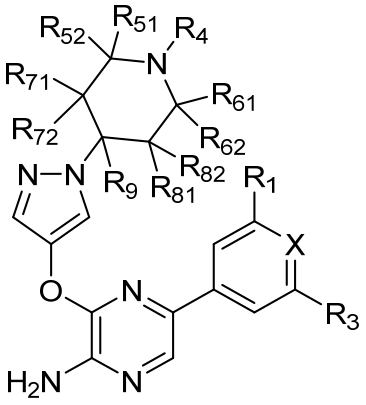
CLAIMS:

1. A compound of Formula (I)



(**I**)

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

wherein

X is N or C**R**$_2$, wherein **R**$_2$ is selected from hydrogen, -C$_{1-8}$alkyl, -C$_{2-8}$alkynyl, halogen, cycloalkyl, aryl, heterocyclyl, heteroaryl, -N**R**^{c}**R**^{d}, -O**R**^{d}, -(C**R**^{a}**R**^{b})$_n$-**R**^{d}, -(C**R**^{a}**R**^{b})$_n$-N**R**^{c}**R**^{d}, -(C**R**^{a}**R**^{b})$_n$-CON**R**^{c}**R**^{d}, -CON**R**^{c}-(C**R**^{a}**R**^{b})$_n$-**R**^{d}, -(C**R**^{a}**R**^{b})$_n$-N**R**^{c}CO**R**^{d}, -N**R**^{c}-CO-(C**R**^{a}**R**^{b})$_n$-**R**^{d}, -(C**R**^{a}**R**^{b})$_n$-SO$_2$-N**R**^{c}**R**^{d}, -(C**R**^{a}**R**^{b})$_n$-N**R**^{c}-SO$_2$-**R**^{d}, -SO$_2$-N**R**^{c}-(C**R**^{a}**R**^{b})$_n$-**R**^{d}, -(C**R**^{a}**R**^{b})$_n$-N**R**^{c}-CS-N**R**^{d}**R**^{e}, or -(C**R**^{a}**R**^{b})$_n$-N**R**^{c}-CO-N**R**^{d}**R**^{e}; each of said -C$_{1-8}$alkyl, cycloalkyl, aryl, heterocyclyl or heteroaryl is optionally substituted with at least one **R**^{f};

R$_1$ and **R**$_3$ are each independently selected from hydrogen, -C$_{1-8}$alkyl, halogen, cycloalkyl, aryl, heterocyclyl, heteroaryl, -N**R**^{c}**R**^{d}, -O**R**^{d}, -Si**R**^{a}**R**^{b}**R**^{c}, -(C**R**^{a}**R**^{b})$_n$-**R**^{d}, -(C**R**^{a}**R**^{b})$_n$-N**R**^{c}**R**^{d}, -(C**R**^{a}**R**^{b})$_n$-CON**R**^{c}**R**^{d}, -CON**R**^{c}-(C**R**^{a}**R**^{b})$_n$-**R**^{d}, -(C**R**^{a}**R**^{b})$_n$-N**R**^{c}CO**R**^{d}, -N**R**^{c}-CO-(C**R**^{a}**R**^{b})$_n$-**R**^{d}, -(C**R**^{a}**R**^{b})$_n$-SO$_2$-N**R**^{c}**R**^{d}, -(C**R**^{a}**R**^{b})$_n$-N**R**^{c}-SO$_2$-**R**^{d}, -SO$_2$-N**R**^{c}-(C**R**^{a}**R**^{b})$_n$-**R**^{d}, or -(C**R**^{a}**R**^{b})$_n$-N**R**^{c}-CO-N**R**^{d}**R**^{e}, wherein each of said -C$_{1-8}$alkyl, cycloalkyl, aryl, heterocyclyl or heteroaryl is optionally substituted with at least one **R**^{f};

R$_4$ is selected from hydrogen, -C$_{1-8}$alkyl, cycloalkyl, heterocyclyl (such as monocyclic heterocyclyl) comprising one, two or three heteroatoms independently selected from nitrogen, oxygen or sulfur as ring member(s), wherein each of said -C$_{1-8}$alkyl, cycloalkyl or heterocyclyl are optionally substituted with **R**^{f};

each **R**^{f} is independently selected from oxo, halogen, -C$_{1-8}$alkyl, hydroxy, -N**R**^{1c}**R**^{1d}, -C$_{1-8}$alkoxy, or heterocyclyl, said heterocyclyl or -C$_{1-8}$alkyl is optionally substituted with at least one **R**^{g}, wherein **R**^{1c} and **R**^{1d} are each independently hydrogen or -C$_{1-8}$alkyl;

R$_{51}$, **R**$_{52}$, **R**$_{61}$, **R**$_{62}$, **R**$_{71}$, **R**$_{72}$, **R**$_{81}$, **R**$_{82}$ and **R**$_9$ are each independently selected from hydrogen, halogen, -C$_{1-8}$alkyl, or -C$_{1-8}$alkoxy; or

(**R**$_{51}$ and **R**$_{61}$), (**R**$_{51}$ and **R**$_{62}$), (**R**$_{52}$ and **R**$_{61}$) **or** (**R**$_{52}$ and **R**$_{62}$), together with the atoms to which they are attached, form a 7- to 12-membered bridged heterocyclyl wherein the bridge contains 1-6 atoms selected from carbon, oxygen, nitrogen or sulfur;

R^a and **R**^{b} are each independently hydrogen, -C$_{1-8}$alkyl or heterocyclyl; or

R^a and **R**^{b}, together with the carbon atom to which they are attached, form a 3- to 6-membered ring comprising 0, 1 or 2 heteroatoms selected from nitrogen, oxygen or optionally oxidized sulfur as the ring member(s);

$\mathbf{R^c}$, $\mathbf{R^d}$ and $\mathbf{R^e}$ are each independently hydrogen, -C_{1-8}alkyl, aryl, CN, hydroxyl, -C_{1-8}alkoxy, cycloalkyl, heterocyclyl, heteroaryl or -$N\mathbf{R^{1c}R^{1d}}$, wherein each of said -C_{1-8}alkyl, cycloalkyl, aryl or heterocyclyl or heteroaryl is optionally substituted with at least one $\mathbf{R^g}$, wherein $\mathbf{R^{1c}}$ and $\mathbf{R^{1d}}$ are each independently hydrogen or -C_{1-8}alkyl;

each $\mathbf{R^g}$ is independently selected from oxo, hydroxy, halogen, haloalkyl, -C_{1-8}alkyl, -C_{1-8}alkoxy, cycloalkyl or heterocyclyl; and

n is each independently 0, 1, 2, 3 or 4.

2. The compound according to claim 1, wherein

X is N or $C\mathbf{R_2}$, wherein $\mathbf{R_2}$ is selected from hydrogen, -C_{1-8}alkyl, -C_{2-8}alkynyl, C_{3-7}cycloalkyl, aryl, 5- to 6-membered heteroaryl comprising one, two or three heteroatoms independently selected from nitrogen, oxygen or optionally oxidized sulfur as the ring member(s), 3- to 7-membered heterocyclyl comprising one, two or three heteroatoms independently selected from nitrogen, oxygen or optionally oxidized sulfur as the ring member(s), -$N\mathbf{R^cR^d}$, -$(C\mathbf{R^aR^b})_n$-$\mathbf{R^d}$, -$(C\mathbf{R^aR^b})_n$-$N\mathbf{R^cR^d}$, -$(C\mathbf{R^aR^b})_n$-$CON\mathbf{R^cR^d}$, -$CON\mathbf{R^c}$-$(C\mathbf{R^aR^b})_n$-$\mathbf{R^d}$, -$(C\mathbf{R^aR^b})_n$-$N\mathbf{R^c}CO\mathbf{R^d}$, -$(C\mathbf{R^aR^b})_n$-$SO_2$-$N\mathbf{R^cR^d}$, -$(C\mathbf{R^aR^b})_n$-$N\mathbf{R^c}$-CO-$N\mathbf{R^dR^e}$, -$(C\mathbf{R^aR^b})_n$-$N\mathbf{R^c}$-CS-$N\mathbf{R^dR^e}$, -$(C\mathbf{R^aR^b})_n$-$N\mathbf{R^c}$-SO_2-$\mathbf{R^d}$ or -$(C\mathbf{R^aR^b})_n$-$N\mathbf{R^c}$-CO-$N\mathbf{R^dR^e}$; each of said -C_{1-8}alkyl, C_{3-7}cycloalkyl, aryl, 3- to 7-membered heterocyclyl or 5- to 6-membered heteroaryl is optionally substituted with at least one $\mathbf{R^f}$;

$\mathbf{R_1}$ is selected from hydrogen, -C_{1-8}alkyl, halogen, C_{3-7}cycloalkyl, 5- to 6-membered heteroaryl, 3- to 7-membered heterocyclyl comprising one, two or three heteroatoms independently selected from nitrogen, oxygen or optionally oxidized sulfur as the ring member(s), -$N\mathbf{R^cR^d}$, or -$O\mathbf{R^d}$; each of said -C_{1-8}alkyl, C_{3-7}cycloalkyl, 5- to 6-membered heteroaryl, or 3- to 7-membered heterocyclyl is optionally substituted with at least one $\mathbf{R^f}$;

$\mathbf{R_3}$ is selected from hydrogen, -C_{1-8}alkyl, C_{3-7}cycloalkyl, 3- to 7-membered heterocyclyl comprising one, two or three heteroatoms independently selected from nitrogen, oxygen, silicon or optionally oxidized sulfur as the ring member(s), -$(C\mathbf{R^aR^b})_n$-$N\mathbf{R^cR^d}$, -$(C\mathbf{R^aR^b})_n$-$CON\mathbf{R^cR^d}$, -$Si\mathbf{R^aR^bR^c}$, -$(C\mathbf{R^aR^b})_n$-$N\mathbf{R^c}CO\mathbf{R^d}$, -$CON\mathbf{R^c}$-$(C\mathbf{R^aR^b})_n$-$\mathbf{R^d}$, -$(C\mathbf{R^aR^b})_n$-$SO_2$-$N\mathbf{R^cR^d}$, -$SO_2$-$N\mathbf{R^c}$-$(C\mathbf{R^aR^b})_n$-$\mathbf{R^d}$, -$(C\mathbf{R^aR^b})_n$-$N\mathbf{R^c}$-$SO_2$-$\mathbf{R^d}$, -$(C\mathbf{R^aR^b})_n$-$N\mathbf{R^c}$-CO-$N\mathbf{R^dR^e}$, or -$(C\mathbf{R^aR^b})_n$-$N\mathbf{R^cR^d}$, wherein said -$C_{1-8}$alkyl, C_{3-7}cycloalkyl, 3- to 7-membered heterocyclyl is optionally substituted with at least one $\mathbf{R^f}$;

$\mathbf{R_4}$ is selected from hydrogen, -C_{1-8}alkyl, C_{3-7}cycloalkyl, 3- to 7-membered heterocyclyl comprising one, two or three heteroatoms independently selected from nitrogen, oxygen or optionally oxidized sulfur as the ring member(s); each said -C_{1-8}alkyl, C_{3-7}cycloalkyl or 3- to 7-membered heterocyclyl are optionally substituted with $\mathbf{R^f}$;

each $\mathbf{R^f}$ is independently selected from oxo, halogen, -C_{1-8}alkyl, hydroxy, -$N\mathbf{R^{1c}R^{1d}}$, -C_{1-8}alkoxy, 3- to 7-membered heterocyclyl; said heterocyclyl or -C_{1-8}alkyl is optionally substituted with at least one $\mathbf{R^g}$, wherein $\mathbf{R^{1c}}$ and $\mathbf{R^{1d}}$ are each independently hydrogen or -C_{1-8}alkyl;

$\mathbf{R_{51}}$, $\mathbf{R_{52}}$, $\mathbf{R_{61}}$, $\mathbf{R_{62}}$, $\mathbf{R_{71}}$, $\mathbf{R_{72}}$, $\mathbf{R_{81}}$ and $\mathbf{R_{82}}$ are each independently selected from hydrogen, halogen, -C_{1-8}alkyl, or -C_{1-8}alkoxy; or

(R_{51} and R_{61}), (R_{51} and R_{62}), (R_{52} and R_{61}) **or** (R_{52} and R_{62}), together with the atoms to which they are attached, form a 7- to 12-membered bridged heterocyclyl wherein the bridge contains 1-6 atoms selected from carbon, oxygen, nitrogen or sulfur;

R^a and R^b are each independently hydrogen, -C_{1-8}alkyl or heterocyclyl; or

R^a and R^b, together with the carbon atom to which they are attached, form a 3- to 6-membered ring comprising 0, 1 or 2 heteroatoms selected from nitrogen, oxygen or optionally oxidized sulfur as the ring member(s);

R^c, R^d and R^e are each independently hydrogen, -C_{1-8}alkyl, 5-to 6 membered heteroaryl, aryl, CN, hydroxyl, -C_{1-8}alkoxy, C_{3-7}cycloalkyl, 3- to 7-membered heterocyclyl comprising one, two or three heteroatoms independently selected from nitrogen, oxygen or optionally oxidized sulfur, or -N$R^{1c}R^{1d}$; each said -C_{1-8}alkyl, 5-to 6 membered heteroaryl, C_{3-7}cycloalkyl, aryl or 3- to 7-membered heterocyclyl is optionally substituted with at least one R^g; wherein R^{1c} and R^{1d} are each independently hydrogen or -C_{1-8}alkyl; each R^g is independently selected from oxo, hydroxy, halogen, -C_{1-8}alkyl, -C_{1-8}alkoxy, or 3- to 7-membered heterocyclyl; and

n is each independently 0, 1, 2, 3 or 4.

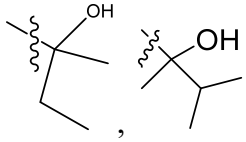
3. The compound according to claims 1 or 2, wherein

R_1 is selected from halogen, -NR^cR^d, or -OR^c, -C_{1-4}alkyl, C_{3-6}cycloalkyl, 4- to 6-membered C-linked heterocyclyl comprising one to three heteroatoms selected from nitrogen, oxygen, silicon or sulfur, 4- to 6-membered Si-linked heterocyclyl comprising 0, 1 or 2 additional heteroatoms selected from nitrogen, oxygen, or sulfur, 5-,6- or 7-membered N-linked heterocyclyl comprising 0, 1 or 2 additional heteroatoms selected from nitrogen, oxygen or optionally oxidized sulfur as ring member(s) or 5- to 6-membered heteroaryl;

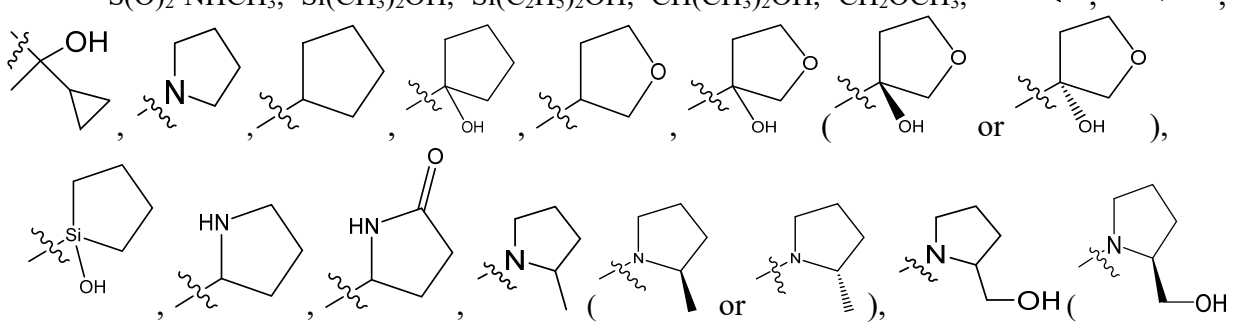
wherein each of said -C_{1-4}alkyl, C_{3-6}cycloalkyl, 4- to 6-membered C-linked heterocyclyl, 4- to 6-membered Si-linked heterocyclyl or 5-,6- or 7-membered N-linked heterocyclyl or 5- to 6-membered heteroaryl is optionally substituted with at least one substituent selected from halogen, hydroxy, oxo, -NH(C_{1-4}alkyl) or -C_{1-4}alkyl; R^c and R^d are each independently hydrogen or -C_{1-4}alkyl.

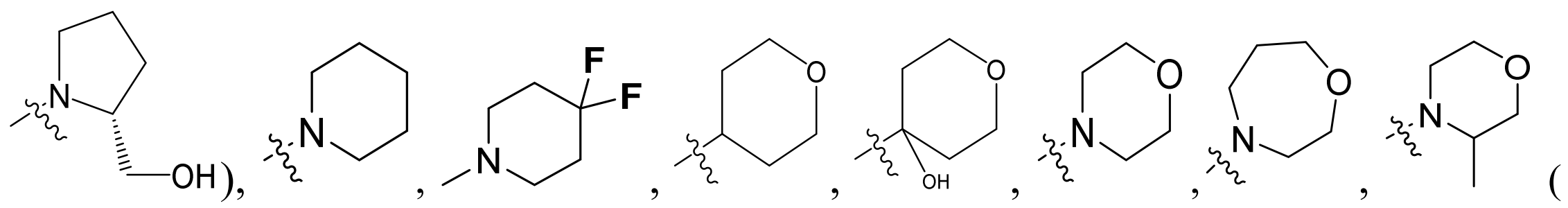
4. The compound according to any one of claims 1-3, wherein

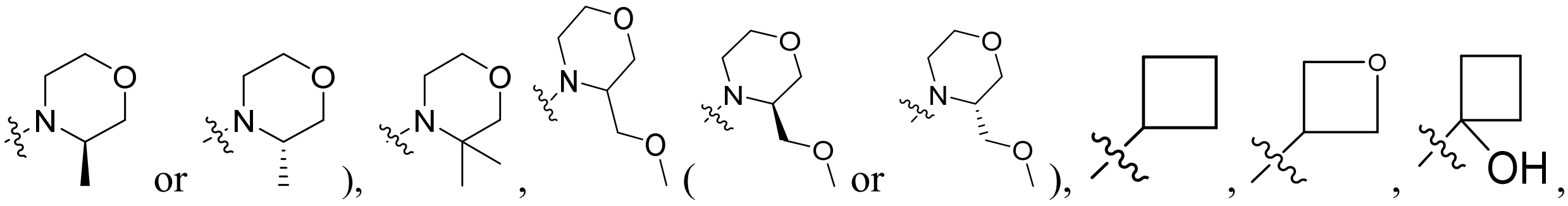
R_1 is selected from hydrogen, methyl, *tert*-butyl, ethyl, n-propyl, iso-propyl, cyclopropyl, 2-methylpropyl, butyl, pentyl, hexyl, chloro, fluoro, methoxy, -CHF_2, -$NHCH_3$, -$N(C_2H_5)_2$, -$OCH(CH_3)_2$,

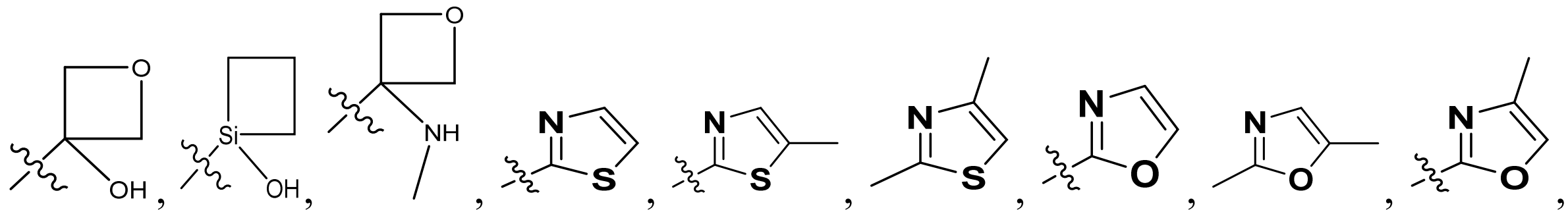


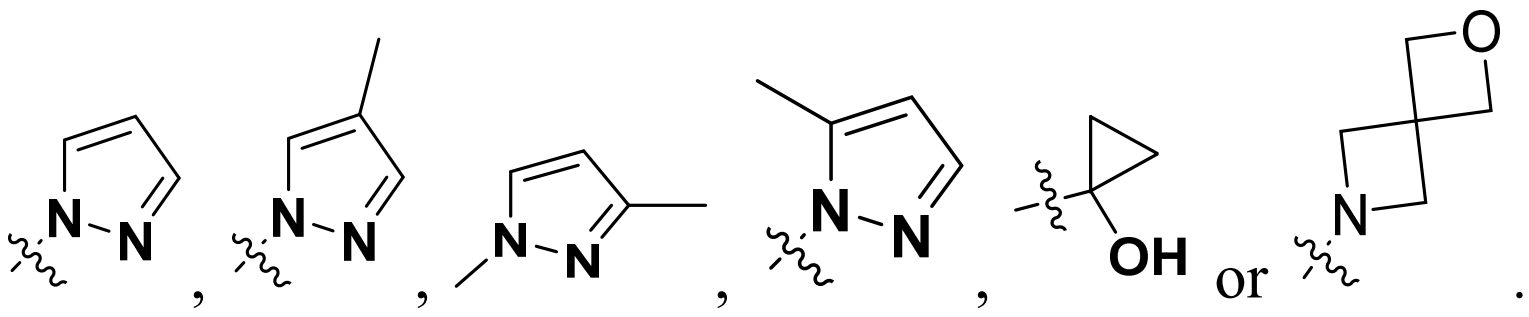
-$S(O)_2$-$NHCH_3$, -$Si(CH_3)_2OH$, -$Si(C_2H_5)_2OH$, -$CH(CH_3)_2OH$, -CH_2OCH_3,



or 







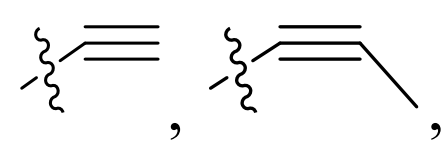
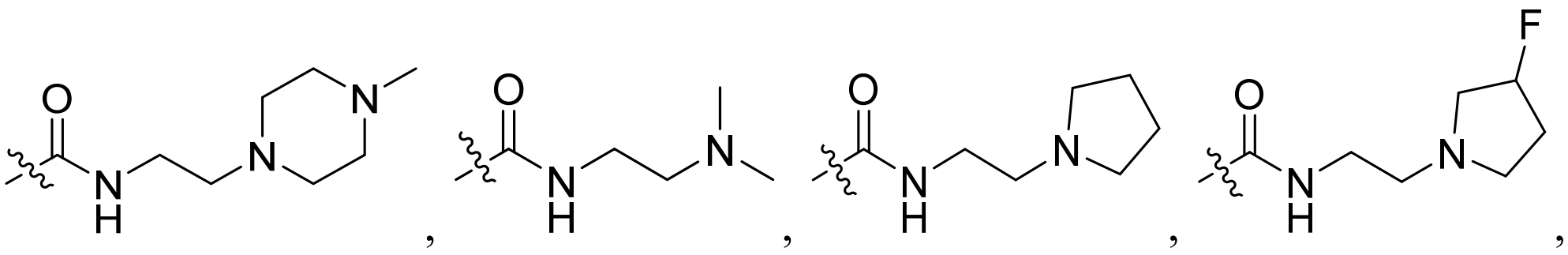
5. The compound according to any one of claims 1-4, wherein

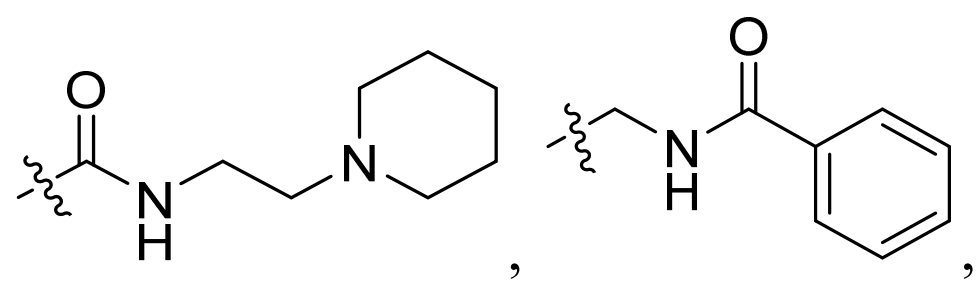
X is -C**R$_2$**, wherein R$_2$ is selected from hydrogen, -C$_{1-4}$alkyl, aryl, 5- to 6- membered heteroaryl comprising one, two or three heteroatoms independently selected from nitrogen, oxygen or optionally oxidized sulfur, 3- to 7-membered heterocyclyl comprising one, two or three heteroatoms independently selected from nitrogen, oxygen or optionally oxidized sulfur, -(CH$_2$)$_n$-CONH**R^d**, -CONH-(CH$_2$)$_n$-**R^d**, -CONH-**R^d**, -(CH$_2$)$_n$-NH**R^d**, -(CH$_2$)$_n$-NHCO**R^d**, -(CH$_2$)$_n$-**R^d**, -SO$_2$-NH-(CH$_2$)$_n$-**R^d**, -(CH$_2$)$_n$-SO$_2$-NH**R^d**, -(CH$_2$)$_n$-NH-CO-N**R^{d}R^e**, -(CH$_2$)$_n$-NH-CS-N**R^{d}R^e**, or -(CH$_2$)$_n$-NH-SO$_2$-**R^d**; wherein each of said aryl, 5- to 6-membered heteroaryl or 3- to 7-membered heterocyclyl is optionally substituted with at least one selected from -C$_{1-4}$alkyl or oxo; and n is 1 or 2;

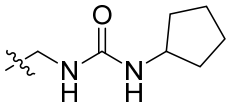
R^d and **R^e** each is independently selected from hydrogen, hydroxy, -C$_{1-4}$alkyl, phenyl, -C$_{1-4}$alkoxy, C$_{3-6}$ cycloalkyl, aryl, 5- to 6-membered heterocyclyl, 5- to 6-membered heteroaryl or -N**R^{1c}R^{1d}**, wherein each of said -C$_{1-4}$alkyl, C$_{3-6}$ cycloalkyl, aryl 5- to 6-membered heteroaryl or 5- to 6-membered heterocyclyl is optionally substituted with at least one halogen, CF$_3$, -C$_{1-4}$alkyl or oxo;

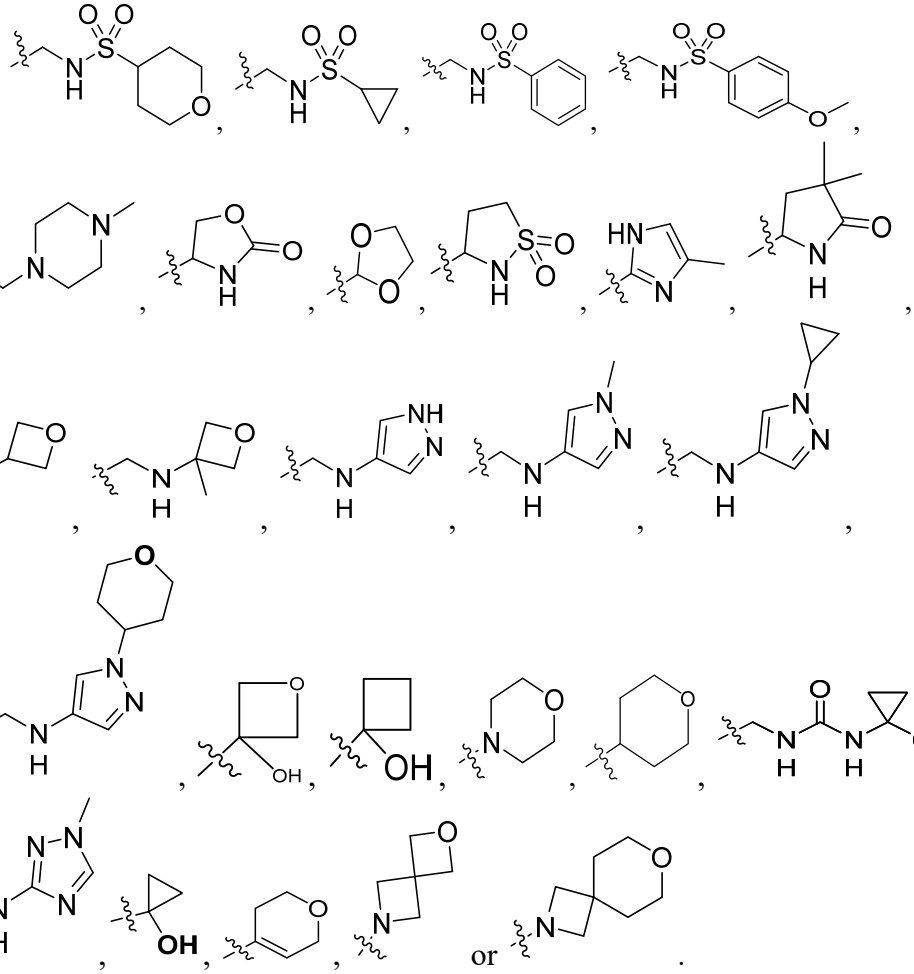
R^{1c} and **R^{1d}** are each independently hydrogen or -C$_{1-4}$alkyl.

6. The compound according to claim 5, wherein

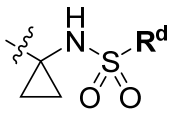
R$_2$ is selected from hydrogen, hydroxyl, methyl, halogen,  , -CONHCH$_3$, -CONHOCH$_3$, 

 , -SO$_2$NHCH$_3$, -CH$_2$NHCONHCH$_3$, -CH$_2$NHCSNHCH$_3$, -



$CH_2NHCOCH_3$, $-CH_2NHSO_2CH_3$, $-CH_2NHCONHC_2H_5$, , $-C_2H_4NHSO_2CH_3$, $-CH_2SO_2NHCH_3$, $-CH_2NHCH_2CF_3$, $-CH_2NHCONHCH_2CF_3$, $-CH_2NHCONHC(CH_3)_3$, $-CH_2NHCOCN(CH_3)_2$, 

7. The compound according to any one of claims 1 to 6, wherein

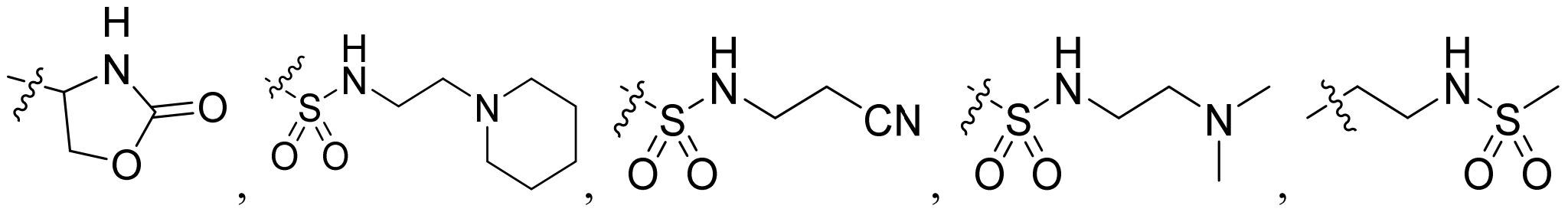
R_3 is selected from hydrogen, $-C_{1-4}$alkyl, C_{3-6}cycloalkyl, 4- to 6-membered heterocyclyl comprising one to three heteroatoms selected from nitrogen, oxygen, silicon or sulfur, $-(CH_2)_n$-CONH**R^d**, -CONH-$(CH_2)_n$-**R^d**, -CONH-**R^d**, $-(CH_2)_n$-NHCO**R^d**, $-SO_2$-NH-$(CH_2)_n$-**R^d**, $-(CH_2)_n-SO_2$-NH**R^d**, $-(CH_2)_n$-NH-CO-N**R^dR^e**, $-(CH_2)_n$-NH-SO_2-**R^d**, -Si**R^aR^{b}R^c**,  or 5- to 6-membered heteroaryl, wherein said $-C_{1-4}$alkyl , C_{3-6}cycloalkyl, 4- to 6-membered heterocyclyl or 5- to 6-membered heteroaryl is optionally substituted with $-C_{1-4}$alkyl, halogen, oxo or hydroxy;

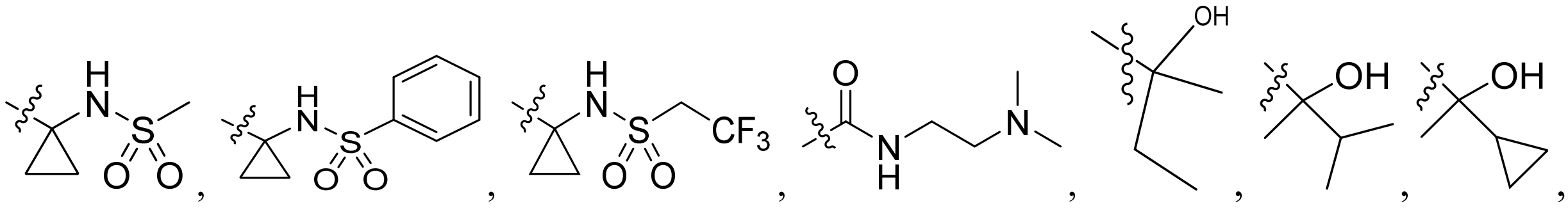
n is 0, 1 or 2;

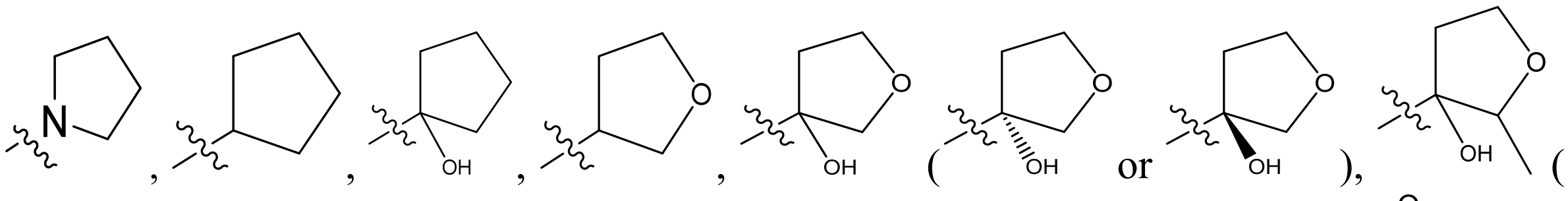
R^d and **R^e** each is independently selected from hydrogen, $-C_{1-4}$alkyl, phenyl, $-C_{1-4}$alkoxy, CN, C_{3-6}cycloalkyl, 5- to 6- membered heterocyclyl, or -N**$R^{1c}R^{1d}$**, wherein each said $-C_{1-4}$alkyl, C_{3-6}cycloalkyl, aryl or 5- to 6- membered heterocyclyl is optionally substituted with at least one of $-C_{1-4}$alkyl, halogen or oxo; and **R^{1c}** and **R^{1d}** are each independently hydrogen or $-C_{1-4}$alkyl.

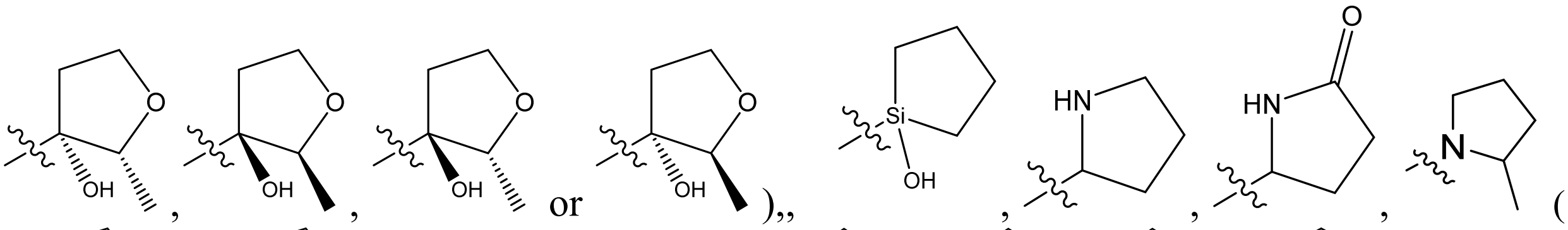
8. The compound according to Claim 7, wherein

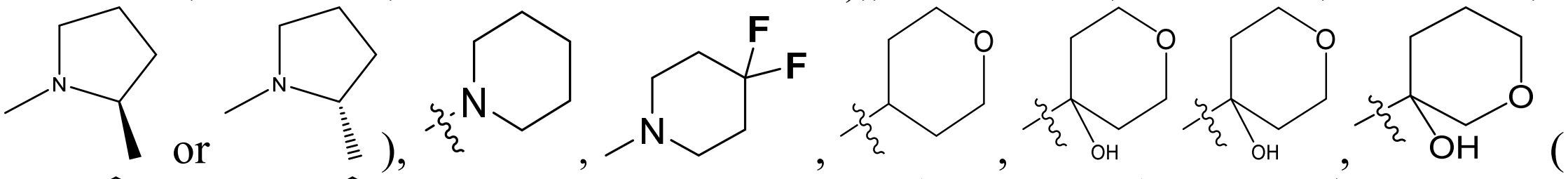
R_3 is selected from methyl, ethyl, propyl, cyclopropyl , $CH(OH)CH_3$, $-C(OH)(CH_3)_2$, $-SO_2NHCH_3$, $-SO_2NH_2$, $-SO_2NHC_2H_5$, $-CH(OH)CF_3$, $-C(OH)(CF_3)_2$, $-C(OH)(CH_3)_2$, $Si(CH_3)_2OH$, $-Si(C_2H_5)_2OH$, $-CH_2NHCH_3$,

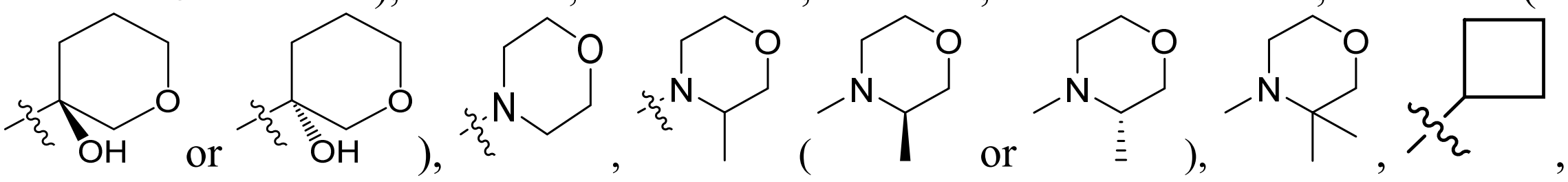


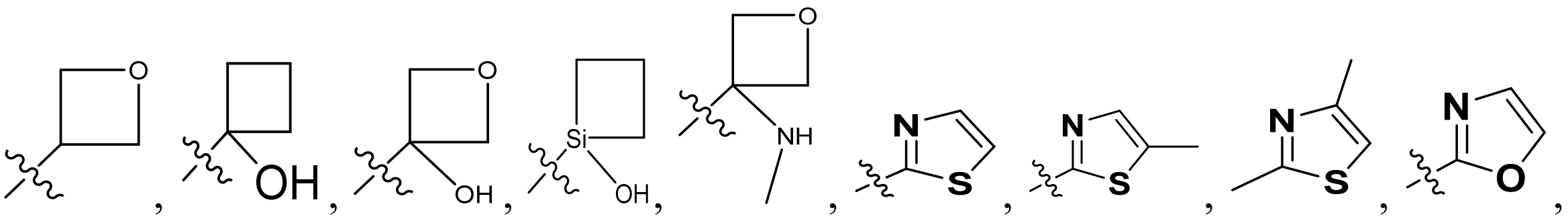


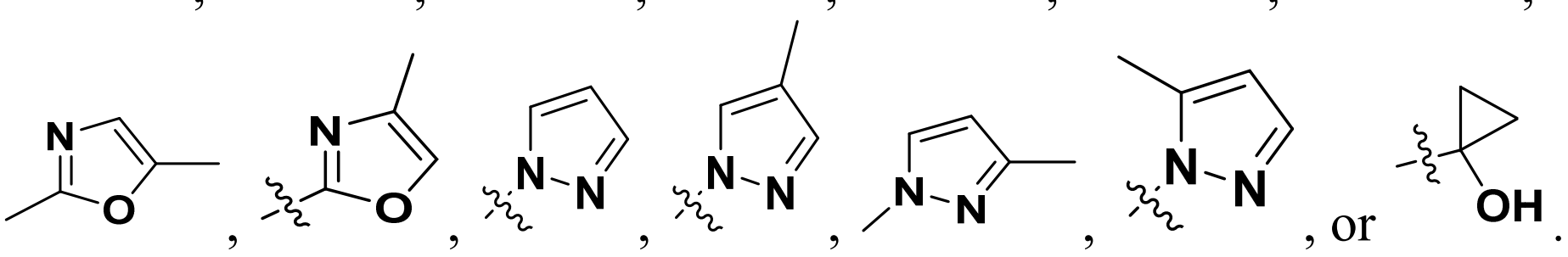








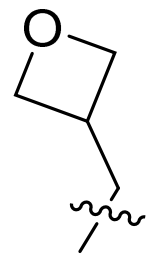




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9. The compound according to any one of claims 1 to 8, wherein **R_4** is selected from C_{3-6}cycloalkyl, or $-C_{1-4}$alkyl optionally substituted with 4- to 6-membered monocyclic heterocyclyl.

10. The compound according to any one of claims 1 to 9, wherein

R_4 is selected from methyl, ethyl, isopropyl, cyclopropyl, or  (oxetan-3-ylmethyl).

11. The compound according to any one of claims 1 to 10, wherein

R_{51}, **R_{52}**, **R_{61}**, and **R_{62}** are hydrogen.

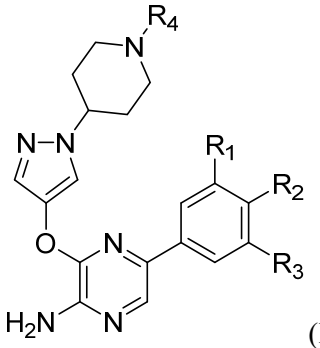
12. The compound according to any one of claims 1 to 11, wherein

R_{51} and **R_{61},** together with the atoms to which they are attached, form an 8-membered bridged heterocyclyl wherein the bridge contains two carbon atoms (i.e., -CH_2-CH_2-); and **R_{52}** and **R_{62}** are hydrogen.

13. The compound according to any one of claims 1 to 12, wherein

R_{71}, **R_{72}**, **R_{81}** and **R_{82}** and R_9 are hydrogen**.**

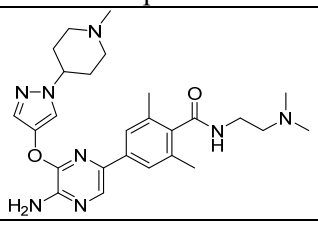
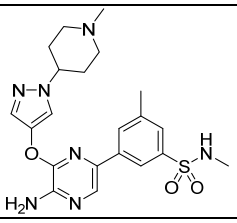
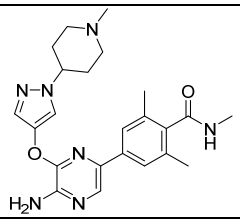
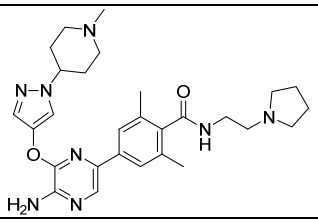
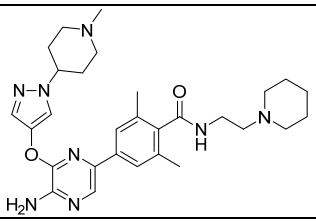
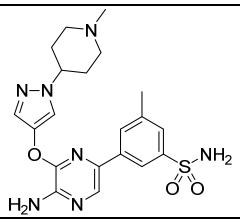
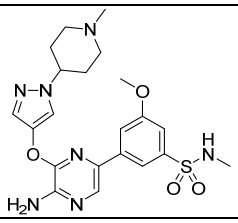
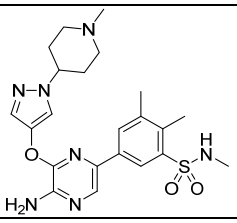
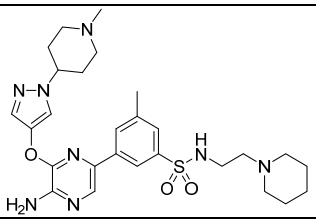
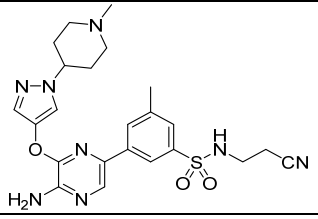
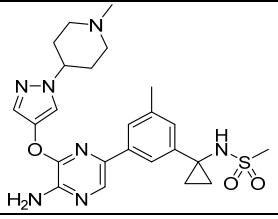
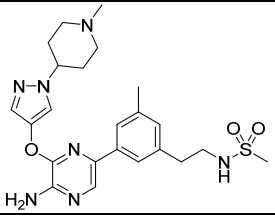
14. The compound according to any one of claims 1 to 13, which is Formula (II),

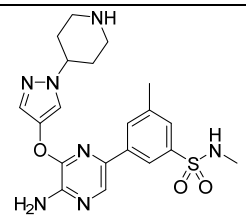
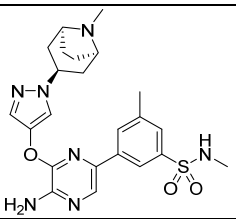
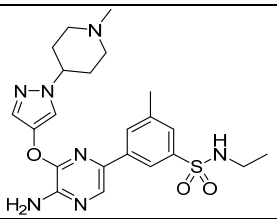
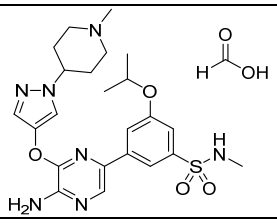
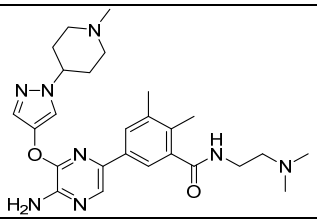
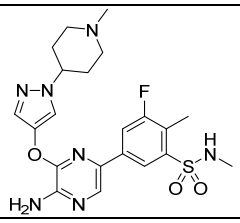
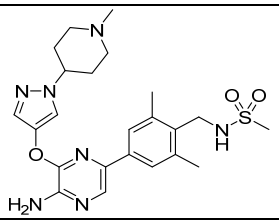
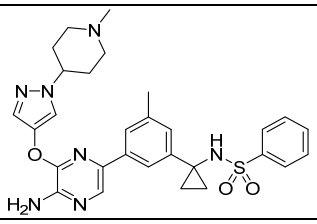
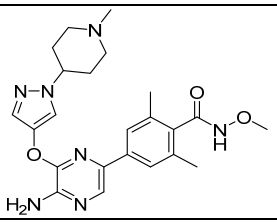
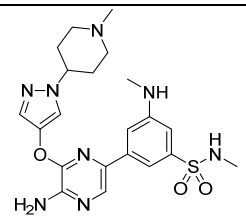
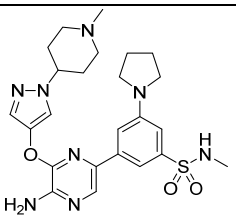
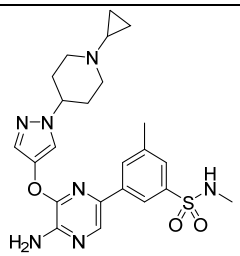
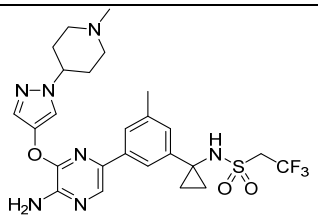
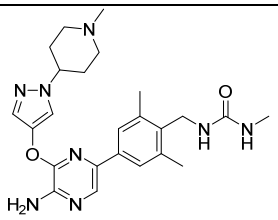
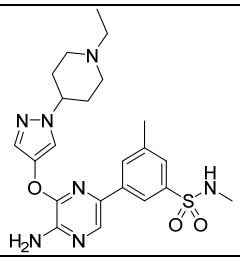
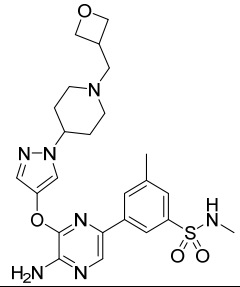
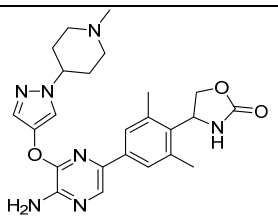
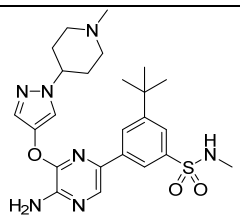


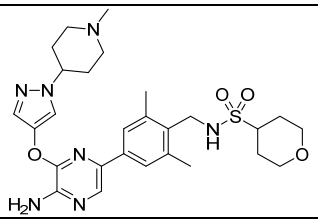
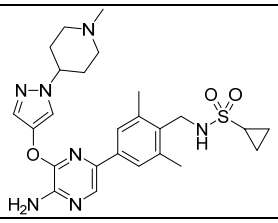
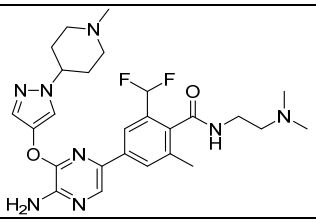
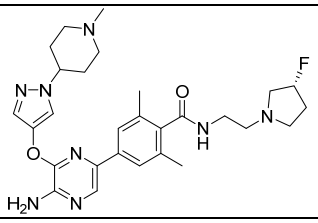
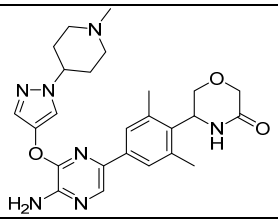
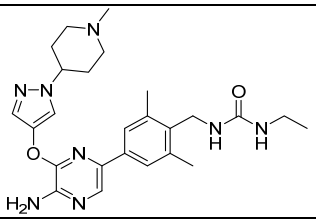
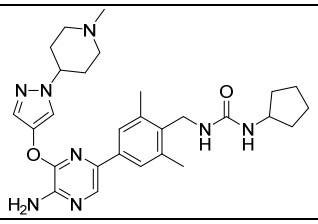
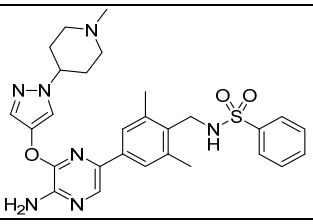
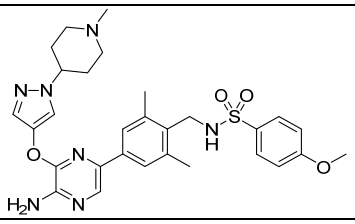
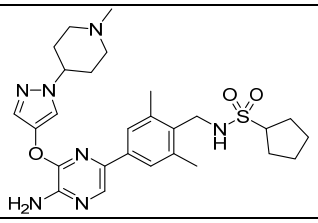
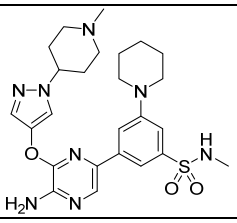
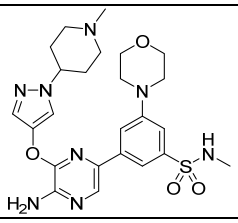
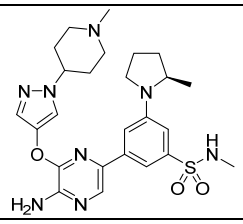
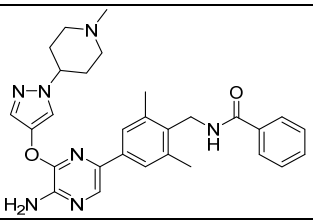
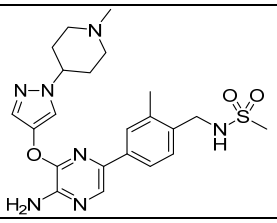
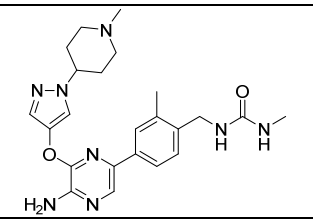
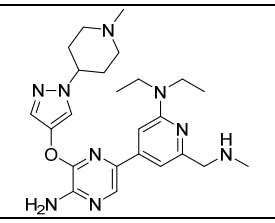
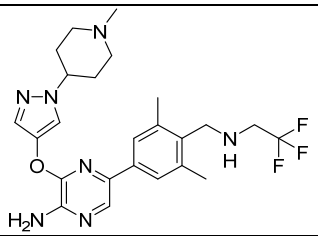
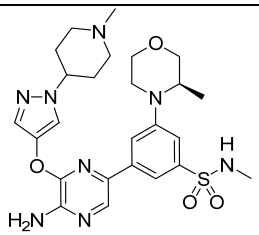
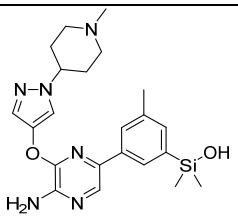
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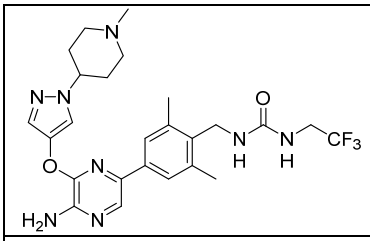
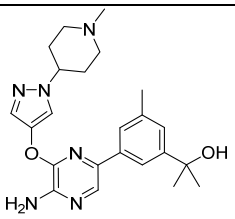
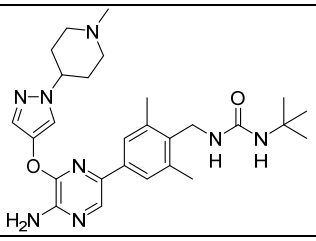
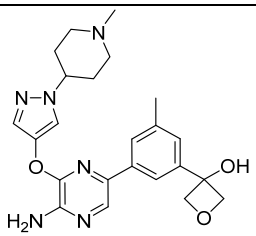
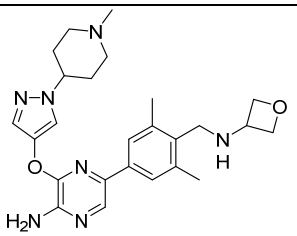
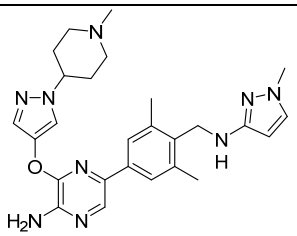
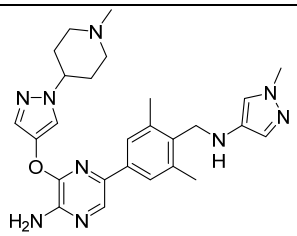
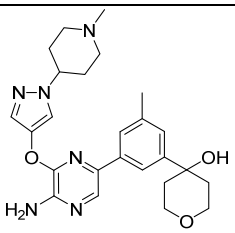
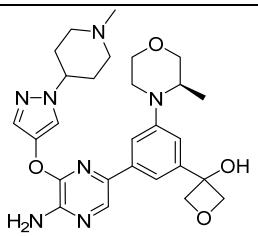
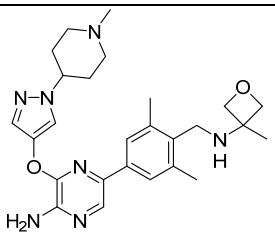
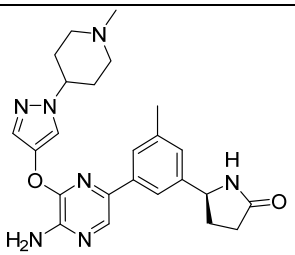
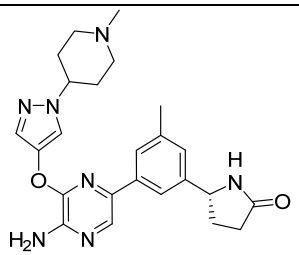
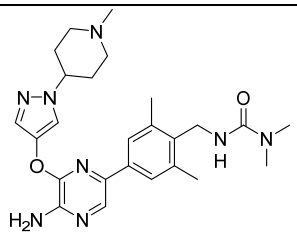
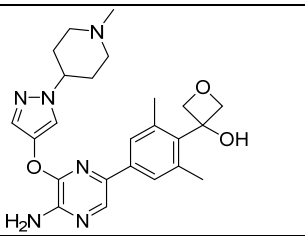
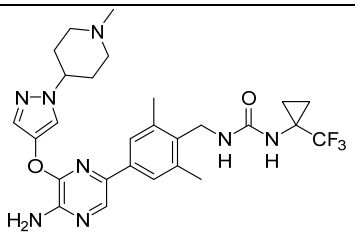
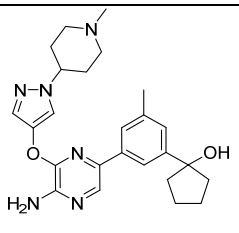
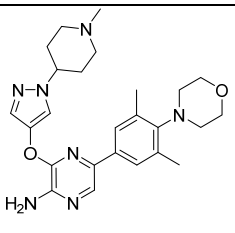
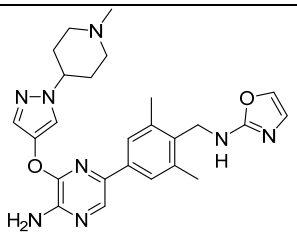
wherein R_1, R_2, R_3 and R_4 are defined as in claim 1.

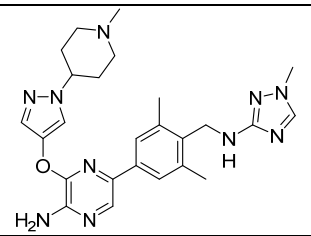
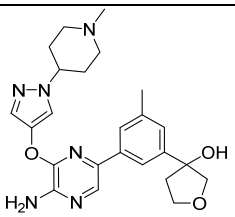
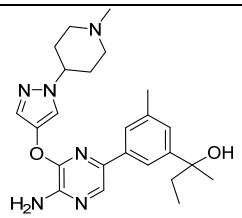
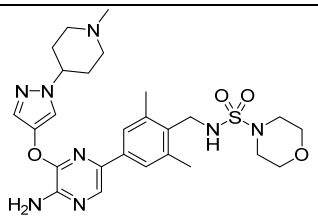
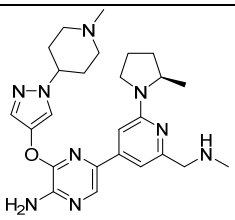
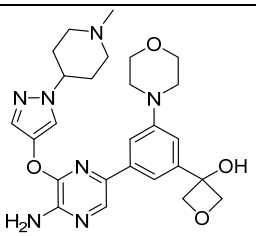
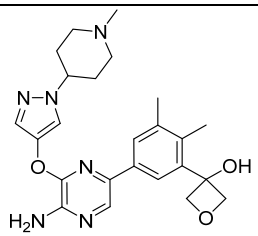
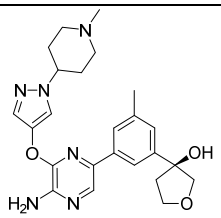
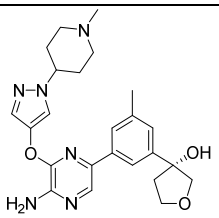
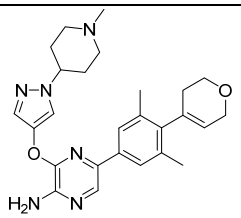
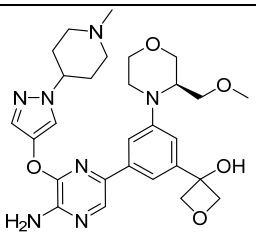
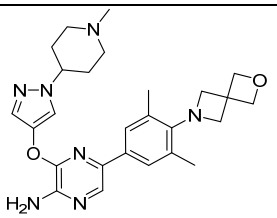
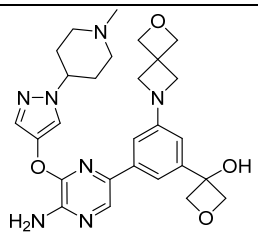
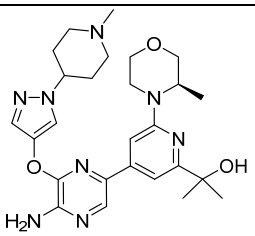
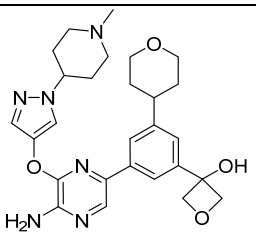
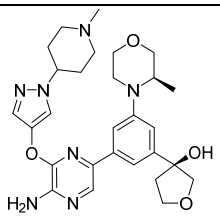
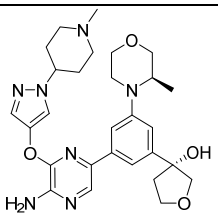
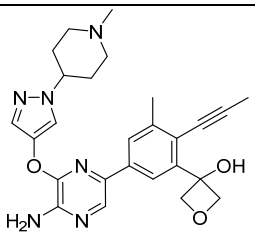
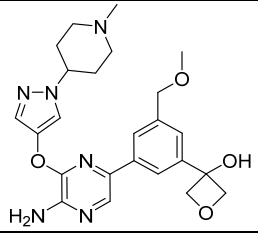
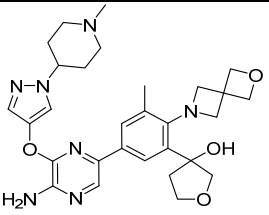
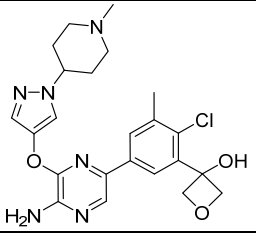
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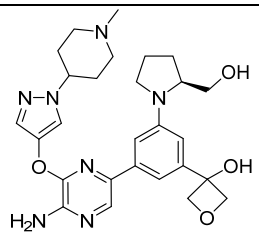
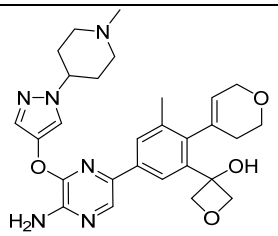
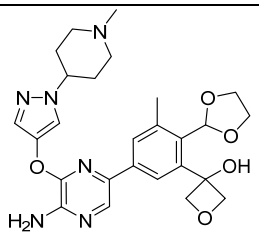
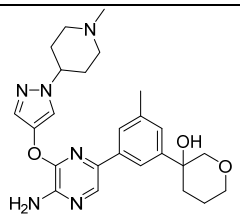
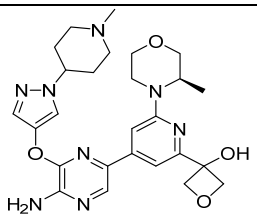
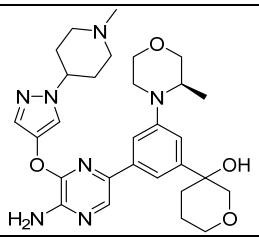
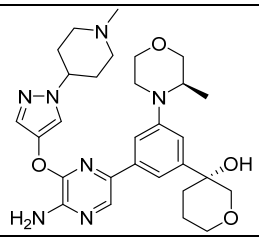
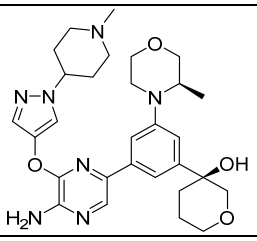
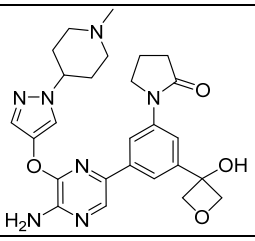
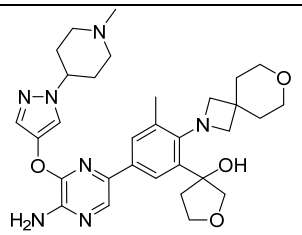
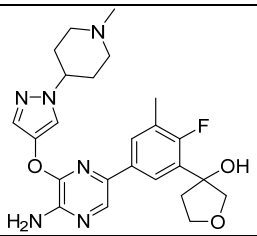
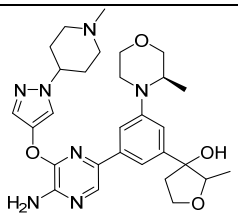
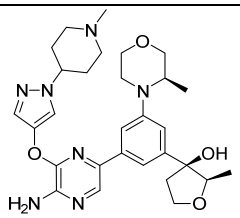
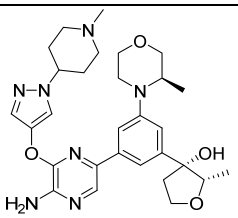
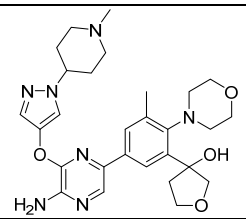
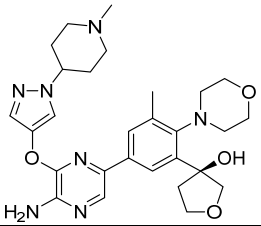
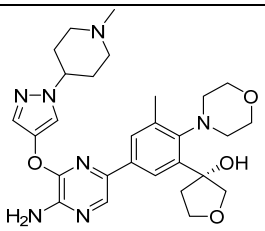
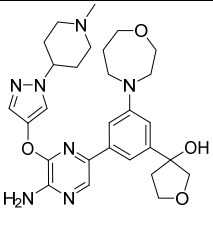
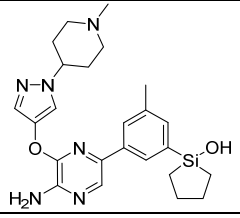
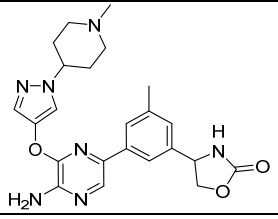
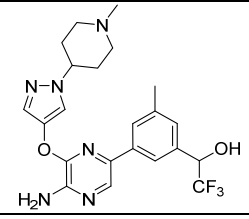
		
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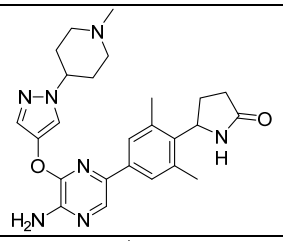
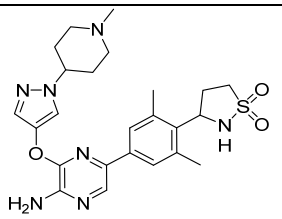
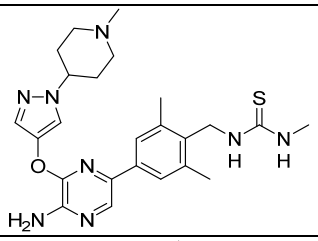
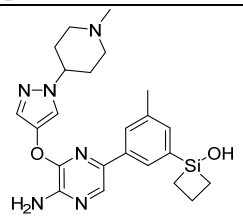
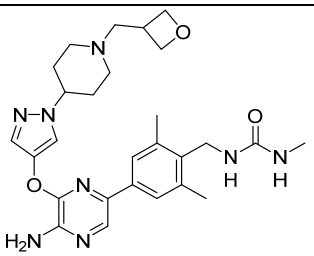
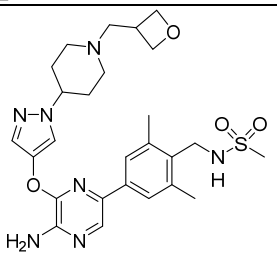
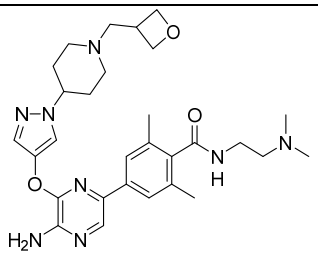
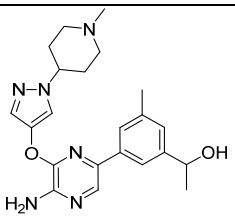
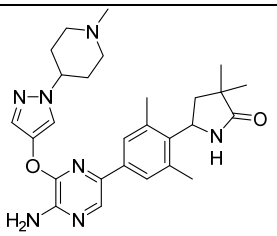
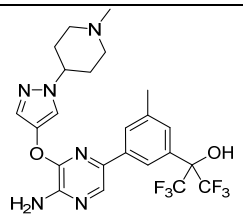
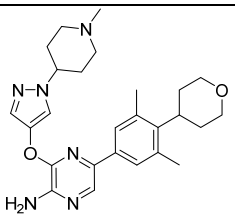
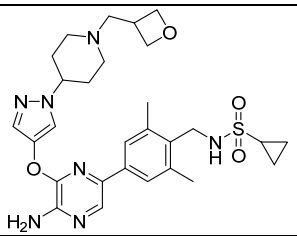
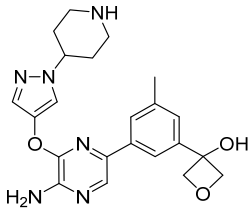
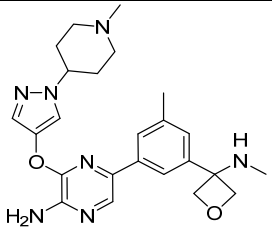
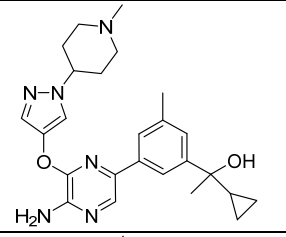
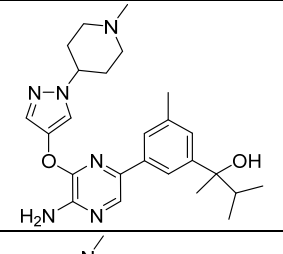
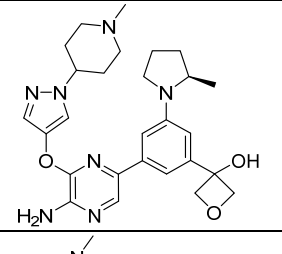
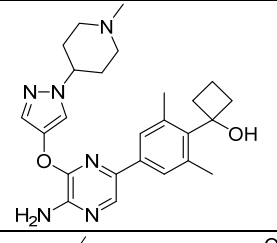
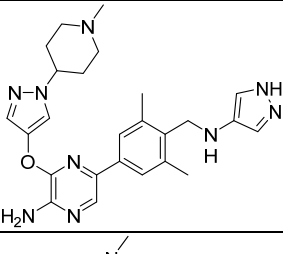
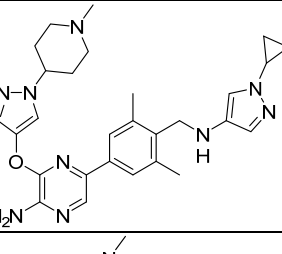
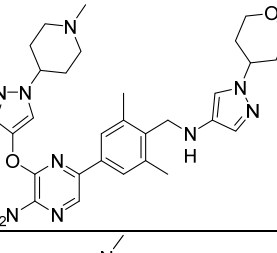
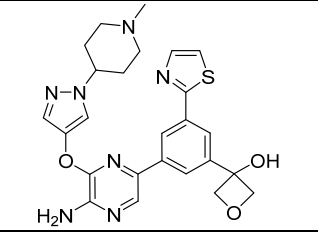
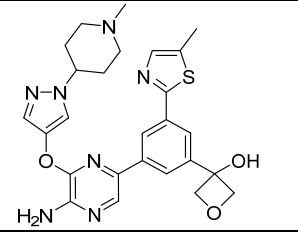
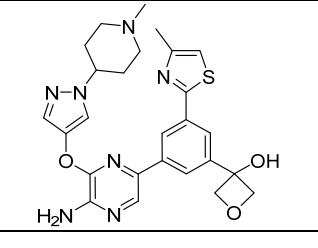
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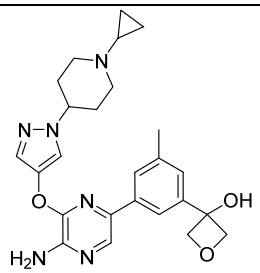
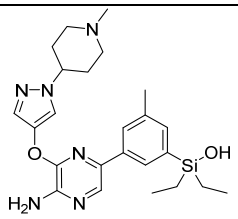
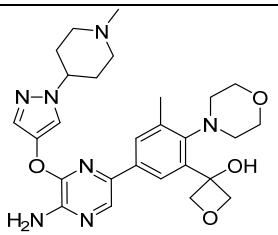
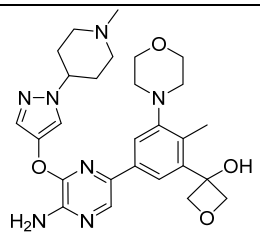
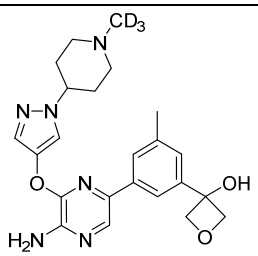
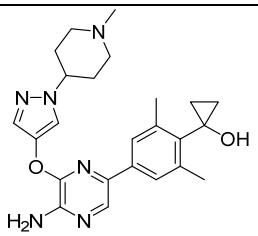
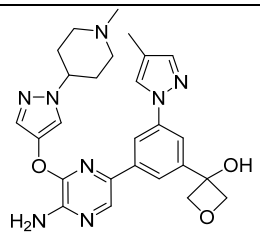
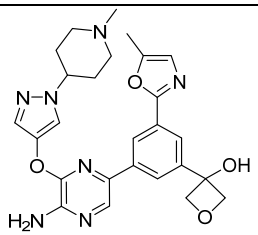
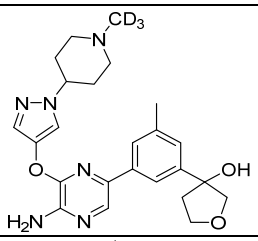
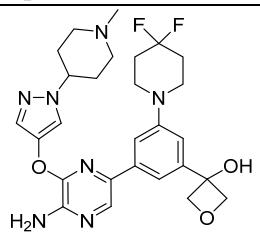
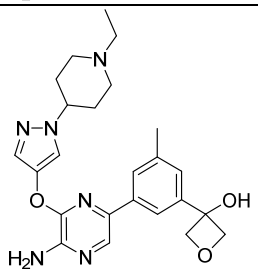
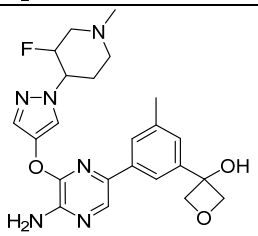
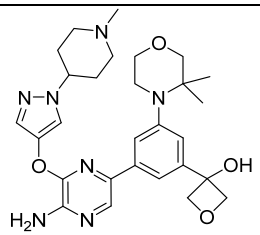
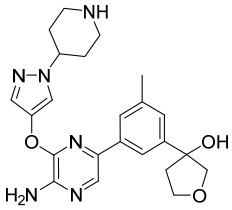
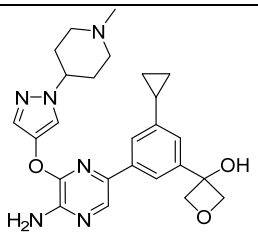
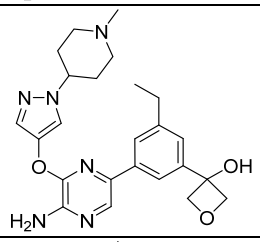
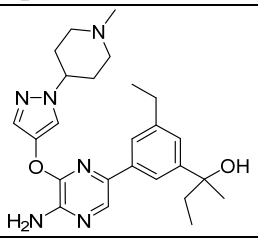
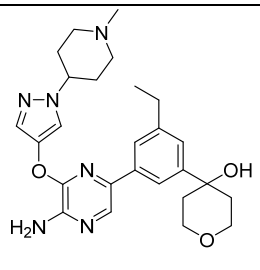
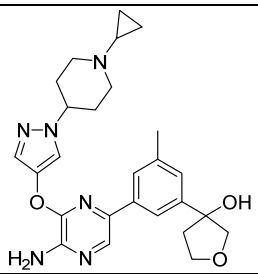
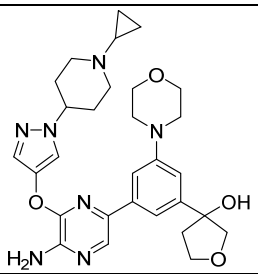
		
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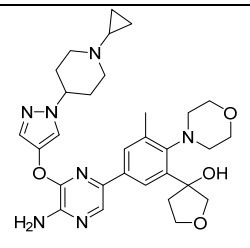
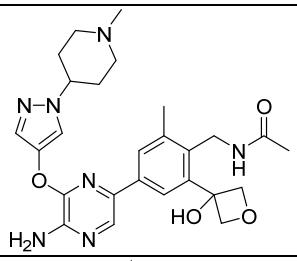
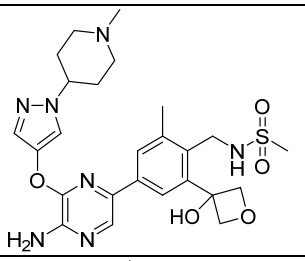
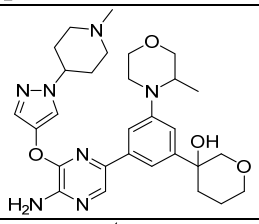
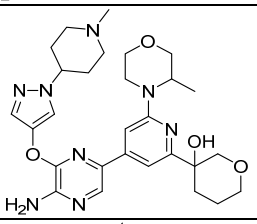
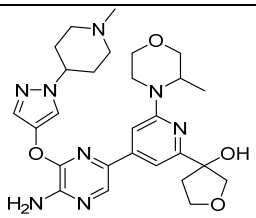
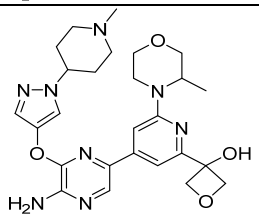
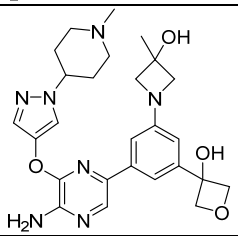
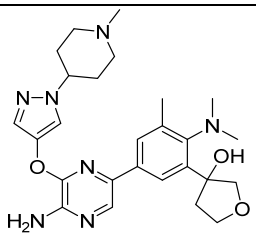
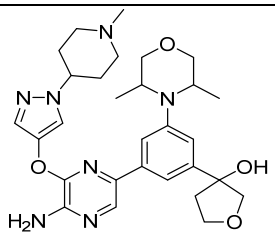
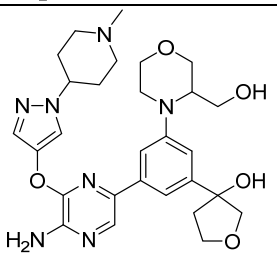
		
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A71	B2	A72
		
A73	A74A	A74B
		
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A80A	A80B	A81
		

A82	A83	A84
		
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A88	B4	A89
		
A90A & A90B		A91
		
A92	A93	A94
		
A95A & A95B		A96
		
A97A & A97B		A98
		

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

16. A pharmaceutical composition comprising the compound of any of claims 1-15 or a stereoisomer thereof, or a pharmaceutically acceptable salt thereof and a pharmaceutically acceptable excipient.