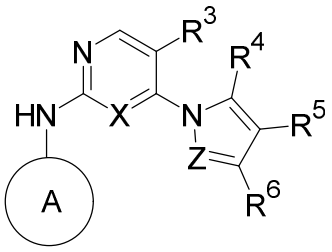
CLAIMS

1. A compound of Formula (I),



Formula (I)

wherein

X is CH or N;

Z is CH or N;

ring A is aryl, heteroaryl, cycloalkyl or heterocyclyl, or aryl-fused heterocyclyl, each of which is optionally and independently substituted with one $\mathbf{R^1}$ and one to four $\mathbf{R^2}$; wherein a carbon atom of the aryl-fused heterocyclyl is optionally substituted with one oxo, and a heteroatom of the aryl-fused heterocyclyl is optionally substituted with one or two oxo;

$\mathbf{R^1}$ is $-S(O)_2-R^{10}$, $-NH-S(O)_2-R^{10}$ or $-SF_5$;

each $\mathbf{R^2}$ is independently H, alkyl, -CN, cyanoalkyl, amino, alkylamino, dialkylamino, $-NO_2$, halo, haloalkyl, hydroxyl, hydroxyalkyl, alkoxyl, haloalkoxy, (haloalkoxy)alkyl, alkoxyalkyl, cycloalkyl or heterocyclyl; wherein the cycloalkyl or heterocyclyl is optionally substituted with one or more R^7;

$\mathbf{R^3}$ is H, halo, alkyl, haloalkyl, hydroxyl, hydroxyalkyl, alkoxyl, alkoxyalkyl, alkenyl, alkynyl, -CN or cyanoalkyl;

$\mathbf{R^4}$ and $\mathbf{R^6}$ are each independently H, alkyl, halo, haloalkyl, hydroxyl, hydroxyalkyl, alkoxyl, haloalkoxy, (haloalkoxy)alkyl, alkoxyalkyl, amino, alkylamino, dialkylamino, -alk-N-R^9R^9, -CN, cyanoalkyl, cycloalkyl or heterocyclyl; wherein the cycloalkyl or heterocyclyl is optionally substituted with one or more R^7;

$\mathbf{R^5}$ is H, alkyl, halo, haloalkyl, hydroxyl, hydroxyalkyl, alkoxyl, haloalkoxy, (haloalkoxy)alkyl, alkoxyalkyl, -CN, cyanoalkyl, amino, alkylamino, dialkylamino, -alk-N-R^9R^9, aryl, heteroaryl, cycloalkyl, cycloalkenyl, heterocyclyl, -alk-cycloalkyl, -alk-heterocyclyl, -O-cycloalkyl, or -O-

heterocyclyl, wherein the aryl, heteroaryl, cycloalkyl, cycloalkenyl, heterocyclyl, -alk-cycloalkyl, -alk-heterocyclyl, -O-cycloalkyl or -O-heterocyclyl is optionally substituted with one or more R^7;

each **R^7** is independently alkyl, halo, haloalkyl, hydroxyl, hydroxyalkyl, alkoxyl, haloalkoxy, (haloalkoxy)alkyl, alkoxyalkyl, amino, alkylamino, dialkylamino, -CN, cyanoalkyl, oxo (=O), R^8-$S(O)_2$-, R^8-O-C(=O)-, R^8-C(=O)-O-, R^8-C(=O)-, cycloalkyl or heterocyclyl; wherein the cycloalkyl or heterocyclyl is optionally further substituted with one or more R^7;

each **R^8** is independently H, alkyl or -NR^9R^9;

each **R^9** is independently H, cycloalkyl, -alk-cycloalkyl, or alkyl;

R^{10} is H, alkyl, haloalkyl, hydroxyalkyl, alkoxyalkyl, cycloalkyl, heterocyclyl or -$NR^{11}R^{11}$; wherein the cycloalkyl or heterocyclyl is optionally substituted with one or more R^7;

each **R^{11}** is independently H, alkyl, cycloalkyl, heterocyclyl, -alk-cycloalkyl, -alk-heterocyclyl, hydroxyalkyl, -alk-O-R^{12}, -alk-C(O)-OR^9 or -alk-N-R^9R^9; wherein the cycloalkyl, -alk-cycloalkyl, -alk-heterocyclyl, or heterocyclyl is optionally substituted with one or more R^7;

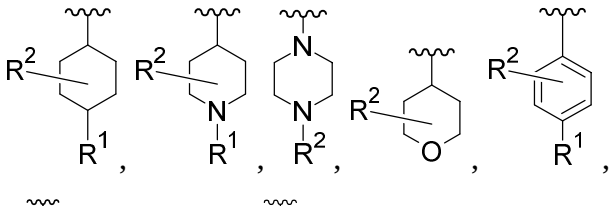
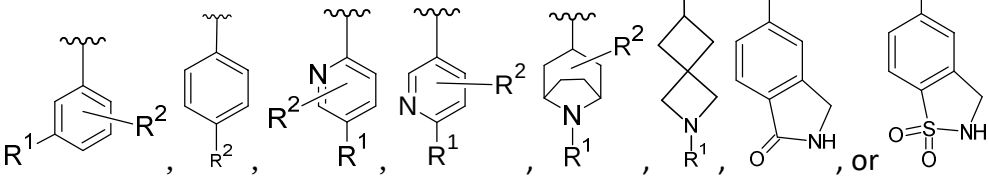
each R^{12} is independently H, alkyl, cycloalkyl, haloalkyl, or heterocyclyl;

the heteroaryl and heterocyclyl in each occurrence independently contain one or more ring-forming heteroatoms each of which is independently oxygen, sulfur or nitrogen;

the heterocyclyl in each occurrence is saturated or partially unsaturated; and

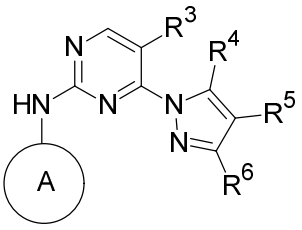
any H in each alkyl is optionally replaced with deuterium (D);

or a pharmaceutically acceptable salt, tautomer, or stereoisomer thereof.

2. The compound of claim 1, wherein ring A is , , or .

3. The compound of claim 1 or 2, wherein the hydroxyalkyl is linear or branched hydroxyalkyl; the cyanoalkyl is linear or branched cyanoalkyl; and the cycloalkyl, cycloalkenyl, or heterocyclyl for ring A is monocyclic or bicyclic.

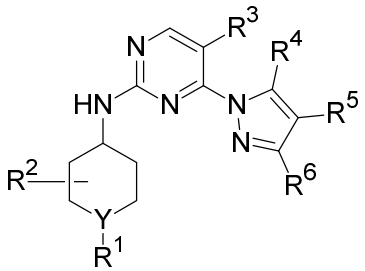
4. The compound of claim 1, wherein the compound is Formula (II):



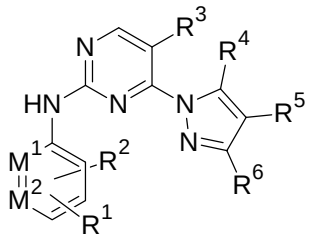
Formula (II)

wherein ring A is the same as defined in claim 1.

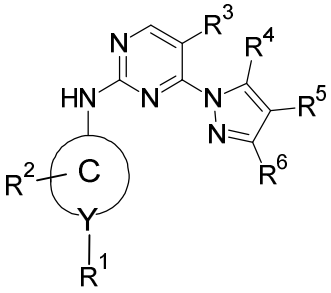
5. The compound of claim 1, wherein the compound is Formula (IIa), (IIb), (IIc), (IId) or (IIe):



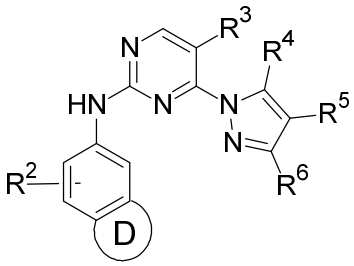
Formula (IIa)



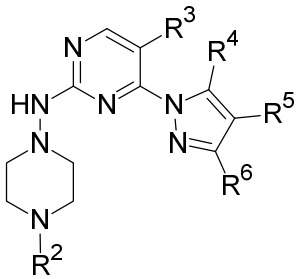
Formula (IIb)



Formula (IIc)



Formula (IId)



Formula (IIe)

wherein

ring C is a bridged or spiro bicyclic heterocycloalkyl;

ring D is a 4-8 membered cycloalkyl or heterocyclyl fused to the adjacent aryl; optionally, ring D is substituted with one or two oxo;

Y is N, O or CH; and when Y is O, R^1 is absent;

M^1 and **M^2** are each independently N or CH; and

R^1, R^2, R^3, R^4, R^5 and R^6 are the same as claim 1.

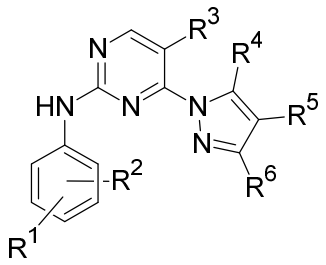
6. The compound of any one of claims 1 to 5, wherein R^1 is NHR^{11}-$S(O)_2$-, heterocyclyl-$S(O)_2$-, $C_{1\text{-}6}$alkyl-$S(O)_2$-, ($C_{1\text{-}6}$alkyl)$_2$-N-$S(O)_2$-, (deuterated $C_{1\text{-}6}$alkyl)$_2$-N-$S(O)_2$-, (deuterated $C_{1\text{-}6}$alkyl)-HN-$S(O)_2$-, $C_{1\text{-}6}$alkyl-$S(O)_2$-NH-, or -SF_5; or

wherein R^2 is H, halo, haloalkyl, hydroxyl, alkyl, cycloalkyl or heterocyclyl; of which cycloalkyl or heterocyclyl is optionally substituted with one or more R^7 ; or

wherein R^3 is H, halo, alkyl, haloalkyl, alkynyl, -CN or cyanoalkyl.

7. The compound of any one of claims 1 to 6, wherein halo is F, Cl, or Br.

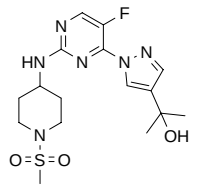
8. The compound of claim 1, wherein the compound is Formula (III)

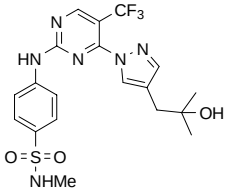


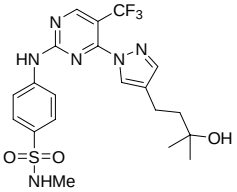
Formula (III)

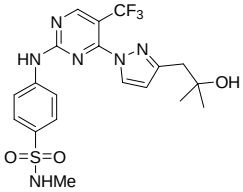
wherein R^1, R^2, R^3, R^4, R^5 and R^6 are the same as defined in claim 1.

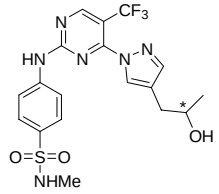
9. The compound of any one of claims 1 to 8, wherein the compound is selected from the following:

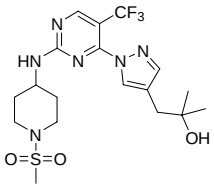


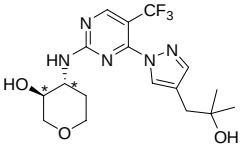


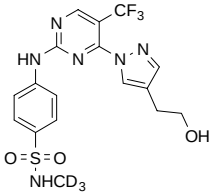


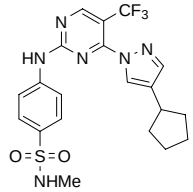


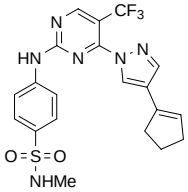


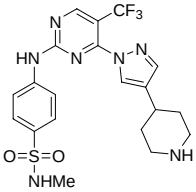


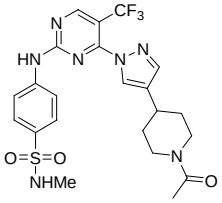


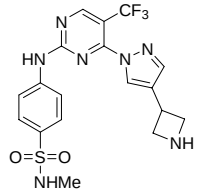


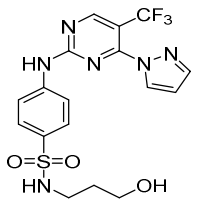
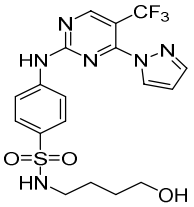
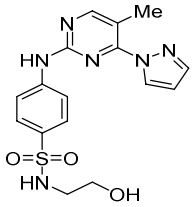
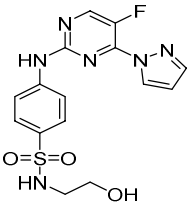
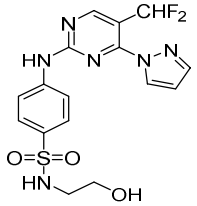
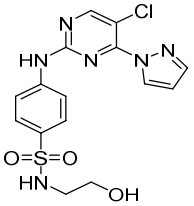
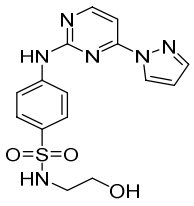
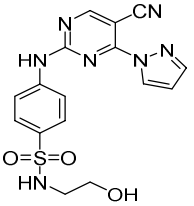
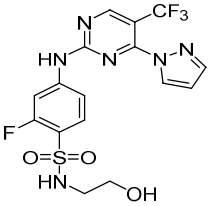
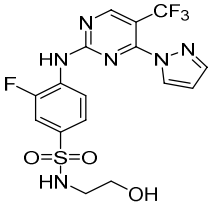
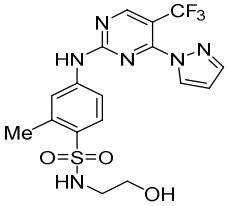
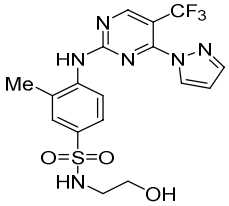
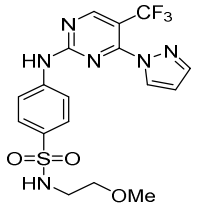
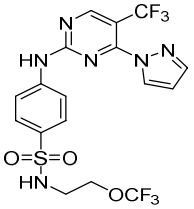
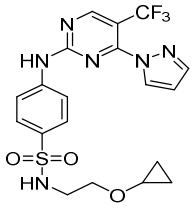
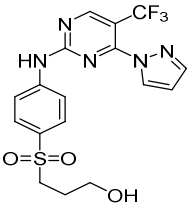
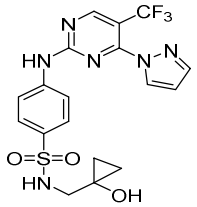
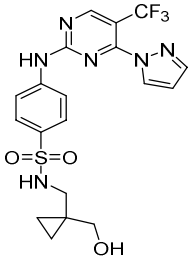
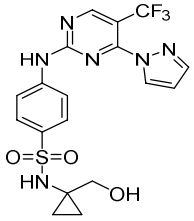
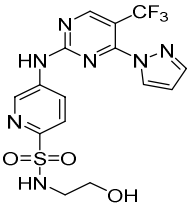
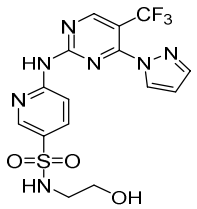
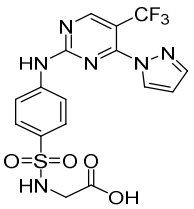
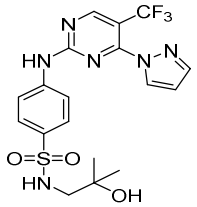


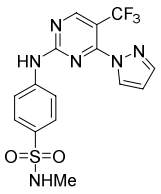
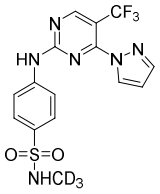
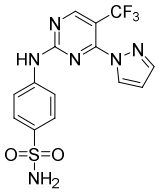
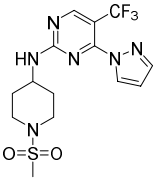
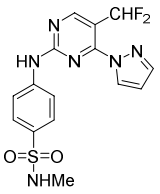
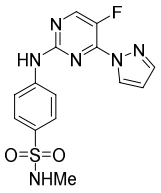
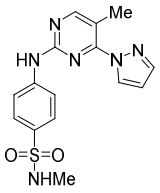
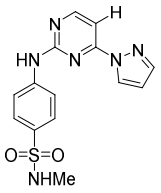
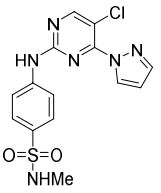
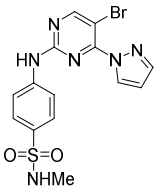
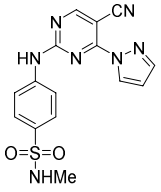
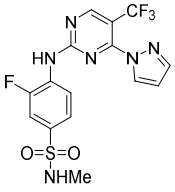
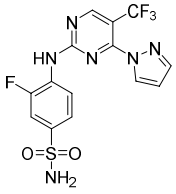
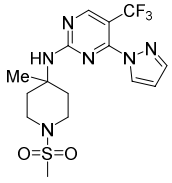
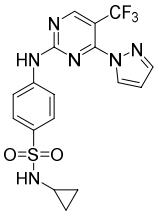
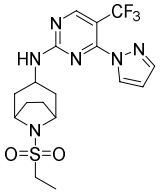
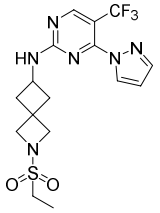
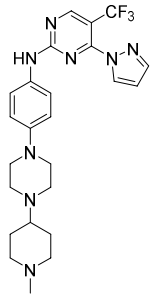
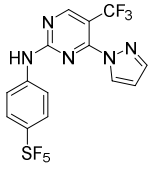
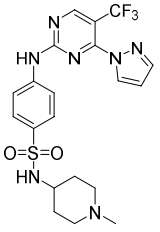
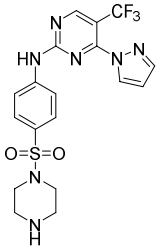
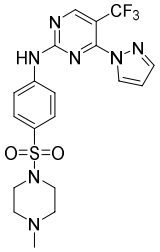
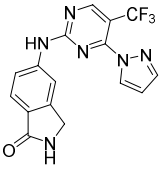
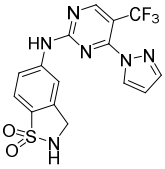
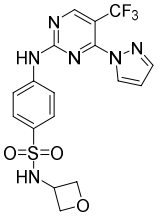
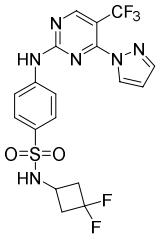
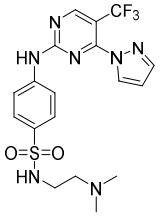
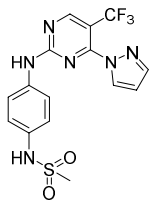
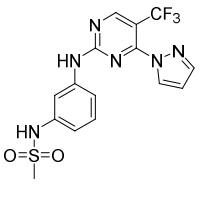
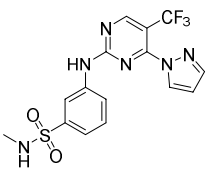


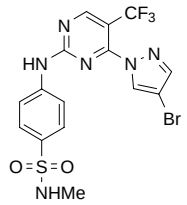


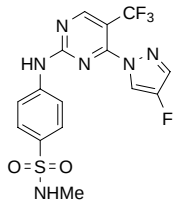


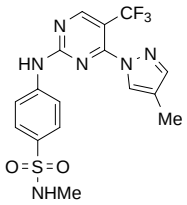


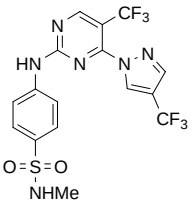
























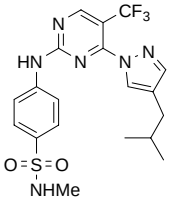































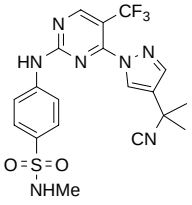


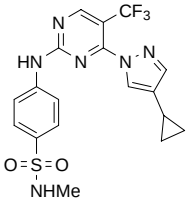


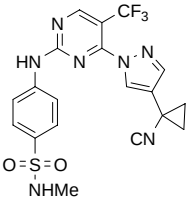


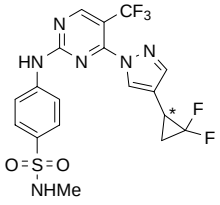


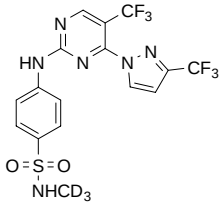


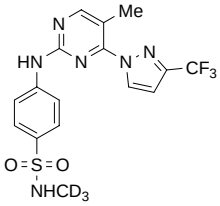


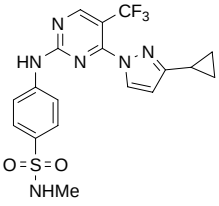


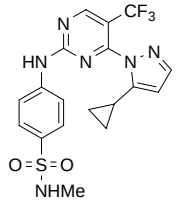


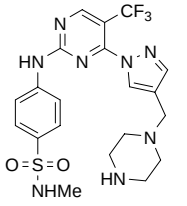


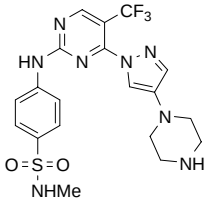


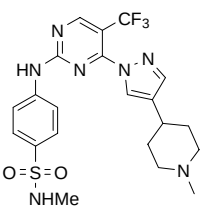


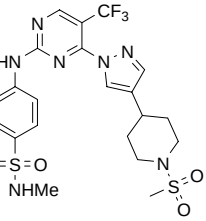


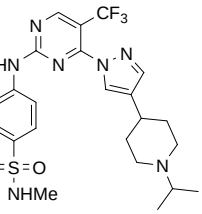


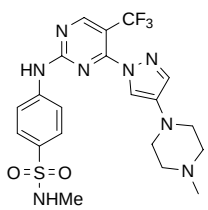


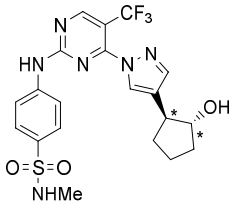


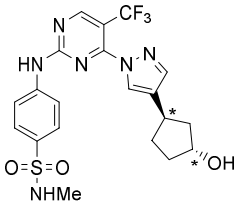


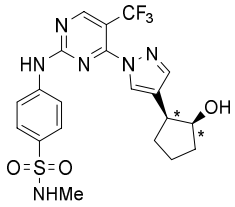


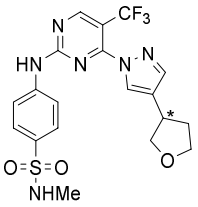


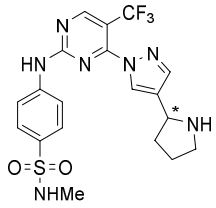


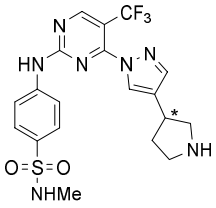


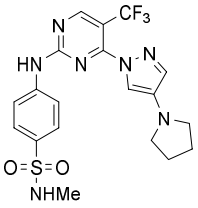


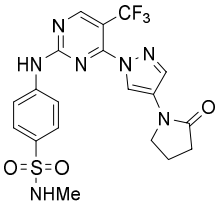


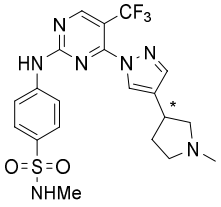


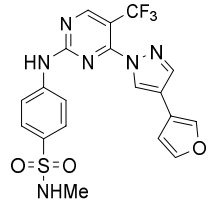


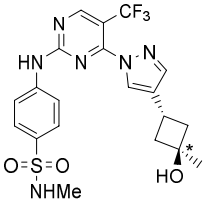


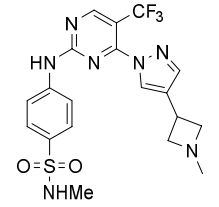


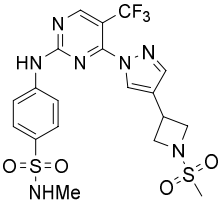


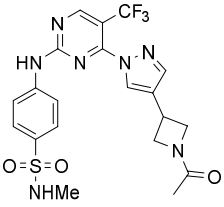


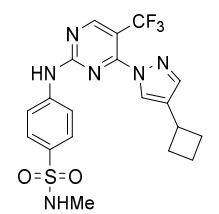


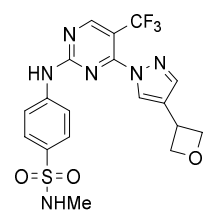


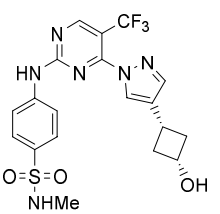


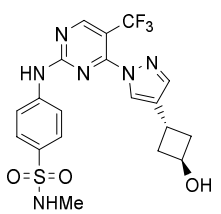


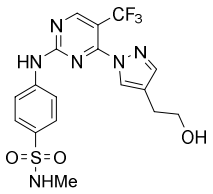
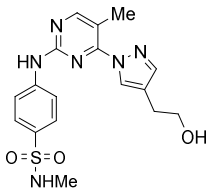
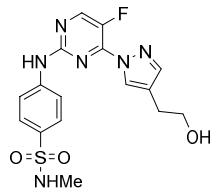
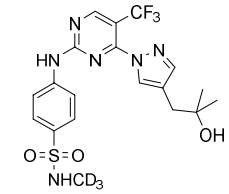
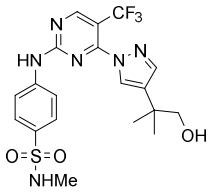
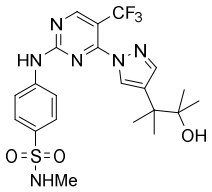
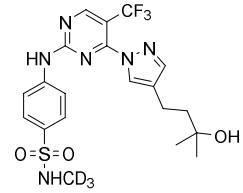
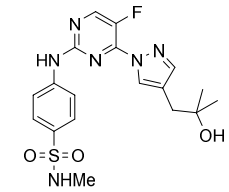
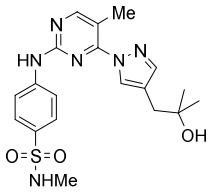
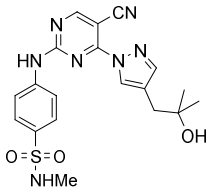
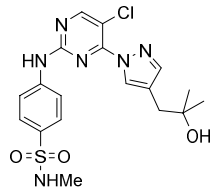
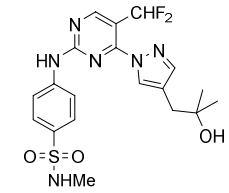
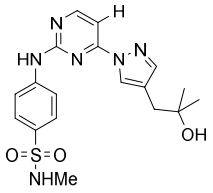
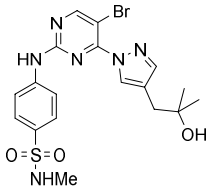
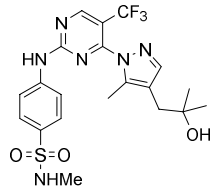
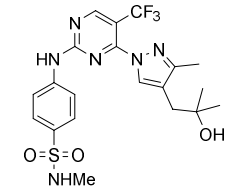
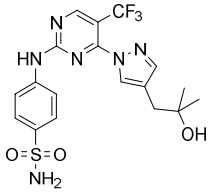
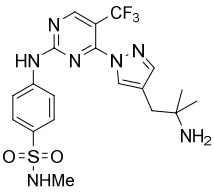
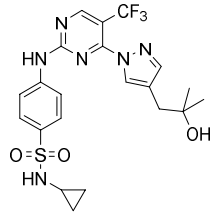
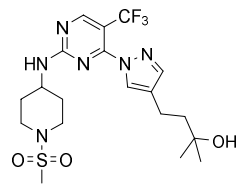


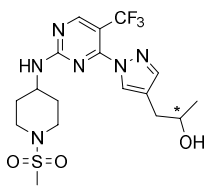


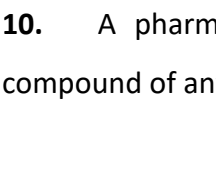










or

10. A pharmaceutical composition comprising a therapeutically effective amount of a compound of any one of claims 1-9, and a pharmaceutically acceptable carrier or excipient.

11. The pharmaceutical composition of claim 10, further comprising a second therapeutic agent.

12. The pharmaceutical composition of claim 11, wherein the second therapeutic agent is a CDK4/6 inhibitor, estrogen receptor antagonist, hormone therapy, PARP inhibitor, S phase inhibitor, M phase inhibitor or BCL-2 inhibitor.

13. Use of a compound of any one of claims 1-9 for the manufacture of a medicament for the treatment of a disorder or disease mediated by CDK2 in a subject in need thereof, comprising a therapeutically effective amount of a compound of any one of claims 1-9 to be administered.

14. The use of claim 13, wherein the disorder or disease mediated by CDK2 is cancer.

15. The use of claim 14, wherein the cancer is breast cancer, colorectal cancer, lung cancer, ovarian cancer, pancreatic cancer, melanoma, prostate cancer, glioblastoma, or sarcoma.