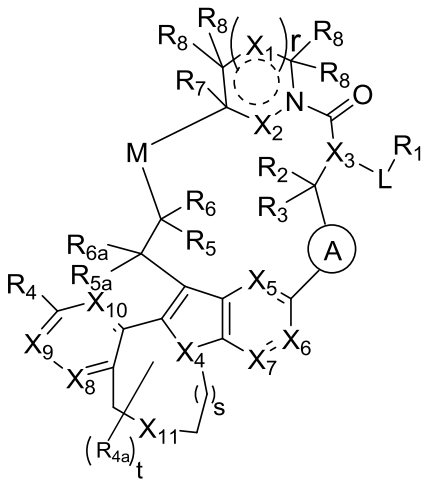
CLAIMS

1. A compound represented by formula (I), or a stereoisomer, a tautomer, a deuterated compound or a pharmaceutically acceptable salt thereof:



(I)

wherein,

 represents that a bond in a ring is a single bond or a double bond;

each X_1 is the same or different, and each X_1 is independently selected from the group consisting of CR_{10}, $CR_{10}R_{10}$, N, NR_{10}, O, S and $S(O)_{1-2}$;

X_2 is selected from the group consisting of O, S, $S(O)_{1-2}$, N and NR_{10};

X_3 is selected from the group consisting of N and CR_{10};

X_4 is selected from the group consisting of CR_{10} and N;

X_5 is selected from the group consisting of CR_{11} and N;

X_6 is selected from the group consisting of CR_{12} and N;

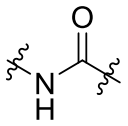
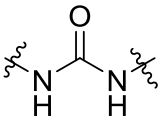
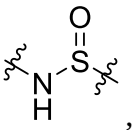
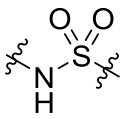
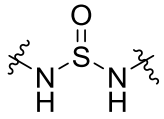
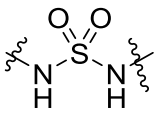
X_7 is selected from the group consisting of CR_{13} and N;

X_8 is selected from the group consisting of CR_{14} and N;

X_9 is selected from the group consisting of CR_{15} and N;

X_{10} is selected from the group consisting of CR_{16} and N;

X_{11} is selected from the group consisting of $C(R_{17})_2$, O and NR_{17};

L is selected from the group consisting of , , , ,  and ;

ring A is selected from the group consisting of C_{5-14} cycloalkyl, 5- to 14-membered heterocyclyl, C_{6-18} aryl and 5- to 18-membered heteroaryl; wherein the C_{5-14} cycloalkyl, 5- to 14-membered heterocyclyl, C_{6-18} aryl or 5- to 18-membered heteroaryl is optionally further substituted by one or more R_a; or two R_a on the same atom together with the atom to which they are attached form C_{3-8} cycloalkyl or 3- to 8-membered heterocyclyl, wherein the C_{3-8} cycloalkyl or 3- to 8-membered heterocyclyl is optionally further substituted by one or more R_b;

R_1 is selected from the group consisting of H, hydroxyl, C_{1-6} hydroxyalkyl, amino, cyano, halogen, C_{1-6} alkyl, C_{1-6} haloalkyl, C_{1-6} alkoxy, C_{1-6} haloalkoxy, -C_{0-3} alkylene-$N(R_c)_2$, -C_{0-3} alkylene-C_{2-6} alkenyl, -C_{0-3} alkylene-C_{2-6} alkynyl, -C_{0-3} alkylene-C_{3-14} cycloalkyl, -C_{0-3} alkylene-3- to 14-membered heterocyclyl, -C_{0-3} alkylene-C_{6-18} aryl and -C_{0-3} alkylene-5- to 18-membered heteroaryl; wherein the hydroxyl, C_{1-6} hydroxyalkyl, amino, C_{1-6} alkyl, C_{1-6} haloalkyl, C_{1-6} alkoxy, C_{1-6} haloalkoxy, -C_{0-3} alkylene-$N(R_c)_2$, -C_{0-3} alkylene-C_{2-6} alkenyl, -C_{0-3} alkylene-C_{2-6} alkynyl, -C_{0-3} alkylene-C_{3-14} cycloalkyl, -C_{0-3} alkylene-3- to 14-membered heterocyclyl, -C_{0-3} alkylene-C_{6-18} aryl or -C_{0-3} alkylene-5- to 18-membered heteroaryl is optionally further substituted by one or more R_a, or two R_a on the same atom together with the atom to which they are attached form C_{3-8} cycloalkyl or 3- to 8-membered heterocyclyl, wherein the C_{3-8} cycloalkyl or 3- to 8-membered heterocyclyl is optionally further substituted by one or more R_b;

R_2 is selected from the group consisting of H, hydroxyl, halogen, C_{1-6} alkyl, C_{1-6} haloalkyl, C_{1-6} alkoxy and C_{1-6} haloalkoxy;

R_3 is selected from the group consisting of H, halogen, cyano, amino, nitro, C_{1-6} alkyl, C_{1-6} alkoxy, C_{3-14} cycloalkyl-O-, 3- to 14-membered heterocyclyl-O-, C_{1-6} haloalkyl, C_{1-6} haloalkoxy, hydroxyl and C_{1-6} hydroxyalkyl; or,

R_2 and R_3 together with the atom to which they are attached form carbonyl, C_{3-8} cycloalkyl or 3- to 8-membered heterocyclyl; wherein the C_{3-8} cycloalkyl or 3- to 8-membered heterocyclyl is optionally further substituted by one or more R_b; or two R_b on the same atom together with the atom to which they are attached form C_{3-8} cycloalkyl or 3- to 8-membered heterocyclyl, wherein the C_{3-8} cycloalkyl or 3- to 8-membered heterocyclyl is optionally further substituted by one or more R_b;

R_4 is selected from the group consisting of H, hydroxyl, C_{1-6} hydroxyalkyl, amino, cyano, halogen, C_{1-6} alkyl, C_{1-6} haloalkyl, C_{1-6} alkoxy, C_{1-6} haloalkoxy, C_{2-6} alkenyl, C_{2-6} alkynyl, -C_{0-3} alkylene-$N(R_c)_2$, -C_{0-3} alkylene-C_{3-14} cycloalkyl, -C_{0-3} alkylene-3- to 14-membered heterocyclyl, -C_{0-3} alkylene-C_{6-18} aryl and -C_{0-3} alkylene-5- to 18-membered heteroaryl; wherein the hydroxyl, C_{1-6} hydroxyalkyl, amino, C_{1-6} alkyl, C_{1-6} haloalkyl, C_{1-6} alkoxy, C_{1-6} haloalkoxy, C_{2-6} alkenyl, C_{2-6} alkynyl, -C_{0-3} alkylene-$N(R_c)_2$, -C_{0-3} alkylene-C_{3-14} cycloalkyl, -C_{0-3} alkylene-3- to 14-membered heterocyclyl, -C_{0-3} alkylene-C_{6-18} aryl or -C_{0-3} alkylene-5- to 18-membered heteroaryl is optionally further substituted by one or more R_a; or two R_a on the same atom together with the atom to which they are attached form C_{3-8} cycloalkyl or 3- to 8-membered heterocyclyl, wherein the C_{3-8} cycloalkyl or 3- to 8-membered heterocyclyl is optionally further substituted by one or more R_b;

R_{4a} is selected from the group consisting of H, halogen, cyano, amino, nitro, C_{1-6} alkyl, C_{1-6} alkoxy, C_{3-14} cycloalkyl-O-, 3- to 14-membered heterocyclyl-O-, C_{1-6} haloalkyl, C_{1-6} haloalkoxy, hydroxyl and C_{1-6} hydroxyalkyl; wherein the amino, C_{1-6} alkyl, C_{1-6} alkoxy, C_{3-14} cycloalkyl-O-, 3- to 14-membered heterocyclyl-O-, C_{1-6} haloalkyl, C_{1-6} haloalkoxy, hydroxyl or C_{1-6} hydroxyalkyl is optionally further substituted by one or more R_a; or two R_a on the same atom together with the atom to which they are attached form C_{3-8} cycloalkyl or 3- to 8-membered heterocyclyl, wherein the C_{3-8} cycloalkyl or 3- to 8-membered heterocyclyl is optionally further substituted by one or more R_b; or,

two R_{4a} together with the atom to which they are attached form carbonyl, C_{3-8} cycloalkyl or 3- to 8-membered heterocyclyl; wherein the C_{3-8} cycloalkyl or 3- to 8-membered heterocyclyl is optionally further substituted by one or more R_b;

R_5 is selected from the group consisting of H, halogen, cyano, amino, nitro, C_{1-6} alkyl, C_{1-6} alkoxy, C_{3-14} cycloalkyl-O-, 3- to 14-membered heterocyclyl-O-, C_{1-6} haloalkyl, C_{1-6} haloalkoxy, hydroxyl and C_{1-6} hydroxyalkyl;

R_6 is selected from the group consisting of H, halogen, hydroxyl, cyano, C_{1-3} alkoxy, C_{1-3} alkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, C_{3-8} cycloalkyl, 3- to 14-membered heterocyclyl, 5- to 10-membered heteroaryl and C_{6-10} aryl; wherein the hydroxyl, C_{1-3} alkoxy, C_{1-3} alkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, C_{3-8} cycloalkyl, 3- to 14-membered heterocyclyl, 5- to 10-membered heteroaryl or C_{6-10} aryl is optionally further substituted by one or more R_a; or,

R_5 and R_6 together with the atom to which they are attached form carbonyl, C_{3-8} cycloalkyl or 3- to 14-membered heterocyclyl; wherein the C_{3-8} cycloalkyl or 3- to 14-membered heterocyclyl is optionally further substituted by one or more R_a;

R_{5a} and R_{6a} are each independently selected from the group consisting of H, halogen, cyano, amino, nitro, C_{1-6} alkyl, C_{1-6} alkoxy, C_{3-14} cycloalkyl-O-, 3- to 14-membered heterocyclyl-O-, C_{1-6} haloalkyl, C_{1-6} haloalkoxy, hydroxyl and C_{1-6} hydroxyalkyl; or,

R_{5a} and R_{6a} together with the atom to which they are attached form carbonyl, C_{3-8} cycloalkyl or 3- to 8-membered heterocyclyl; wherein the C_{3-8} cycloalkyl or 3- to 8-membered heterocyclyl is optionally further substituted by one or more R_b;

R_7 is selected from the group consisting of absent, H, halogen, cyano, amino, nitro, C_{1-6} alkyl, C_{1-6} alkoxy, C_{3-14} cycloalkyl-O-, 3- to 14-membered heterocyclyl-O-, C_{1-6} haloalkyl, C_{1-6} haloalkoxy, hydroxyl, C_{1-6} hydroxyalkyl, C_{3-8} cycloalkyl, 3- to 14-membered heterocyclyl and 5- to 10-membered heteroaryl;

R_8 is selected from the group consisting of absent, H, halogen, cyano, amino, nitro, C_{1-6} alkyl, C_{1-6} alkoxy, C_{3-14} cycloalkyl-O-, 3- to 14-membered heterocyclyl-O-, C_{1-6} haloalkyl, C_{1-6} haloalkoxy, hydroxyl and C_{1-6} hydroxyalkyl; or,

R_7 and R_8 together with the atom to which they are attached form C_{3-8} cycloalkyl or 3- to 8-membered heterocyclyl; wherein the C_{3-8} cycloalkyl or 3- to 8-membered heterocyclyl is optionally further substituted by one or more R_b; or,

two R_8 together with the atom to which they are attached form C_{3-8} cycloalkyl or 3- to 8-membered heterocyclyl; wherein the C_{3-8} cycloalkyl or 3- to 8-membered heterocyclyl is optionally further substituted by one or more R_b;

M is selected from the group consisting of C_{1-6} alkylene, C_{2-6} alkenylene, C_{2-6} alkynylene, C_{1-6} heteroalkylene, -C(O)O-CH(R_9)-, -C(O)NH-CH(R_9)- and 5- to 8-membered heteroarylene; R_9 is selected from the group consisting of hydrogen and methyl;

when M is -C(O)O-CH(R_9)- or -C(O)NH-CH(R_9)-, CH(R_9) therein is bonded to -C(R_5R_6)-; or,

R_6 and R_9 together with the atom to which they are attached form C_{3-8} cycloalkyl or 3- to 14-membered heterocyclyl; wherein the C_{3-8} cycloalkyl or 3- to 14-membered heterocyclyl is optionally further substituted by one or more R_b;

R_{10} is selected from the group consisting of H, halogen, cyano, C_{1-6} alkyl, C_{1-6} alkoxy, C_{1-6} haloalkoxy, C_{3-6} cycloalkyl, 3- to 8-membered heterocyclyl and C_{1-6} haloalkyl; or,

R_{10} and R_8 together with the atom to which they are attached form C_{3-8} cycloalkyl or 3- to 8-membered heterocyclyl; wherein the C_{3-8} cycloalkyl or 3- to 8-membered heterocyclyl is optionally further substituted by one or more R_b; or,

two R_{10} together with the atom to which they are attached form carbonyl, C_{3-8} cycloalkyl or 3- to 8-membered heterocyclyl; wherein the C_{3-8} cycloalkyl or 3- to 8-membered heterocyclyl is optionally further substituted by one or more R_b;

R_{11}, R_{12}, R_{13}, R_{14}, R_{15}, R_{16}, R_{17} are each independently selected from the group consisting of H, halogen, C_{1-6} alkyl, C_{1-6} alkoxy, C_{1-6} haloalkoxy and C_{1-6} haloalkyl; or,

two R_{17} together with the atom to which they are attached form carbonyl, C_{3-8} cycloalkyl or 3- to 8-membered heterocyclyl; wherein the C_{3-8} cycloalkyl or 3- to 8-membered heterocyclyl is optionally further substituted by one or more R_b; or,

R_{13} and R_{4a} together with the atom to which they are attached form C_{3-8} cycloalkyl or 3- to 8-membered heterocyclyl; wherein the C_{3-8} cycloalkyl or 3- to 8-membered heterocyclyl is optionally further substituted by one or more R_b; or,

R_{16} and R_{5a} together with the atom to which they are attached form C_{3-8} cycloalkyl or 3- to 8-membered heterocyclyl; wherein the C_{3-8} cycloalkyl or 3- to 8-membered heterocyclyl is optionally further substituted by one or more R_b; or,

R_{17} and R_{4a} together with the atom to which they are attached form C_{3-8} cycloalkyl or 3- to 8-membered heterocyclyl; wherein the C_{3-8} cycloalkyl or 3- to 8-membered heterocyclyl is optionally further substituted by one or more R_b; or,

any two of R_{14}, R_{15}, R_{16}, R_4 and R_{4a} together with the atom to which they are attached form C_{3-8} cycloalkyl, 3- to 8-membered heterocyclyl, C_{6-10} aryl or 5- to 10-membered heteroaryl; wherein the C_{3-8} cycloalkyl, 3- to 8-membered heterocyclyl, C_{6-10} aryl or 5- to 10-membered heteroaryl is optionally further substituted by one or more R_b;

R_a is independently selected from the group consisting of absent, H, hydroxyl, oxo, amino, imino, cyano, halogen, C_{1-6} alkyl, C_{1-6} haloalkyl, C_{1-6} alkoxy, C_{1-6} haloalkoxy, -C_{0-3} alkylene-OR_b, -C_{0-3} alkylene-SR_b, -C_{0-3} alkylene-$N(R_b)_2$, -C_{0-3} alkylene-$S(O)_{1-2}R_b$, -C_{0-3} alkylene-$S(R_b)_5$, $=C(R_b)_2$, C_{2-6} alkenyl, C_{2-6} alkynyl, -C_{0-3} alkylene-C_{3-14} cycloalkyl, -C_{0-3} alkylene-(3- to 14-membered heterocyclyl), -C_{0-3} alkylene-C_{6-18} aryl and -C_{0-3} alkylene-(5- to 18-membered heteroaryl); wherein the amino, imino, C_{1-6} alkyl, C_{1-6} haloalkyl, C_{1-6} alkoxy, C_{1-6} haloalkoxy, C_{2-6} alkenyl, C_{2-6} alkynyl, -C_{0-3} alkylene-, -C_{0-3} alkylene-C_{3-14} cycloalkyl, -C_{0-3} alkylene-(3- to 14-membered heterocyclyl), -C_{0-3} alkylene-C_{6-18} aryl or -C_{0-3} alkylene-(5- to 18-membered heteroaryl) is optionally further substituted by one or more R_b;

each R_b is independently selected from the group consisting of H, halogen, hydroxyl, oxo, amino, cyano, C_{1-6} alkyl, C_{1-6} alkoxy, C_{3-6} cycloalkyl, 3- to 8-membered heterocyclyl, C_{1-6} haloalkoxy and C_{1-6} haloalkyl; wherein the amino, C_{1-6} alkyl, C_{1-6} alkoxy, C_{3-6} cycloalkyl, 3- to 8-membered heterocyclyl, C_{1-6} haloalkoxy or C_{1-6} haloalkyl is optionally further substituted by one or more H, halogen, hydroxyl, cyano, C_{1-6} alkyl, C_{1-6} haloalkyl, C_{1-6} alkoxy, C_{1-6} haloalkoxy, amino, -NHC_{1-3} alkyl or -$N(C_{1-3}$ alkyl$)_2$;

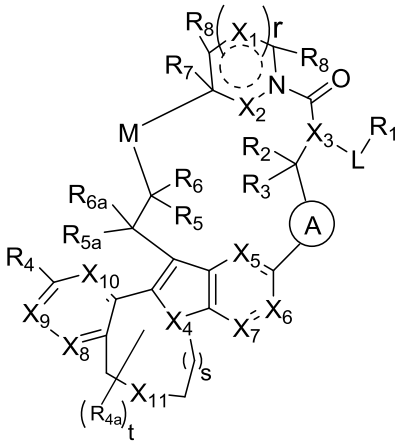
each R_c is independently selected from the group consisting of H, hydroxyl, halogen, C_{1-6} alkyl, C_{3-6} cycloalkyl, 3- to 8-membered heterocyclyl and C_{1-6} haloalkyl;

r is 1 to 3; preferably 1, 2 or 3;

s is 1 to 3, preferably 1, 2 or 3; and

t is 0 to 4, preferably 0, 1, 2, 3 or 4, more preferably 0 to 3.

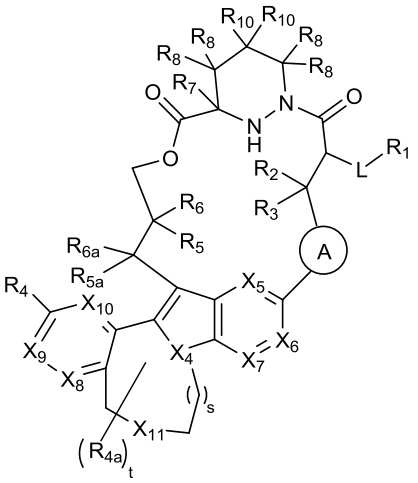
2. The compound, or the stereoisomer, the tautomer, the deuterated compound or the pharmaceutically acceptable salt thereof according to claim 1, wherein formula (I) is formula (I-1):



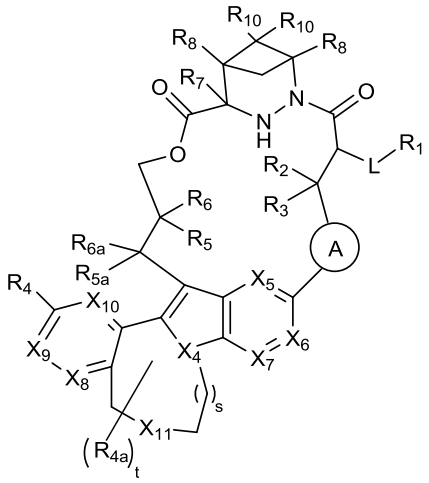
(I-1)

wherein, R_1, R_2, R_3, R_4, R_5, R_6, R_7, R_8, R_{4a}, R_{5a}, R_{6a}, X_1, X_2, X_3, X_4, X_5, X_6, X_7, X_8, X_9, X_{10}, X_{11}, L, M, ring A, r, s, t are as defined in claim 1.

3. The compound, or the stereoisomer, the tautomer, the deuterated compound or the pharmaceutically acceptable salt thereof according to claim 1 or 2, wherein formula (I) is selected from the group consisting of formula (II-1) and formula (II-2):



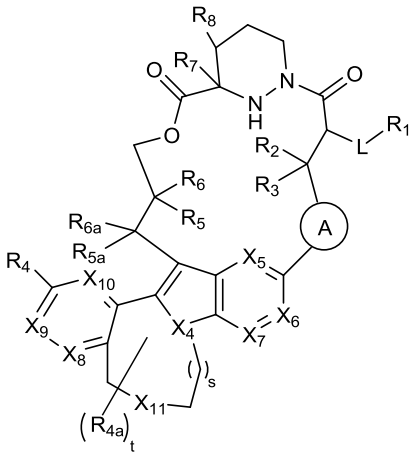
and



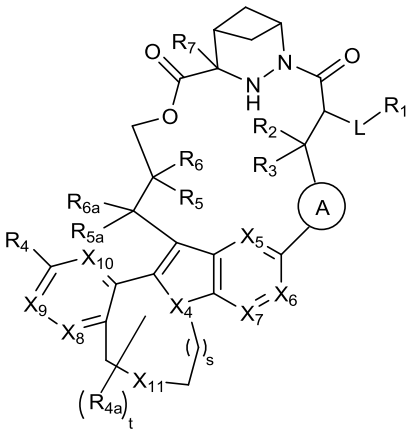
(II-1) (II-2)

wherein, R_1, R_2, R_3, R_4, R_5, R_6, R_7, R_8, R_{10}, R_{4a}, R_{5a}, R_{6a}, X_4, X_5, X_6, X_7, X_8, X_9, X_{10}, X_{11}, L, ring A, s, t are as defined in any one of claims 1 to 2.

4. The compound, or the stereoisomer, the tautomer, the deuterated compound or the pharmaceutically acceptable salt thereof according to any one of claims 1 to 3, wherein formula (I) is selected from the group consisting of formula (II-1a) and formula (II-2a):



and

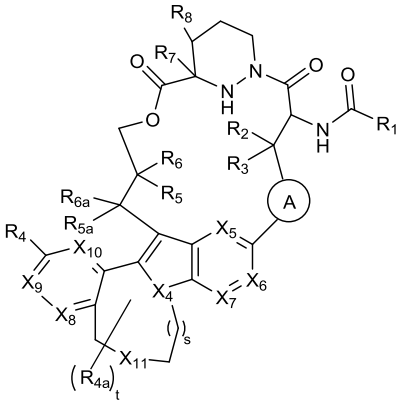


(II-1a) (II-2a)

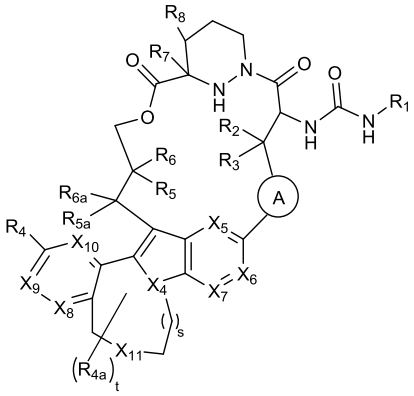
wherein, R_1, R_2, R_3, R_4, R_5, R_6, R_7, R_8, R_{4a}, R_{5a}, R_{6a}, X_4, X_5, X_6, X_7, X_8, X_9, X_{10}, X_{11}, L, ring A, s, t are as defined in any one of claims 1 to 3.

5. The compound, or the stereoisomer, the tautomer, the deuterated compound or the pharmaceutically acceptable salt thereof according to any one of claims 1 to 4, wherein formula

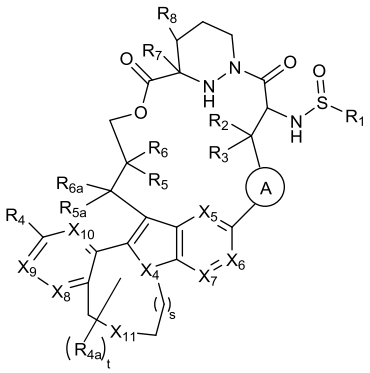
(I) is selected from the group consisting of formulas (IIIa) to (IIIc) and (IIIa') to (IIIc'):



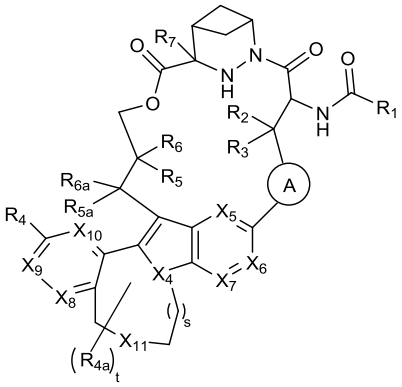
(IIIa)



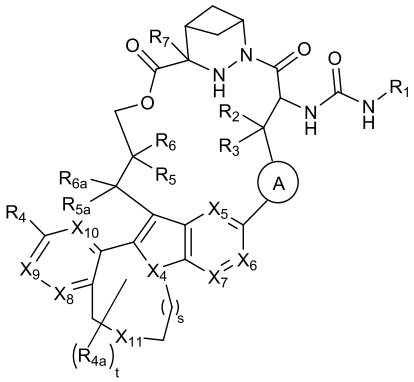
(IIIb)



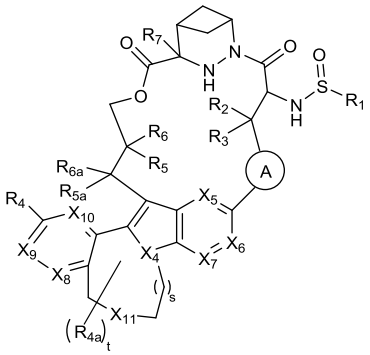
(IIIc)



(IIIa')



(IIIb')



(IIIc')

wherein, R_1, R_2, R_3, R_4, R_5, R_6, R_7, R_8, R_{4a}, R_{5a}, R_{6a}, X_4, X_5, X_6, X_7, X_8, X_9, X_{10}, X_{11}, ring A, s, t are as defined in any one of claims 1 to 4.

6. The compound, or the stereoisomer, the tautomer, the deuterated compound or the pharmaceutically acceptable salt thereof according to any one of claims 1 to 5, wherein ring A is selected from the group consisting of C_{6-18} aryl and 5- to 18-membered heteroaryl; wherein the C_{6-18} aryl or 5- to 18-membered heteroaryl is optionally further substituted by one or more R_a, wherein R_a is selected from the group consisting of H, hydroxyl, cyano, halogen, C_{1-6} alkyl, C_{1-6} haloalkyl, C_{1-6} alkoxy and C_{1-6} haloalkoxy, wherein the C_{1-6} alkyl, C_{1-6} haloalkyl, C_{1-6} alkoxy or C_{1-6} haloalkoxy is optionally further substituted by one or more R_b, wherein R_b is selected from the group consisting of H, halogen and C_{1-6} alkyl; preferably, the C_{6-18} aryl is phenyl, and/or, the 5- to 18-membered heteroaryl is selected from the group consisting of thiazolyl and oxazolyl;

and/or

X_4 is N; and/or

X_5 is selected from the group consisting of CH and N; and/or

X_6 is selected from the group consisting of CH and N; and/or

X_7 is selected from the group consisting of CH and N; and/or

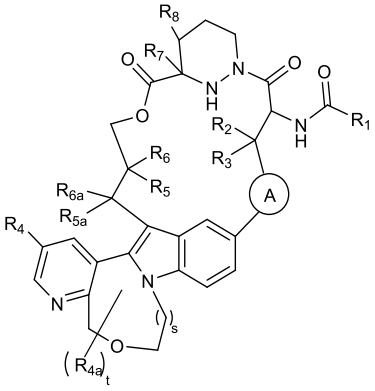
X_8 is selected from the group consisting of CH and N; and/or

X_9 is selected from the group consisting of CH and N; and/or

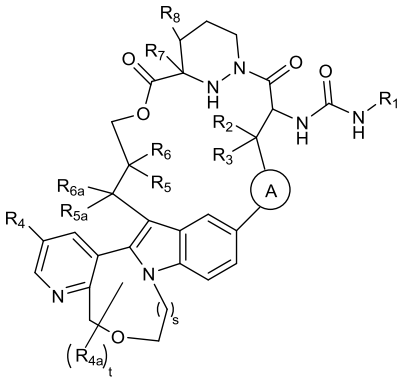
X_{10} is CH; and/or

X_{11} is O.

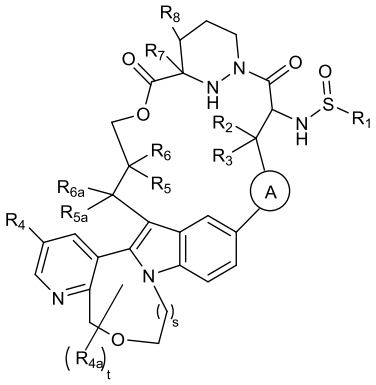
7. The compound, or the stereoisomer, the tautomer, the deuterated compound or the pharmaceutically acceptable salt thereof according to any one of claims 1 to 6, wherein formula (I) is selected from the group consisting of formulas (IVa) to (IVc) and formulas (IVa') to (IVc'):



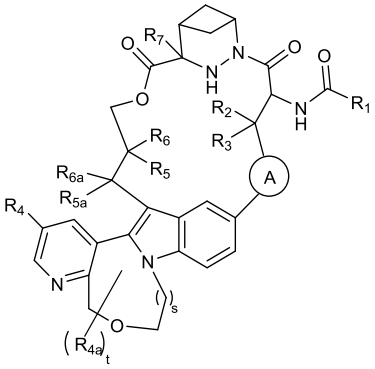
(IVa)



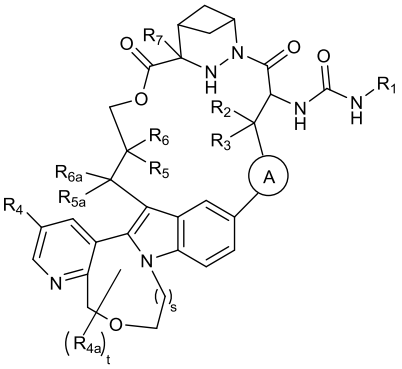
(IVb)



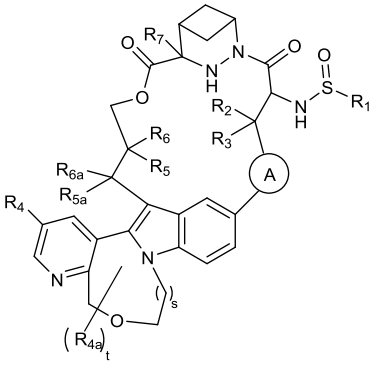
(IVc)



(IVa')



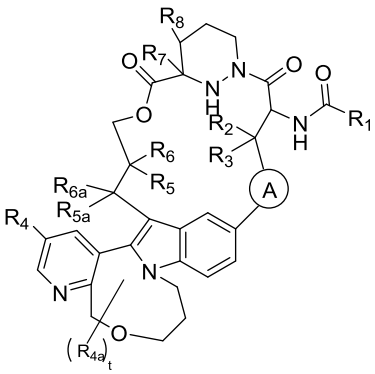
(IVb')



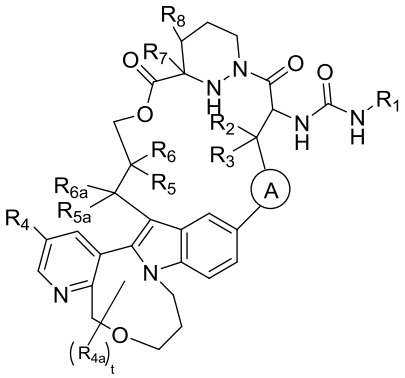
(IVc')

wherein, R_1, R_2, R_3, R_4, R_5, R_6, R_7, R_8, R_{4a}, R_{5a}, R_{6a}, ring A, s, t are as defined in any one of claims 1 to 6.

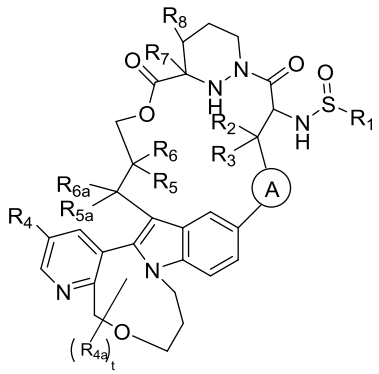
8. The compound, or the stereoisomer, the tautomer, the deuterated compound or the pharmaceutically acceptable salt thereof according to claim 7, wherein formula (I) is selected from the group consisting of formulas (IVa-1) to (IVc-1) and (IVa-1') to (IVc-1'):



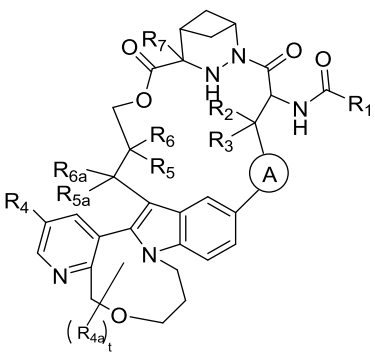
(IVa-1)



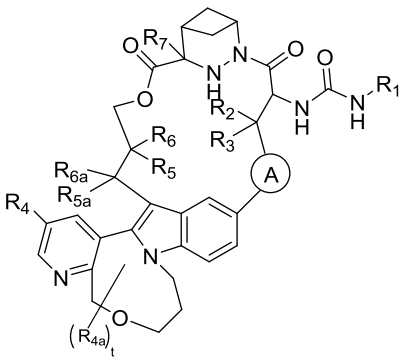
(IVb-1)



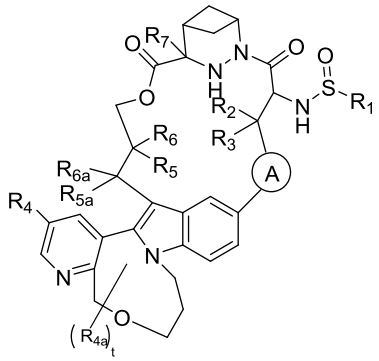
(IVc-1)



(IVa-1')



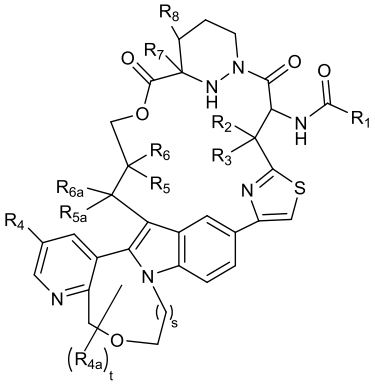
(IVb-1')



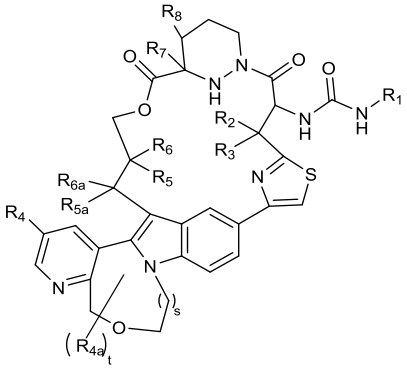
(IVc-1')

wherein, R_1, R_2, R_3, R_4, R_5, R_6, R_7, R_8, R_{4a}, R_{5a}, R_{6a}, ring A, t are as defined in claim 7.

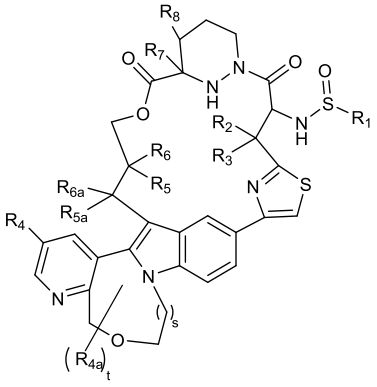
9. The compound, or the stereoisomer, the tautomer, the deuterated compound or the pharmaceutically acceptable salt thereof according to any one of claims 1 to 6, wherein formula (I) is selected from the group consisting of formulas (Va) to (Vc) and formulas (Va') to (Vc'):



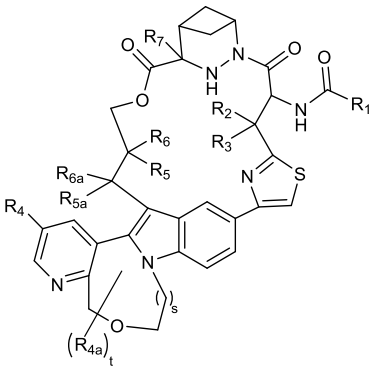
(Va)



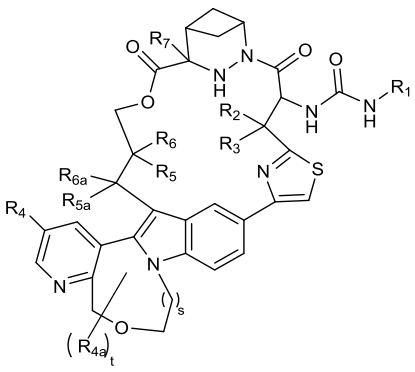
(Vb)



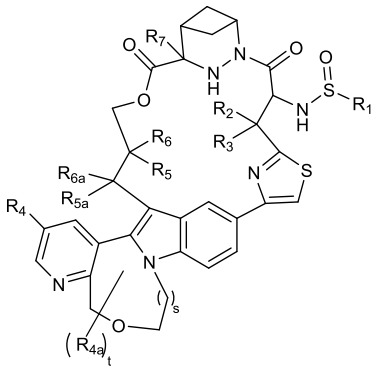
(Vc)



(Va')



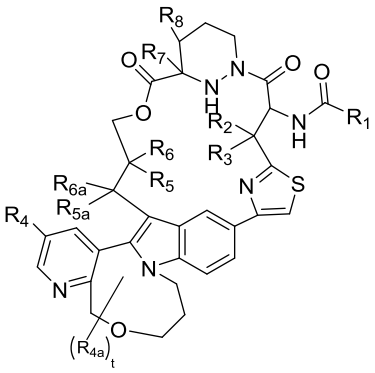
(Vb')



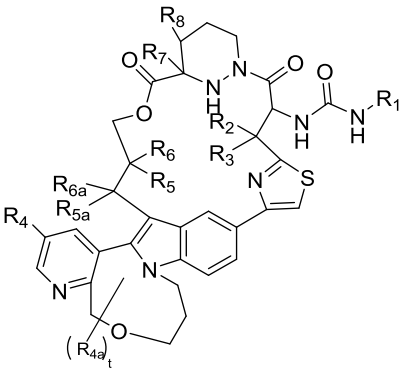
(Vc')

wherein, R_1, R_2, R_3, R_4, R_5, R_6, R_7, R_8, R_{4a}, R_{5a}, R_{6a}, s, t are as defined in any one of claims 1 to 6;

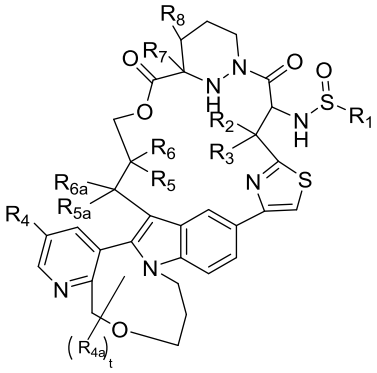
preferably, formula (I) is selected from the group consisting of formulas (Va-1) to (Vc-1) and formulas (Va-1') to (Vc-1'):



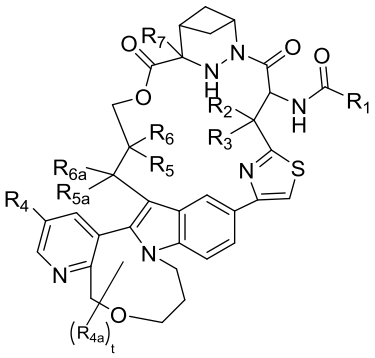
(Va-1)



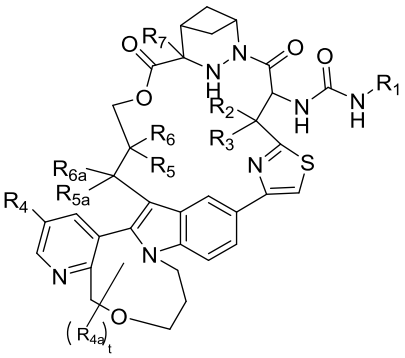
(Vb-1)



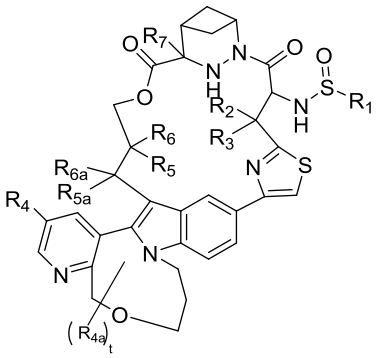
(Vc-1)



(Va-1')



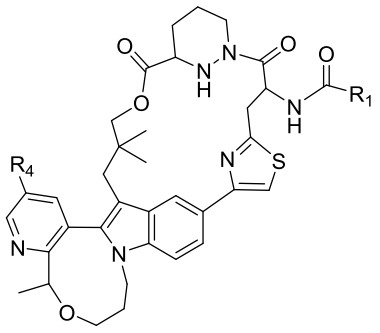
(Vb-1')



(Vc-1')

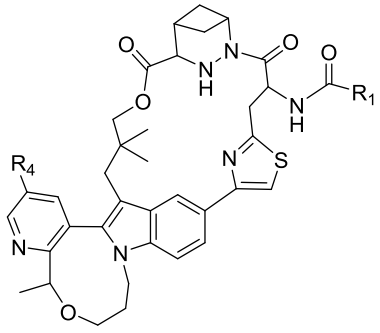
wherein, R_1, R_2, R_3, R_4, R_5, R_6, R_7, R_8, R_{4a}, R_{5a}, R_{6a}, t are as defined in any one of claims 1 to 6.

10. The compound, or the stereoisomer, the tautomer, the deuterated compound or the pharmaceutically acceptable salt thereof according to claim 1, wherein formula (I) is selected from the group consisting of formula (VI) and formula (VI'):



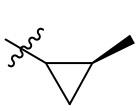
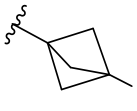
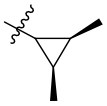
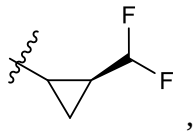
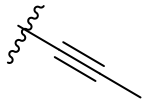
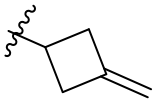
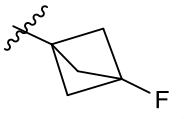
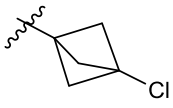
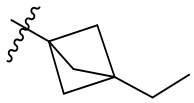
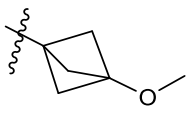
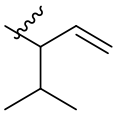
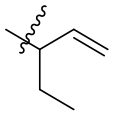
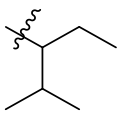
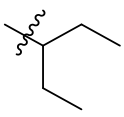
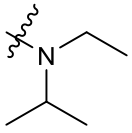
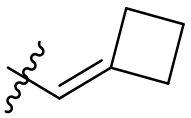
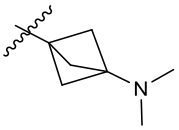
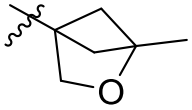
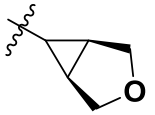
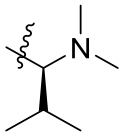
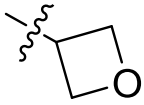
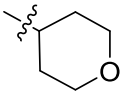
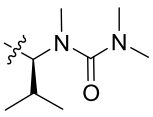
(VI)

and



(VI')

wherein, R_1, R_4 are as defined in claim 1.

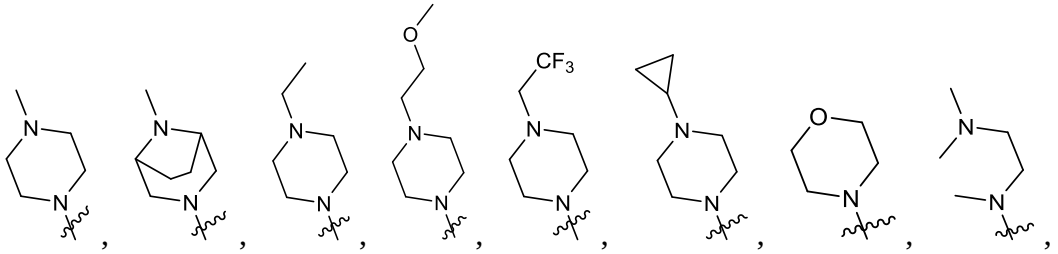
11. The compound, or the stereoisomer, the tautomer, the deuterated compound or the pharmaceutically acceptable salt thereof according to any one of claims 1 to 10, wherein R_1 is selected from the group consisting of C_{1-6} alkyl, -C_{0-3} alkylene-C_{3-14} cycloalkyl, -C_{0-3} alkylene-3- to 14-membered heterocyclyl, -C_{0-3} alkylene-$N(R_c)_2$, -C_{0-3} alkylene-C_{2-6} alkenyl and -C_{0-3} alkylene-C_{2-6} alkynyl; wherein the C_{1-6} alkyl, -C_{0-3} alkylene-C_{3-14} cycloalkyl, -C_{0-3} alkylene-3- to 14-membered heterocyclyl, -C_{0-3} alkylene-$N(R_c)_2$, -C_{0-3} alkylene-C_{2-6} alkenyl or -C_{0-3} alkylene-C_{2-6} alkynyl is optionally further substituted by one or more R_a, each R_c is independently selected from the group consisting of H, hydroxyl, halogen, C_{1-6} alkyl, C_{3-6} cycloalkyl and C_{1-6} haloalkyl; wherein R_a is selected from the group consisting of halogen, C_{1-6} alkyl, $=C(R_b)_2$, C_{1-6} haloalkyl, C_{1-6} alkoxy and -C_{0-3} alkylene-$N(R_b)_2$, R_b is selected from the group consisting of H, halogen and C_{1-6} alkyl; or two R_a on the same atom together with the atom to which they are attached form C_{3-8} cycloalkyl or 3- to 8-membered heterocyclyl; preferably, R_1 is selected from the group consisting of , , , , , , , , , , , , , , , , , , , , , , and ; and/or

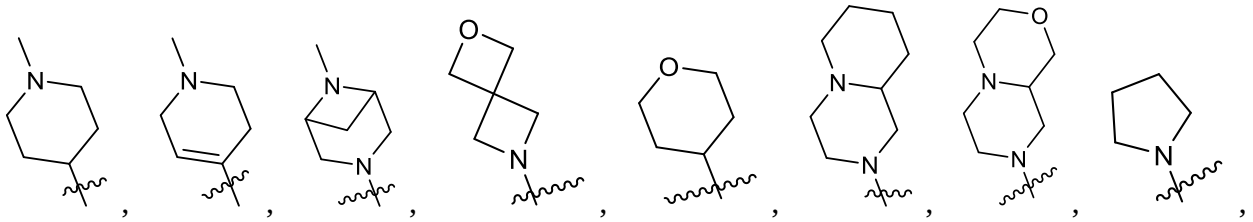
R_2 is H; and/or

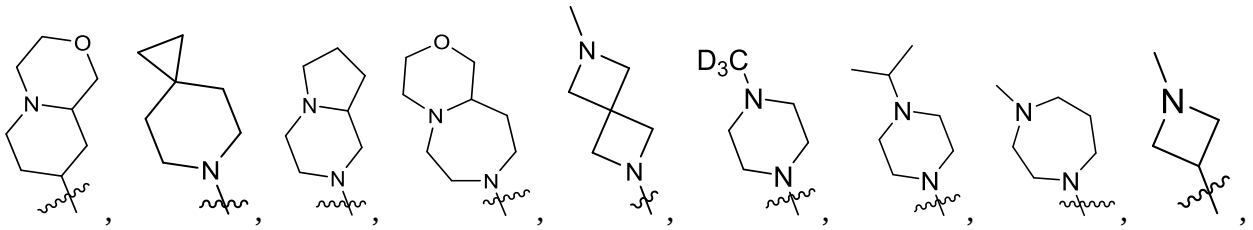
R_3 is H; and/or

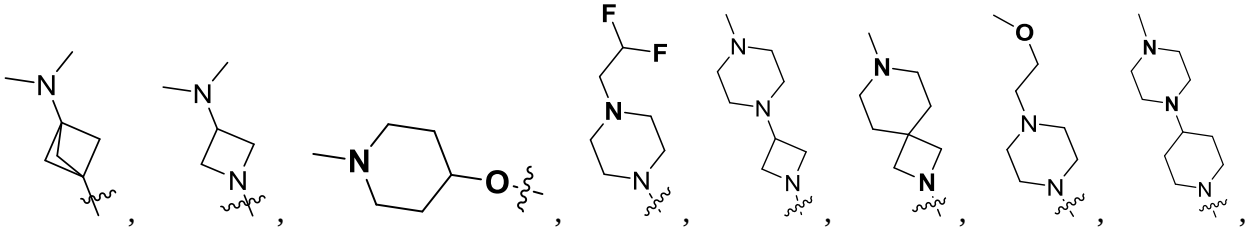
R_4 is selected from the group consisting of H, C_{1-6} alkyl, C_{1-6} alkoxy, -C_{0-3} alkylene-3- to 14-membered heterocyclyl and -C_{0-3} alkylene-$N(R_c)_2$; wherein the C_{1-6} alkyl, C_{1-6} alkoxy, -C_{0-3} alkylene-3- to 14-membered heterocyclyl or -C_{0-3} alkylene-$N(R_c)_2$ is optionally further

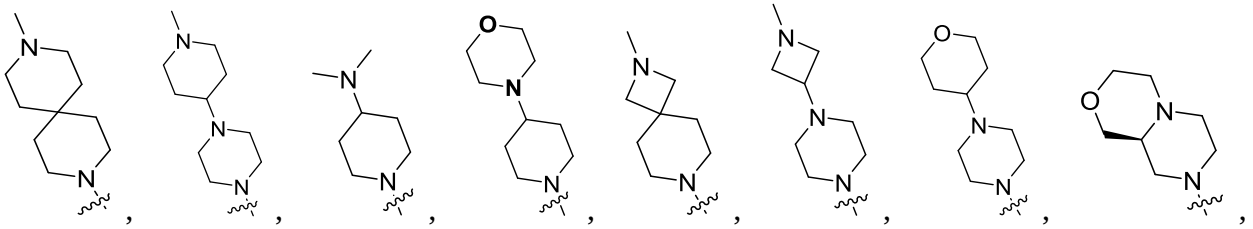
substituted by one or more R_a, wherein R_a is independently selected from the group consisting o absent, H, hydroxyl, oxo, amino, imino, cyano, halogen, C_{1-6} alkyl, -C_{0-3} alkylene-N(R_b)$_2$, C_{1-} haloalkyl, -C_{0-3} alkylene-C_{3-14} cycloalkyl and -C_{0-3} alkylene-3- to 14-membered heterocyclyl; wherein the amino, imino, C_{1-6} alkyl, -C_{0-3} alkylene-, C_{1-6} haloalkyl or -C_{0-3} alkylene-3- t 14-membered heterocyclyl is optionally further substituted by one or more R_b, wherein each R is independently selected from the group consisting of H, halogen, hydroxyl, cyano, C_{1-6} alkyl, C_{1-6} alkoxy, C_{3-6} cycloalkyl and C_{1-6} haloalkyl; preferably, R_4 is selected from the group consisting of

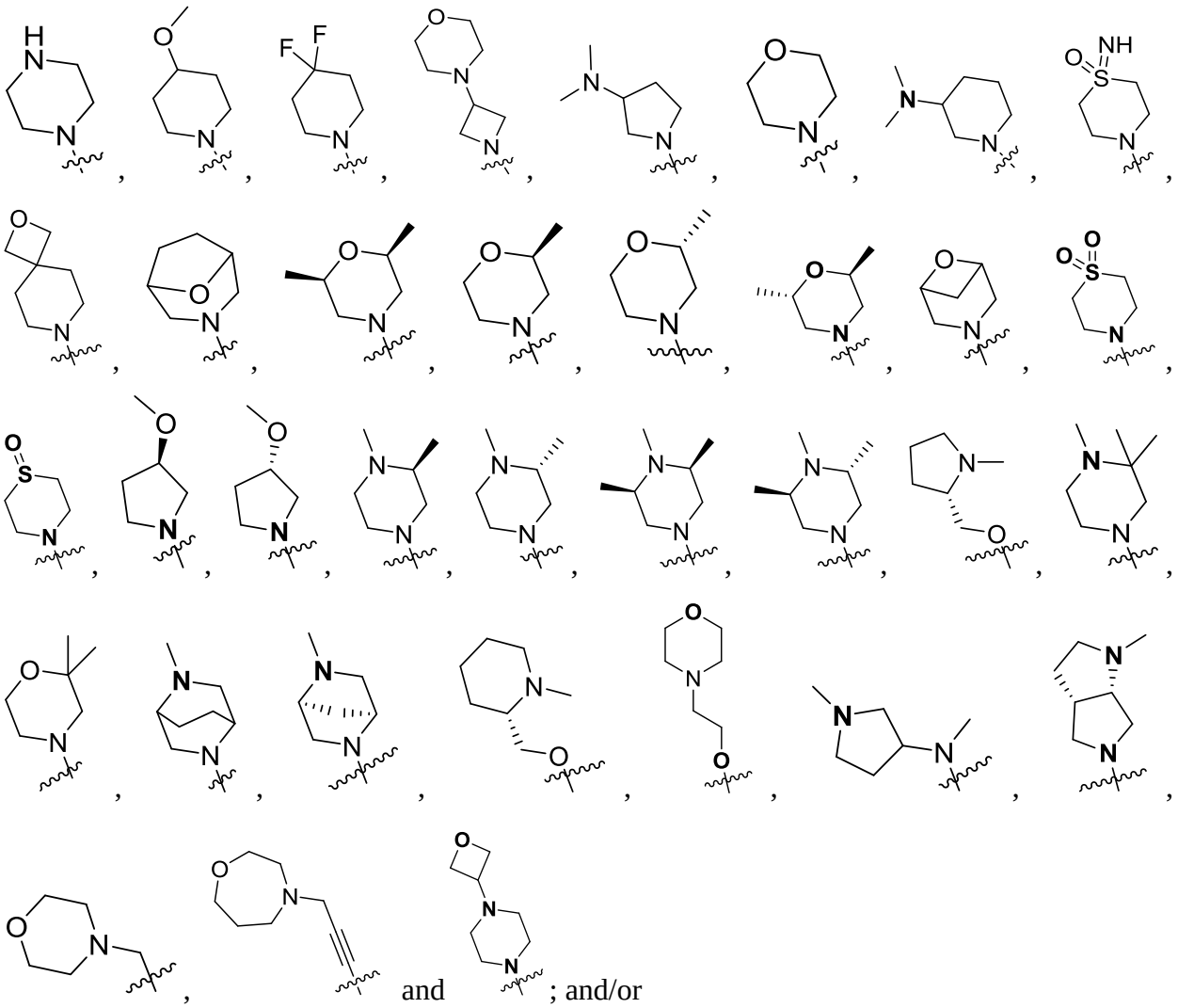












; and/or

R_{4a} is selected from the group consisting of H and C_{1-6} alkyl; and/or

R_5 is selected from the group consisting of H and C_{1-3} alkyl; and/or

R_6 is selected from the group consisting of H and C_{1-3} alkyl; and/or

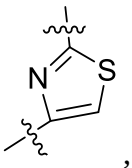
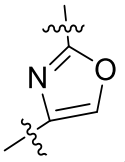
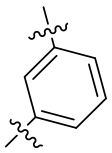
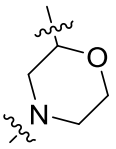
R_{5a} is selected from the group consisting of H and C_{1-3} alkyl; and/or

R_{6a} is selected from the group consisting of H and C_{1-3} alkyl; and/or

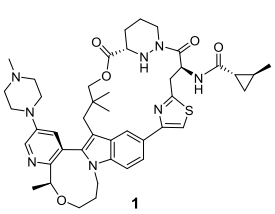
R_7 is selected from the group consisting of H and C_{1-3} alkyl, preferably H; and/or

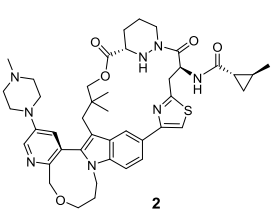
R_8 is selected from the group consisting of H and C_{1-3} alkyl, preferably H.

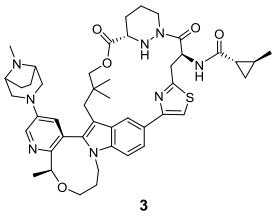
12. The compound, or the stereoisomer, the tautomer, the deuterated compound or the pharmaceutically acceptable salt thereof according to any one of claims 1 to 8 and 11, wherein

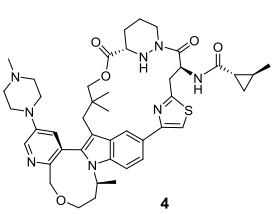
ring A is selected from the group consisting of , ,  and ; wherein these groups are optionally further substituted by one or more R_a; or two R_a on the same atom together with the atom to which they are attached form C_{3-8} cycloalkyl or 3- to 8-membered heterocyclyl, wherein the C_{3-8} cycloalkyl or 3- to 8-membered heterocyclyl is optionally further substituted by one or more R_b.

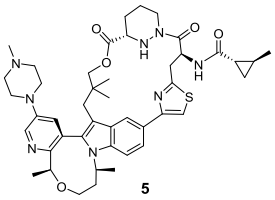
13. The compound, or the stereoisomer, the tautomer, the deuterated compound or the pharmaceutically acceptable salt thereof according to any one of claims 1 to 12, the compound represented by formula (I) is selected from the group consisting of:

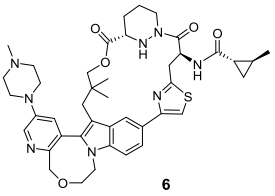

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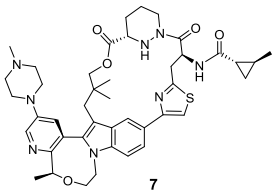

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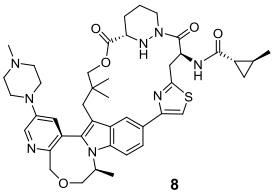

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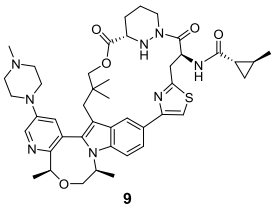

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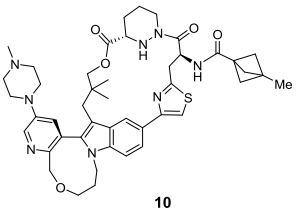

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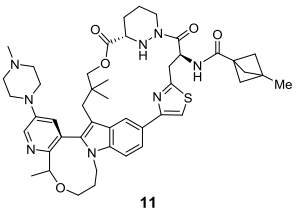

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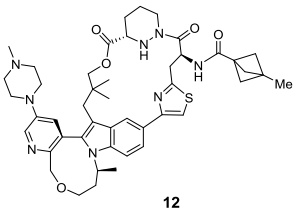

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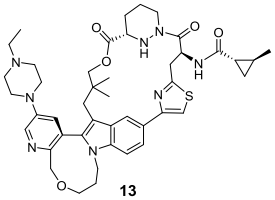

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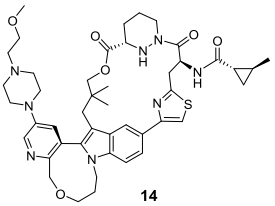

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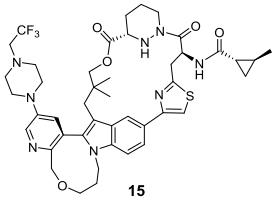

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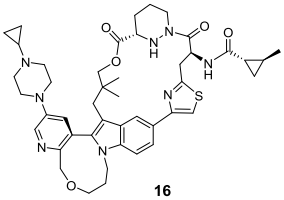

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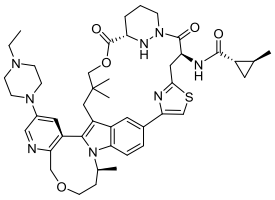

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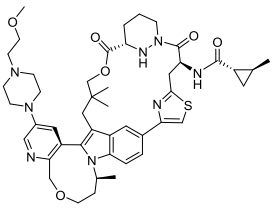

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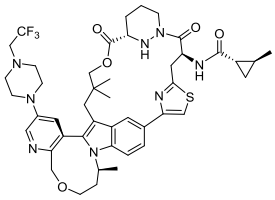

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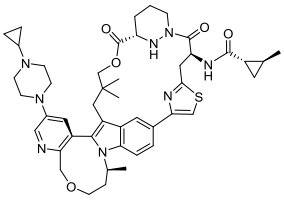

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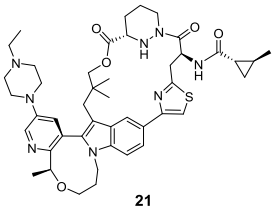

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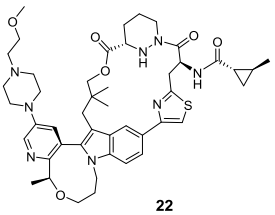

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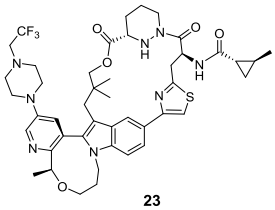

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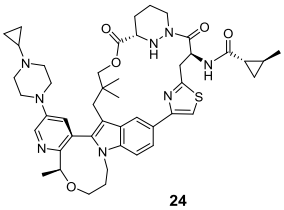

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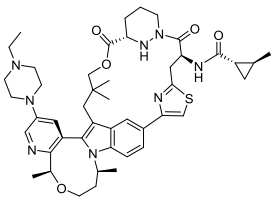

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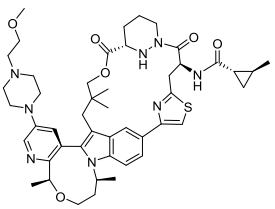

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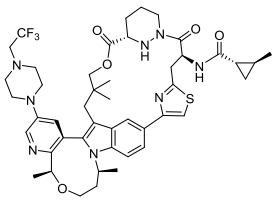

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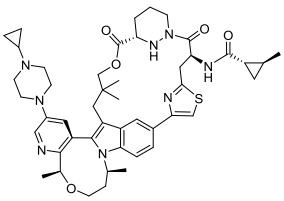

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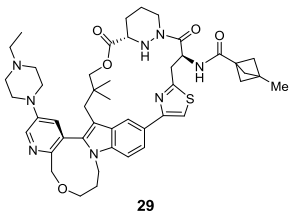

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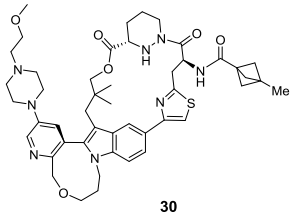

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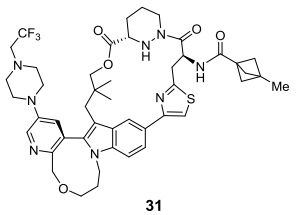

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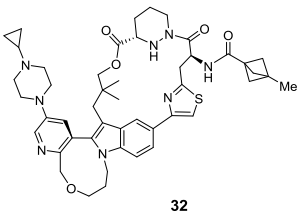

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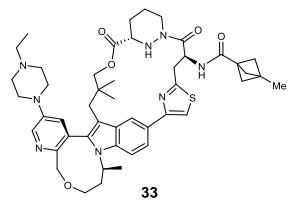

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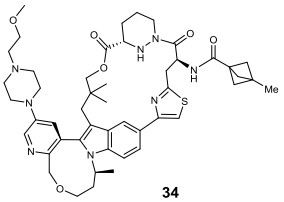

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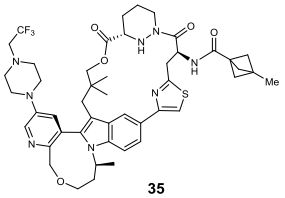

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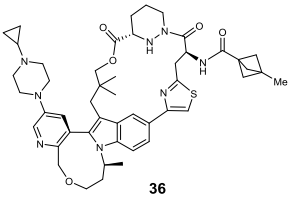

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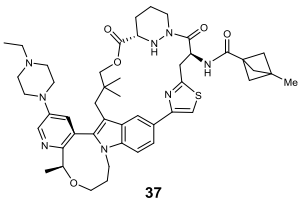

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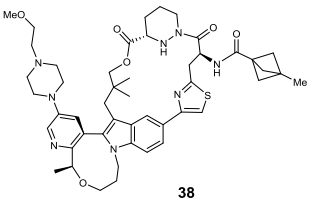

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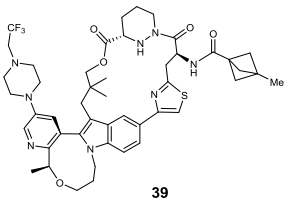

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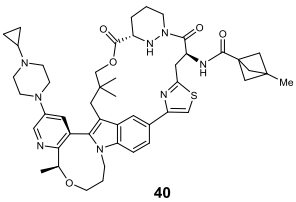

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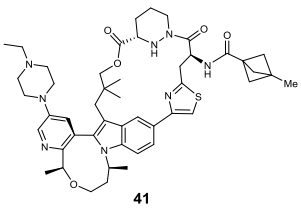

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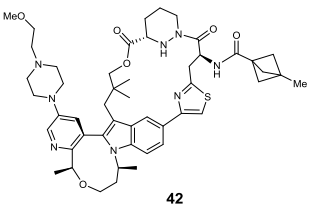

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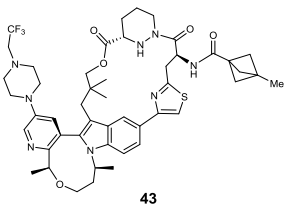

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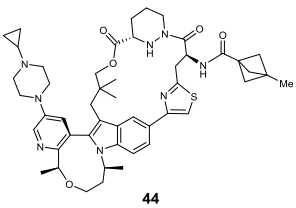

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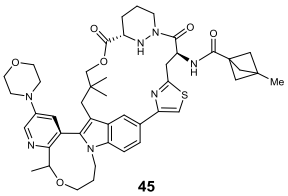

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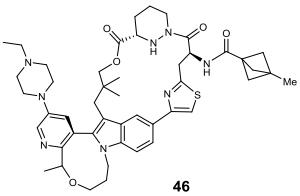

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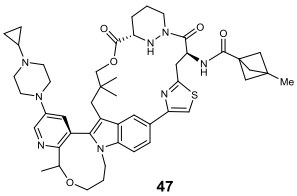

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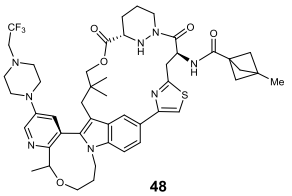

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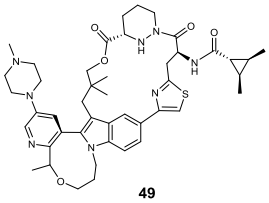

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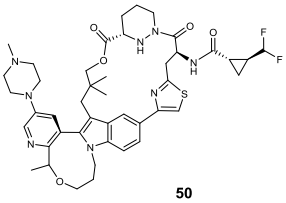

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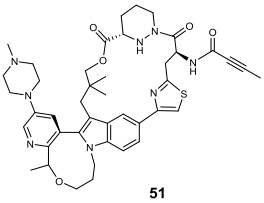

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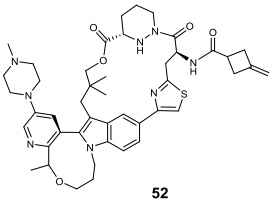

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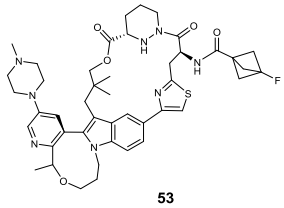

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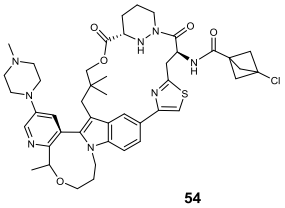

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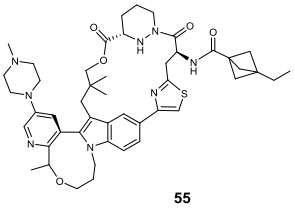

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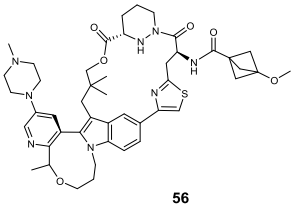

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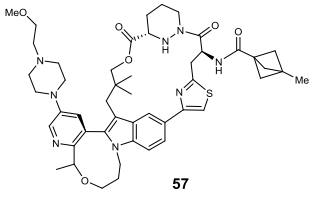

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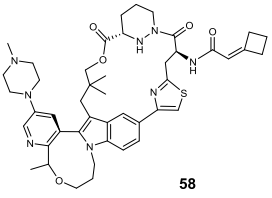

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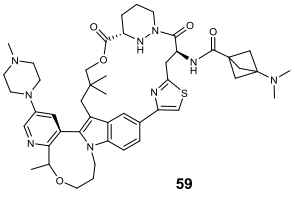

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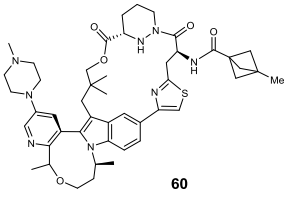

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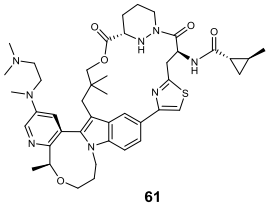

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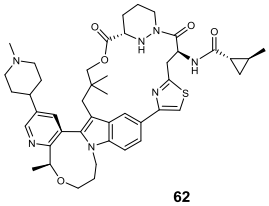

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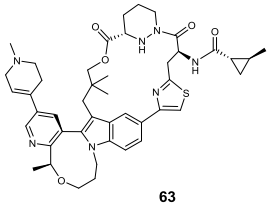

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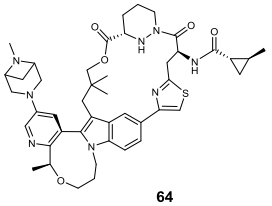

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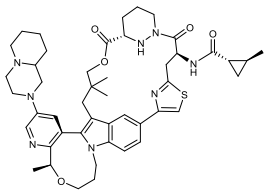

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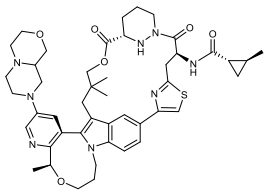

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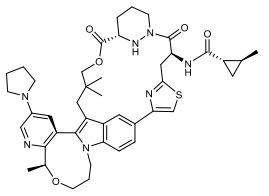

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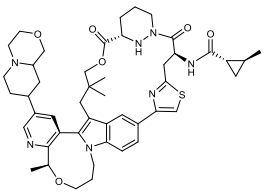
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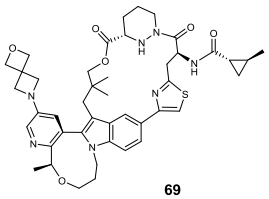
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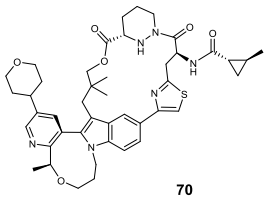
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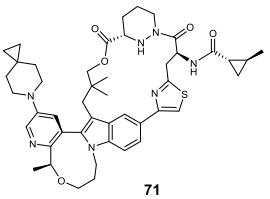
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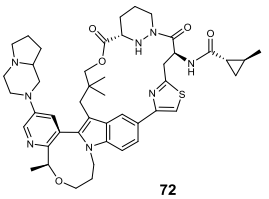
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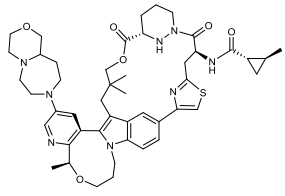
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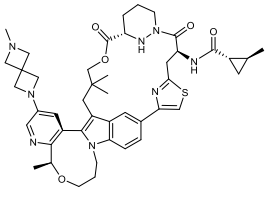
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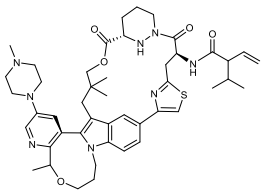
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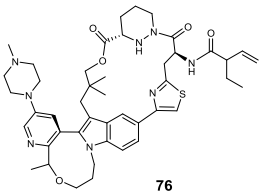
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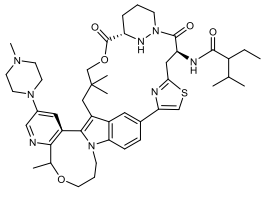
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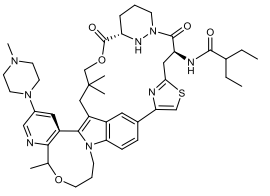
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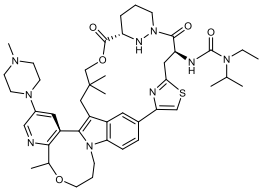
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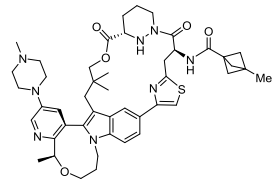
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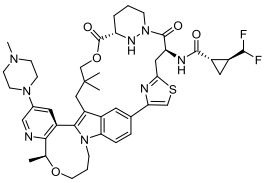
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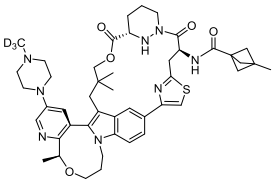
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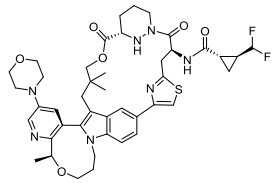
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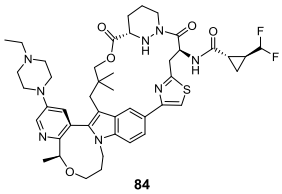
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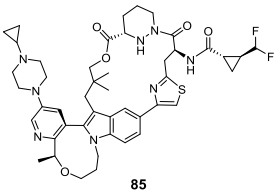
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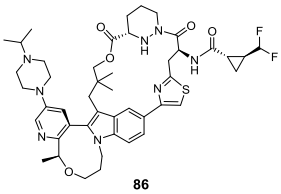
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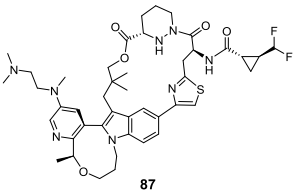
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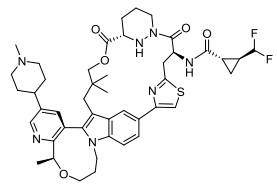
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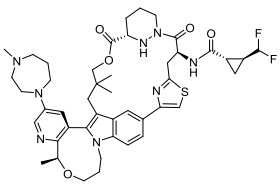
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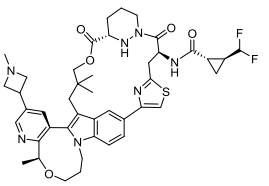
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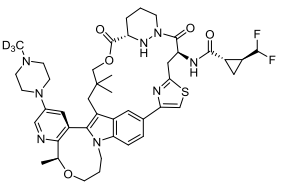
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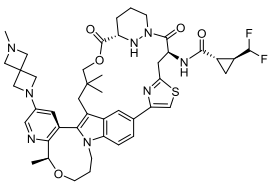
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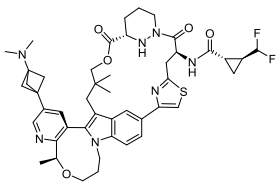
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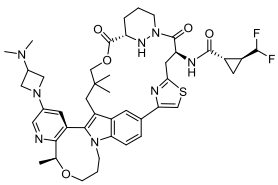
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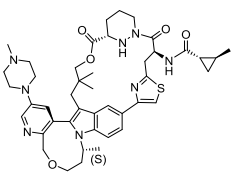
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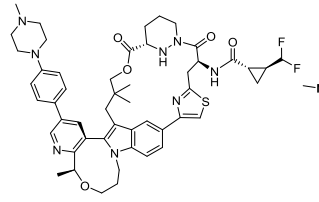
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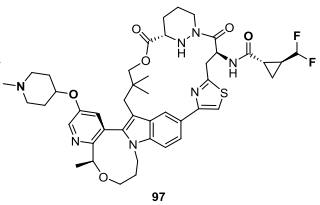


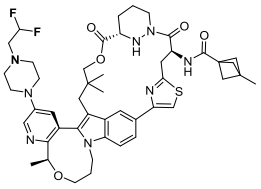
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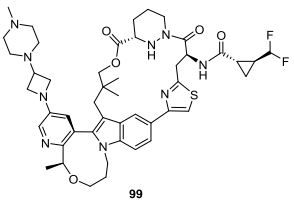


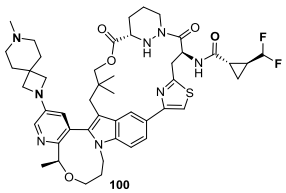
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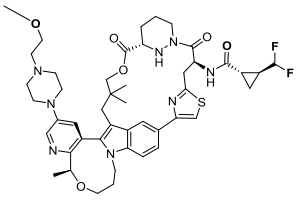

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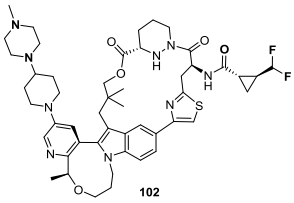

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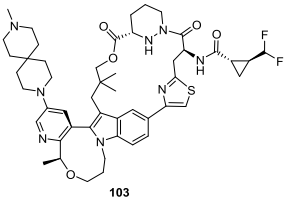

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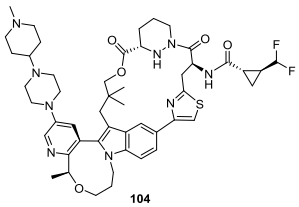

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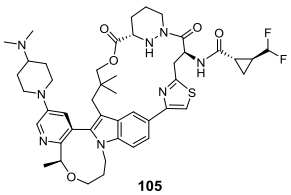

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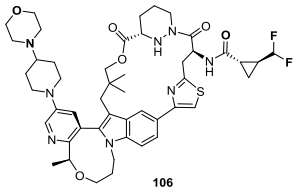

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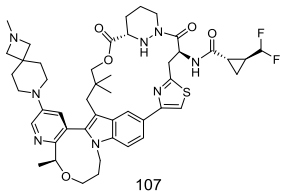

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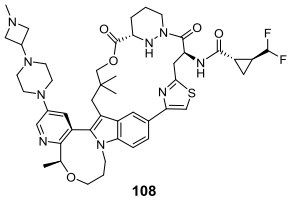

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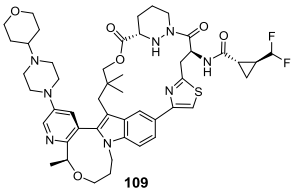

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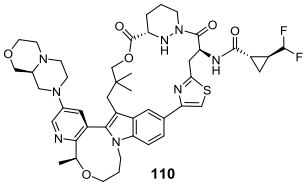

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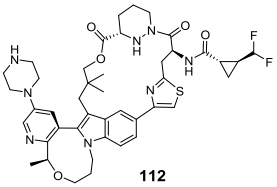

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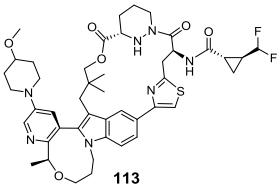

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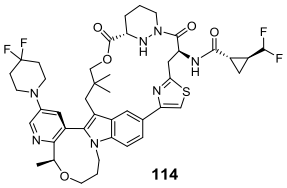

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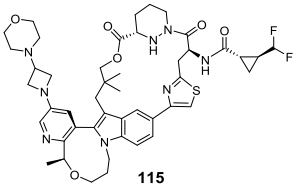

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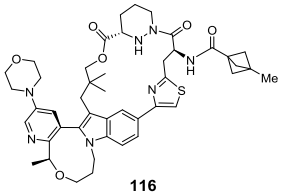

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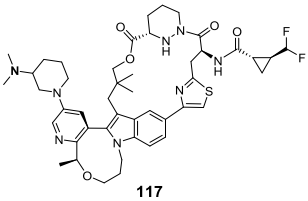

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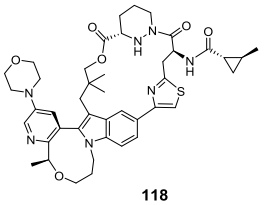

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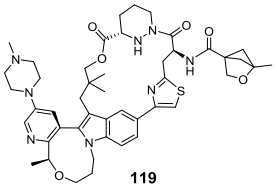

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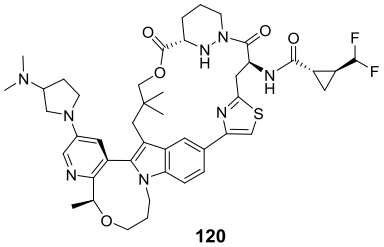

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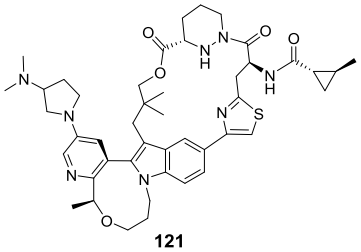

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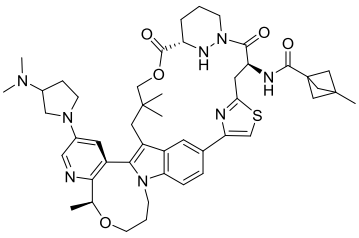

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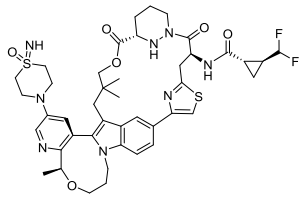

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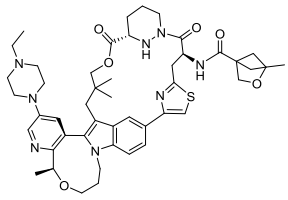

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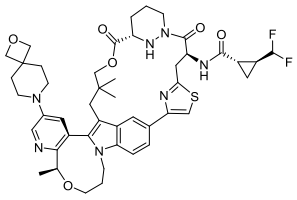

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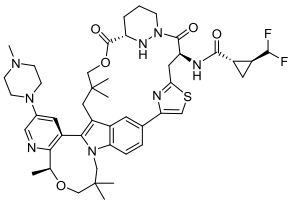
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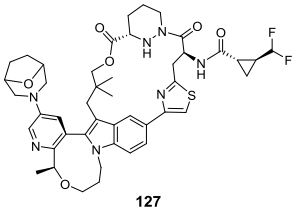
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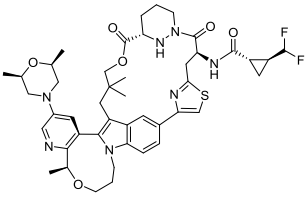
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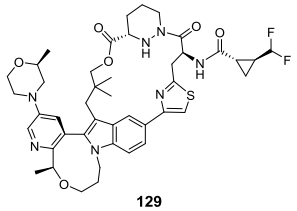
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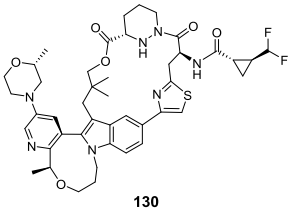
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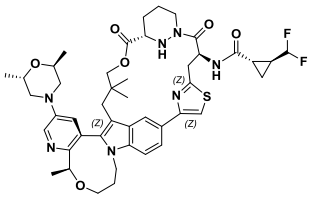
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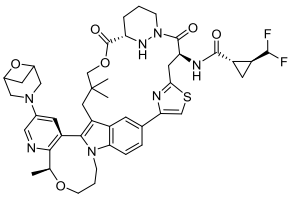
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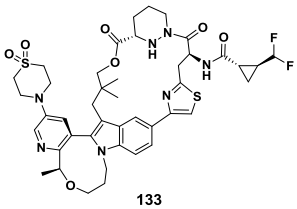
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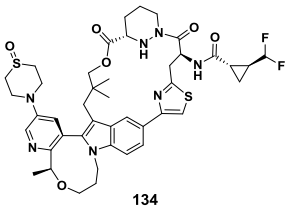
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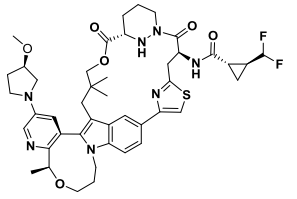
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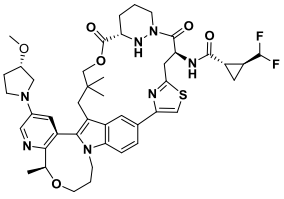
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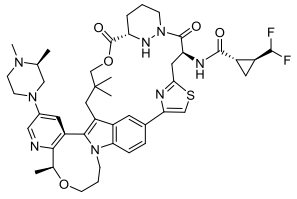
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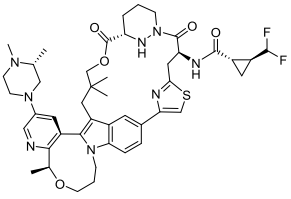
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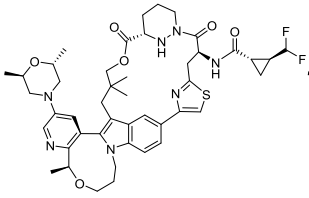
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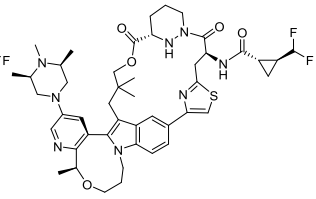
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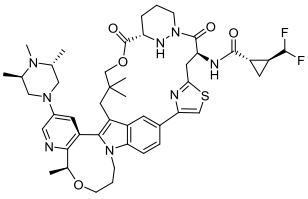
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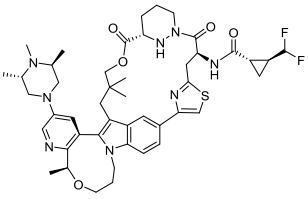
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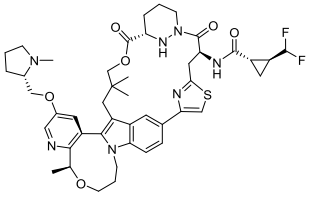
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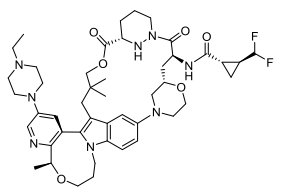
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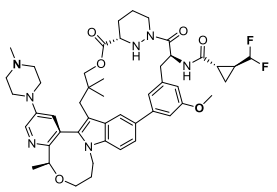
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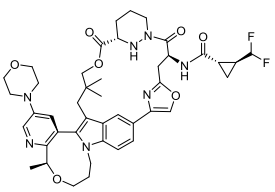
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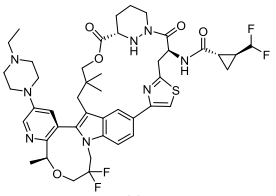
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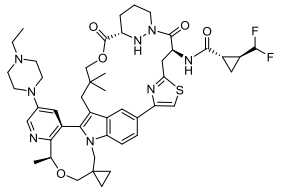
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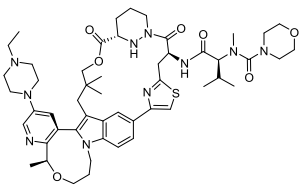
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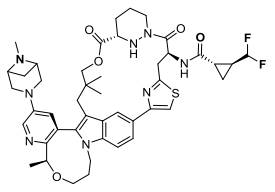
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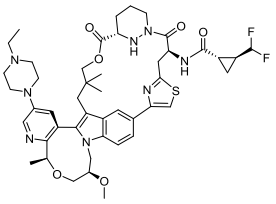
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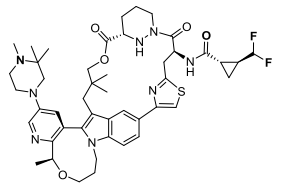
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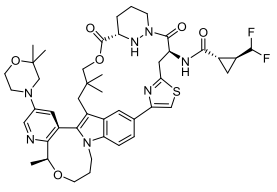
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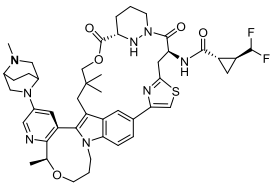
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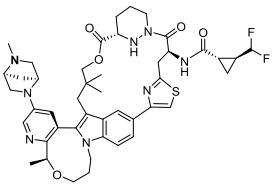
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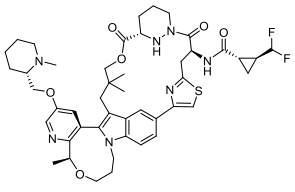
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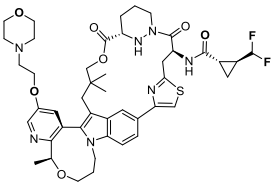
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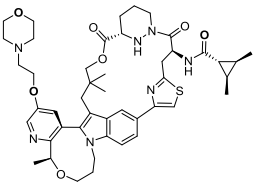
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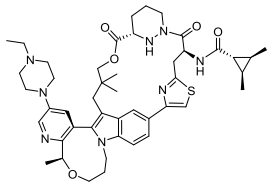
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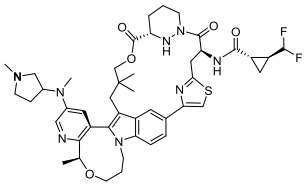
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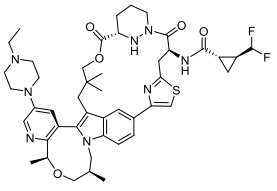
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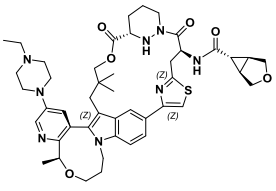
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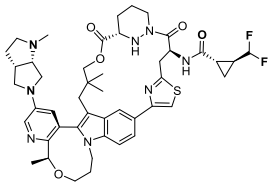
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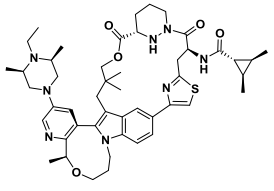
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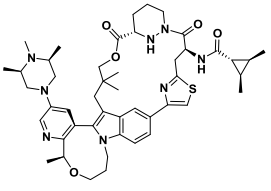
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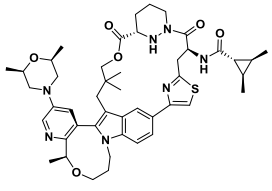
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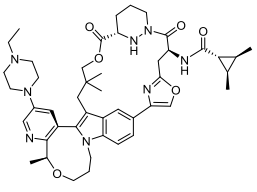
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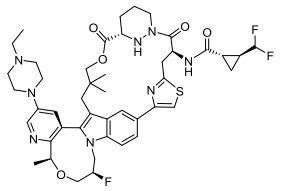
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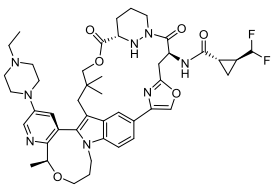
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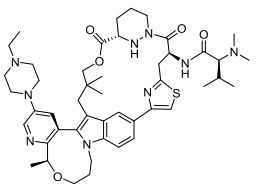
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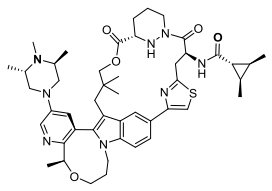
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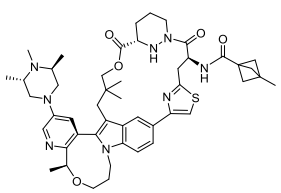
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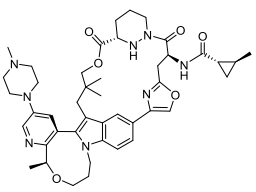
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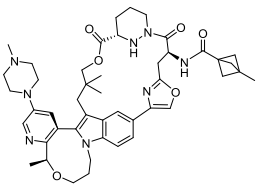
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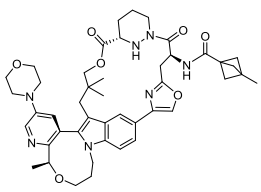
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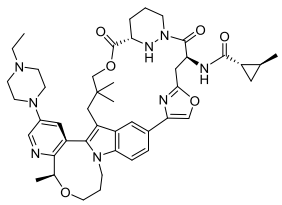
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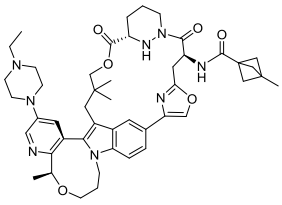


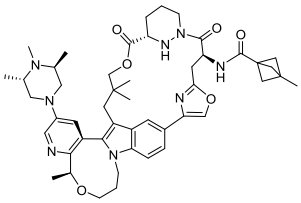
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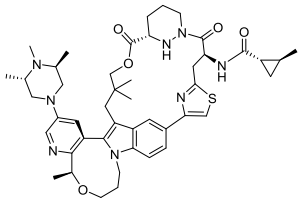


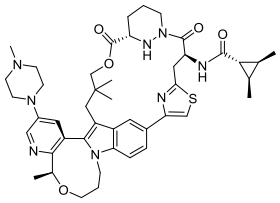
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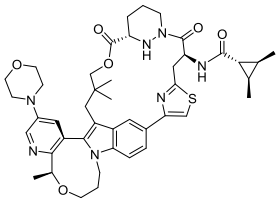

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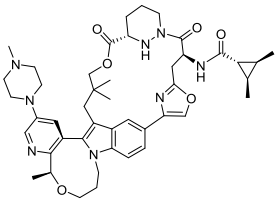

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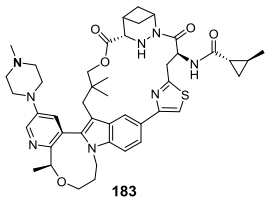

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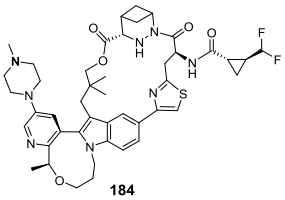

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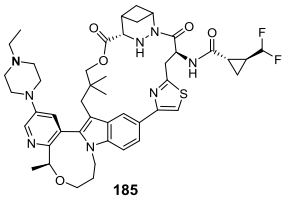

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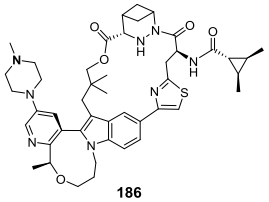

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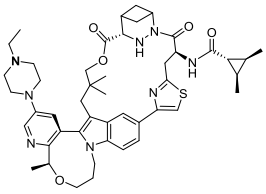

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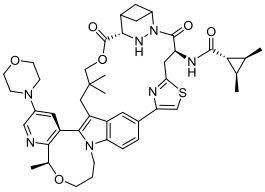

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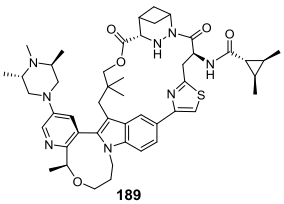

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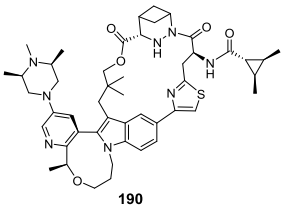

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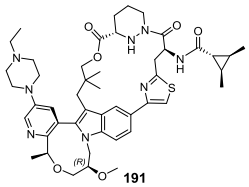

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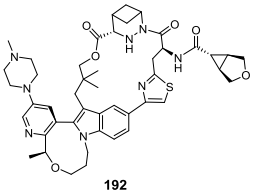

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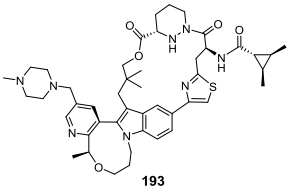

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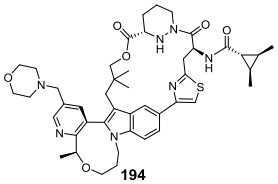

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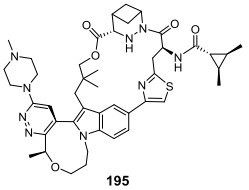

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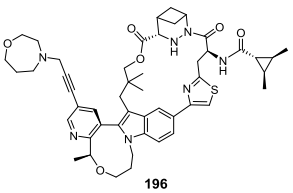

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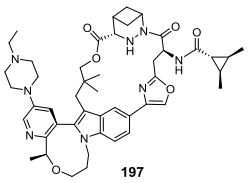

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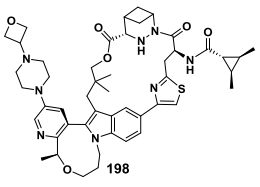

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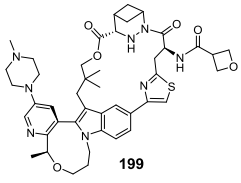

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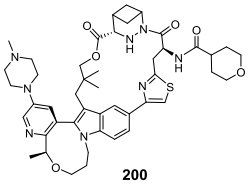

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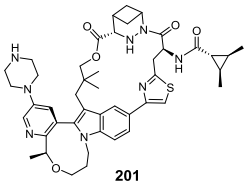

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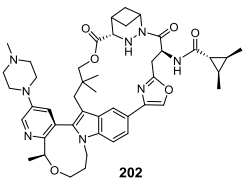

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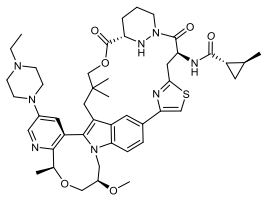

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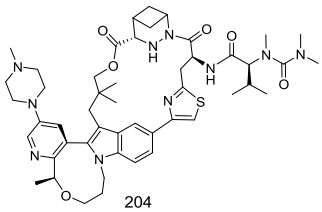

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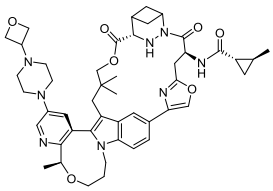

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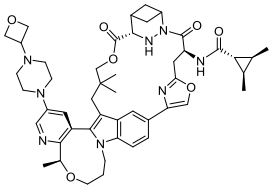

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and


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14. A pharmaceutical composition, comprising a therapeutically effective amount of the compound, or the stereoisomer, the tautomer, the deuterated compound or the pharmaceutically acceptable salt thereof according to any one of claims 1 to 13.

15. Use of the compound, or the stereoisomer, the tautomer, the deuterated compound or the pharmaceutically acceptable salt thereof according to any one of claims 1 to 13, or the pharmaceutical composition according to claim 14 in the manufacture of a medicament for treating a KRAS-mediated disease.