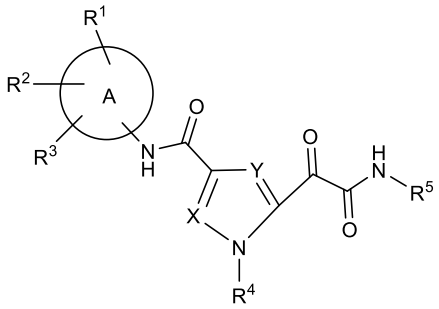
What is claimed

1. A compound of Formula I, a stereoisomer, a tautomer, a geometric isomer, a solvate, ~~an active metabolite,~~ a hydrate, ~~a prodrug~~ or a pharmaceutically acceptable salt thereof,



I

wherein,

X and Y each independently represent CR^7, and said R^7 is independently selected from the group consisting of hydrogen, C_{3-4} cycloalkyl, -CN, fluoro, chloro, bromo and C_{1-3} alkyl, wherein said C_{1-3} alkyl is optionally substituted with one or more ~~groups selected from the group consisting of~~ fluoro~~, chloro, bromo, C_{1-6} alkoxy, -OH, $-NH_2$ and -CN~~;

ring A is selected from the group consisting of phenyl and 5- to 10-membered heteroaryl;

R^1, R^2 and R^3 are each independently selected from the group consisting of hydrogen, fluoro, chloro, bromo, $-CHF_2$, $-CH_2F$, $-CF_3$, -CN, C_{1-3} alkyl, and ~~$-NH_2$,~~ C_{3-4} cycloalkyl~~, $-NHR^a$ and $-NR^bR^c$, wherein R^a, R^b and R^c are each independently selected from the group consisting of $-C(O)C_{1-6}$ alkyl, C_{1-6} alkyl, $-S(O)_2C_{1-6}$ alkyl, 5- to 10-membered heteroaryl, C_{6-10} aryl, C_{3-6} cycloalkyl and 3- to 6-membered heterocycloalkyl~~;

R^4 is selected from the group consisting of hydrogen, C_{1-3} alkyl and C_{3-4} cycloalkyl;

R^5 is selected from the group consisting of C_{1-6} alkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, 3- to 7-membered cycloalkyl and 3- to 7-membered heterocycloalkyl, wherein said C_{1-6} alkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, 3- to 7-membered cycloalkyl and 3- to 7-membered heterocycloalkyl are optionally substituted with the group(s) selected from the group consisting of halo, 3- to 4-membered cycloalkyl, 3- to 4-membered heterocycloalkyl, $-OR^8$, oxo, -CN, $-C(O)OR^8$, $-SO_2R^8$, $-C(O)N(R^8)_2$, and C_{1-3} alkyl, wherein C_{1-3} alkyl is optionally substituted with one or more groups selected from the group consisting of fluoro, -CN and -OH; and

each R^8 is independently selected from the group consisting of hydrogen and C_{1-3} alkyl.

~~2. The compound of Formula I, a stereoisomer, a tautomer, a geometric isomer, a solvate, an active metabolite, a hydrate, a prodrug or a pharmaceutically acceptable salt thereof according to claim 1, wherein:~~

~~R^a is selected from the group consisting of $-C(O)C_{1-3}$ alkyl, C_{1-3} alkyl, $-S(O)_2C_{1-3}$ alkyl, 5- to 6-membered heteroaryl, C_{6-10} aryl, C_{3-6} cycloalkyl, and 3- to 6-membered heterocycloalkyl;~~

~~alternatively, R^a is selected from the group consisting of $-C(O)C_{1-3}$ alkyl, C_{1-3} alkyl, and $-S(O)_2C_{1-3}$ alkyl; and~~

~~alternatively, R^a is selected from the group consisting of $-C(O)CH_3$, and $-S(O)_2CH_3$.~~

~~3. The compound of Formula I, a stereoisomer, a tautomer, a geometric isomer, a solvate, an active metabolite, a hydrate, a prodrug or a pharmaceutically acceptable salt thereof according to claim 1 or 2, wherein:~~

~~R^b and R^c are each independently selected from the group consisting of $-C(O)C_{1-3}$ alkyl, C_{1-3} alkyl, $-S(O)_2C_{1-3}$ alkyl, 5- to 6-membered heteroaryl, C_{6-10} aryl, C_{3-6} cycloalkyl, and 3- to 6-membered heterocycloalkyl; and~~

~~alternatively, R^b and R^c are each independently selected from the group consisting of $-C(O)C_{1-3}$ alkyl, C_{1-3} alkyl, and $-S(O)_2C_{1-3}$ alkyl.~~

~~4.~~2. The compound of Formula I, a stereoisomer, a tautomer, a geometric isomer, a solvate, ~~an active metabolite,~~ a hydrate, ~~a prodrug~~ or a pharmaceutically acceptable salt thereof according to ~~any one of~~ claim~~s~~ 1~~ to 3~~, wherein:

X and Y each independently represent CR^7, and said R^7 is independently selected from the group consisting of hydrogen, fluoro, chloro, bromo and C_{1-3} alkyl, wherein the C_{1-3} alkyl is optionally substituted with one or more ~~groups selected from the group consisting of~~ fluoro~~ and C_{1-3} alkoxy~~;

alternatively, R^7 is independently selected from the group consisting of hydrogen, fluoro, chloro, bromo, and C_{1-3} alkyl~~, wherein C_{1-3} alkyl is optionally substituted with one or more methoxy~~;

alternatively, R^7 is independently selected from the group consisting of hydrogen, fluoro, chloro, bromo, ~~$-CH_2OCH_3$~~ and methyl; and

alternatively, R^7 is independently selected from the group consisting of hydrogen, chloro, bromo, and methyl.

~~5. The compound of Formula I, a stereoisomer, a tautomer, a geometric isomer, a solvate, an active metabolite, a hydrate, a prodrug or a pharmaceutically acceptable salt thereof according to any one of claims 1 to 3, wherein X and Y each independently represent CR^7, and said R^7 is independently selected from the group consisting of hydrogen, C_{3-4} cycloalkyl, -CN, fluoro, chloro, bromo, and C_{1-3} alkyl, wherein C_{1-3} alkyl is optionally substituted with one or more fluoro;~~

~~alternatively, R^7 is independently selected from the group consisting of hydrogen, fluoro, chloro, bromo, and C_{1-3} alkyl, wherein C_{1-3} alkyl is optionally substituted with one or more fluoro;~~

~~alternatively, R^7 is independently selected from the group consisting of hydrogen, fluoro, chloro, bromo and C_{1-3} alkyl; and~~

~~alternatively, R^7 is independently selected from the group consisting of hydrogen, fluoro, chloro, bromo and methyl.~~

~~6.~~3. The compound of Formula I, a stereoisomer, a tautomer, a geometric isomer, a solvate, ~~an active metabolite,~~ a hydrate, ~~a prodrug~~ or a pharmaceutically acceptable salt thereof according to ~~any one of~~ claim~~s~~ 1 or 2~~to 5~~, wherein:

ring A is selected from the group consisting of phenyl, 5-membered heteroaryl, 6-membered heteroaryl, 7-membered heteroaryl, 8-membered heteroaryl, 9-membered heteroaryl and 10-membered heteroaryl;

alternatively, ring A is selected from the group consisting of phenyl and 6-membered heteroaryl;

~~alternatively, ring A is selected from the group consisting of phenyl and pyridyl;~~

alternatively, ring A is selected from phenyl; and

alternatively, the "heteroaryl" in the above definitions of ring A contains 1 or 2 N atoms.

4. The compound of Formula I, a stereoisomer, a tautomer, a geometric isomer, a solvate, a hydrate, or a pharmaceutically acceptable salt thereof according to claim 1 or 2, wherein ring A is selected from the group consisting of phenyl and pyridyl.

~~7.~~5. The compound of Formula I, a stereoisomer, a tautomer, a geometric isomer, a solvate, ~~an active metabolite,~~ a hydrate, ~~a prodrug~~ or a pharmaceutically acceptable salt thereof according to any one of claims 1 to ~~6~~4, wherein:

~~R^1, R^2 and R^3 are each independently selected from the group consisting of hydrogen, fluoro, chloro, bromo, $-CHF_2$, $-CH_2F$, $-CF_3$, -CN, C_{1-3} alkyl, $-NH_2$, and C_{3-4} cycloalkyl;~~

~~alternatively, R^1, R^2 and R^3 are each independently selected from the group consisting of hydrogen, fluoro, chloro, bromo, $-CHF_2$, $-CH_2F$, $-CF_3$, -CN, C_{1-3} alkyl, and C_{3-4} cycloalkyl;~~

~~alternatively,~~ R^1 is selected from the group consisting of hydrogen, fluoro, chloro, $-CHF_2$, -CN, $-CF_3$ and methyl; and

alternatively, R^1 is selected from the group consisting of hydrogen and fluoro.

~~8.~~6. The compound of Formula I, a stereoisomer, a tautomer, a geometric isomer, a solvate, ~~an active metabolite,~~ a hydrate, ~~a prodrug~~ or a pharmaceutically acceptable salt thereof according to any one of claims 1 to ~~5~~7, wherein:

R^2 is selected from the group consisting of hydrogen, fluoro, chloro, and bromo; and

alternatively, R^2 is selected from the group consisting of hydrogen and fluoro.

~~9.~~7. The compound of Formula I, a stereoisomer, a tautomer, a geometric isomer, a solvate, ~~an active metabolite,~~ a hydrate, ~~a prodrug~~ or a pharmaceutically acceptable salt thereof according to any one of claims 1 to ~~6~~8, wherein:

R^3 is selected from the group consisting of hydrogen, fluoro, chloro, $-CHF_2$, -CN, $-CF_3$, and methyl~~, $-NH_2$ and $-NHR^a$~~;

alternatively, R^3 is selected from the group consisting of hydrogen, fluoro, chloro, ~~$-CHF_2$,~~ -CN, and ~~$-CF_3$,~~ methyl~~, $-NH_2$, $-NHC(O)CH_3$, and $-NHS(O)_2CH_3$;~~

~~alternatively, R^3 is selected from the group consisting of hydrogen, fluoro, chloro, $-CHF_2$, -CN, $-CF_3$, methyl, and $-NH_2$; and~~

~~alternatively, R^3 is selected from the group consisting of hydrogen, fluoro, chloro, -CN, methyl, and $-NH_2$.~~

~~10.~~8. The compound of Formula I, a stereoisomer, a tautomer, a geometric isomer, a solvate, ~~an active metabolite,~~ a hydrate, ~~a prodrug~~ or a pharmaceutically acceptable salt thereof according to any one of claims 1 to ~~7~~9, wherein:

R^1 is selected from the group consisting of hydrogen, fluoro, chloro, $-CHF_2$, -CN, $-CF_3$ and methyl, and at least one of R^1 and R^3 is fluoro or hydrogen.

~~11.~~9. The compound of Formula I, a stereoisomer, a tautomer, a geometric isomer, a solvate, ~~an active metabolite,~~ a hydrate, ~~a prodrug~~ or a pharmaceutically acceptable salt thereof according to any one of claims 1 to ~~4~~9, wherein:

one of R^1 and R^3 is selected from the group consisting of hydrogen and fluoro, and the other is selected from the group consisting of hydrogen, fluoro, chloro, -CHF_2, -CN, -CF_3, and methyl ~~and $-NH_2$~~;

alternatively, one of R^1 and R^3 is hydrogen, and the other is selected from the group consisting of fluoro, chloro, -CHF_2, -CN, -CF_3 and methyl;

alternatively, R^2 is selected from the group consisting of fluoro, chloro, and bromo, and one of R^1 and R^3 is hydrogen, and the other is selected from the group consisting of hydrogen, fluoro, chloro, -CHF_2, -CN, -CF_3 and methyl;

alternatively, R^2 is fluoro, and one of R^1 and R^3 is hydrogen, and the other is selected from the group consisting of fluoro, chloro and -CN;

alternatively, R^2 is fluoro, R^1 is hydrogen, and R^3 is -CN or chloro; and

alternatively, R^2 is fluoro, R^1 is hydrogen, and R^3 is -CN.

~~12.~~10. The compound of Formula I, a stereoisomer, a tautomer, a geometric isomer, a solvate, ~~an active metabolite,~~ a hydrate, ~~a prodrug~~ or a pharmaceutically acceptable salt thereof according to any one of claims 1 to 9~~11~~, wherein:

R^4 is selected from the group consisting of hydrogen and C_{1-3} alkyl; and/or R^8 is selected from the group consisting of hydrogen and methyl;

alternatively, R^4 is methyl or hydrogen; and

alternatively, R^4 is methyl.

~~13.~~11. The compound of Formula I, a stereoisomer, a tautomer, a geometric isomer, a solvate, ~~an active metabolite,~~ a hydrate, ~~a prodrug~~ or a pharmaceutically acceptable salt thereof according to any one of claims 1 to 10~~12~~, wherein:

R^5 is selected from the group consisting of C_{1-4} alkyl, C_{2-4} alkenyl, C_{2-4} alkynyl, 3- to 6-membered cycloalkyl and 4- to 6-membered heterocycloalkyl, wherein said C_{1-4} alkyl, C_{2-4} alkenyl, C_{2-4} alkynyl, 3- to 6-membered cycloalkyl or 4- to 6-membered heterocycloalkyl is optionally substituted with the group(s) selected from the group consisting of halo, 3- to 4-membered cycloalkyl, 3- to 4-membered heterocycloalkyl, -OR^8, oxo, -CN, -$C(O)OR^8$, -SO_2R^8, -$C(O)N(R^8)_2$, and C_{1-3} alkyl, wherein C_{1-3} alkyl is optionally substituted with one or more groups selected from the group consisting of fluoro, -CN and -OH; alternatively, R^5 is selected from the group consisting of C_{1-4} alkyl, C_{2-4} alkenyl, C_{2-4} alkynyl, 4- to 6-membered cycloalkyl and 4- to 6-membered heterocycloalkyl, wherein said C_{1-4} alkyl, C_{2-4} alkenyl, C_{2-4} alkynyl, 4- to 6-membered cycloalkyl or 4- to 6-membered heterocycloalkyl is optionally substituted with the group(s) selected from the group consisting of halo, 3- to 4-membered cycloalkyl, 3- to 4-membered heterocycloalkyl, -OR^8, oxo, -CN, -$C(O)OR^8$, -SO_2R^8, -$C(O)N(R^8)_2$, and C_{1-3} alkyl, wherein C_{1-3} alkyl is optionally substituted with one or more groups selected from the group consisting of fluoro, -CN and -OH; alternatively, R^5 is selected from the group consisting of C_{1-4} alkyl, C_{2-4} alkenyl, C_{2-4} alkynyl, 3- to 6-membered cycloalkyl and 4- to 6-membered heterocycloalkyl, wherein said C_{1-4} alkyl, C_{2-4} alkenyl, C_{2-4} alkynyl, 3- to 6-membered cycloalkyl or 4- to 6-membered heterocycloalkyl is optionally substituted with the group(s) selected from the group consisting of halo, oxo, -OH, -CN, -$C(O)OR^8$, -$C(O)N(R^8)_2$, and C_{1-3}

alkyl, wherein C_{1-3} alkyl is optionally substituted with one or more groups selected from the group consisting of fluoro and OH;

alternatively, R^5 is selected from the group consisting of C_{1-4} alkyl, C_{2-4} alkenyl, C_{2-4} alkynyl, 3- to 6-membered cycloalkyl and 4- to 6-membered heterocycloalkyl, wherein said C_{1-4} alkyl, C_{2-4} alkenyl, C_{2-4} alkynyl, 3- to 6-membered cycloalkyl or 4- to 6-membered heterocycloalkyl is optionally substituted with the group(s) selected from the group consisting of halo, -OH, -CN, $-C(O)OR^8$, $-C(O)N(R^8)_2$, and C_{1-3} alkyl, wherein C_{1-3} alkyl is optionally substituted with one or more groups selected from the group consisting of fluoro and OH;

alternatively, R^5 is selected from the group consisting of C_{1-4} alkyl, C_{2-4} alkenyl, C_{2-4} alkynyl, 4- to 6-membered cycloalkyl and 4- to 6-membered heterocycloalkyl, wherein said C_{1-4} alkyl, C_{2-4} alkenyl, C_{2-4} alkynyl, 4- to 6-membered cycloalkyl or 4- to 6-membered heterocycloalkyl is optionally substituted with the group(s) selected from the group consisting of halo, -OH, -CN, $-C(O)OR^8$, $-C(O)N(R^8)_2$, and C_{1-3} alkyl, wherein C_{1-3} alkyl is optionally substituted with one or more groups selected from the group consisting of fluoro and OH;

alternatively, R^5 is selected from the group consisting of C_{1-4} alkyl, C_{2-4} alkynyl, 3- to 6-membered cycloalkyl and 4- to 6-membered heterocycloalkyl, wherein said C_{1-4} alkyl, C_{2-4} alkynyl, 3- to 6-membered cycloalkyl or 4- to 6-membered heterocycloalkyl is optionally substituted with the group(s) selected from the group consisting of halo, oxo, -OH, $-C(O)N(R^8)_2$, $-C(O)OR^8$, and C_{1-3} alkyl, wherein C_{1-3} alkyl is optionally substituted with one or more groups selected from the group consisting of OH and fluoro;

alternatively, R^5 is selected from the group consisting of C_{1-4} alkyl, C_{2-4} alkynyl, 3- to 6-membered cycloalkyl and 4- to 6-membered heterocycloalkyl, wherein said C_{1-4} alkyl, C_{2-4} alkynyl, 3- to 6-membered cycloalkyl or 4- to 6-membered heterocycloalkyl is optionally substituted with the group(s) selected from the group consisting of halo, -OH, $-C(O)N(R^8)_2$, $-C(O)OR^8$, and C_{1-3} alkyl, wherein C_{1-3} alkyl is optionally substituted with the group(s) selected from the group consisting of OH and fluoro;

alternatively, R^5 is selected from the group consisting of C_{1-4} alkyl, C_{2-4} alkynyl, 4- to 6-membered cycloalkyl and 4- to 6-membered heterocycloalkyl, wherein said C_{1-4} alkyl, C_{2-4} alkynyl, 4- to 6-membered cycloalkyl or 4- to 6-membered heterocycloalkyl is optionally substituted with the group(s) selected from the group consisting of halo, -OH, $-C(O)OR^8$, and C_{1-3} alkyl, wherein C_{1-3} alkyl is optionally substituted with OH;

alternatively, R^5 is selected from the group consisting of C_{1-4} alkyl, C_{2-4} alkynyl, 3- to 6-membered cycloalkyl and 4- to 6-membered heterocycloalkyl, wherein said C_{1-4} alkyl is optionally substituted with the group(s) selected from the group consisting of halo, -OH and $-C(O)OR^8$, wherein the 3- to 6-membered cycloalkyl or 4- to 6-membered heterocycloalkyl is optionally substituted with the group(s) selected from the group consisting of oxo, -OH, fluoro, $-C(O)N(R^8)_2$, and C_{1-3} alkyl, wherein C_{1-3} alkyl is optionally substituted with one or more groups selected from the group consisting of OH and fluoro;

alternatively, R^5 is selected from the group consisting of C_{1-4} alkyl, C_{2-4} alkynyl, 3- to 6-membered cycloalkyl and 4- to 6-membered heterocycloalkyl, wherein said C_{1-4} alkyl is optionally substituted with the group(s) selected from the group consisting of halo, -OH and $-C(O)OR^8$, wherein the 3- to 6-membered cycloalkyl or 4- to 6-membered heterocycloalkyl is optionally substituted with the group(s)

selected from the group consisting of -OH, fluoro, -C(O)N(R^8)$_2$, and C_{1-3} alkyl, wherein C_{1-3} alkyl is optionally substituted with the group(s) selected from the group consisting of OH and fluoro;

~~alternatively, R^5 is selected from the group consisting of C_{1-4} alkyl, C_{2-4} alkynyl, 4- to 6-membered cycloalkyl and 4- to 6-membered heterocycloalkyl, wherein said C_{1-4} alkyl is optionally substituted with the group(s) selected from the group consisting of halo, -OH and -C(O)OR^8, wherein the 4- to 6-membered cycloalkyl or 4- to 6-membered heterocycloalkyl is optionally substituted with the group(s) selected from the group consisting of -OH, and C_{1-3} alkyl, wherein C_{1-3} alkyl is optionally substituted with OH;~~

alternatively, R^5 is selected from the group consisting of C_{1-4} alkyl, C_3 alkynyl, 3- to 6-membered cycloalkyl and 4- to 6-membered heterocycloalkyl, wherein said C_{1-4} alkyl group is optionally substituted with the group(s) selected from the group consisting of fluoro, -OH and -C(O)OCH_3, wherein said 3- to 6-membered cycloalkyl or 4- to 6-membered heterocycloalkyl is optionally substituted with the group(s) selected from the group consisting of oxo, -OH, fluoro, -C(O)NHCH_3, and methyl, wherein methyl is optionally substituted with one or more groups selected from the group consisting of OH and fluoro;

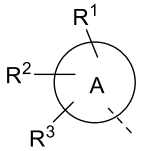
alternatively, R^5 is selected from the group consisting of C_{1-4} alkyl, C_3 alkynyl, 3- to 6-membered cycloalkyl and 4- to 6-membered heterocycloalkyl, wherein said C_{1-4} alkyl is optionally substituted with the group(s) selected from the group consisting of fluoro, -OH and -C(O)OCH_3, wherein said 3- to 6-membered cycloalkyl or 4- to 6-membered heterocycloalkyl is optionally substituted with the group(s) selected from the group consisting of -OH, fluoro, -C(O)NHCH_3, and methyl, wherein methyl is optionally substituted with the group(s) selected from the group consisting of OH and fluoro; and

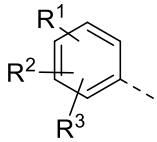
alternatively, the "heterocycloalkyl" in the definitions of R^5 contains 1 or 2 heteroatoms selected from the group consisting of N, O and S.

12. The compound of Formula I, a stereoisomer, a tautomer, a geometric isomer, a solvate, a hydrate, or a pharmaceutically acceptable salt thereof according to any one of claims 1 to 10, wherein R^5 is selected from the group consisting of C_{1-4} alkyl, C_{2-4} alkynyl, 4- to 6-membered cycloalkyl and 4- to 6-membered heterocycloalkyl, wherein said C_{1-4} alkyl is optionally substituted with the group(s) selected from the group consisting of halo, -OH and -C(O)OR^8, wherein the 4- to 6-membered cycloalkyl or 4- to 6-membered heterocycloalkyl is optionally substituted with the group(s) selected from the group consisting of -OH, and C_{1-3} alkyl, wherein C_{1-3} alkyl is optionally substituted with OH.

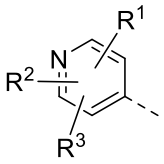
~~14.~~13. The compound of Formula I, a stereoisomer, a tautomer, a geometric isomer, a solvate, ~~an active metabolite,~~ a hydrate, ~~a prodrug~~ or a pharmaceutically acceptable salt thereof according to any one of claims 1 to 12~~13~~, wherein R^8 is selected from the group consisting of hydrogen and methyl.

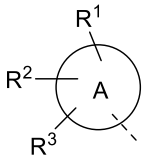
~~15.~~14. The compound of Formula I, a stereoisomer, a tautomer, a geometric isomer, a solvate, ~~an active metabolite,~~ a hydrate, ~~a prodrug~~ or a pharmaceutically acceptable salt thereof according to any one of claims 1 to 13~~14~~, wherein:

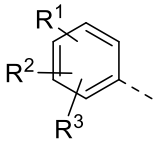
the structural unit 

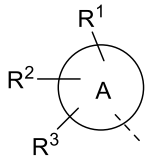
is selected from the group consisting of 

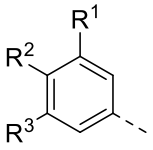
and

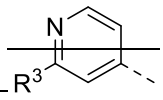


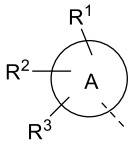
; alternatively, the structural unit 

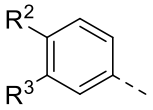
is selected from 

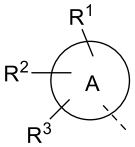
; alternatively, the structural unit 

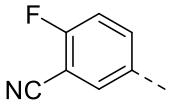
is selected from ~~the group consisting of~~ 

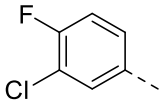
~~and~~ 

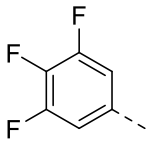
; alternatively, the structural unit 

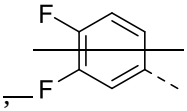
is selected from 

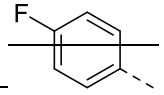
; alternatively, the structural unit 

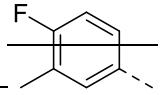
is selected from the group consisting of 

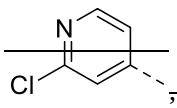
, 

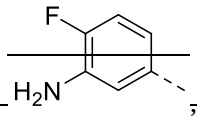
, <u>and</u> 

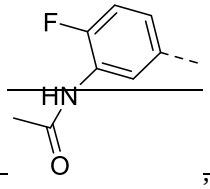
, 

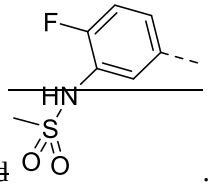
, 

, 

; 

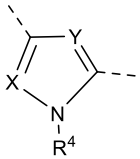
, 

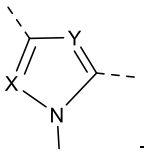
, 

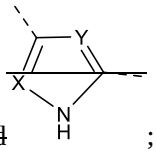
~~, and~~ 

.

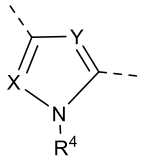
~~16.~~15. The compound of Formula I, a stereoisomer, a tautomer, a geometric isomer, a solvate, ~~an active metabolite,~~ a hydrate, ~~a prodrug~~ or a pharmaceutically acceptable salt thereof according to any one of claims 1 to 14~~15~~, wherein:

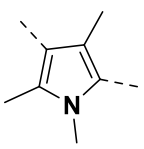
the structural unit 

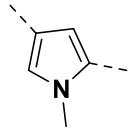
is selected from ~~the group consisting of~~ 

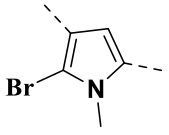
~~and~~ 

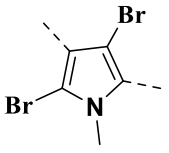
;

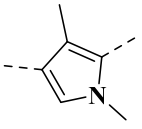
alternatively, the structural unit 

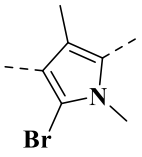
is selected from the group consisting of 

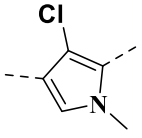
, 

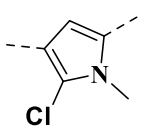
, 

, 

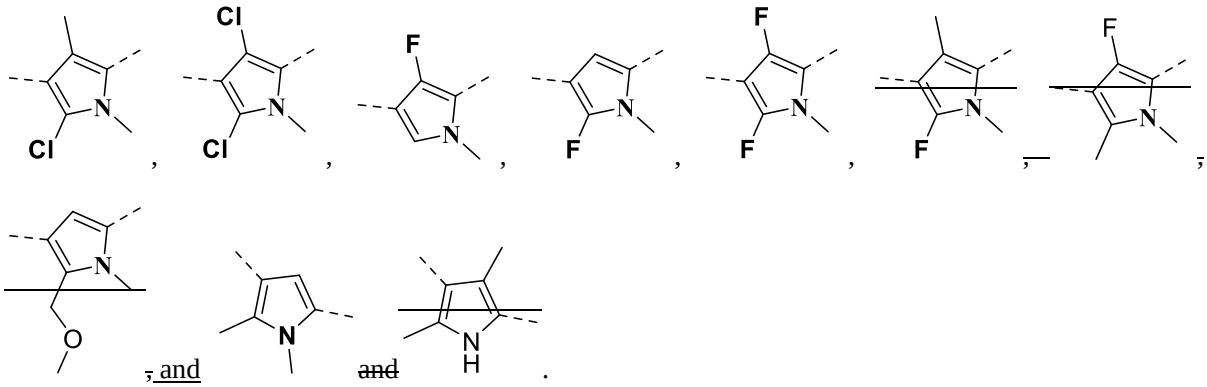
, 

, 

, 

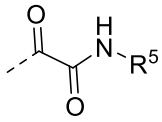
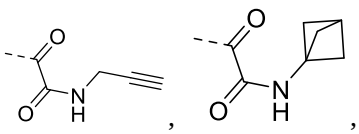
, 

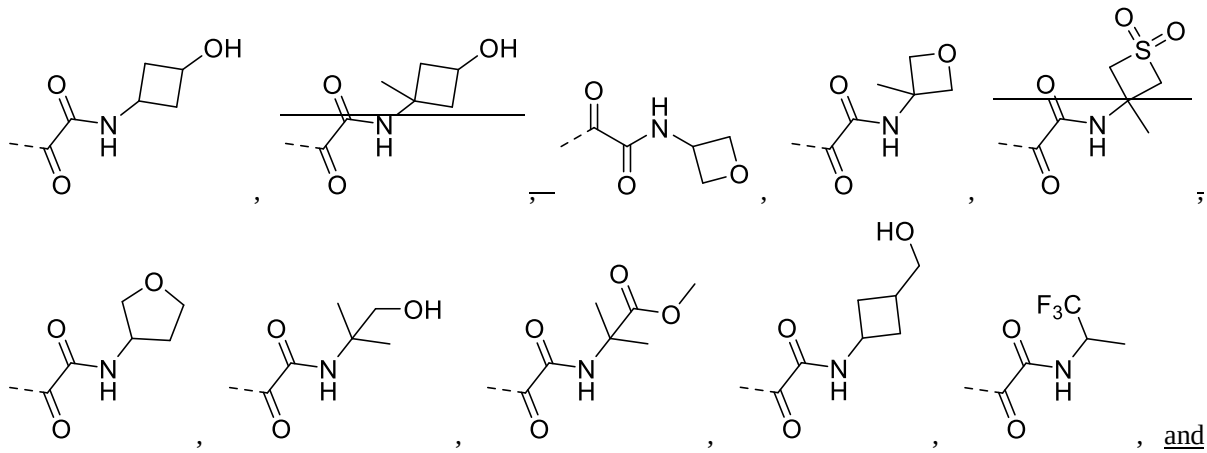
,



, and and .

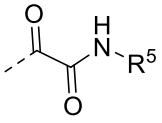
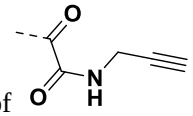
17.16. The compound of Formula I, a stereoisomer, a tautomer, a geometric isomer, a solvate, an active metabolite, a hydrate, a prodrug or a pharmaceutically acceptable salt thereof according to any one of claims 1 to 1516, wherein:

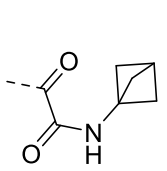
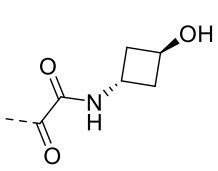
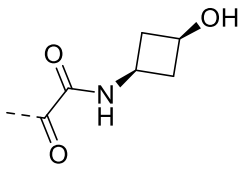
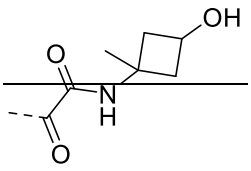
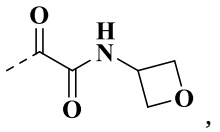
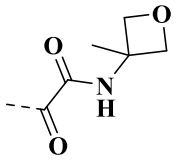
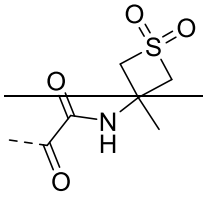
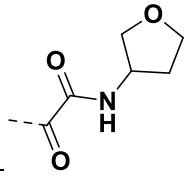
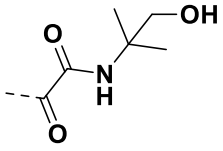
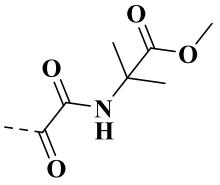
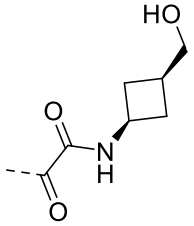
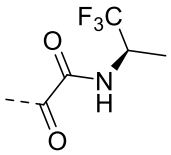
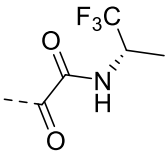
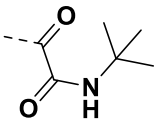
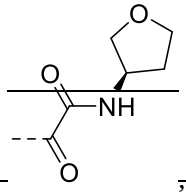
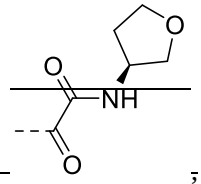
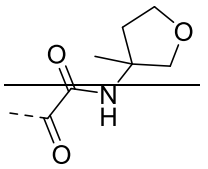
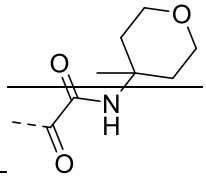
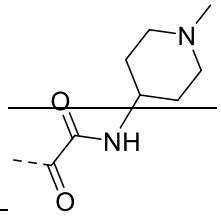
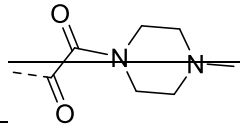
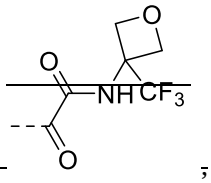
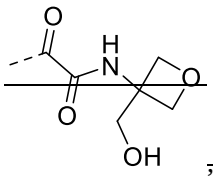
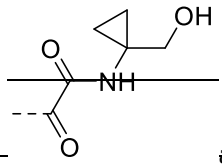
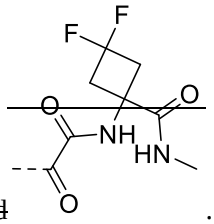
the structural unit  is selected from the group consisting of 



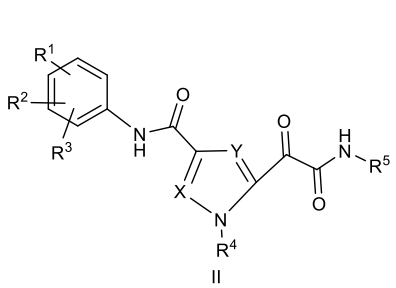
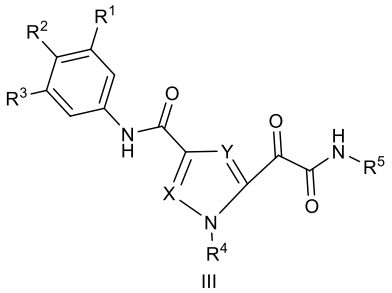
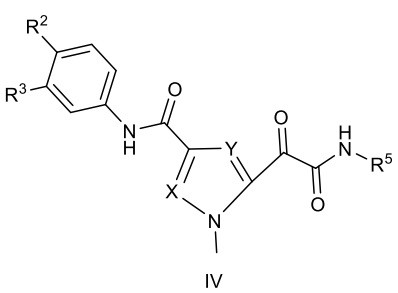
, and

; and

alternatively, the structural unit  is selected from the group consisting of ,

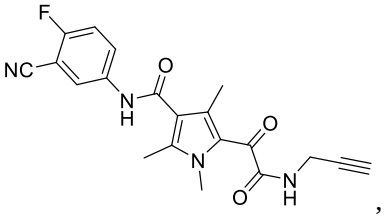
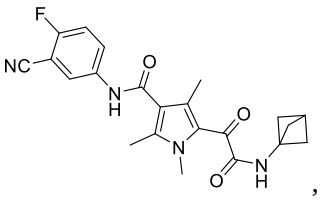
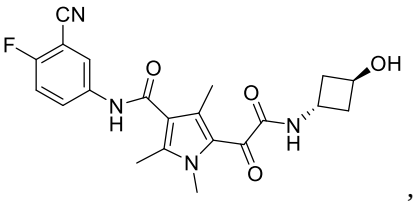
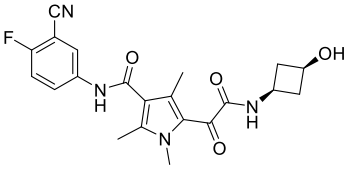
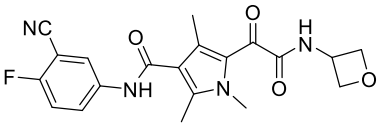
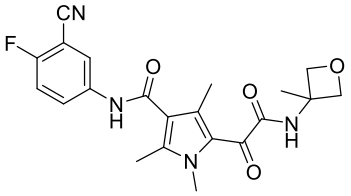
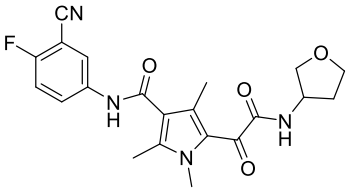
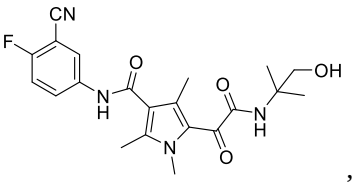
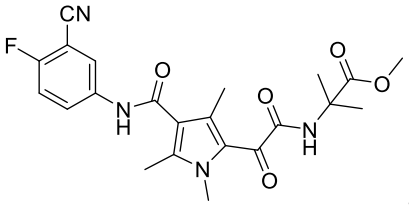
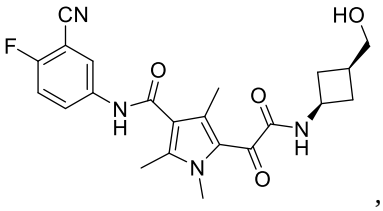
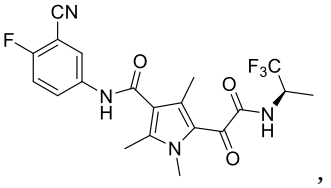
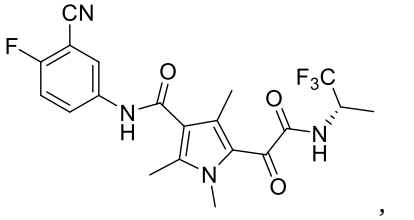
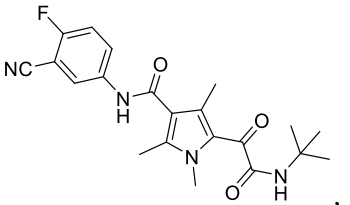
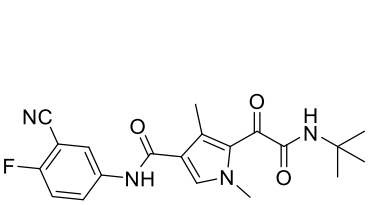
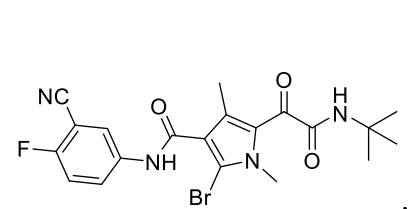
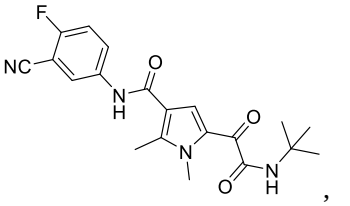
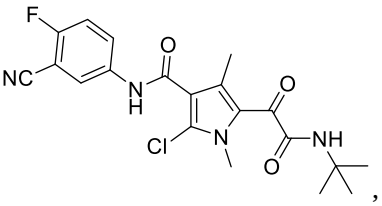

,

,

,

,

,

,

,

,

,

,

,

,

, and

,

,

;

,

,

,

,

;

,

and

.

~~18.~~17. The compound of Formula I, a stereoisomer, a tautomer, a geometric isomer, a solvate, ~~an active metabolite,~~ a hydrate, ~~a prodrug~~ or a pharmaceutically acceptable salt thereof according to claim 1, wherein, the compound of formula I, a stereoisomer, a tautomer, a geometric isomer, a solvate, ~~an active metabolite,~~ a hydrate, ~~a prodrug~~ or a pharmaceutically acceptable salt thereof is selected from a compound of Formula II, Formula III or Formula IV, a stereoisomer, a tautomer, a geometric isomer, a solvate, ~~an active metabolite,~~ a hydrate, ~~a prodrug~~ or a pharmaceutically acceptable salt thereof,


II

III

IV

wherein R^1, R^2, R^3, R^4, R^5, X, and Y are as defined in claim 1.

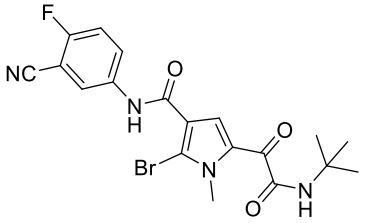
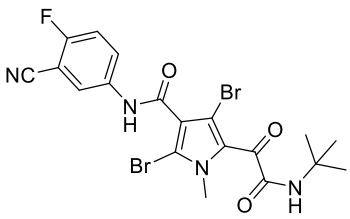
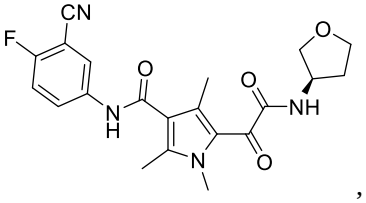
~~19.~~18. A compound, a stereoisomer, a tautomer, a geometric isomer, a solvate, ~~an active metabolite,~~ a hydrate, ~~a prodrug~~ or a pharmaceutically acceptable salt thereof, selected from the group consisting of:


,

,

,

,

,

,

,

,

,

,

,

,

,

,

,

,

,

,

,

,

,

,

,

,

,

,

,

,

,

,

,

,

,

,

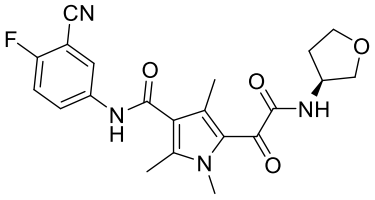
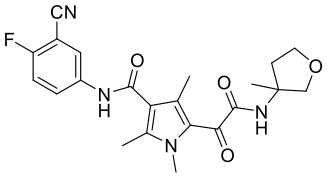
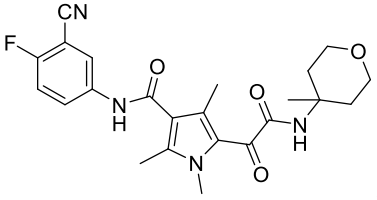
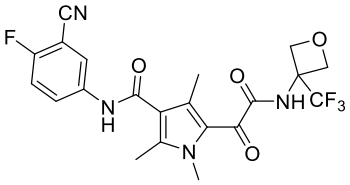
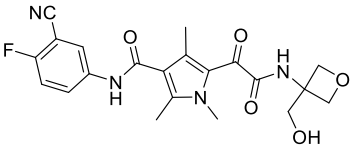
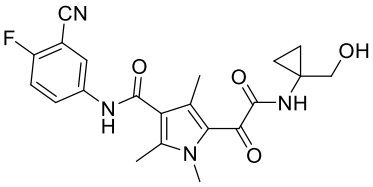
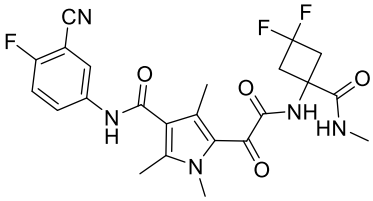
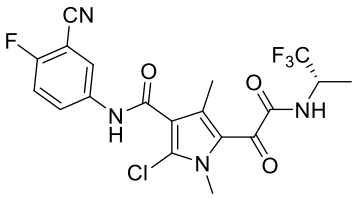
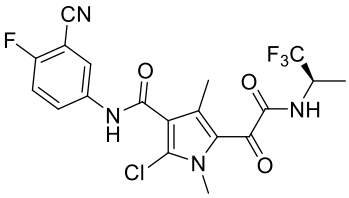
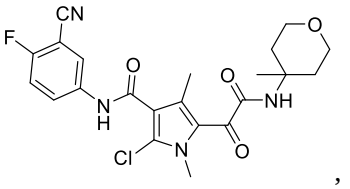
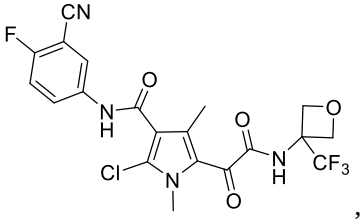
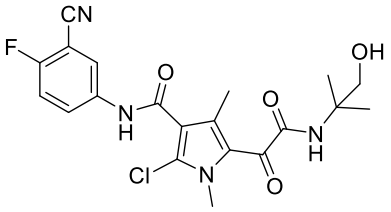
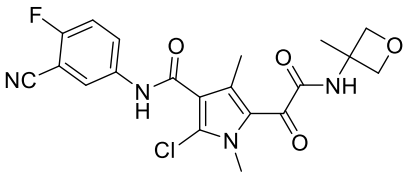
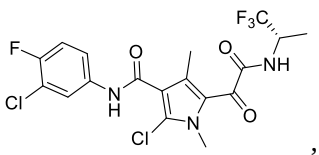
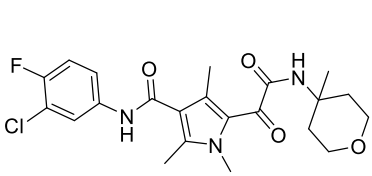
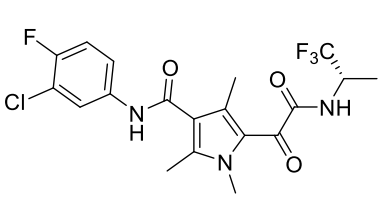
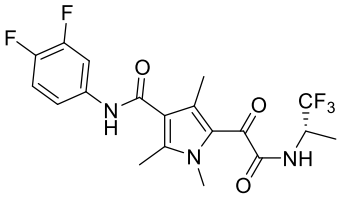
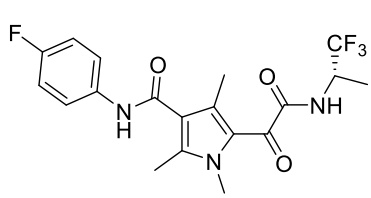
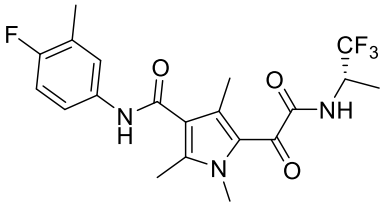
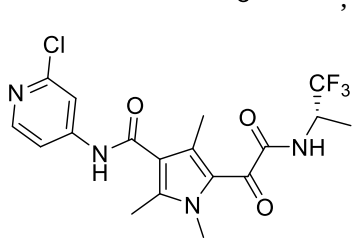
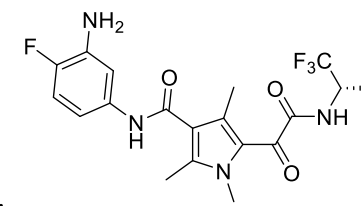
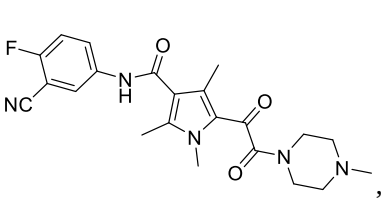
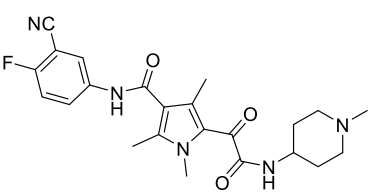
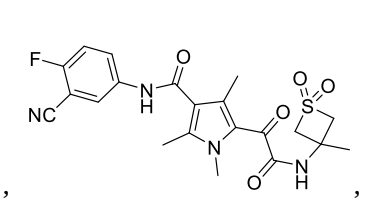
,

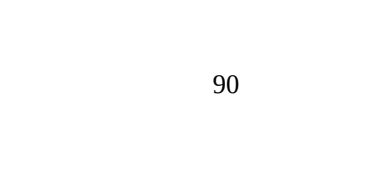
,

,

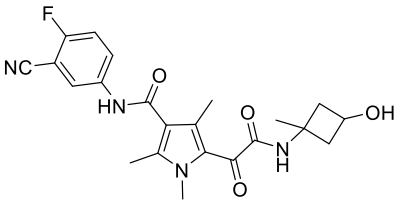
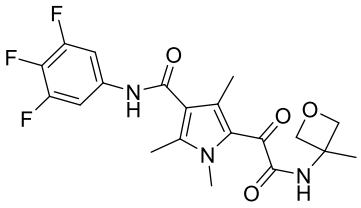
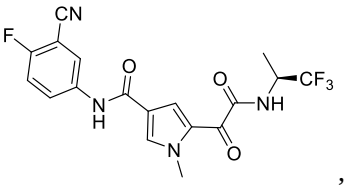
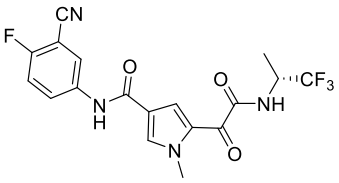
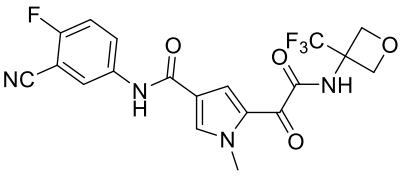
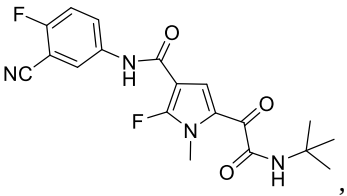
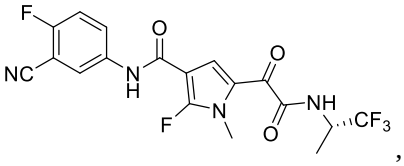
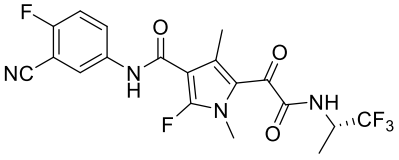
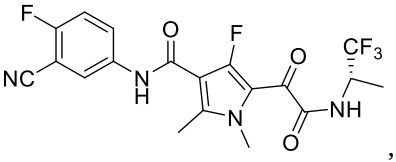
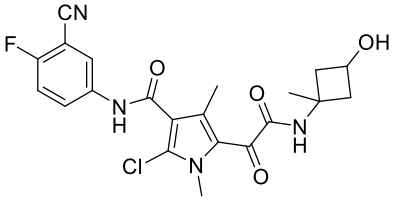
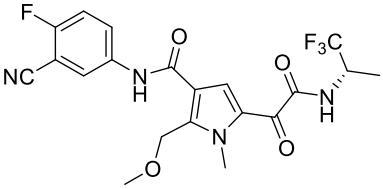
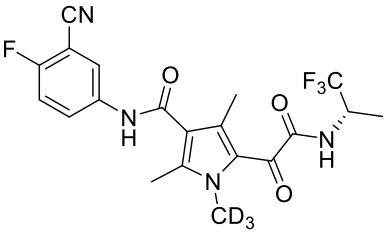
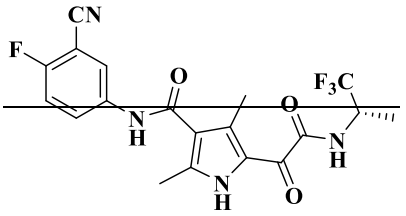
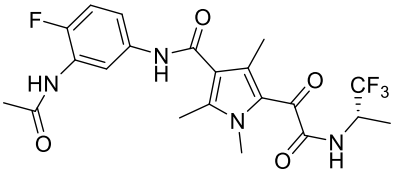
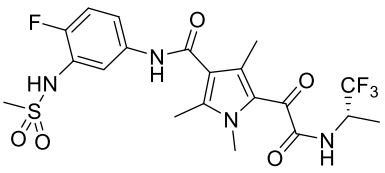
,

,


,

,

,

,

,

,

,

,

,

,

,

,

,

,

,

,

,

,

,

,

,

,

,

,

,

,

,


,

,

,

,

,

,

,

,

,

,

,

,

;

, and

.

20.19. A pharmaceutical composition comprising a compound of Formula I, a stereoisomer, a tautomer, a geometric isomer, a solvate, ~~an active metabolite,~~ a hydrate, ~~a prodrug~~ or a pharmaceutically acceptable salt thereof according to any one of claims 1 to 18~~19~~; optionally, the pharmaceutical composition further comprises a pharmaceutically acceptable excipient.

21.20. Use of a compound of Formula I, a stereoisomer, a tautomer, a geometric isomer, a solvate, ~~an active metabolite,~~ a hydrate, ~~a prodrug,~~ or a pharmaceutically acceptable salt thereof according to any one of claims 1 to 18~~19~~, or a pharmaceutical composition according to claim 19~~20~~, in the manufacture ~~preparation~~ of a medicament for ~~preventing or~~ treating a disease caused by hepatitis B virus (HBV) infection~~benefiting from the inhibition of capsid protein assembly~~.

21. A compound of Formula I, a stereoisomer, a tautomer, a geometric isomer, a solvate, a hydrate, or a pharmaceutically acceptable salt thereof according to any one of claims 1 to 18 or a pharmaceutical

composition according to claim 19 for use in treating a disease caused by hepatitis B virus (HBV) infection.