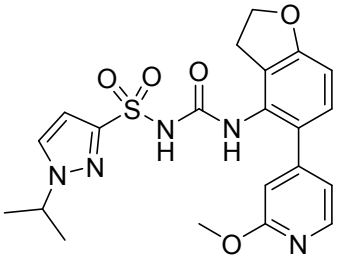


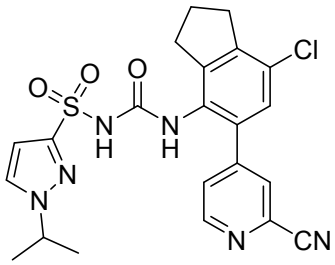


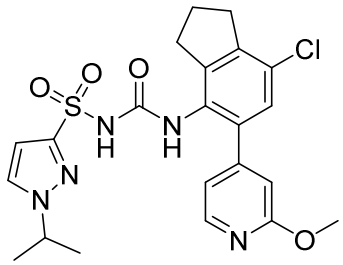


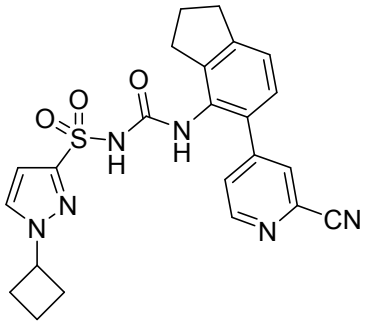


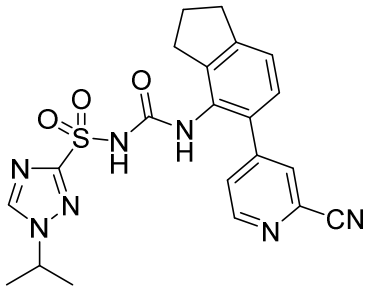


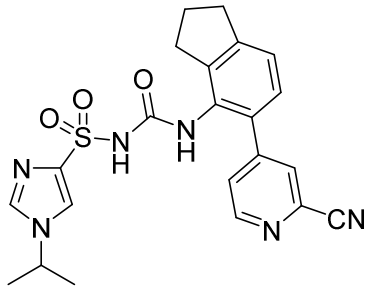


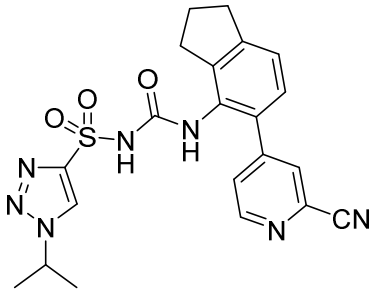


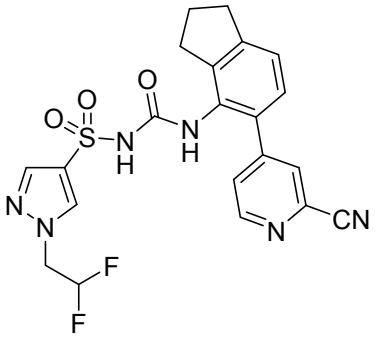




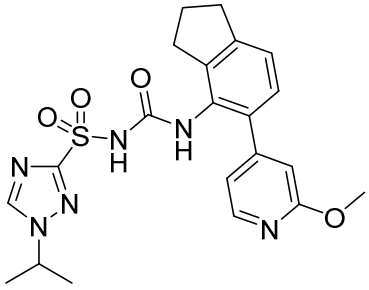


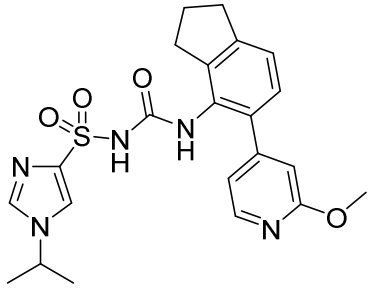


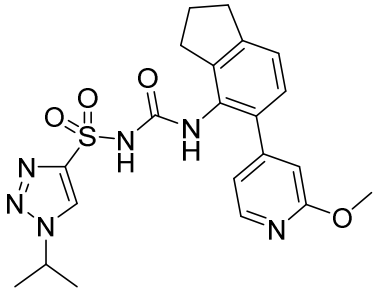


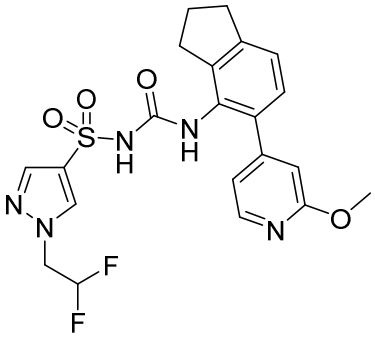


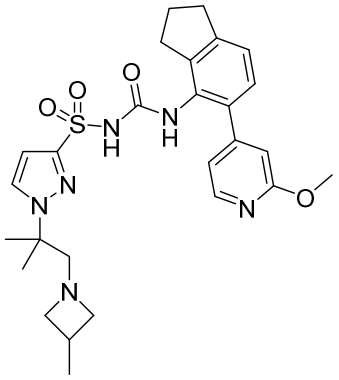
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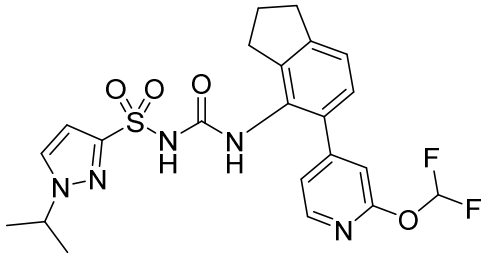


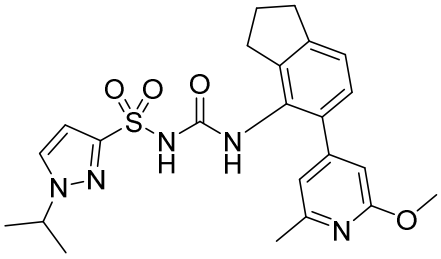


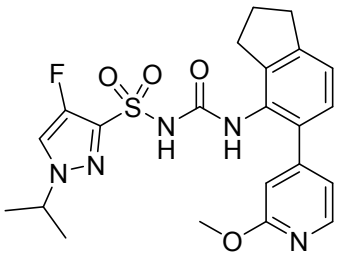


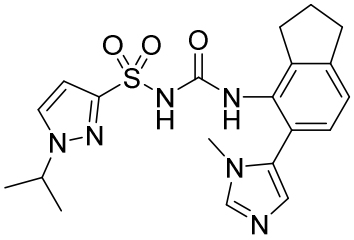


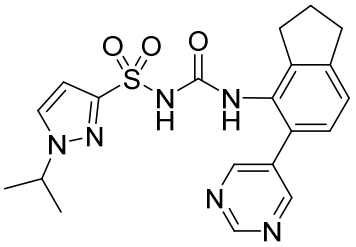




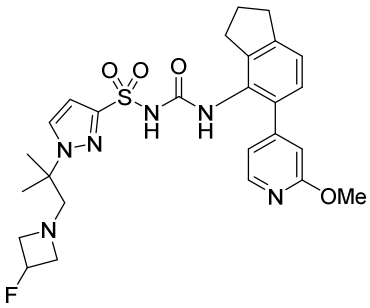
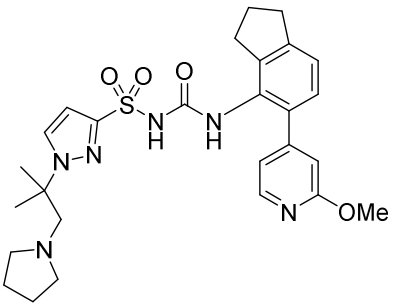
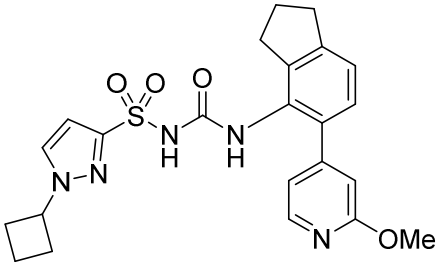
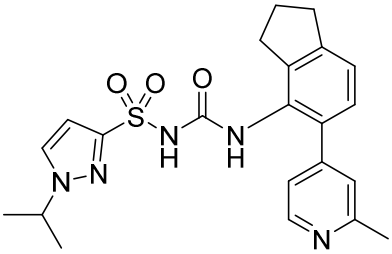
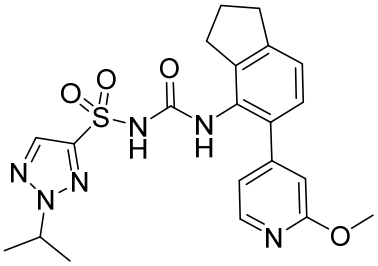
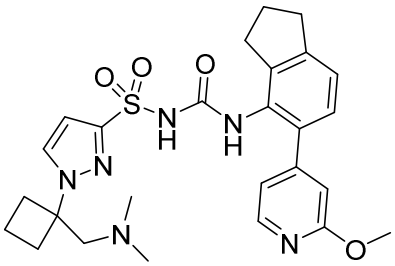
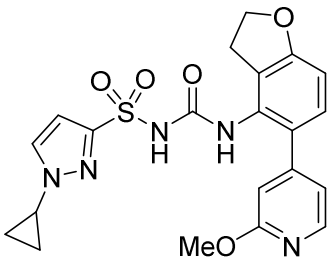
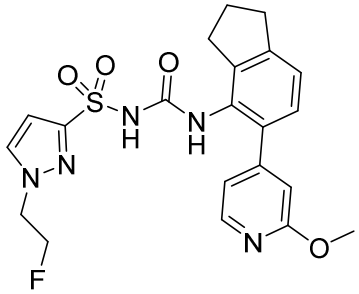
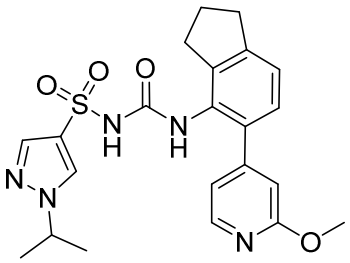
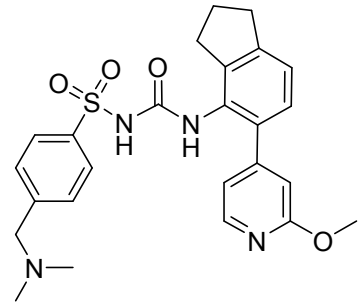
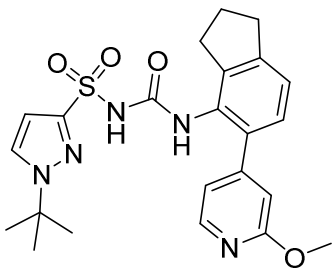
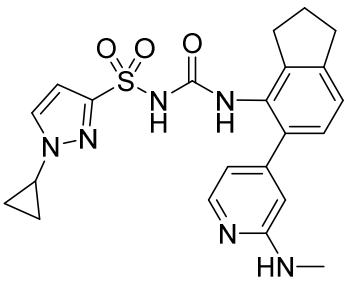
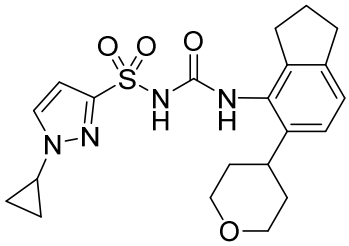
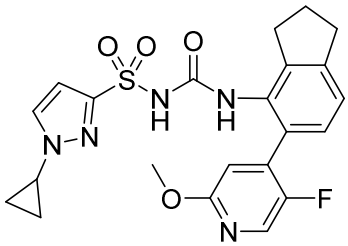
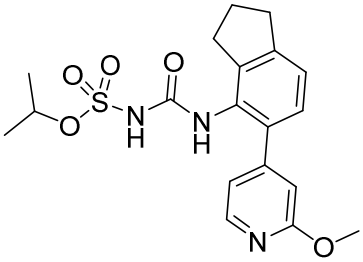


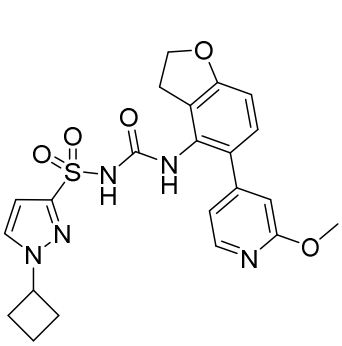


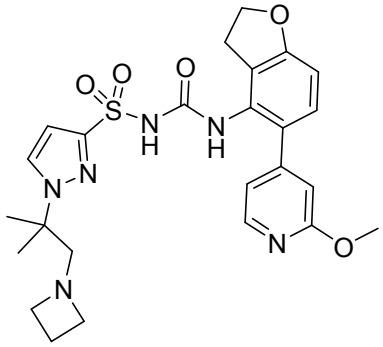


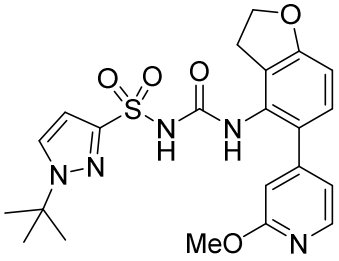


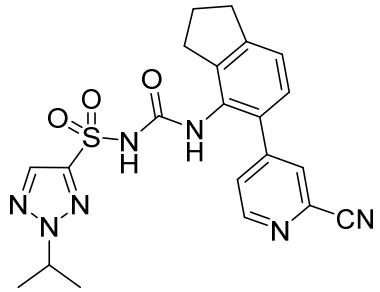
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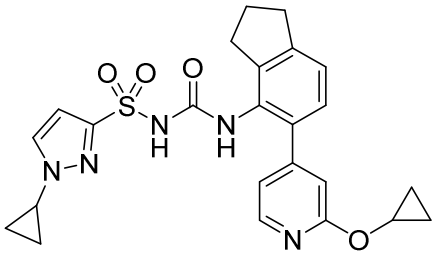
















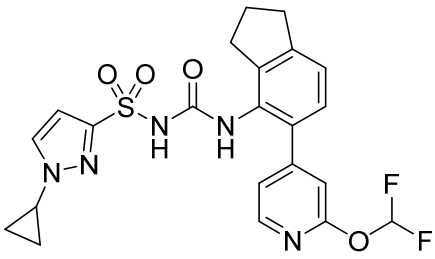


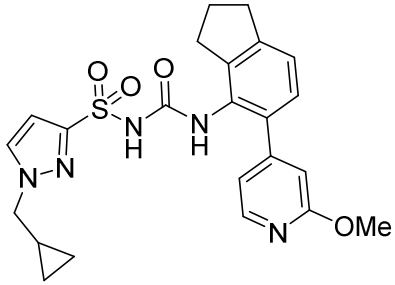


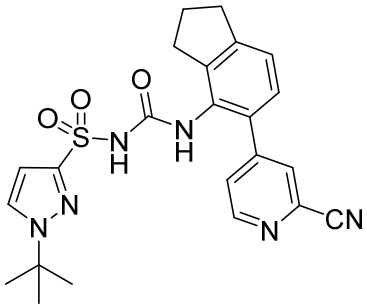


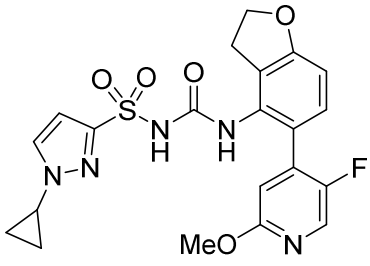


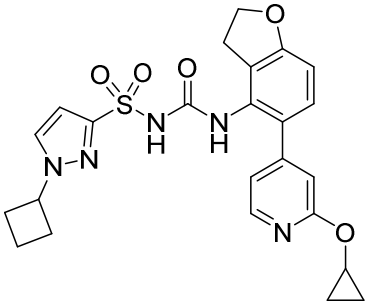


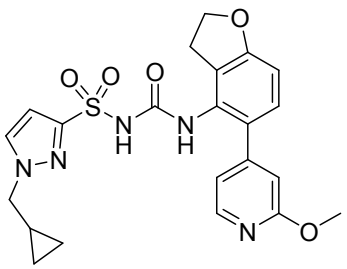


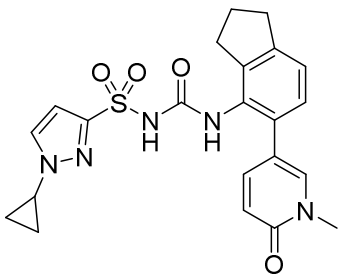




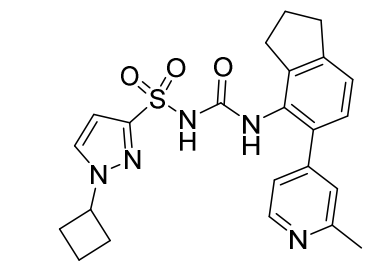


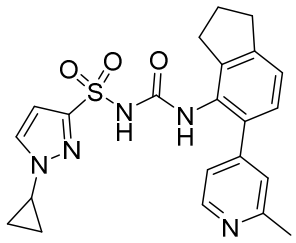


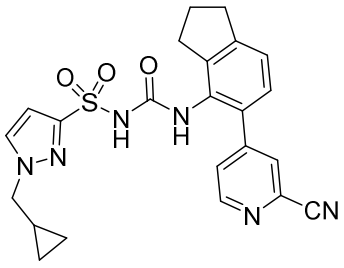


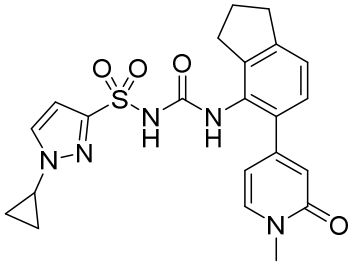


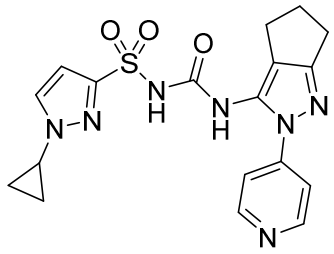
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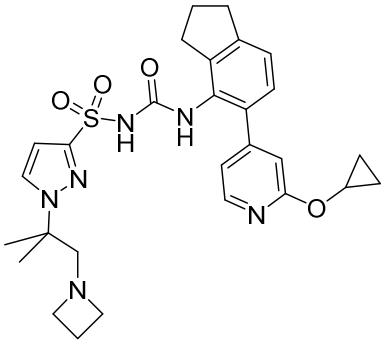


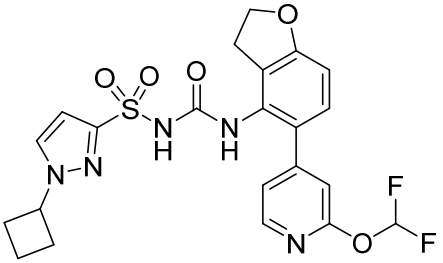


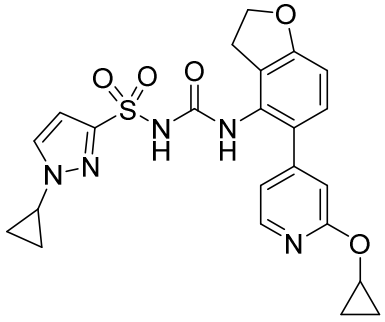


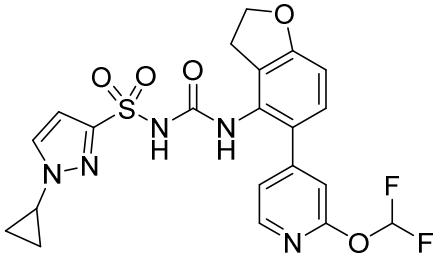


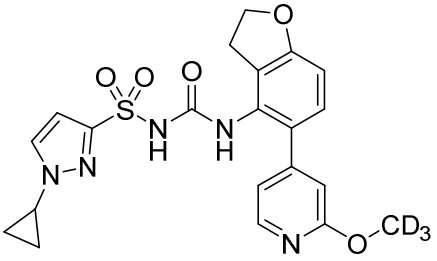


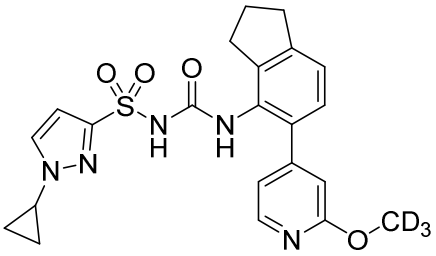


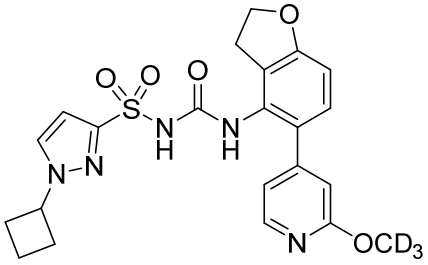




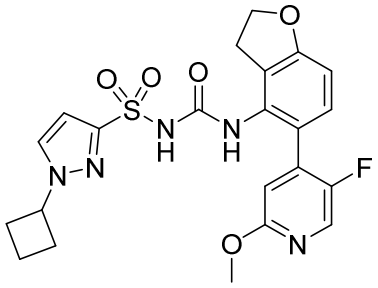


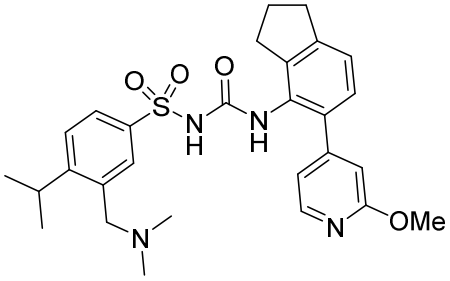


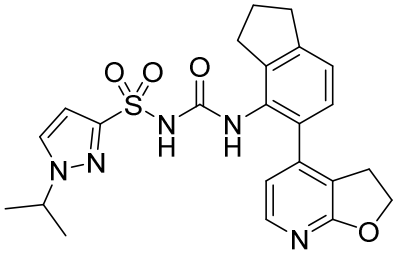


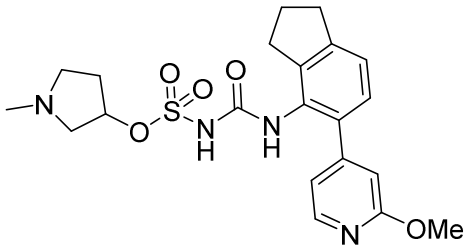


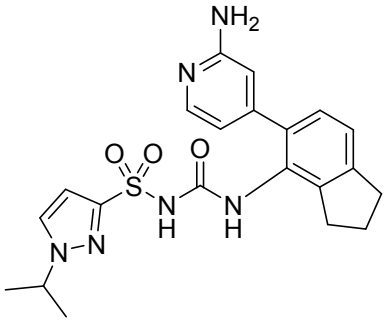
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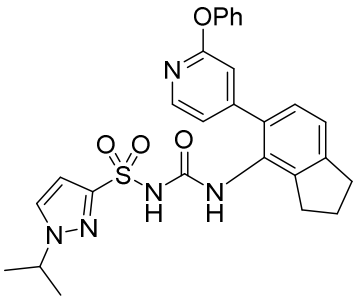


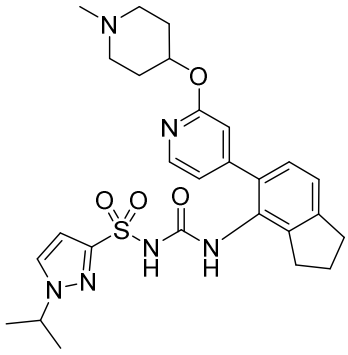


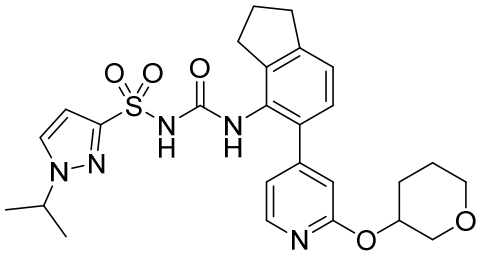


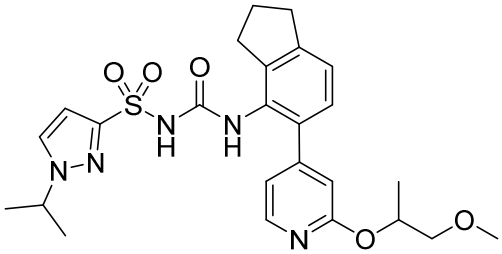


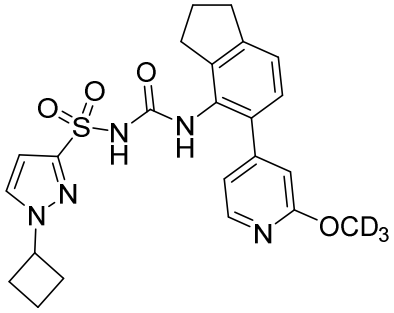




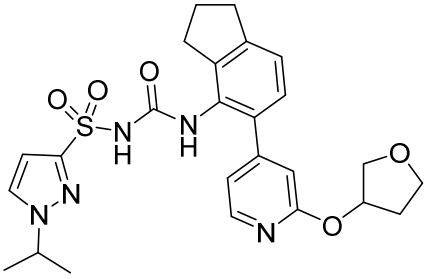
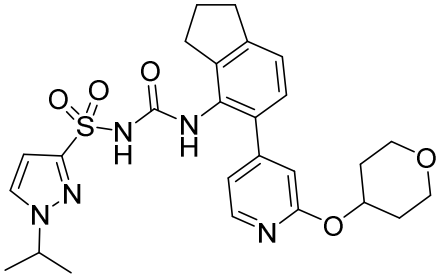
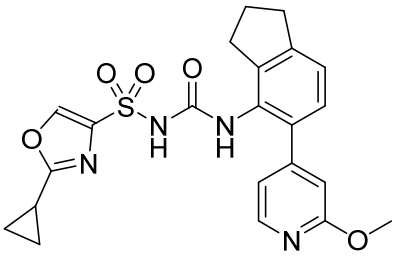
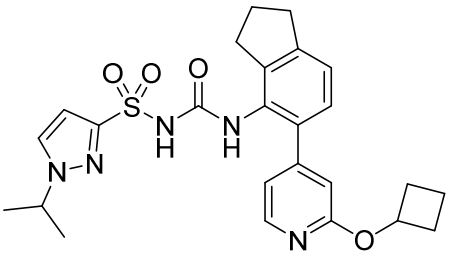
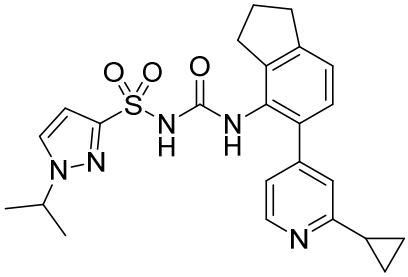
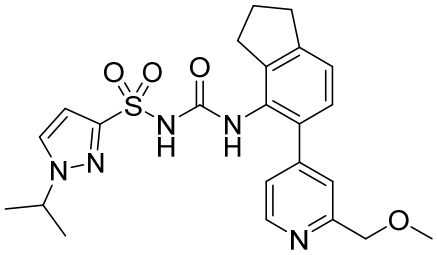
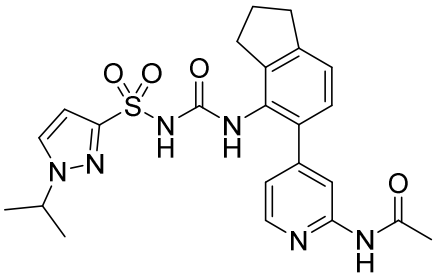
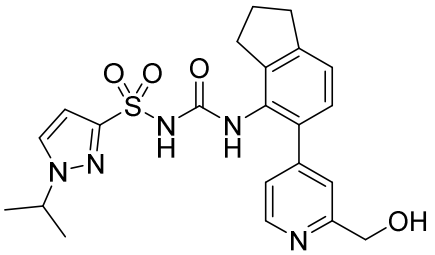
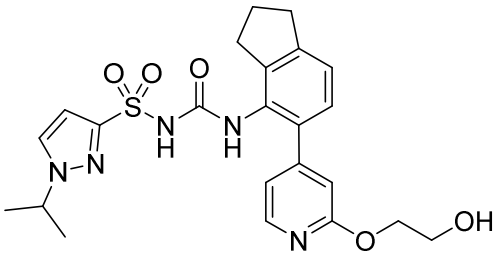
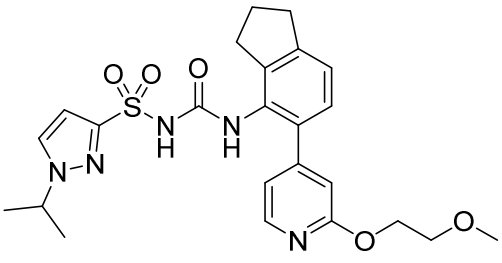
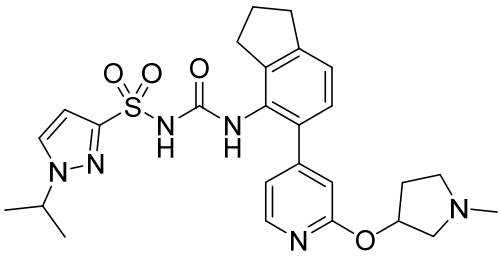
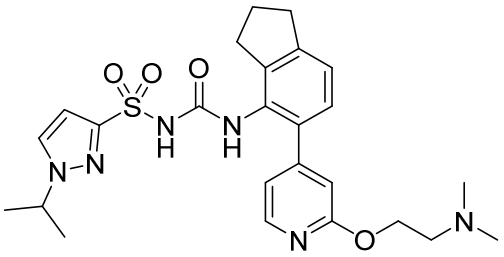




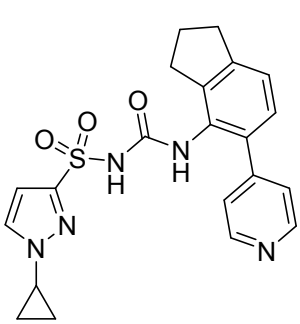


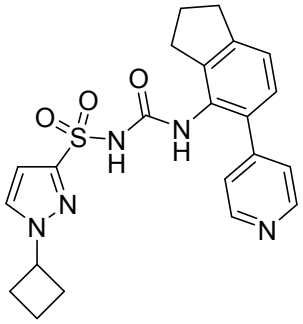


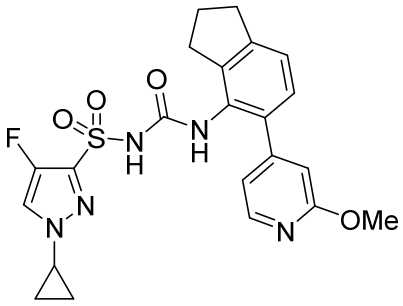
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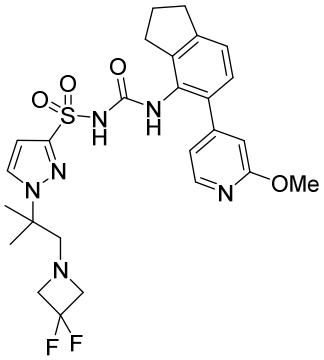













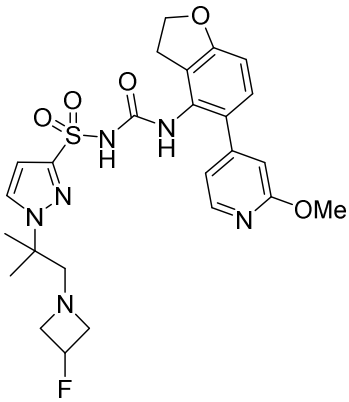
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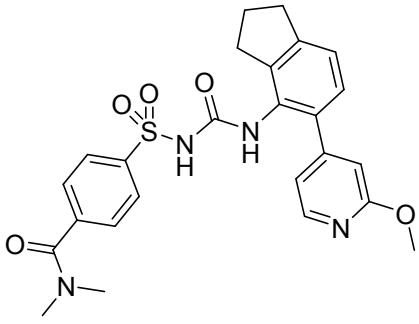


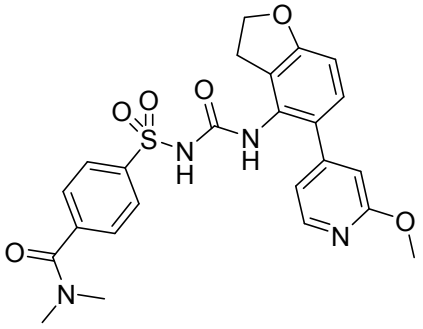


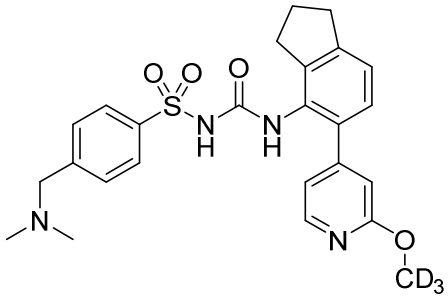


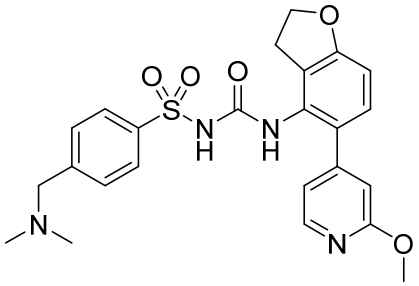


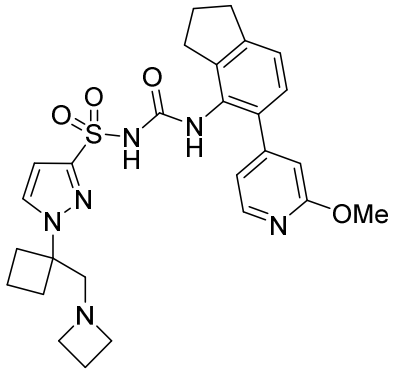


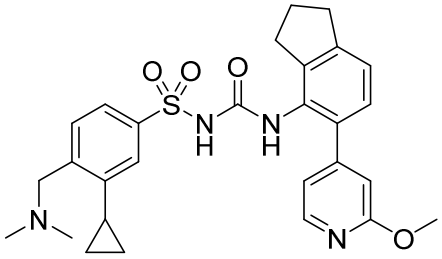


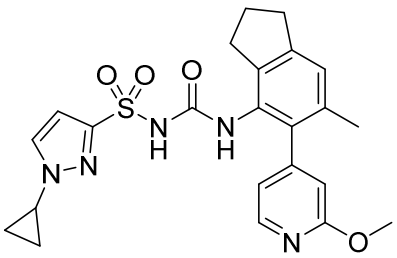




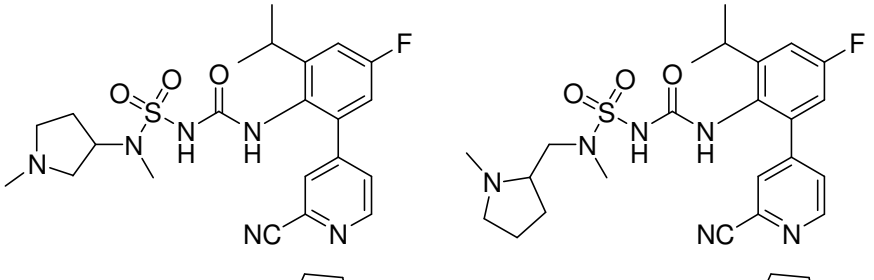


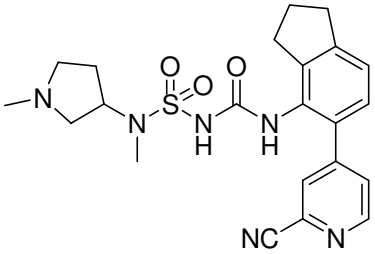
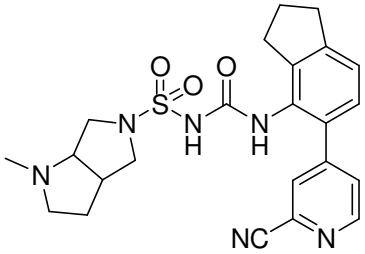
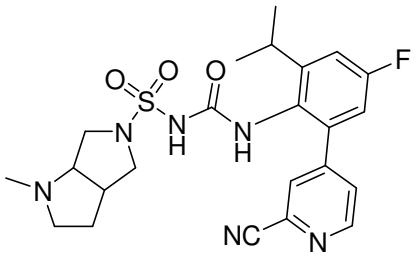
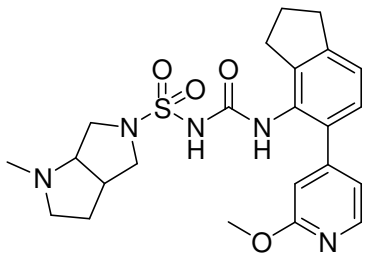
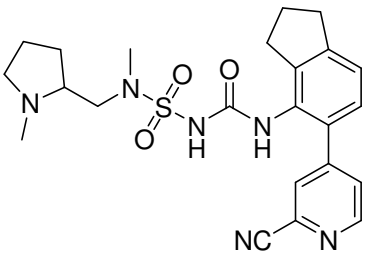
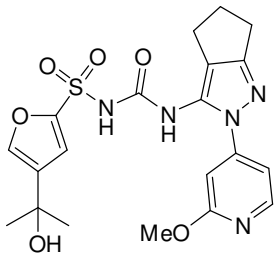
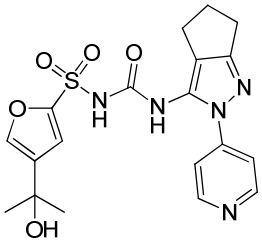






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and .

11. A pharmaceutically acceptable salt, solvate or prodrug of a compound as claimed in any one of claims 1 to 10.

12. A pharmaceutical composition comprising a compound as claimed in any one of claims 1 to 10, or a pharmaceutically acceptable salt, solvate or prodrug as claimed in claim 11, and a pharmaceutically acceptable excipient.

13. A pharmaceutical composition as claimed in claim 12, wherein the pharmaceutical composition is a topical pharmaceutical composition.

14. A compound as claimed in any one of claims 1 to 10, or a pharmaceutically acceptable salt, solvate or prodrug as claimed in claim 11, or a pharmaceutical composition as claimed in claim 12 or 13, for use in medicine.

15. A compound, pharmaceutically acceptable salt, solvate, prodrug or pharmaceutical composition as claimed in claim 14, for use in the treatment or prevention of a disease, disorder or condition, wherein the disease, disorder or condition is responsive to NLRP3 inhibition.

16. A compound, pharmaceutically acceptable salt, solvate, prodrug or pharmaceutical composition as claimed in claim 14 or 15, for use in 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.

17. A compound, pharmaceutically acceptable salt, solvate, prodrug or pharmaceutical composition as claimed in claim 14 or 15, for use in 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).

18. A compound as claimed in any one of claims 1 to 10, or a pharmaceutically acceptable salt, solvate or prodrug as claimed in claim 11, or a pharmaceutical composition as claimed in claim 12 or 13, for use in inhibiting NLRP3.

19. Use of a compound as claimed in any one of claims 1 to 10, or a pharmaceutically acceptable salt, solvate or prodrug as claimed in claim 11, or a pharmaceutical composition as claimed in claim 12 or 13, in the manufacture of a medicament for treating or preventing a disease, disorder or condition 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.

20. Use of a compound as claimed in any one of claims 1 to 10, or a pharmaceutically acceptable salt, solvate or prodrug as claimed in claim 11, or a pharmaceutical composition as claimed in claim 12 or 13, in the manufacture of a medicament for treating or preventing a disease, disorder or condition 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).