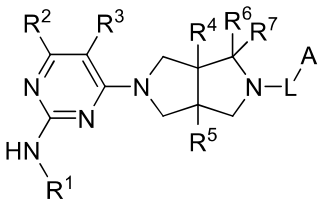
Claims:

1. A compound of Formula (I), or a pharmaceutical acceptable salt, stable isotope, stereoisomer thereof:



(I)

wherein:

R^1 is ~~aryl or heteroaryl~~ pyrazolyl, where one or more hydrogens of the ~~aryl and heteroaryl~~pyrazolyl are optionally substituted by D, halogen, cyano, $-OR^b$, $-NR^bR^c$, $-COOR^b$, $-C(O)R^b$, $-NR^bC(O)R^c$, $-C(O)NR^bR^c$, $-S(O)_2R^b$, $-S(O)_2NR^bR^c$, $-S(O)(NR^b)R^c$, $-P(O)(CH_3)_2$, C_{1-6} alkyl, C_{3-6} cycloalkyl, 3- to 8-membered heterocyclyl or 5- to 6-membered heteroaryl;

R^2 is H, D or $-NHR^a$;

R^3 is H, D, halogen, cyano, C_{1-6} alkyl, C_{3-6} cycloalkyl or OC_{1-6} alkyl, where one or more hydrogens of the alkyl and cycloalkyl are optionally substituted by D or F;

R^4 and R^5 are independently selected from H, D, halogen, C_{1-6} alkyl or OC_{1-6} alkyl, where one or more hydrogens of the alkyl are optionally substituted by D or F;

R^6 and R^7 are independently selected from H, D, cyano or C_{1-6} alkyl, where one or more hydrogens of the alkyl is optionally substituted by D or F, or R^6 and R^7 combine as oxo;

L is a bond, C_{1-6} alkylene, -C(O)-, -C(O)O-, $-C(O)N(R^a)-$, $-S(O)_2-$ or $-S(O)_2N(R^a)-$;

A is H, C_{1-6} alkyl, C_{3-6} cycloalkyl, 3- to 8-membered heterocyclyl, aryl or heteroaryl, where one or more hydrogens of the alkyl, cycloalkyl, heterocyclyl, aryl and heteroaryl are optionally substituted by D, halogen, cyano, $-OR^d$, $-NR^dR^e$, C_{1-6} alkyl, C_{3-6} cycloalkyl or 3- to 8-membered heterocyclyl;

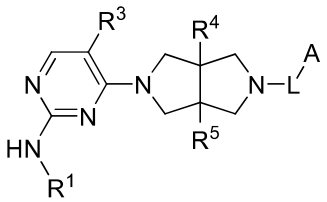
R^a is H, C_{1-6} alkyl or C_{3-6} cycloalkyl, where one or more hydrogens of the alkyl and cycloalkyl are optionally substituted by D or F;

R^b and R^c are independently selected from H, C_{1-6} alkyl, C_{3-6} cycloalkyl or 3- to 8-membered heterocyclyl containing N and/or O, where one or more hydrogens of the alkyl, cycloalkyl and heterocyclyl are optionally further substituted by D, halogen, CN, -OH, $-NH_2$, C_{1-6} alkyl and $-OC_{1-6}$ alkyl, and

R^d and R^e are independently selected from H, C_{1-6} alkyl, C_{3-6} cycloalkyl or 3- to 8-membered heterocyclyl, where one or more hydrogens of the alkyl, cycloalkyl and

heterocyclyl are optionally further substituted by D or F.

2. ~~The compound according to Claim 1, which is a~~A compound of Formula (II), or a pharmaceutical acceptable salt, stable isotope, stereoisomer thereof:



(II)

wherein:

R^1 is phenyl, pyridyl or pyrazolyl, where one or more hydrogens of the phenyl, pyridyl and pyrazolyl are optionally substituted by halogen, C_{1-6} alkyl, 4- to 6-membered heterocyclyl containing N and/or O, $-C(O)R^b$ or $-C(O)NR^bR^c$, and one or more hydrogens of the alkyl and heterocyclyl are optionally further substituted by D, F, CN, -OH or C_{1-6} alkyl;

R^b and R^c are independently selected from H, C_{1-6} alkyl, C_{3-6} cycloalkyl or 4- to 6-membered heterocyclyl containing N and/or O, where one or more hydrogens of the alkyl, cycloalkyl and heterocyclyl are optionally further substituted by C_{1-2} alkyl;

R^3 is H, halogen, cyano, C_{1-6} alkyl or OC_{1-6} alkyl;

R^4 and R^5 are independently H or C_{1-6} alkyl;

L is a bond, C_{1-6} alkylene, -C(O)-, -C(O)O-, -C(O)NH- or $-S(O)_2-$, and

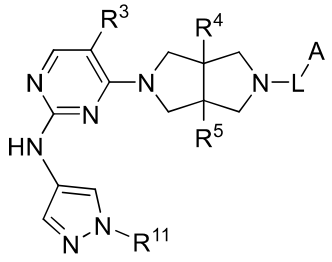
A is C_{1-6} alkyl, C_{3-6} cycloalkyl, 4- to 6-membered heterocyclyl containing N and/or O, pyridyl, pyrimidyl or 5-membered heteroaryl, where one or more hydrogens of the alkyl and cycloalkyl are optionally substituted by D, halogen, cyano, -OH, $-OC_{1-2}$ alkyl or C_{1-2} alkyl, and those of the heterocyclyl and heteroaryl are optionally substituted by C_{1-2} alkyl.

3. The compound of Claim ~~1 or~~ 2, wherein R^1 is pyrazolyl.

4. The compound of Claim 1 or 2, wherein L is -C(O)-.

5. The compound of Claim 1 or 2, wherein A is C_{1-6} alkyl or C_{3-6} cycloalkyl, where one or more hydrogens of the alkyl and cycloalkyl are optionally substituted by halogen, cyano, -OH or $-OC_{1-2}$ alkyl.

6. The compound of Claim 2, which is a compound of Formula (III), or a pharmaceutical acceptable salt, stable isotope, stereoisomer thereof:



(III)

where:

R^3 is H, halogen, cyano, C_{1-6} alkyl, or OC_{1-6} alkyl;

R^4 and R^5 are independently H or C_{1-6} alkyl;

L is a bond, C_{1-6} alkylene, -C(O)-, -C(O)O-, -C(O)NH-, or $-S(O)_2-$;

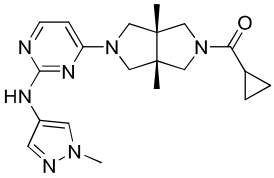
A is C_{1-6} alkyl, C_{3-6} cycloalkyl, 4- to 6-membered heterocyclyl containing N and/or O pyridyl, pyrimidyl, or 5-membered heteroaryl, where one or more hydrogens of the alkyl and cycloalkyl are optionally substituted by D, halogen, cyano, -OH, $-OC_{1-2}$ alkyl or C_{1-2} alkyl, and one or more hydrogens of the heterocyclyl and heteroaryl are optionally substituted by C_{1-2} alkyl, and

R^{11} is H, C_{1-6} alkyl or 4- to 6-membered heterocyclyl containing N and/or O, where one or more hydrogens of the alkyl and heterocyclyl are optionally substituted by D, F, CN, -OH or C_{1-6} alkyl.

7. The compound of Claim 6, wherein A is C_{1-6} alkyl or C_{3-6} cycloalkyl, where one or more hydrogens of the alkyl and cycloalkyl are optionally substituted by halogen, cyano, -OH or $-OC_{1-2}$ alkyl.

8. The compound of Claim 6, wherein R^{11} is C_{1-6} alkyl, wherein one or more hydrogens of the alkyl are optionally substituted by D, F, CN, -OH, or C_{1-6} alkyl.

9. The compound according to Claim 1, or a pharmaceutical acceptable salt, stable isotope, stereoisomer thereof, the compound structure is shown below: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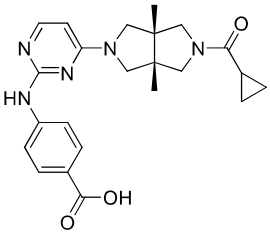
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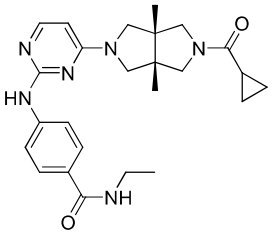
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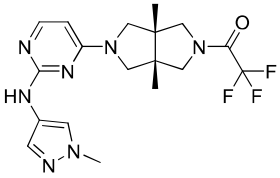
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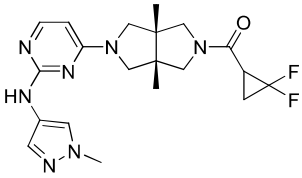
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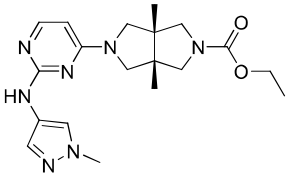
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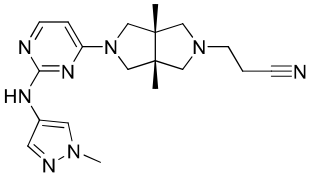
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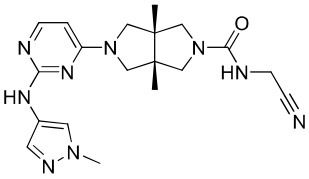
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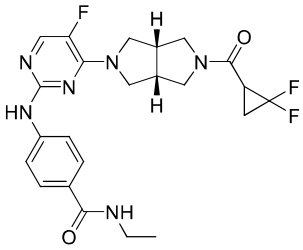
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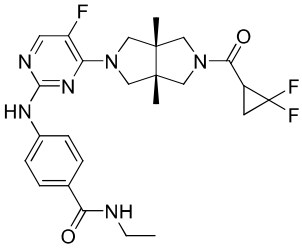
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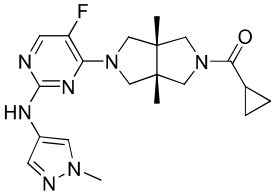
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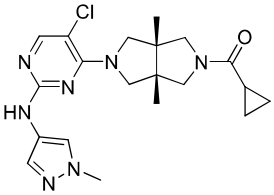
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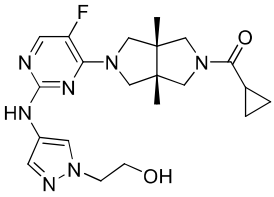
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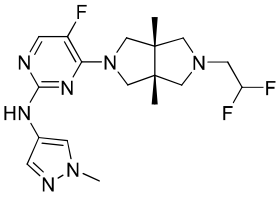
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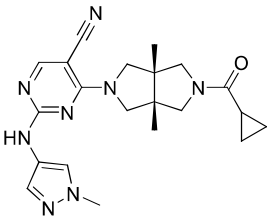
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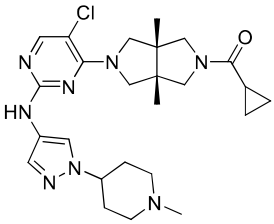
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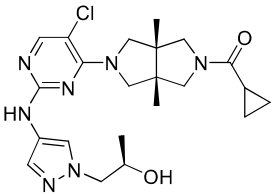
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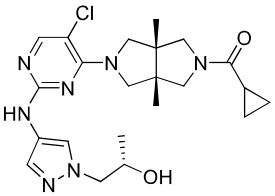
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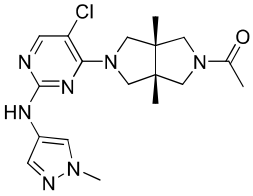
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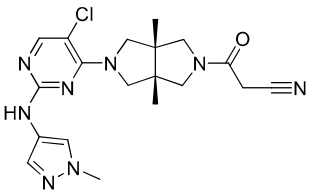
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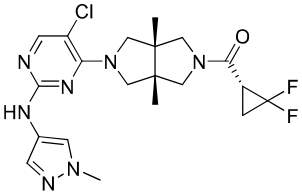
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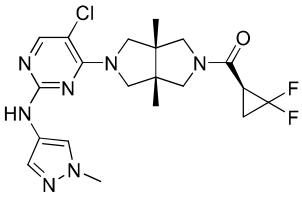
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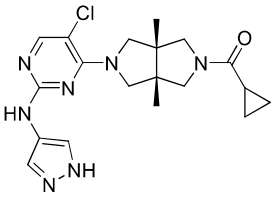
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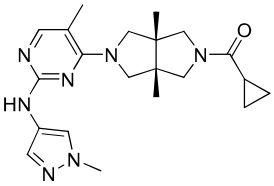
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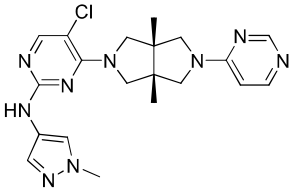
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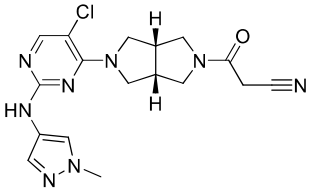
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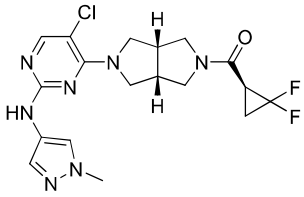
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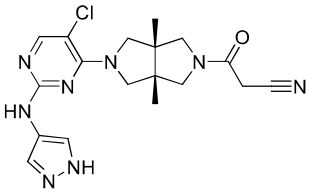
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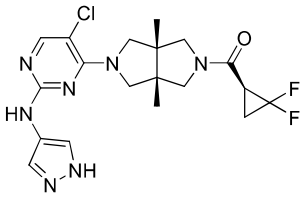
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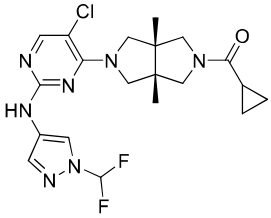
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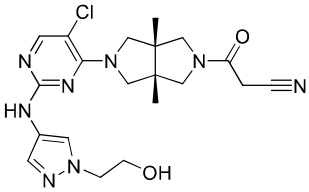
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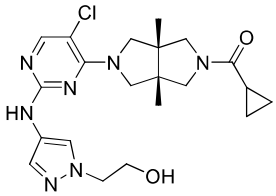
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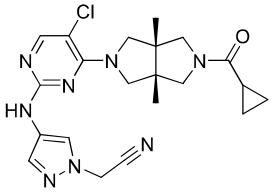
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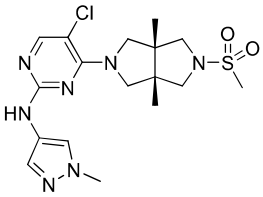
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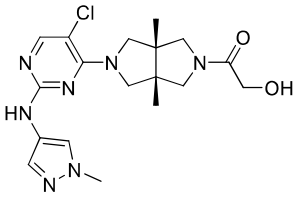
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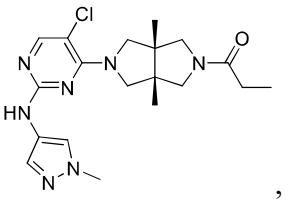
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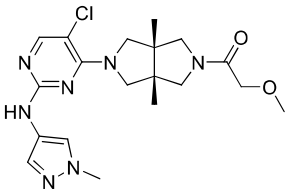
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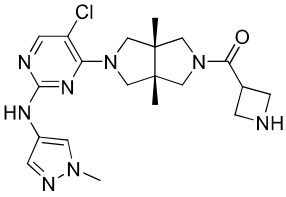
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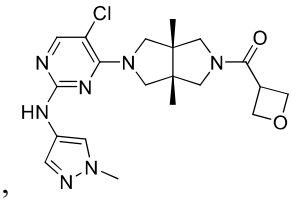
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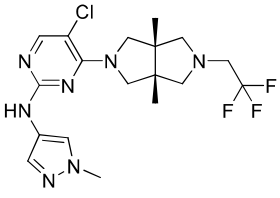
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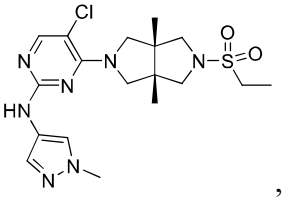
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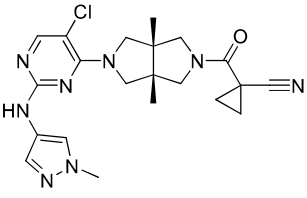
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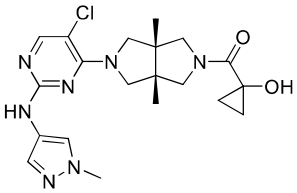
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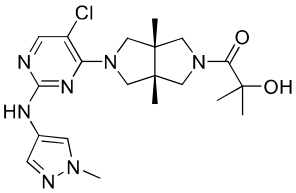
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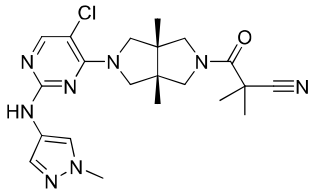
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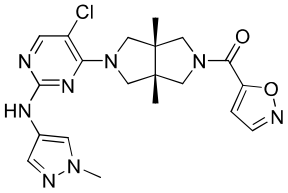
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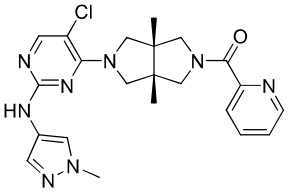
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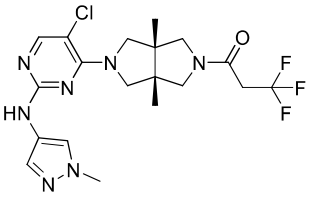
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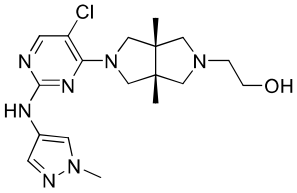
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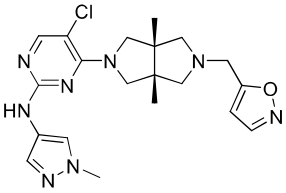
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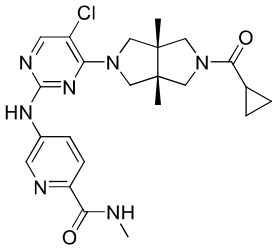
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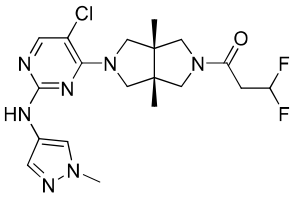
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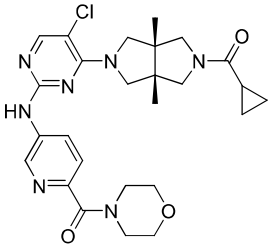
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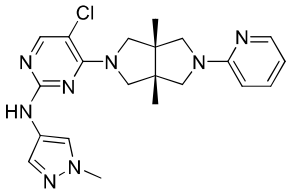
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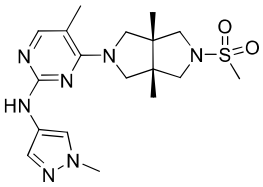
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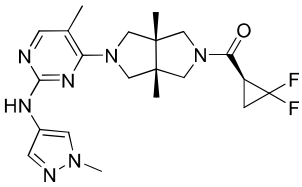
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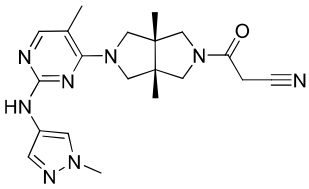
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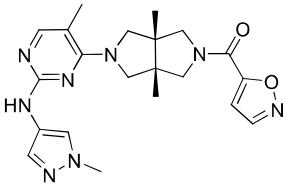
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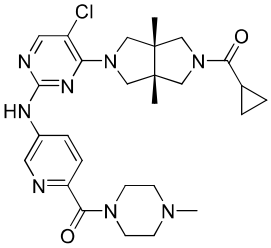
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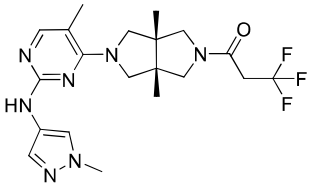
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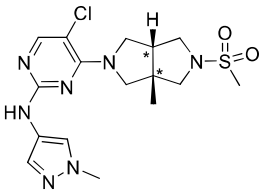
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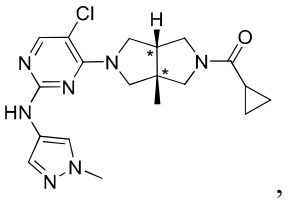
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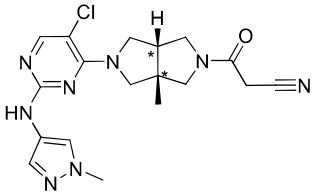
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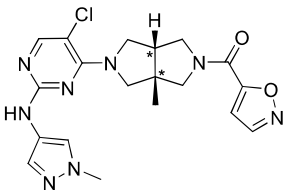
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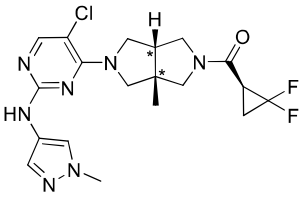
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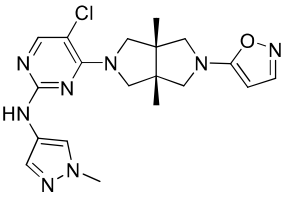
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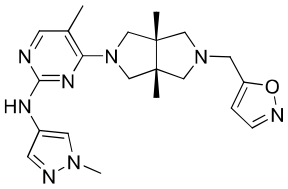
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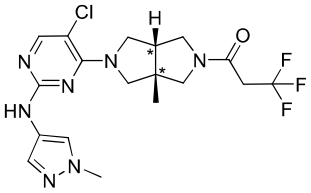
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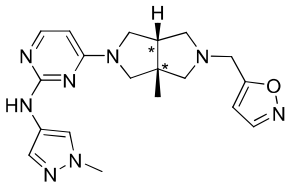
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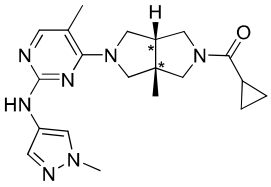
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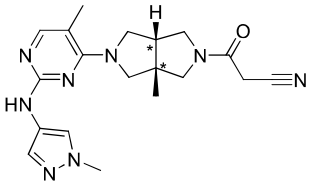
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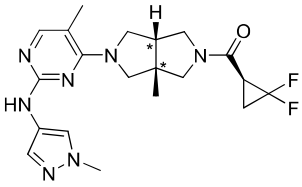
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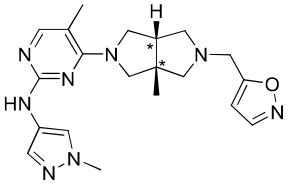
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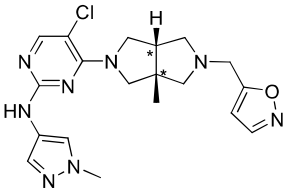
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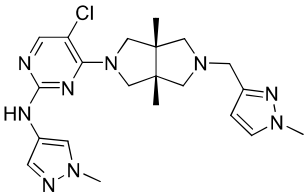
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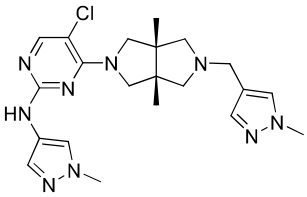
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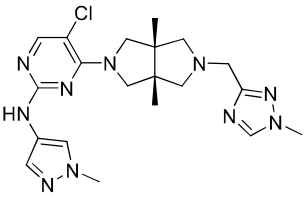
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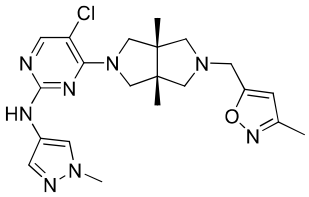
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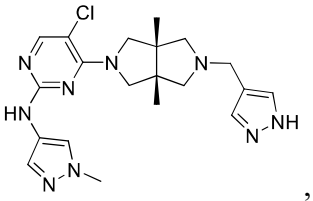
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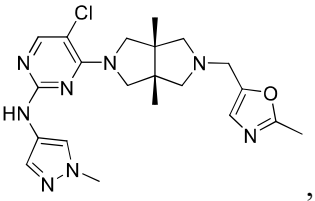
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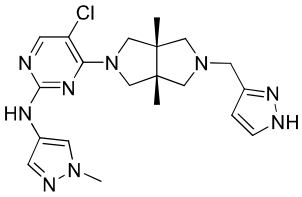
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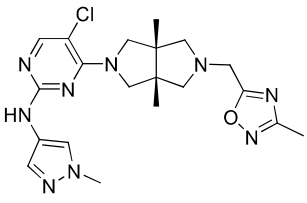
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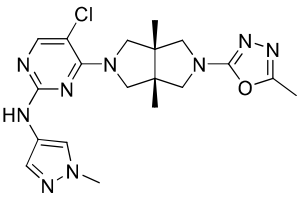
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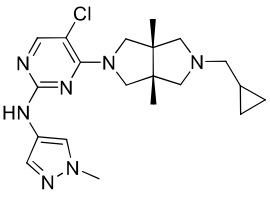
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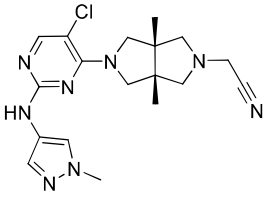
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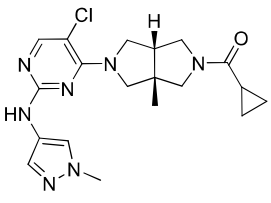
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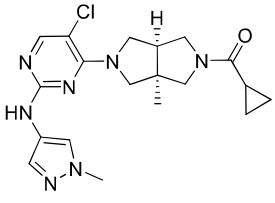
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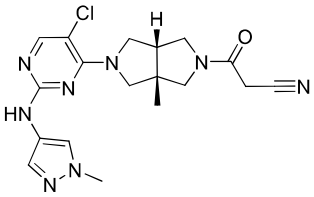
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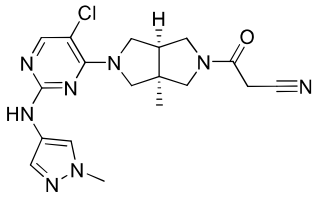
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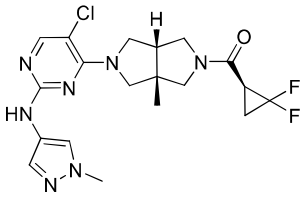
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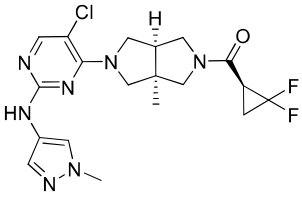
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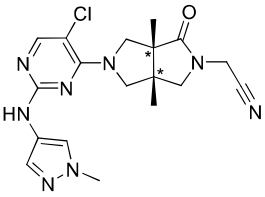
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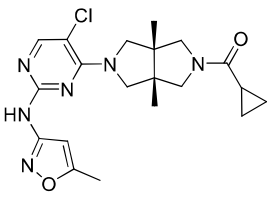
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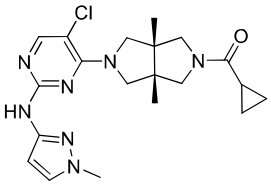
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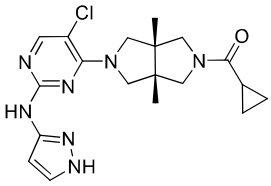
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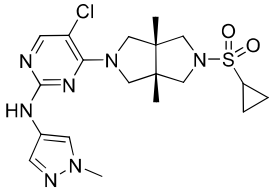
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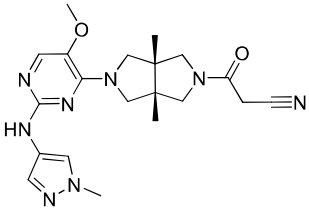
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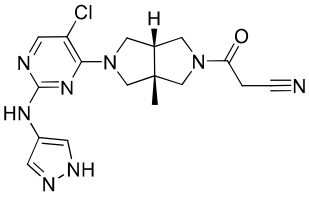
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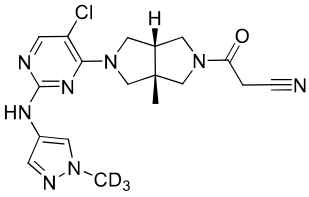
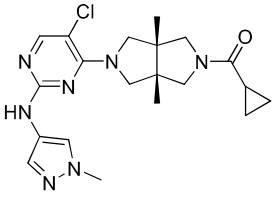

(the stereochemistry of the carbon atoms labeled with * is not determined).

10. The compound of Claim 9, which is: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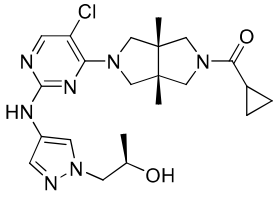
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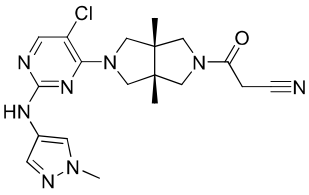
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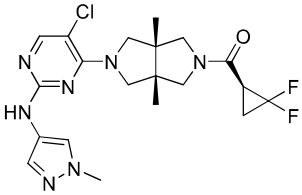
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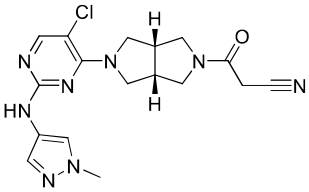
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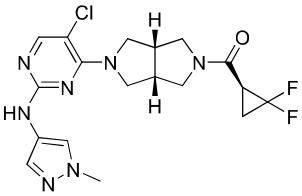
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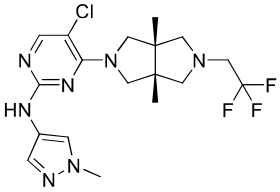
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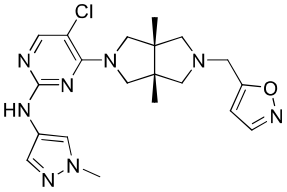
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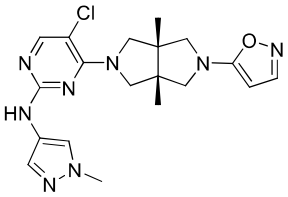
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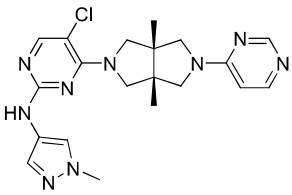
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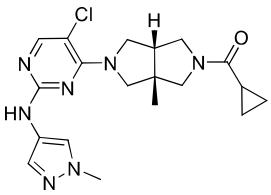
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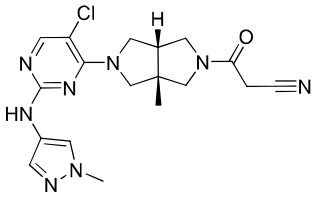
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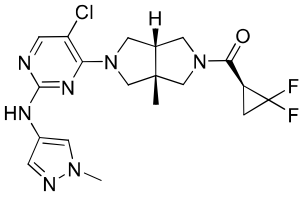
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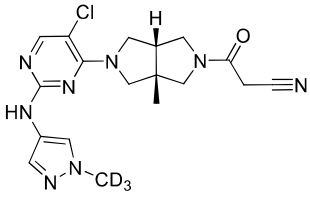
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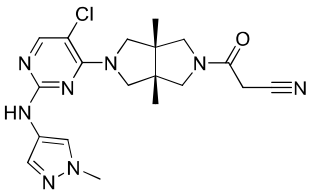
11. The compound of Claim 9, which is: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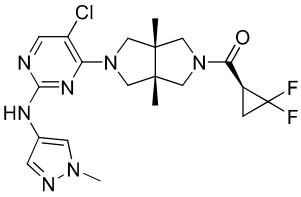
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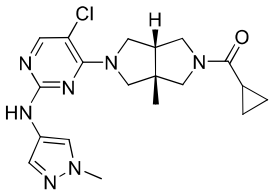
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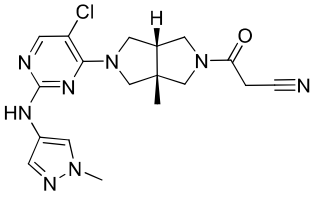
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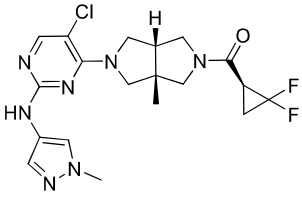
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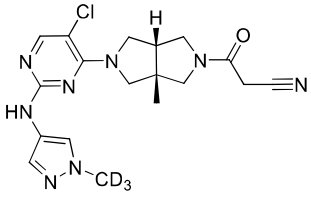
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12. A pharmaceutical composition comprising the compound of any one of Claims 1-11 and a pharmaceutically acceptable carrier or excipient thereof.

13. Use of a therapeutically effective amount of the compounds of any one of Claims 1-11, or pharmaceutically acceptable salts, stable isotope derivatives, stereoisomers thereof, in the manufacture of a medicament for preventing or treating a disease mediated by tyrosine kinase 2 (TYK2), wherein the disease mediated by TYK2 is autoimmune diseases, inflammatory diseases including intestinal diseases, cancers, skin diseases, diabetes, eye diseases, neurodegenerative diseases, anaphylaxis, asthma and other obstructive airway diseases, or transplant rejection.

14. The use of Claim 13, wherein the disease is psoriasis, psoriatic arthritis, ulcerative colitis, Crohn's disease, systemic lupus erythematosus, lupus nephritis, vitiligo, areata alopecia, dermatitis, or atopic eczema.