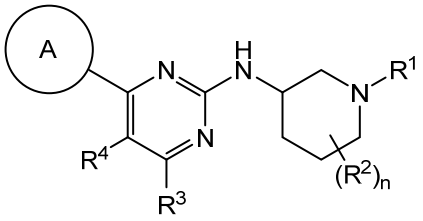
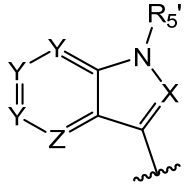
CLAIMS

What is claimed is:

1. A compound of formula I:



, or a pharmaceutically acceptable salt or stereoisomer thereof, wherein



ring A is ;

X is $C(R^6)$;

each Y is, independently, $C(R^7)$;

Z is $C(R^8)$;

R^1 is selected from hydrogen, -C_1-C_6 alkyl, -O-(C_1-C_6-alkylene)-O-(C_1-C_4-alkyl), -(C_0-C_6 alkylene)-carbocyclyl, -C(O)-O-(C_1-C_6 alkylene), -(C_1-C_6 alkylene)-$NR^{1'}$-$S(O)_2$-(C_1-C_4 alkyl), -(C_1-C_6 alkylene)-$NR^{1'}$-SO_2-$N(R^{1'})_2$, -(C_1-C_6 alkylene)-$S(O)_2$-(C_1-C_4 alkyl), and -(C_1-C_6 alkylene)-$S(O)_2$-$N(R^{1'})_2$, wherein any carbocyclyl portion of R^1 is optionally substituted, and wherein any alkyl or alkylene portion of R^1 is optionally substituted with one or more independently selected monovalent substituents;

each $R^{1'}$ is independently selected from hydrogen and optionally substituted C_1-C_6 alkyl, or

two $R^{1'}$ are optionally taken together with the nitrogen atom to which they are bound to form a 4-6 membered, optionally substituted heterocyclyl or heteroaryl ring, wherein:

each R^2, if present, is independently selected from =O, halo, -OH, -CN, -C_1-C_6 alkyl, -(C_0-C_6 alkylene)-carbocyclyl, -(C_0-C_6 alkylene)-heterocyclyl, -(C_0-C_6 alkylene)-heteroaryl, -(C_0-C_6 alkylene)-aryl, -(C_0-C_6 alkylene)-C(O)-heterocyclyl, -(C_0-C_6 alkylene)-C(O)-heteroaryl, -O-(C_1-C_6-alkyl), -O-(C_1-C_6-alkylene)-O-(C_1-C_4-alkyl), -O-(C_1-C_4-alkylene)-carbocyclyl, -O-(C_1-C_6-alkylene)-heterocyclyl, -O-(C_1-C_6-alkylene)-heteroaryl, -O-(C_1-C_6-alkylene)-aryl, -NH-C(O)-C_1-C_4 alkyl, and -C(O)-NH-(unsubstituted C_1-C_4 alkyl), or

R^1 and any R^2 are taken together with the atoms to which they are bound to form an optionally substituted heterocyclyl or heteroaryl ring fused, spirofused or bridged to the piperidine ring, or

two R^2 are taken together with the atom or atoms to which they are bound and any intervening ring atoms to form an optionally substituted aryl, carbocyclyl, heterocyclyl or heteroaryl ring fused, spirofused or bridged to the piperidine ring,

wherein any carbocyclyl, heterocyclyl, or heteroaryl portion of R^2, any ring formed by taking R^1 together with R^2, or any ring formed by taking two R^2 together is optionally

substituted, and wherein any alkyl or alkylene portion of R^2 is optionally substituted with one or more independently selected monovalent substituents unless otherwise specified;

R^3 is selected from hydrogen, halo, -CN, optionally substituted -C_1-C_6 alkyl, or optionally substituted carbocyclyl;

R^4 is selected from halo, -CN, -C_1-C_6 alkyl, -C_2-C_6 alkenyl, C_2-C_6 alkynyl, -O-C_1-C_6 alkyl, -S-C_1-C_6 alkyl, and carbocyclyl, wherein any alkyl, alkenyl, alkynyl, or carbocyclyl portion of R^4 is optionally substituted;

each R^5 is independently selected from halo, -OH, -C_1-C_6 alkyl, -CN, -(C_0-C_6 alkylene)-C(O)OH, -(C_0-C_6 alkylene)-C(O)-(C_1-C_4 alkyl), -(C_0-C_6 alkylene)-C(O)-N($R^{1'}$)$_2$, -(C_0-C_6 alkylene)-S(O)$_2$-(C_1-C_4 alkyl), -(C_0-C_6 alkylene)-S(O)$_2$-N($R^{1'}$)$_2$, -(C_0-C_6 alkylene)-P(O)-O-(C_1-C_4 alkyl)$_2$, -(C_0-C_6 alkylene)-P(O)-(C_1-C_4 alkyl)(O-C_1-C_4 alkyl), -(C_0-C_6 alkylene)-P(O)(C_1-C_4 alkyl)$_2$, -(C_0-C_6 alkylene)-carbocyclyl, -(C_0-C_6 alkylene)-heterocyclyl, -(C_0-C_6 alkylene)-heteroaryl, -(C_0-C_6 alkylene)-C(O)-heterocyclyl, -(C_0-C_6 alkylene)-C(O)-heteroaryl, -O-(C_1-C_6-alkyl), -O-(C_1-C_6-alkylene)-O-(C_1-C_4-alkyl), -O-(C_0-C_6-alkylene)-carbocyclyl, -O-(C_1-C_6-alkylene)-heterocyclyl, -O-(C_1-C_6-alkylene)-heteroaryl, phenyl, -(C_2-C_4 alkenylene)-phenyl, -S(O)-(C_1-C_4 alkyl), -S-(C_1-C_4 alkyl), -S(O)-OH, and -S(O)$_2$-OH, wherein any alkyl, alkylene, alkenylene, carbocyclyl, heterocyclyl, phenyl, and heteroaryl portion of R^5 is optionally substituted; or

two vicinal R^5 are taken together with the ring atoms to which they are bound to form an optionally substituted carbocyclyl or optionally substituted heterocyclyl, wherein each carbocyclyl or heterocyclyl is fused to ring A;

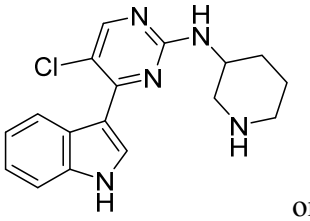
$R^{5'}$ is selected from hydrogen, -CN, -C_1-C_6 alkyl, -(C_0-C_6 alkylene)-S(O)$_2$-N($R^{1'}$)$_2$, -(C_0-C_6 alkylene)-carbocyclyl, -(C_0-C_6 alkylene)-C(O)-N($R^{1'}$)$_2$, -(C_0-C_6 alkylene)-aryl, -(C_0-C_6 alkylene)-heterocyclyl, -(C_0-C_6 alkylene)-heteroaryl, -(C_0-C_6 alkylene)-S(O)$_2$-(C_1-C_4 alkyl), -(C_1-C_6 alkylene)-O-(C_1-C_3 alkylene)-C(O)-N($R^{1'}$)$_2$, -(C_1-C_6 alkylene)-O-(C_1-C_4 alkylene)-P(O)(C_1-C_4 alkyl)$_2$, -(C_1-C_6 alkylene)-O-(C_1-C_4 alkylene)-P(O)(C_1-C_4 alkyl)-O-(C_1-C_4 alkyl), -(C_1-C_6 alkylene)-O-(C_1-C_4 alkylene)-P(O)-(O-C_1-C_4 alkyl)$_2$, -(C_1-C_6 alkylene)-O-(C_1-C_4 alkylene)-S(O)$_2$-(C_1-C_4 alkyl), -(C_1-C_6 alkylene)-O-(C_1-C_4 alkylene)-S(O)$_2$-N($R^{1'}$)$_2$, -(C_1-C_6 alkylene)-O-(C_1-C_4 alkyl), -(C_1-C_6 alkylene)-O-carbocyclyl, -(C_1-C_6 alkylene)-O-heteroaryl, -(C_1-C_6 alkylene)-O-heterocyclyl, -(C_1-C_6 alkylene)-P(O)(C_1-C_4 alkyl)$_2$, -(C_1-C_6 alkylene)-P(O)(C_1-C_4 alkyl)-O-(C_1-C_4 alkyl), -(C_1-C_6 alkylene)-P(O)-(O-C_1-C_4 alkyl)$_2$, -(C_1-C_6 alkylene)-C(O)-(C_1-C_4 alkyl), and -(C_1-C_6 alkylene)-C(O)OH, wherein any alkyl, alkylene, carbocyclyl, heterocyclyl and heteroaryl portion of $R^{5'}$ is optionally substituted;

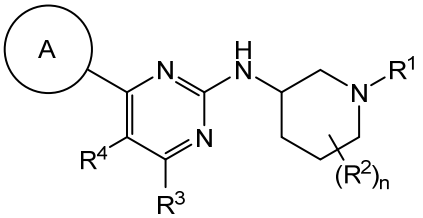
$R^{5'}$ and any R^5 are taken together with the ring atoms to which they are bound to form an optionally substituted heterocyclyl, wherein each heterocyclyl is fused to ring A;

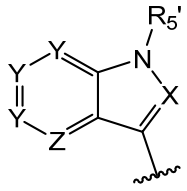
R^6 is selected from hydrogen, -CN, -CH_3, -CH_2F, -CHF_2 and -CF_3;

each R^7 is independently selected from hydrogen and R^5;

R^8 is selected from hydrogen and fluoro; and

n is 0, 1, 2, 3, or 4, wherein the compound is other than  or a stereoisomer or pharmaceutical salt thereof.

2. A pharmaceutically acceptable solvate, hydrate, tautomer, or isotopically labeled derivative of a compound of formula I  (I), wherein

ring A is ;

X is $C(R^6)$;

each Y is, independently, $C(R^7)$;

Z is $C(R^8)$;

R^1 is selected from hydrogen, -C_1-C_6 alkyl, -O-(C_1-C_6-alkylene)-O-(C_1-C_4-alkyl), -(C_0-C_6 alkylene)-carbocyclyl, -C(O)-O-(C_1-C_6 alkylene), -(C_1-C_6 alkylene)-$NR^{1'}$-$S(O)_2$-(C_1-C_4 alkyl), -(C_1-C_6 alkylene)-$NR^{1'}$-SO_2-$N(R^{1'})_2$, -(C_1-C_6 alkylene)-$S(O)_2$-(C_1-C_4 alkyl), and -(C_1-C_6 alkylene)-$S(O)_2$-$N(R^{1'})_2$, wherein any carbocyclyl portion of R^1 is optionally substituted, and wherein any alkyl or alkylene portion of R^1 is optionally substituted with one or more independently selected monovalent substituents;

each $R^{1'}$ is independently selected from hydrogen and optionally substituted C_1-C_6 alkyl, or

two $R^{1'}$ are optionally taken together with the nitrogen atom to which they are bound to form a 4-6 membered, optionally substituted heterocyclyl or heteroaryl ring, wherein:

each R^2, if present, is independently selected from =O, halo, -OH, -CN, -C_1-C_6 alkyl, -(C_0-C_6 alkylene)-carbocyclyl, -(C_0-C_6 alkylene)-heterocyclyl, -(C_0-C_6 alkylene)-heteroaryl, -(C_0-C_6 alkylene)-aryl, -(C_0-C_6 alkylene)-C(O)-heterocyclyl, -(C_0-C_6 alkylene)-C(O)-heteroaryl, -O-(C_1-C_6-alkyl), -O-(C_1-C_6-alkylene)-O-(C_1-C_4-alkyl), -O-(C_1-C_4-alkylene)-carbocyclyl, -O-(C_1-C_6-alkylene)-heterocyclyl, -O-(C_1-C_6-alkylene)-heteroaryl, -O-(C_1-C_6-alkylene)-aryl, -NH-C(O)-C_1-C_4 alkyl, and -C(O)-NH-(unsubstituted C_1-C_4 alkyl), or

R^1 and any R^2 are taken together with the atoms to which they are bound to form an optionally substituted heterocyclyl or heteroaryl ring fused, spirofused or bridged to the piperidine ring, or

two R^2 are taken together with the atom or atoms to which they are bound and any intervening ring atoms to form an optionally substituted aryl, carbocyclyl, heterocyclyl or heteroaryl ring fused, spirofused or bridged to the piperidine ring,

wherein any carbocyclyl, heterocyclyl, or heteroaryl portion of R^2, any ring formed by taking R^1 together with R^2, or any ring formed by taking two R^2 together is optionally substituted, and wherein any alkyl or alkylene portion of R^2 is optionally substituted with one or more independently selected monovalent substituents unless otherwise specified;

R^3 is selected from hydrogen, halo, -CN, optionally substituted -C_1-C_6 alkyl, or optionally substituted carbocyclyl;

R^4 is selected from halo, -CN, -C_1-C_6 alkyl, -C_2-C_6 alkenyl, C_2-C_6 alkynyl, -O-C_1-C_6 alkyl, -S-C_1-C_6 alkyl, and carbocyclyl, wherein any alkyl, alkenyl, alkynyl, or carbocyclyl portion of R^4 is optionally substituted;

each R^5 is independently selected from halo, -OH, -C_1-C_6 alkyl, -CN, -(C_0-C_6 alkylene)-C(O)OH, -(C_0-C_6 alkylene)-C(O)-(C_1-C_4 alkyl), -(C_0-C_6 alkylene)-C(O)-N($R^{1'}$)$_2$, -(C_0-C_6 alkylene)-S(O)$_2$-(C_1-C_4 alkyl), -(C_0-C_6 alkylene)-S(O)$_2$-N($R^{1'}$)$_2$, -(C_0-C_6 alkylene)-P(O)-O-(C_1-C_4 alkyl)$_2$, -(C_0-C_6 alkylene)-P(O)-(C_1-C_4 alkyl)(O-C_1-C_4 alkyl), -(C_0-C_6 alkylene)-P(O)(C_1-C_4 alkyl)$_2$, -(C_0-C_6 alkylene)-carbocyclyl, -(C_0-C_6 alkylene)-heterocyclyl, -(C_0-C_6 alkylene)-heteroaryl, -(C_0-C_6 alkylene)-C(O)-heterocyclyl, -(C_0-C_6 alkylene)-C(O)-heteroaryl, -O-(C_1-C_6-alkyl), -O-(C_1-C_6-alkylene)-O-(C_1-C_4-alkyl), -O-(C_0-C_6-alkylene)-carbocyclyl, -O-(C_1-C_6-alkylene)-heterocyclyl, -O-(C_1-C_6-alkylene)-heteroaryl, phenyl, -(C_2-C_4 alkenylene)-phenyl, -S(O)-(C_1-C_4 alkyl), -S-(C_1-C_4 alkyl), -S(O)-OH, and -S(O)$_2$-OH, wherein any alkyl, alkylene, alkenylene, carbocyclyl, heterocyclyl, phenyl, and heteroaryl portion of R^5 is optionally substituted; or

two vicinal R^5 are taken together with the ring atoms to which they are bound to form an optionally substituted carbocyclyl or optionally substituted heterocyclyl, wherein each carbocyclyl or heterocyclyl is fused to ring A;

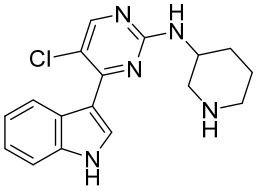
$R^{5'}$ is selected from hydrogen, -CN, -C_1-C_6 alkyl, -(C_0-C_6 alkylene)-S(O)$_2$-N($R^{1'}$)$_2$, -(C_0-C_6 alkylene)-carbocyclyl, -(C_0-C_6 alkylene)-C(O)-N($R^{1'}$)$_2$, -(C_0-C_6 alkylene)-aryl, -(C_0-C_6 alkylene)-heterocyclyl, -(C_0-C_6 alkylene)-heteroaryl, -(C_0-C_6 alkylene)-S(O)$_2$-(C_1-C_4 alkyl), -(C_1-C_6 alkylene)-O-(C_1-C_3 alkylene)-C(O)-N($R^{1'}$)$_2$, -(C_1-C_6 alkylene)-O-(C_1-C_4 alkylene)-P(O)(C_1-C_4 alkyl)$_2$, -(C_1-C_6 alkylene)-O-(C_1-C_4 alkylene)-P(O)(C_1-C_4 alkyl)-O-(C_1-C_4 alkyl), -(C_1-C_6 alkylene)-O-(C_1-C_4 alkylene)-P(O)-(O-C_1-C_4 alkyl)$_2$, -(C_1-C_6 alkylene)-O-(C_1-C_4 alkylene)-S(O)$_2$-(C_1-C_4 alkyl), -(C_1-C_6 alkylene)-O-(C_1-C_4 alkylene)-S(O)$_2$-N($R^{1'}$)$_2$, -(C_1-C_6 alkylene)-O-(C_1-C_4 alkyl), -(C_1-C_6 alkylene)-O-carbocyclyl, -(C_1-C_6 alkylene)-O-heteroaryl, -(C_1-C_6 alkylene)-O-heterocyclyl, -(C_1-C_6 alkylene)-P(O)(C_1-C_4 alkyl)$_2$, -(C_1-C_6 alkylene)-P(O)(C_1-C_4 alkyl)-O-(C_1-C_4 alkyl), -(C_1-C_6 alkylene)-P(O)-(O-C_1-C_4 alkyl)$_2$, -(C_1-C_6 alkylene)-C(O)-(C_1-C_4 alkyl), and -(C_1-C_6 alkylene)-C(O)OH, wherein any alkyl, alkylene, carbocyclyl, heterocyclyl and heteroaryl portion of $R^{5'}$ is optionally substituted;

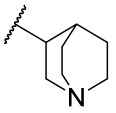
$R^{5'}$ and any R^5 are taken together with the ring atoms to which they are bound to form an optionally substituted heterocyclyl, wherein each heterocyclyl is fused to ring A;

R^6 is selected from hydrogen, -CN, -CH_3, -CH_2F, -CHF_2 and -CF_3;

each R^7 is independently selected from hydrogen and R^5;

R^8 is selected from hydrogen and fluoro; and

n is 0, 1, 2, 3, or 4, wherein the compound is other than  .

3. The compound of claim 1, the salt or stereoisomer thereof, or the solvate, hydrate, tautomer, or isotopically labeled derivative of claim 2, wherein R^1 is selected from hydrogen, cyclopropyl, $-CH_3$, $-CH_2CH_3$, $-CH_2CH_2OCH_3$, $-CH(CH_3)_2$, or $-CH_2CH(CH_3)_2$, or wherein R^1 is taken together with one R^2 and the ring atoms to which each are bound to form a ring which, taken together with the ring to which R^1 and R^2 are bound, is  .

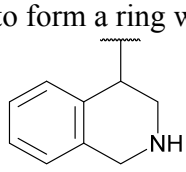
4. The compound, salt, stereoisomer, solvate, hydrate, tautomer, or isotopically labeled derivative of claim 3, wherein R^1 is hydrogen.

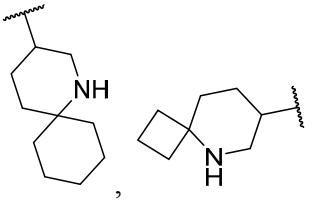
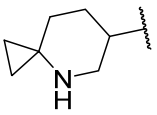
5. The compound, salt, stereoisomer, solvate, hydrate, tautomer, or isotopically labeled derivative of any one of claims 1-4, wherein each R^2, if present, is independently selected from halo, =O, -OH, $-C_1$-C_4 alkyl, phenyl, heteroaryl, -C(O)-heterocyclyl, -NH-C(O)-C_1-C_4 alkyl, and -C(O)-NH-(unsubstituted C_1-C_4 alkyl), wherein any heteroaryl or heterocyclyl portion of R^2 is optionally substituted and any C_1-C_4 alkyl or phenyl portion of R^2 is optionally substituted with one or more independently selected monovalent substituents; or, either

(a) two R^2 bound to different ring atoms are optionally taken together with the atoms to which they are bound and any intervening ring atoms to form an optionally substituted aryl or cycloalkyl, fused or bridged to the piperidine ring; or

(b) two R^2 bound to the same ring atom are optionally taken together with the atom to which they are bound to form an optionally substituted cycloalkyl spirofused to the piperidine ring.

6. The compound, salt, stereoisomer, solvate, hydrate, tautomer, or isotopically labeled derivative of claim 5, wherein n is 0, 1, 2 or 3, and each R^2, if present, is independently selected from fluoro, =O, $-CH_3$, $-CH_2CH_3$, -OH, $-CH(CH_3)_2$, $-C(O)NHCH_3$, $-NHC(O)CH_2CH_3$, 3-methyl-1,2,4-oxadiazol-5-yl, 1,2,4-triazolo[4,3-a]pyridin-3-yl, 8-methylsulfonyl-1,2,4-triazolo[4,3-a]pyridin-3-yl, pyrrolidin-1-ylcarbonyl, 3-hydroxypyrrolidin-1-ylcarbonyl, and unsubstituted phenyl, or

two R^2 on different atoms are taken together with the atoms to which they are bound and any intervening ring atoms to form a ring which, taken together with the piperdine ring to which both R^2 are bound, is  ; or

two R^2 bound to the same ring atom are taken together with the atom to which they are bound to form a ring which, taken together with the piperdine ring to which both R^2 are bound, is: , , or .

7. The compound, salt, stereoisomer, solvate, hydrate, tautomer, or isotopically labeled derivative of any one of claims 1-6, wherein n is 0 and/or R^3 is hydrogen.

8. The compound, salt, stereoisomer, solvate, hydrate, tautomer, or isotopically labeled derivative of any one of claims 1-7, wherein R^4 is selected from hydrogen, halo, -CN, optionally substituted C_1-C_4 alkyl, optionally substituted C_2-C_4 alkynyl, optionally substituted -O-C_1-C_4 alkyl, optionally substituted C_3-C_6 cycloalkyl, and -C(O)-optionally substituted C_1-C_4 alkyl.

9. The compound, salt, stereoisomer, solvate, hydrate, tautomer, or isotopically labeled derivative of claim 8, wherein R^4 is selected from chloro, fluoro, bromo, iodo, cyclopropyl, -CN, $-CF_3$, $-CH_2CF_3$, $-CH_2CH_2F$, $-CH_3$, $-CH_2CH_3$, $-CH_2CH_2CH_3$, $-CH(CH_3)_2$, $-CH_2CH(CH_3)_2$, $-OCH_3$, $-CH(OH)CH_3$, $-CH{=}CH_2$, $-C(O)CH_3$, $-OCHF_2$, S-CH_3, S-CHF_2, S-CF_3, and -C≡CH.

10. The compound, salt, stereoisomer, solvate, hydrate, tautomer, or isotopically labeled derivative of claim 9, wherein R^4 is selected from $-CF_3$, $-CH_2CH_3$, and $-CH_2CH_2F$.

11. The compound, salt, stereoisomer, solvate, hydrate, tautomer, or isotopically labeled derivative of any one of claims 1-10, wherein each R^7 is independently selected from hydrogen, halo, -C_1-C_6 alkyl, -CN, -C(O)OH, -C(O)-(C_1-C_4 alkyl), -C(O)-N($R^{1'}$)$_2$, -S(O)$_2$-(C_1-C_4 alkyl), -CH_2-S(O)$_2$-(C_1-C_4 alkyl), -S(O)$_2$-N($R^{1'}$)$_2$, -P(O)(C_1-C_4 alkyl)-O-C_1-C_4 alkyl, -P(O)(O-(C_1-C_4 alkyl))$_2$, carbocyclyl, heterocyclyl, heteroaryl, -C(O)-heterocyclyl, -(C_1-C_4 alkylene)-S(O)$_2$-(C_1-C_4 alkyl), -O-(C_0-C_6-alkylene)-carbocyclyl, phenyl, -(C_2-C_4 alkenylene)-phenyl, -S(O)-(C_1-C_4 alkyl), -S-(C_1-C_4 alkyl), -S(O)-OH, and -S(O)$_2$-OH, wherein any alkyl, alkylene, alkenylene, carbocyclyl, phenyl, heterocyclyl or heteroaryl is optionally substituted.

12. The compound, salt, stereoisomer, solvate, hydrate, tautomer, or isotopically labeled derivative of claim 11, wherein R^7 is selected from hydrogen, fluoro, chloro, bromo, -CN, $-CH_3$, $-CH_2CH_2C(CH_3)_2OH$, $-C(O)-CH_3$, -C(O)OH, -C(O)-NH-CH_3, -P(=O)(OCH_2CH_3)$_2$, -P(=O)(OCH_2CH_3)CH_3, -S(O)$_2CH_3$, -P(O)-(CH_3)$_2$, -P(O)-(CH_2CH_3)$_2$, -S(O)$_2$N(CH_3)$_2$, -S(O)$_2CH(CH_3)_2$, -S(O)$_2CH_2F$, -S(O)$_2CHF_2$, -$SCHF_2$, -S(O)CHF_2, -S(O)OH, -S(O)$_2$OH, -S(O)$_2NHCH_3$, -(CH_2)$_4CH_3$, -CH_2S(O)$_2CH_3$, -S(O)$_2$-CH_2CH_3, 1H-pyrazol-4-yl, 1-methylpyrazol-4-yl, 1,3-dimethyl-pyrazol-4-yl, 5-methyl-1H-pyrazol-4-yl, 1-methyl-2-oxoimidazolidin-3-yl, 4-methylimidazol-1-yl, morpholin-4-yl, pyridin-4-yl, pyridazin-4-yl, 4-hydroxycyclohexyl, 4-hydroxy-4-methylcyclohexyl, 5-methyl-1,2,4-triazol-3-yl, 5-methyl,

1,2,4-oxadiazol-3-yl, 1,3-dimethylpyridazin-4-yl, 1,5-dimethylpyridazin-4-yl, 3-methyl-1H-pyridazin-4-yl, 1-(2-methyl-2-hydroxypropyl)pyridazin-4-yl, imidazol-1-yl, 1-methyl-5-cyanopyrrol-3-yl, 5-cyano-1H-pyrrol-3-yl, and pyridazin-4-yl, 1H-pyrazol-3-yl, 1-difluoromethyl-pyrazol-3-yl, 1-difluoromethyl-pyrazol-4-yl, 1-methylpyrazol-3-yl, 3-methyl-1H-pyrazol-4-yl, 3-methyl-3-hydroxypyrrolidin-1-ylcarbonyl, 3-hydroxypyrrolidin-1-ylcarbonyl, 4-hydroxycyclohexyl, 4-hydroxycyclohex-1-enyl, 1,1-dioxothiomorpholin-4-yl, 4-cyano-1H-imidazol-1-yl, 2,3-dimethyl-1,2,4-triazol-5-yl, 1,5-dimethyl-pyrazol-4-yl, pyridin-3-yl, 1-(2-methyl-2-hydroxypropan-1-yl)pyrazol-4-yl, pyrrolidin-1-yl, pyrrolidin-1-ylcarbonyl, 1H-pyrazol-2-yl, 3-hydroxy-3-trifluoromethylpyrrolidin-1-ylcarbonyl, 3-methoxypyrrolidin-1-ylcarbonyl, 3-cyanopyrrolidin-1-ylcarbonyl, 4-hydroxy-4-methylpiperindin-1-ylcarbonyl, 3-oxopyrrolidin-1-ylcarbonyl, 3-(pyrrolidin-1-ylcarbonyl)phenyl, 3-phenoxyphenyl, thiazol-2-yl, pyrazin-2-yl, 2,4-dioxo-1H,3H-pyrimidin-5-yl, 3-methyl-3-hydroxypyrrolidin-1-ylsulfonyl, 5-flluoropyridin-3-yl, 2-hydroxpyridin-3-yl, 3,3-difluoro-4-hydroxy, 3,5-dimethyloxazol-4-yl, 3-fluorophenyl, 4-methylpyridin-3-yl, 2-hydroxymethylpyridin-3-yl, 6-hydroxymethylpyridin-2-yl, 5-hydroxymethylpyridin-3-yl, 1-methyl-6-oxopyridin-3-yl, 4-aminosulfonylphenyl, 3-aminosulfonylphenyl, 3-hydroxy-3-ethylpyrrolidin-1-ylcarbonyl, 3-cyano-4-hydroxyphenyl, benzo[*d*]thiazol-6-yl, 2H-indazol-6-yl, 1H-benzoimidazol-5-yl, 2-oxo-3-cyano-4-methylpyridin-5-yl, 2-aminobenzo[*d*]thiazol-2-yl, 3-aminocarbonylphenyl, 6-trifluoromethyl-1H-pyrrolo[3,2-c]pyridin-3-yl, 2-aminoquinazolin-8-yl, styryl, 1-methyl-1H-indazol-6-yl, 2,3-dihydrobenzo[b][1,4]dioxin-7-yl, 2-ethoxyphenyl, 3-(2-hydroxyethyl)phenyl, 3-(methylcarbonylaminomethyl)phenyl, 1-methyl-6-trifluoromethyl-1H-pyrrolo[3,2-c]pyridin-3-yl, quinolin-4-yl, isoquinolin-5-yl, isoquinolin-7-yl, and 2-oxo-3,4-dihydroquinolin-7-yl.

13. The compound, salt, stereoisomer, solvate, hydrate, tautomer, or isotopically labeled derivative of claim 12, wherein R^7 is selected from hydrogen, fluoro, -CN, $-S(O)_2CH_3$, $-S(O)_2NHCH_3$, 3-hydroxy-pyrrolidin-1-ylcarbonyl, 3-hydroxy-3-methyl-pyrrolidin-1-ylcarbonyl, and 1H-imidazol-2-yl.

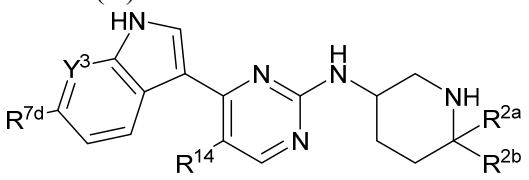
14. The compound, salt, stereoisomer, solvate, hydrate, tautomer, or isotopically labeled derivative of any one of claims 1-13, wherein $R^{5'}$ is selected from hydrogen, C_1-C_4 alkyl, -(C_0-C_3 alkylene)-aryl and -(C_1-C_3 alkylene)-O-(C_1-C_4 alkyl).

15. The compound, salt, stereoisomer, solvate, hydrate, tautomer, or isotopically labeled derivative of claim 14, wherein $R^{5'}$ is selected from hydrogen, methyl, isopropyl, $-CH_2-O-CH_3$, $-(CH_2)_2-O-CH_3$, and phenyl.

16. The compound, salt, stereoisomer, solvate, hydrate, tautomer, or isotopically labeled derivative of any one of claims 1-15, wherein R^6 is selected from hydrogen and methyl.

17. The compound, salt, stereoisomer, solvate, hydrate, tautomer, or isotopically labeled derivative of claim 16, wherein R^6 is hydrogen.

18. The compound of claim 1, the salt or stereoisomer thereof, or the solvate, hydrate, tautomer, or isotopically labeled derivative of claim 2, wherein the compound is a compound of formula (II):



(II), wherein:

Y^3 is $C(R^{7e})$;

each of R^{2a} and R^{2b} is independently selected from hydrogen and C_1-C_3 alkyl; or

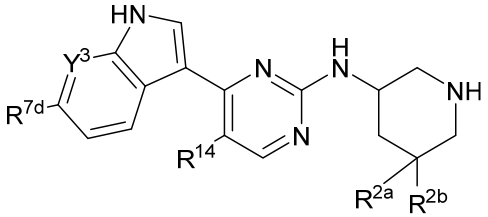
R^{2a} and R^{2b} are taken together to form a cycloalkyl or a heterocycle spirofused to the piperidine ring, wherein ~~said~~ the cycloalkyl or heterocycle is optionally substituted with one or more independently selected C_1-C_4 alkyl or C_1-C_4 haloalkyl;

R^{7d} is selected from hydrogen, -C(O)-(C_1-C_4 alkyl), -CN, and heteroaryl optionally substituted with one or more independently selected C_1-C_4 alkyl or C_1-C_4 haloalkyl;

R^{7e} is selected from hydrogen, halo, -$S(O)_2$-(C_1-C_4 alkyl), -$P(O)(C_1$-C_4 alkyl$)_2$, -C(O)NH-(C_1-C_4 alkyl), -$C(O)N(C_1$-C_4 alkyl$)_2$, -$S(O)_2$NH-(C_1-C_4 alkyl), -$S(O)_2$N-(C_1-C_4 alkyl$)_2$, and heteroaryl optionally substituted with one or more independently selected C_1-C_4 alkyl or C_1-C_4 haloalkyl; and

R^{14} is selected from C_1-C_3 alkyl and C_1-C_3 haloalkyl.

19. The compound of claim 1, the salt or stereoisomer thereof, or the pharmaceutically acceptable solvate, hydrate, tautomer, or isotopically labeled derivative of claim 2, wherein the compound is a compound of formula (III):



(III), wherein:

Y^3 is $C(R^{7e})$;

each of R^{2a} and R^{2b} is independently selected from hydrogen and C_1-C_3 alkyl; or

R^{2a} and R^{2b} are taken together to form a cycloalkyl or a heterocycle spirofused to the piperidine ring, wherein the cycloalkyl or heterocycle is optionally substituted with one or more independently selected C_1-C_4 alkyl or C_1-C_4 haloalkyl;

R^{7d} is selected from hydrogen, -C(O)-(C_1-C_4 alkyl), -CN, and heteroaryl optionally substituted with one or more independently selected C_1-C_4 alkyl or C_1-C_4 haloalkyl;

R^{7e} is selected from hydrogen, halo, -$S(O)_2$-(C_1-C_4 alkyl), -$P(O)(C_1$-C_4 alkyl$)_2$, -C(O)NH-(C_1-C_4 alkyl), -$C(O)N(C_1$-C_4 alkyl$)_2$, -$S(O)_2$NH-(C_1-C_4 alkyl), -$S(O)_2$N-(C_1-C_4 alkyl$)_2$, and heteroaryl optionally substituted with one or more independently selected C_1-C_4 alkyl or C_1-C_4 haloalkyl; and

R^{14} is selected from C_1-C_3 alkyl and C_1-C_3 haloalkyl.

20. The compound, salt, stereoisomer, solvate, hydrate, tautomer, or isotopically labeled derivative of claim 18 or claim 19, wherein:

R^{2a} is selected from hydrogen and $-CH_3$;

R^{2b} is selected from hydrogen, $-CH_3$, $-CH_2CH_3$, and $-CH(CH_3)_2$; or

R^{2a} and R^{2b} are taken together to form oxetan-3-yl;

R^{7d} is selected from hydrogen, $-C(O)CH_3$, -CN, pyridin-3-yl, pyridin-4-yl, 1-methyl-5-cyanopyrrol-3-yl, 1-methylpyrazol-4-yl, 1-methylpyrazol-3-yl, 1H-pyrazol-4-yl, 1H-pyrazol-3-yl, 1H-imidazol-2-yl, 1,3-dimethylpyrazol-4-yl, 1,5-dimethylpyrazol-4-yl, 1,5-dimethyl-1,2,4-triazol-3-yl, imidazol-1-yl, 1-difluoromethylpyrazol-3-yl, 1-difluoromethylpyrazol-4-yl and thiazol-2-yl;

R^{7e} is selected from hydrogen, fluoro, chloro, bromo, -CN, $-P(O)(CH_3)_2$, $-S(O)_2CH(CH_3)_2$, $-S(O)_2CH_2CH_3$, $-S(O)_2N(CH_3)_2$, $-C(O)NHCH_3$, pyridin-4-yl, pyridazin-4-yl, 5-methyl-1H-pyrazol-4-yl, 1-methylpyrazol-4-yl, 4-methyl-1H-imidazol-1-yl, 1H-benzo[d]imidazol-5-yl, 6-(trifluoromethyl)-1H-pyrrolo[3,2-c]pyridin-3-yl, 1-methyl-6-(trifluoromethyl)-1H-pyrrolo[3,2-c]pyridin-3-yl, isoquinolin-7-yl, isoquinolin-5-yl, pyrazin-2-yl, 2H-indazol-6-yl, 3,5-dimethylisoxazol-4-yl, thiazol-2-yl, 4-methylpyridin-3-yl, 1-methylindazol-6-yl, quinolin-4-yl, benzo[d]thiazol-6-yl, and 1,3-dimethylpyrazol-4-yl; and

R^{14} is selected from $-CH_3$, $-CF_3$, $-CH_2CH_3$, $-CH_2CF_3$, $-CH_2CH_2F$, and $-CH(CH_3)_2$.

21. The compound, salt, stereoisomer, solvate, hydrate, tautomer, or isotopically labeled derivative of claim 19, wherein:

R^{2a} is selected from hydrogen and $-CH_3$;

R^{2b} is selected from hydrogen, and $-CH_3$;

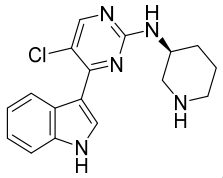
R^{7d} is selected from hydrogen, -CN, pyrazin-2-yl, thiazol-2-yl, and 3,5-dimethylisoxazol-4-yl;

R^{7e} is selected from hydrogen, fluoro, $-C(O)NHCH_3$, $-P(O)(CH_3)_2$, $-S(O)_2CH_3$, $-S(O)_2N(CH_3)_2$, 1,3-dimethylpyrazol-4-yl, and pyridazin-4-yl; and

R^{14} is selected from $-CH_2CH_3$, and $-CF_3$.

22. The compound of claim 1, the salt or stereoisomer thereof, or the solvate, hydrate, tautomer, or isotopically labeled derivative of claim 2, wherein the compound is:

Compound 100



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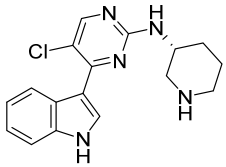

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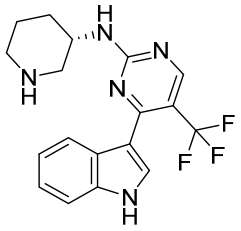

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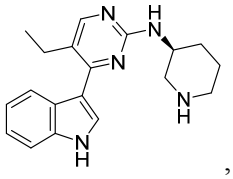

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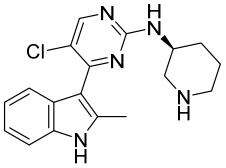

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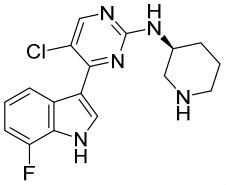

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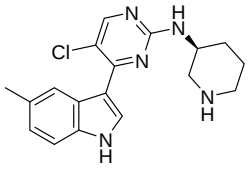

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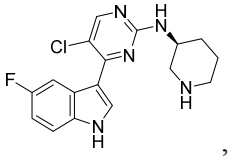
Compound 109



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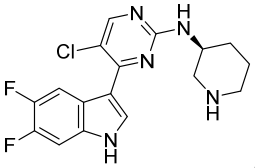

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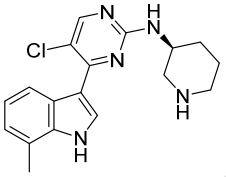

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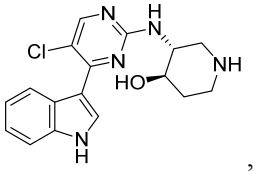

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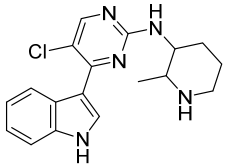

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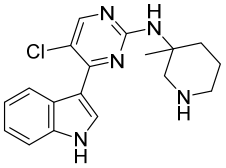

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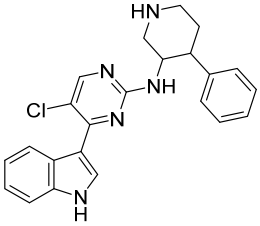

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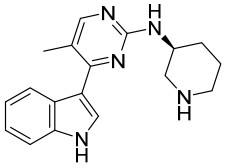

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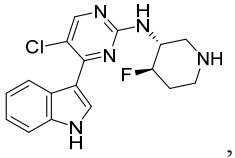

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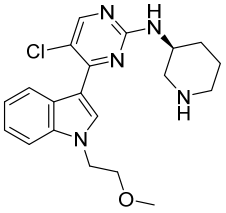

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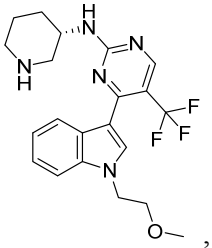

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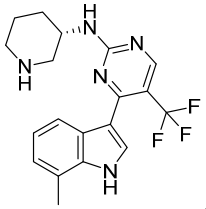

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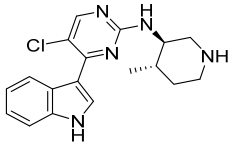

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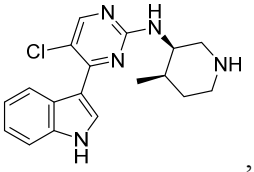

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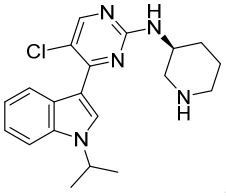

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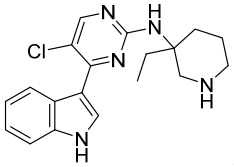

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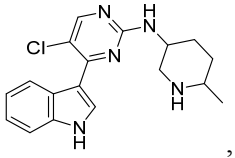

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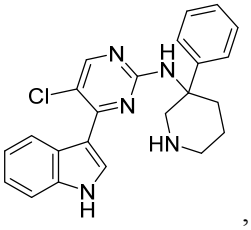

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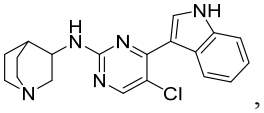

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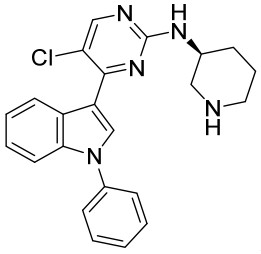

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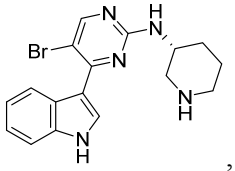
Compound 133



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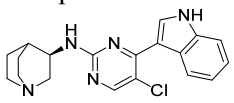
Compound 134



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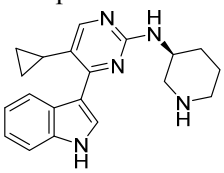
Compound 135



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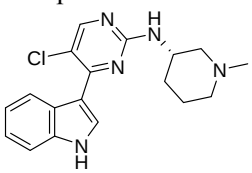
Compound 136



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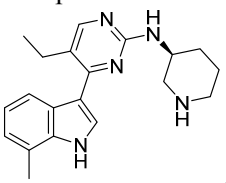
Compound 137



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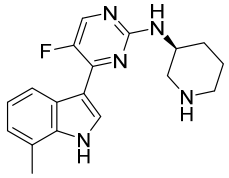

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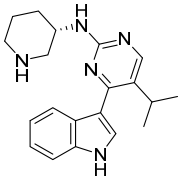
Compound 139



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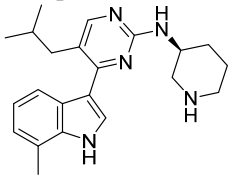
Compound 140



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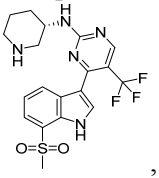
Compound 141



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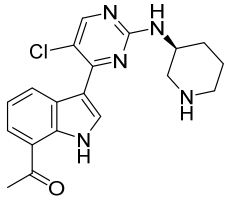
Compound 142



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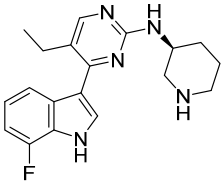

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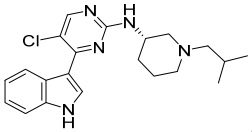

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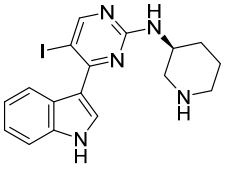

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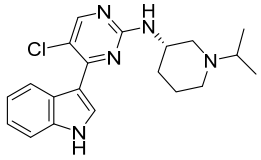

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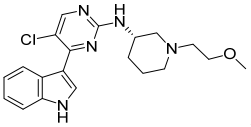

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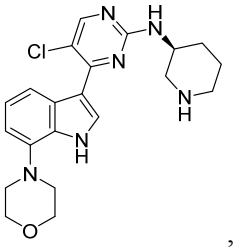

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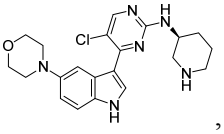

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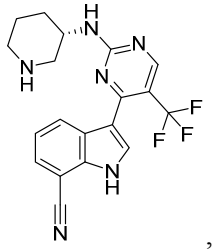

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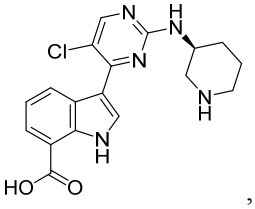

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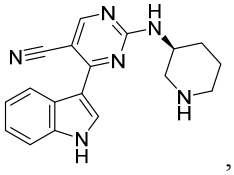

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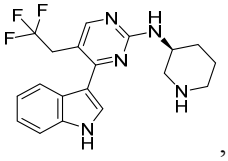

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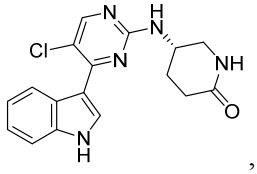

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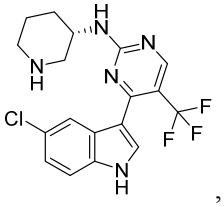

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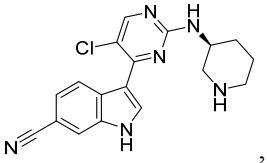

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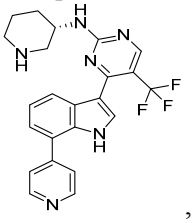

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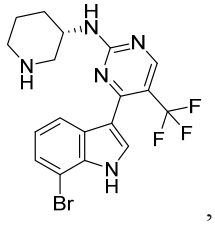

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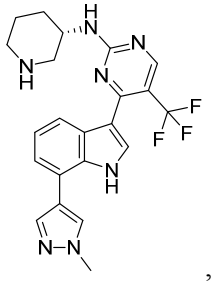

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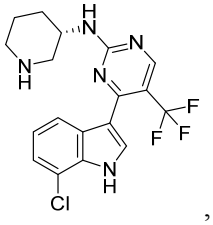

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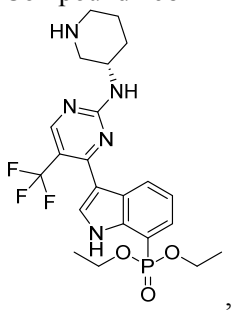

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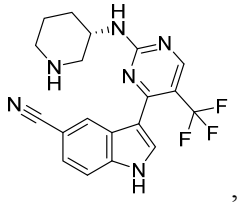

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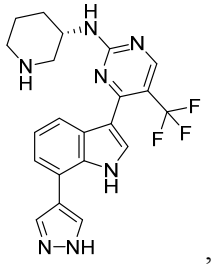

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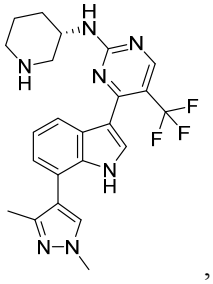

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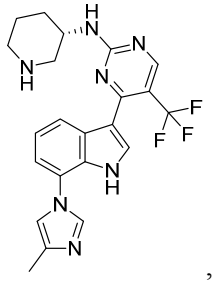

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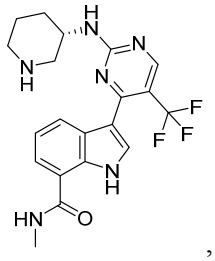

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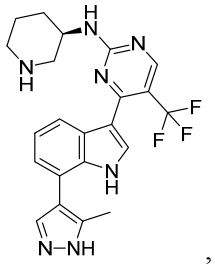
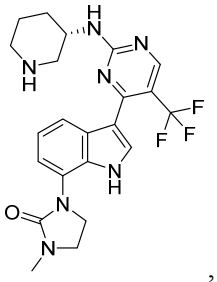


Compound 176



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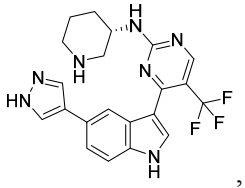
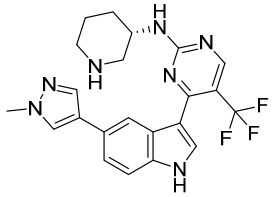


Compound 178



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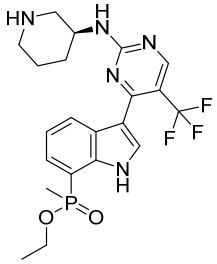
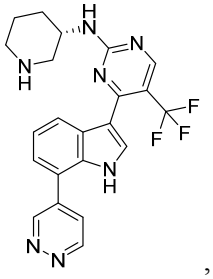


Compound 180



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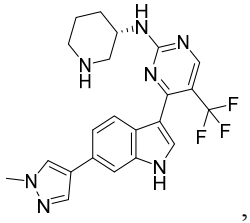
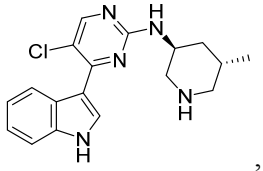


Compound 182



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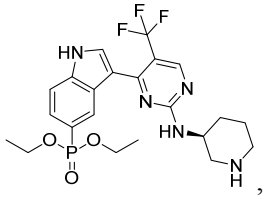
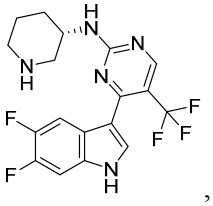


Compound 184



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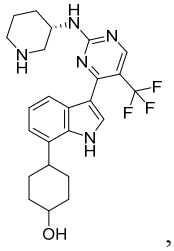

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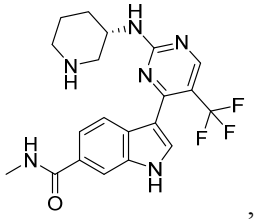

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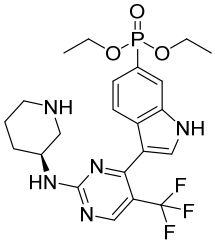
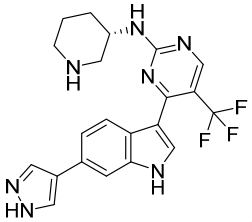
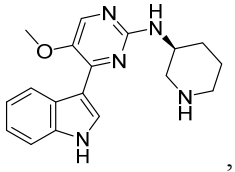


Compound 188



Compound 189



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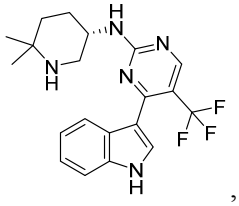
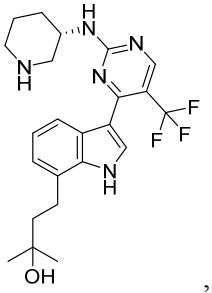


Compound 191



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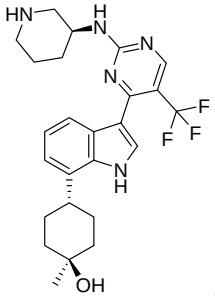
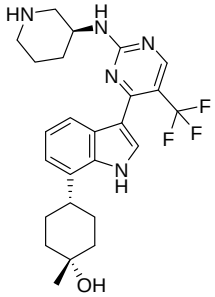
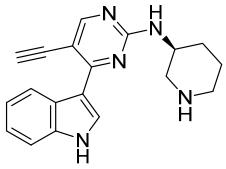


Compound 193



Compound 194



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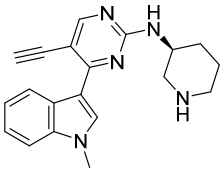

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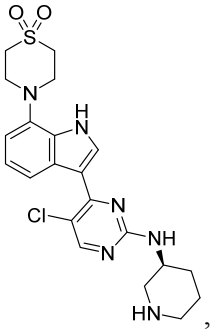

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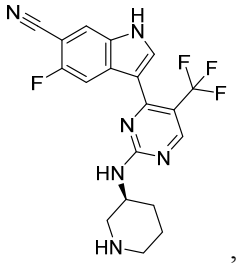
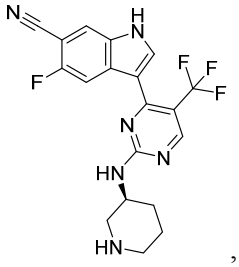


Compound 198



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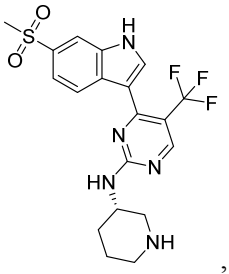

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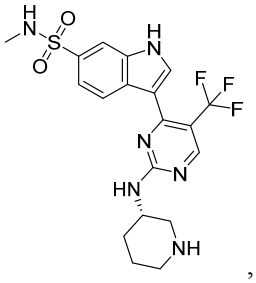

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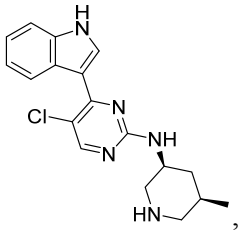

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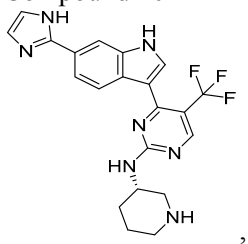

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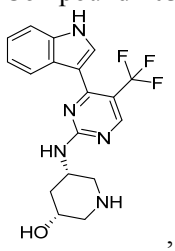

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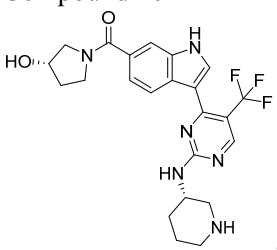

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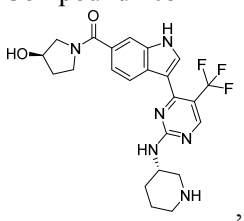

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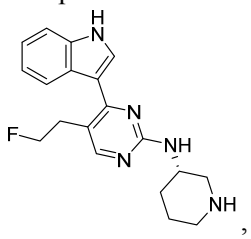

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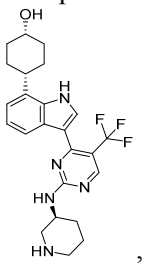

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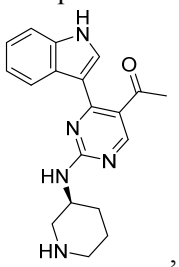

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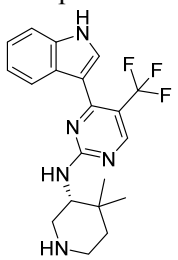

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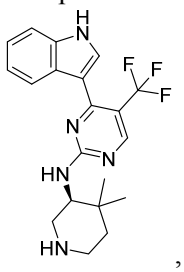

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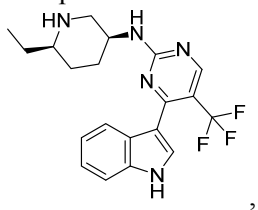

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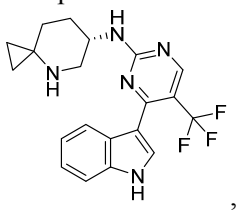

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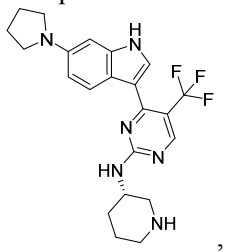

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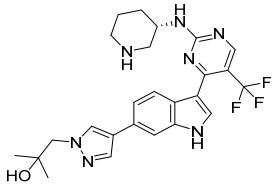

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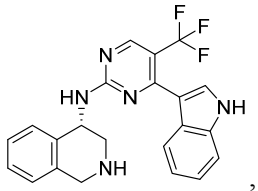

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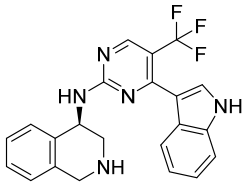

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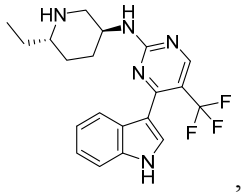

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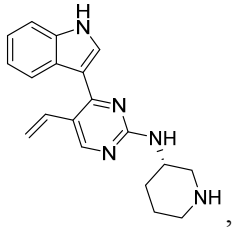

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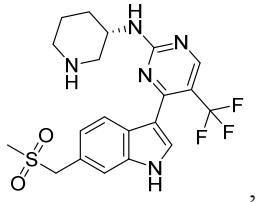

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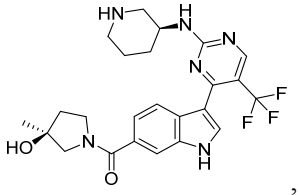

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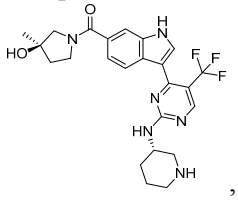

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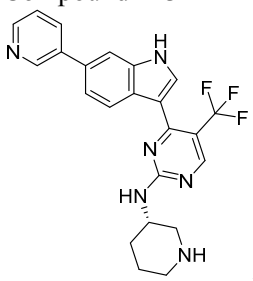

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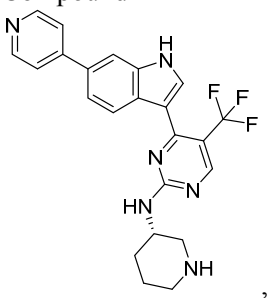

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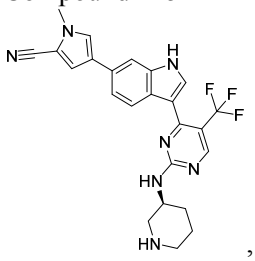

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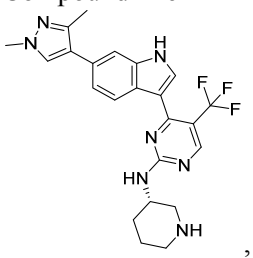

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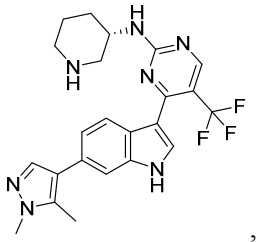

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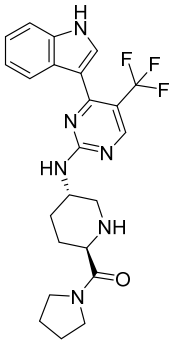

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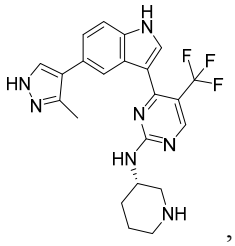

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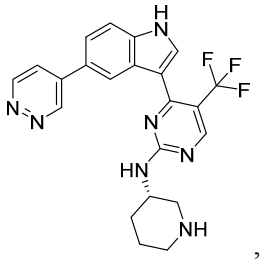

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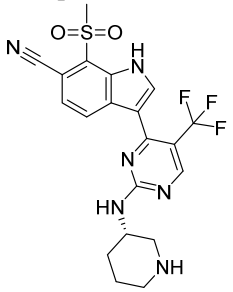

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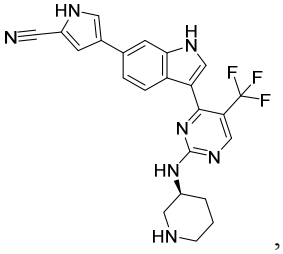

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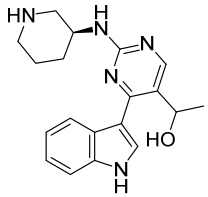

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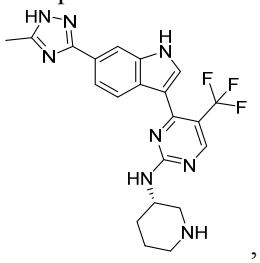

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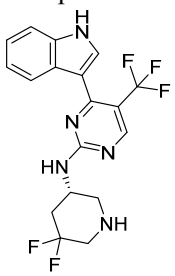

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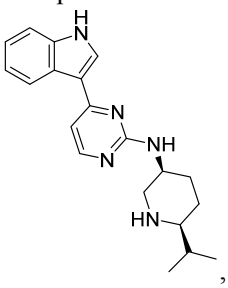

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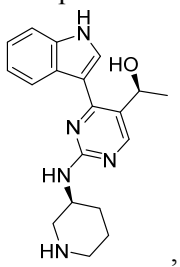

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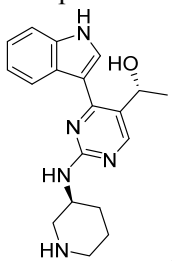

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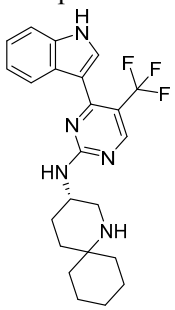

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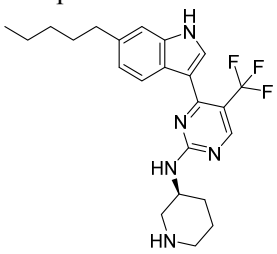

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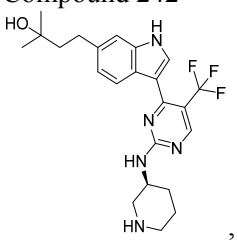

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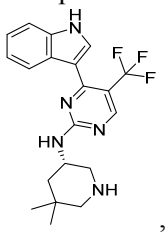

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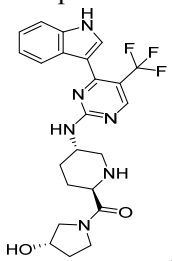

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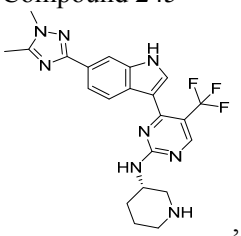

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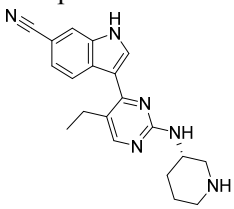

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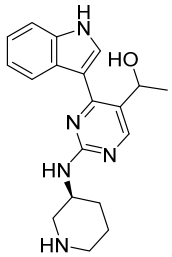

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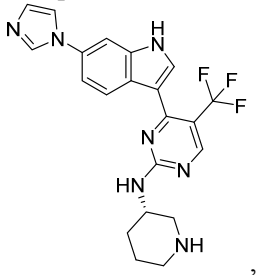

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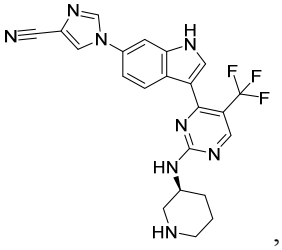

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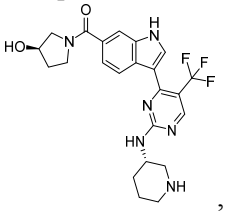

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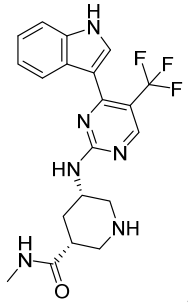

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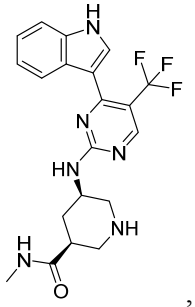

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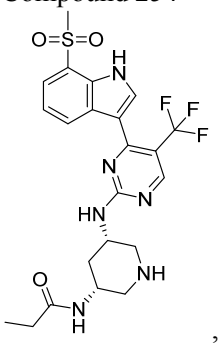

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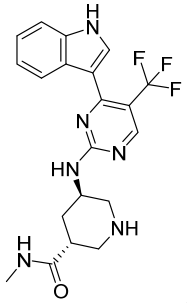

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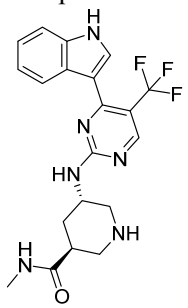
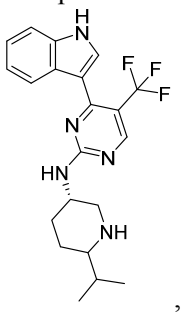


Compound 257



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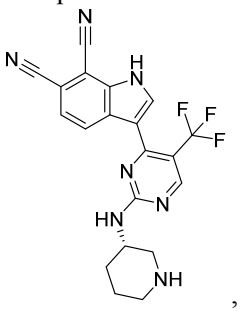

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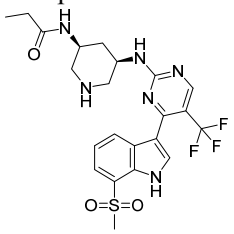

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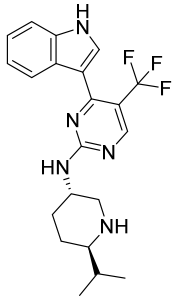

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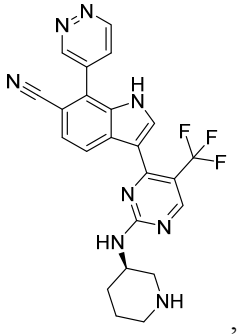

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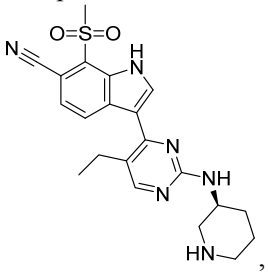

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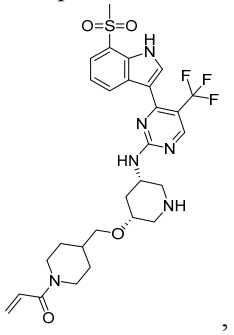

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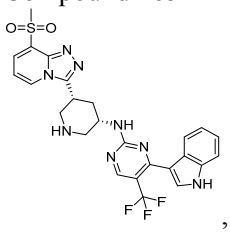

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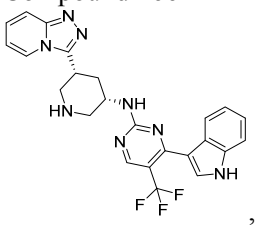

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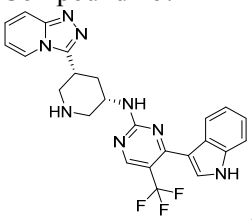

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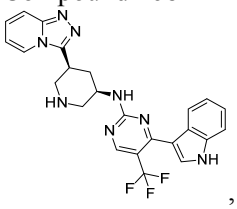

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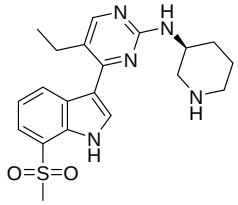

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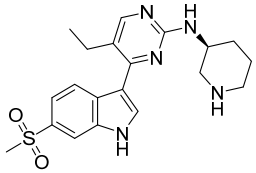

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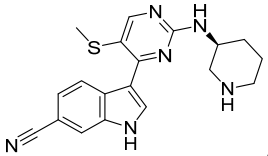

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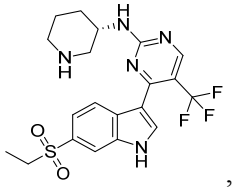

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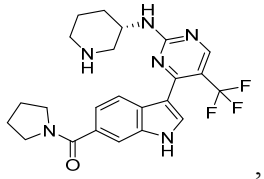

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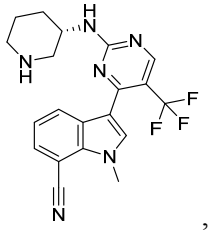

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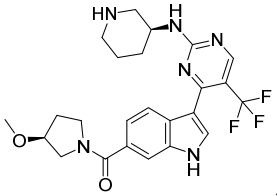

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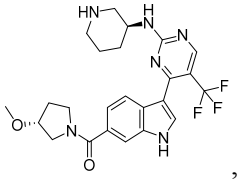

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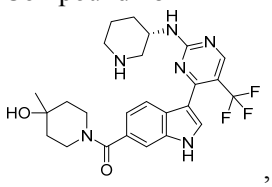

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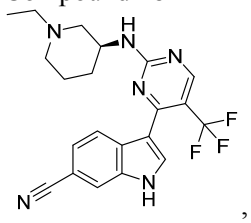

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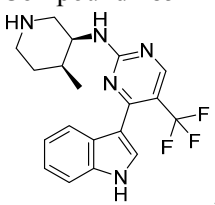

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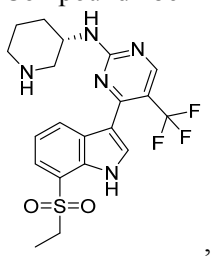

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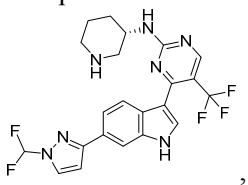

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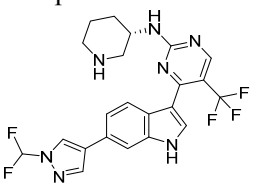

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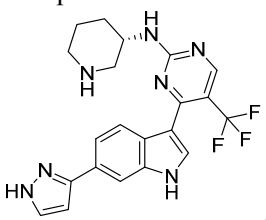

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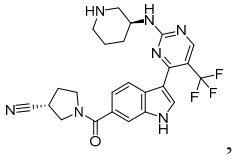

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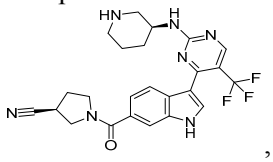

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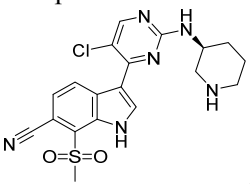

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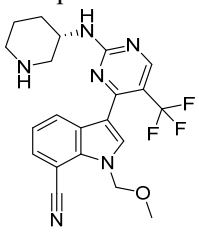

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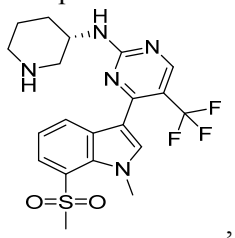

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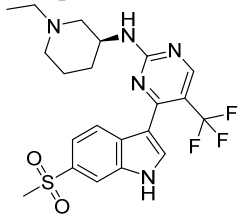

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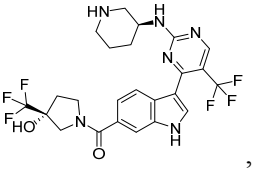

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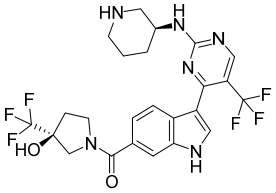

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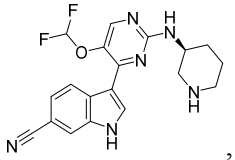

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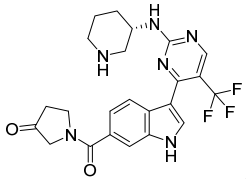

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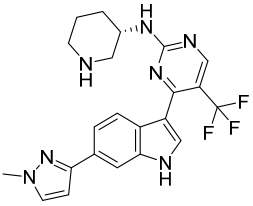

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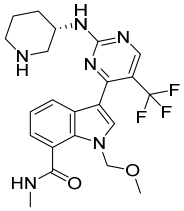

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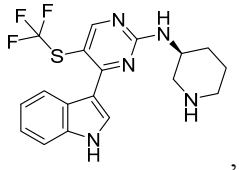

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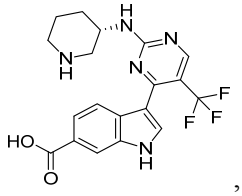

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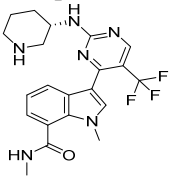

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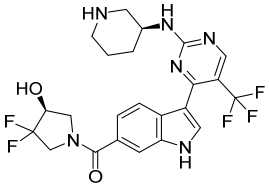

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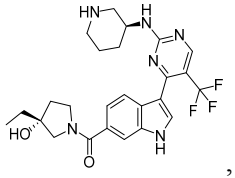

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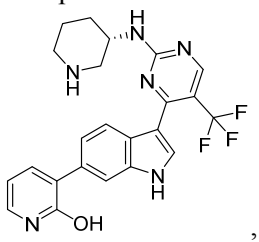

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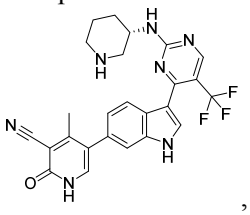

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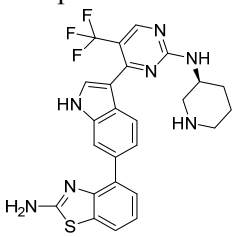

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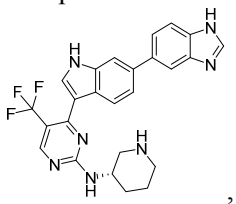

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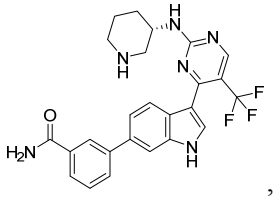

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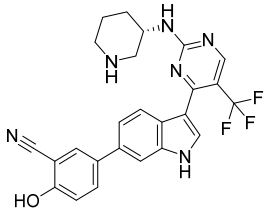

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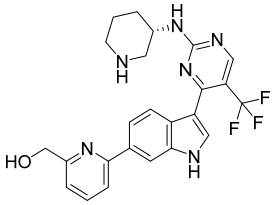

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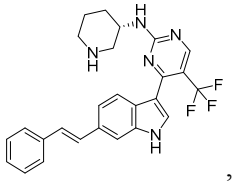

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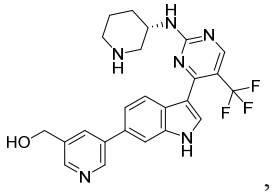

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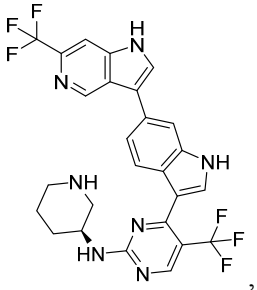

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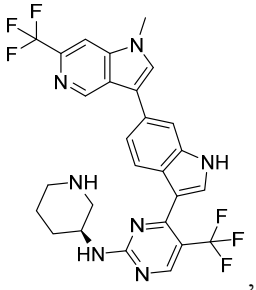

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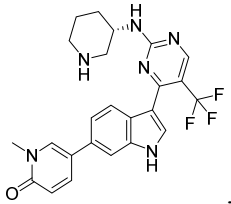

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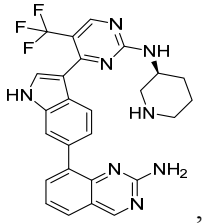

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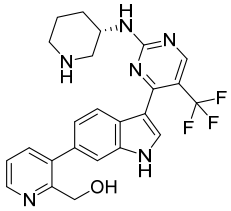
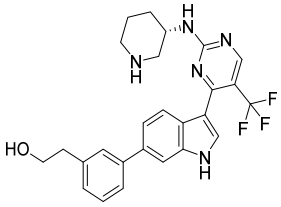


Compound 324



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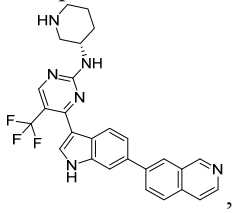

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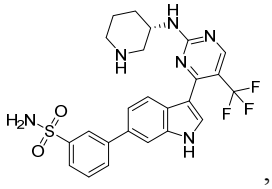

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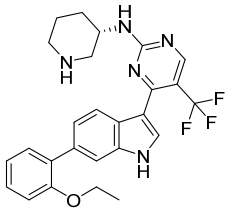

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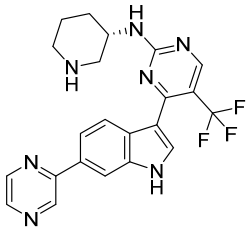

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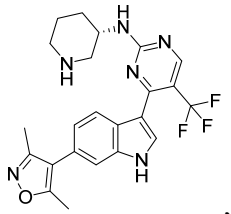

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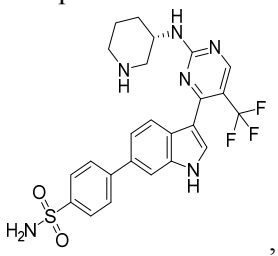

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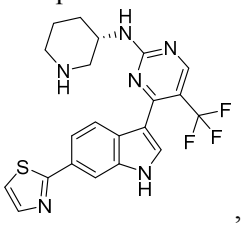

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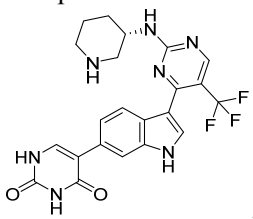

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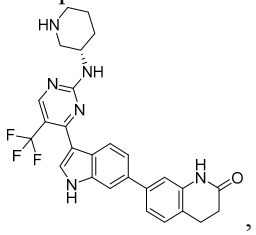

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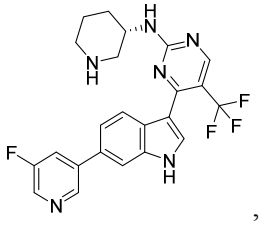

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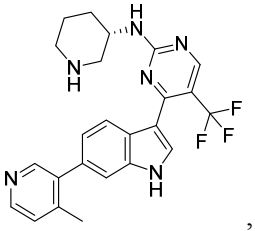

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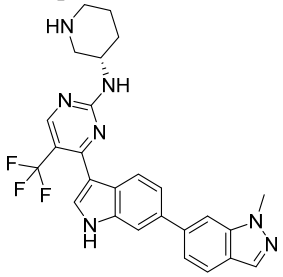

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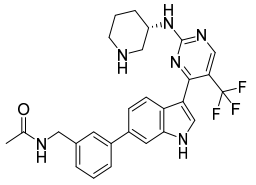

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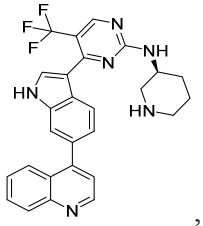

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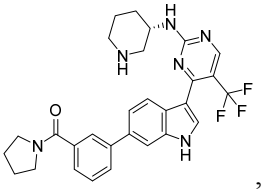

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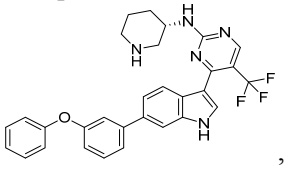

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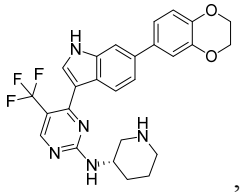

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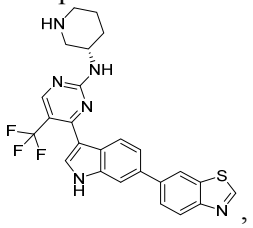

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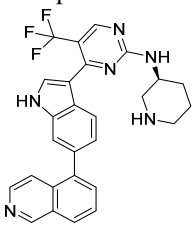

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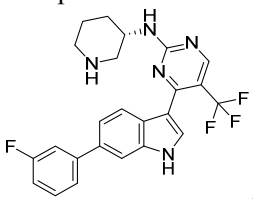

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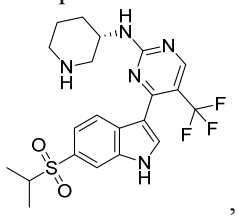

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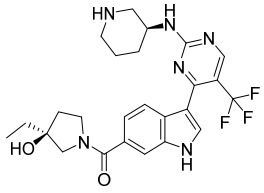

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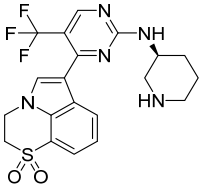

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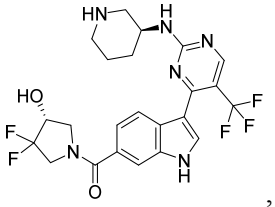

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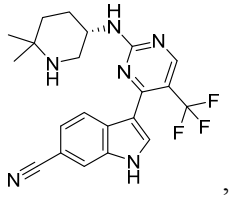

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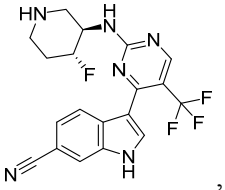

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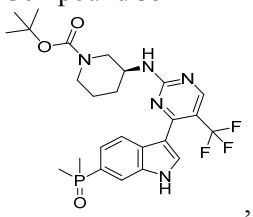

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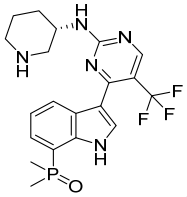

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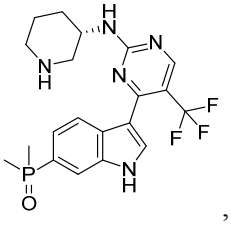

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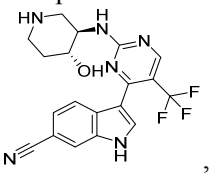

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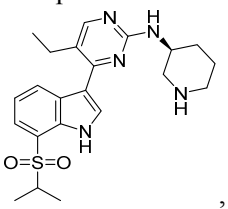

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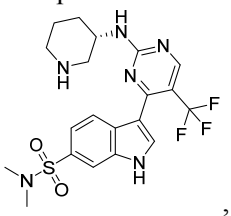

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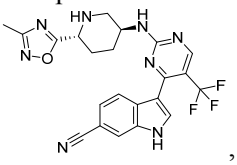

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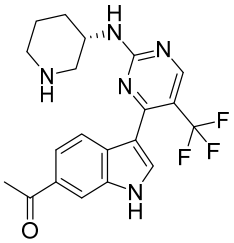

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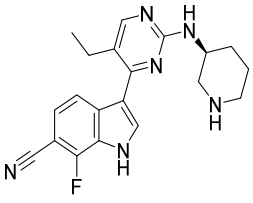

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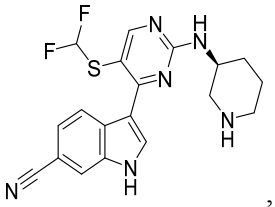

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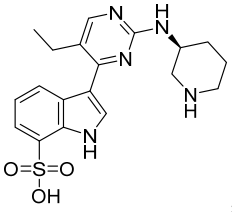

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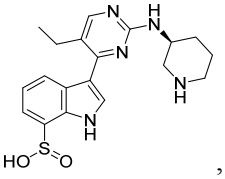

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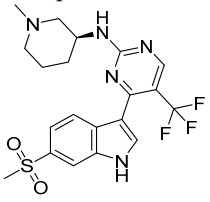

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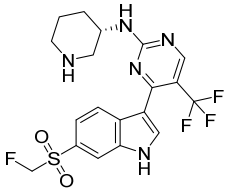

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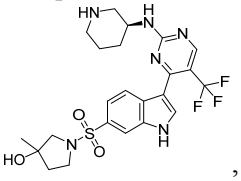

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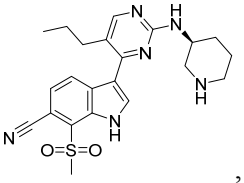

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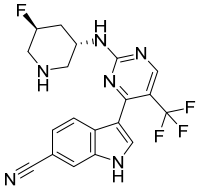

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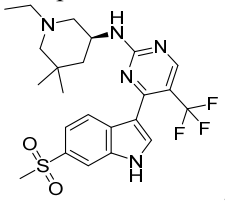

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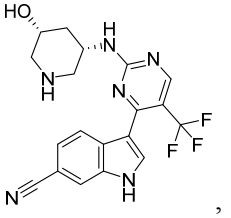

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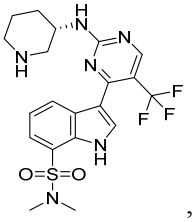

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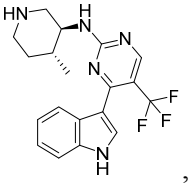

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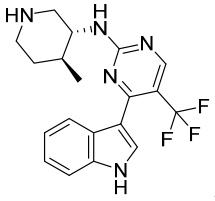

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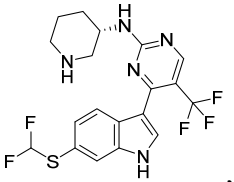
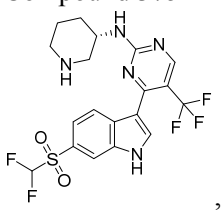
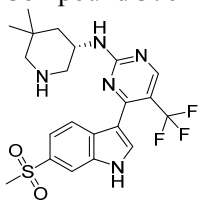
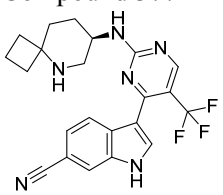
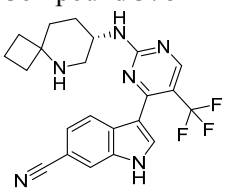
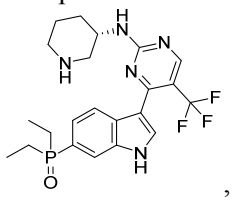


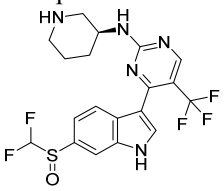
Compound 375 ,

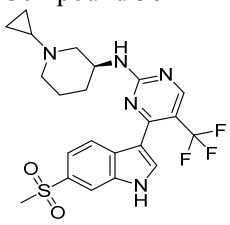
Compound 376 ,

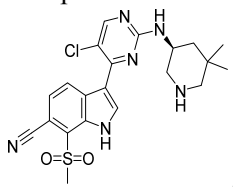
Compound 377 ,

Compound 378 ,

Compound 379 ,

Compound 380 ,

Compound 381 , or

Compound 382 .

23. A pharmaceutical composition comprising the compound, salt, stereoisomer, solvate, hydrate, tautomer, or isotopically labeled derivative of any one of claims 1-22 and a pharmaceutically acceptable excipient.

24. A compound, salt, stereoisomer, solvate, hydrate, tautomer, or isotopically labeled derivative of any one of claims 1-22 or a pharmaceutical composition of claim 23 for use in treating a subject suffering from cancer, a benign neoplasm, angiogenesis, an inflammatory disease, an autoinflammatory disease, an autoimmune disease, or an infectious disease.

25. The compound or pharmaceutical composition for use according to claim 24, wherein the subject is a mammal and/or the subject is suffering from cancer.

26. The compound or pharmaceutical composition for use according to claim 25, wherein the cancer is selected from a blood cancer, melanoma, a bone cancer, a breast cancer, a brain cancer, or a lung cancer.

27. The compound or pharmaceutical composition for use according to claim 26, wherein the cancer is a blood cancer selected from chronic lymphocytic leukemia (CLL), acute lymphoblastic leukemia (ALL), T-cell acute lymphoblastic leukemia (T-ALL), chronic myelogenous leukemia (CML), acute myelogenous leukemia (AML), lymphoma, and multiple myeloma.

28. The compound or pharmaceutical composition for use according to claim 26, wherein the cancer is a bone cancer selected from osteosarcoma and Ewing's sarcoma.

29. The compound or pharmaceutical composition for use according to claim 26, wherein the breast cancer is triple-negative breast cancer (TNBC).

30. The compound or pharmaceutical composition for use according to claim 26, wherein the brain cancer is a neuroblastoma.

31. The compound or pharmaceutical composition for use according to claim 26, wherein the lung cancer is a small cell lung cancer (SCLC).

32. Use of the compound, salt, stereoisomer, solvate, hydrate, tautomer, or isotopically labeled derivative of any one of claims 1-22 or the pharmaceutical composition of claim 23 in the manufacture of a medicament for treating a subject suffering from cancer, a benign neoplasm, angiogenesis, an inflammatory disease, an autoinflammatory disease, an autoimmune disease, or an infectious disease.

33. The use according to claim 32, wherein the subject is a mammal and/or the subject is suffering from cancer.

34. The use according to claim 32, wherein the cancer is selected from a blood cancer, melanoma, a bone cancer, a breast cancer, a brain cancer, or a lung cancer.

35. The use according to claim 34, wherein the cancer is a blood cancer selected from chronic lymphocytic leukemia (CLL), acute lymphoblastic leukemia (ALL), T-cell acute lymphoblastic leukemia (T-ALL), chronic myelogenous leukemia (CML), acute myelogenous leukemia (AML), lymphoma, and multiple myeloma.

36. The use according to claim 34, wherein the bone cancer is osteosarcoma or Ewing's sarcoma.

37. The use according to claim 34, wherein the breast cancer is a triple-negative breast cancer (TNBC).

38. The use according to claim 34, wherein the brain cancer is a neuroblastoma.

39. The use according to claim 34, wherein the lung cancer is a small cell lung cancer (SCLC).