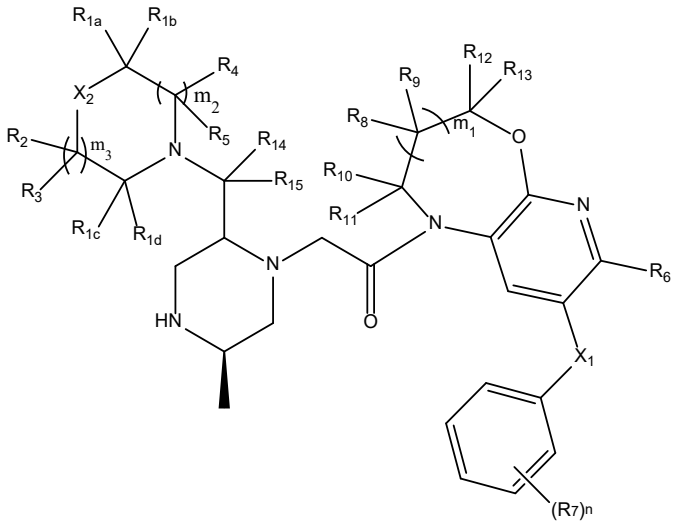
CLAIMS

1. A compound of Formula (**I**):



(I)

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

$\mathbf{X_1}$ and $\mathbf{X_2}$ are each independently -O-, -S-, -N$\mathbf{R^a}$-, or -C$\mathbf{R^aR^b}$-;

m_1 is 0;

m_2, and m_3 are each independently 0, 1 or 2;

$\mathbf{R_{1a}}$, $\mathbf{R_{1b}}$, $\mathbf{R_{1c}}$, $\mathbf{R_{1d}}$, and $\mathbf{R_7}$, which may be the same or different, are each independently hydrogen, halogen, -$C_{1\text{-}8}$alkyl, -$C_{2\text{-}8}$alkenyl, -$C_{2\text{-}8}$alkynyl, -$C_{3\text{-}8}$cycloalkyl, heterocyclyl, aryl, heteroaryl, oxo, -CN, -NO_2, -O$\mathbf{R^a}$, -S$\mathbf{R^a}$, -$SO_2\mathbf{R^a}$, -CO$\mathbf{R^a}$, -$CO_2\mathbf{R^a}$, -CON$\mathbf{R^aR^b}$, -C(=N$\mathbf{R^a}$)N$\mathbf{R^bR^c}$, -N$\mathbf{R^aR^b}$, -N$\mathbf{R^a}$CO$\mathbf{R^b}$, -N$\mathbf{R^a}$CON$\mathbf{R^bR^c}$, -N$\mathbf{R^a}$$CO_2\mathbf{R^b}$, -N$\mathbf{R^a}SON\mathbf{R^bR^c}$, -N$\mathbf{R^a}$$SO_2N\mathbf{R^bR^c}$, -$SO_2N\mathbf{R^aR^b}$, or –N$\mathbf{R^a}$$SO_2\mathbf{R^b}$, each of said -$C_{1\text{-}8}$alkyl, -$C_{2\text{-}8}$alkenyl, -$C_{2\text{-}8}$alkynyl, -$C_{3\text{-}8}$cycloalkyl, heterocyclyl, aryl, or heteroaryl is optionally substituted with 1-3 $\mathbf{R^d}$;

n is 0, 1, 2, 3 or 4;

$\mathbf{R_3}$ and $\mathbf{R_5}$ are each independently hydrogen, halogen, -$C_{3\text{-}8}$cycloalkyl, or -$C_{1\text{-}8}$alkyl, said -$C_{1\text{-}8}$alkyl or -$C_{3\text{-}8}$cycloalkyl is optionally substituted with at least one halogen or -O$\mathbf{R^a}$;

$\mathbf{R_2}$ and $\mathbf{R_4}$ are each independently hydrogen or -$C_{1\text{-}8}$alkyl; or

$\mathbf{R_4}$ and $\mathbf{R_5}$ together with the same carbon atom to which they are attached form a spiro 3-to 5-membered carbon ring; or

$\mathbf{R_2}$ at one of its occurrences and $\mathbf{R_4}$ at one of its occurrences together form a bridge comprising zero, one or two -CH_2- moieties in the bridge; or

or $\mathbf{R_{1b}}$ and $\mathbf{R_4}$ at one of its occurrences together form a 3- to 6-membered carbon ring;

or $\mathbf{R_{1d}}$ and $\mathbf{R_4}$ at one of its occurrences together form a bridge comprising one or two -CH_2- moieties in the bridge;

R_6 is hydrogen, halogen, -C_{1-8}alkyl, -C_{2-8}alkenyl, -C_{2-8}alkynyl, -C_{3-8}cycloalkyl, heterocyclyl, aryl, heteroaryl, oxo, -CN, -NO_2, -O**R**^{a}, -S**R**^{a}, -SO_2**R**^{a}, -CO**R**^{a}, -CO_2**R**^{a}, -CON**R**^{a}**R**^{b}, -C(=N**R**^{a})N**R**^{b}**R**^{c}, -N**R**^{a}**R**^{b}, -N**R**^{a}CO**R**^{b}, -N**R**^{a}CON**R**^{b}**R**^{c}, -N**R**^{a}CO_2**R**^{b}, -N**R**^{a}SON**R**^{b}**R**^{c}, -N**R**^{a}SO_2N**R**^{b}**R**^{c}, -SO_2N**R**^{a}**R**^{b}, or –N**R**^{a}SO_2**R**^{b}, each of said -C_{1-8}alkyl, -C_{2-8}alkenyl, -C_{2-8}alkynyl, -C_{3-8}cycloalkyl, heterocyclyl, aryl, or heteroaryl is optionally substituted with 1-3 **R**^{d};

R_8 and **R_9** are each independently hydrogen, -C_{1-8}alkyl, C_{1-8}alkoxy-C_{1-8}alkyl-, -C_{2-8}alkenyl, -C_{2-8}alkynyl or C_{3-8}cycloalkyl;

R_{10} and **R_{11}** are each independently hydrogen, -C_{1-8}alkyl, -C_{2-8}alkenyl, -C_{2-8}alkynyl, -C_{3-8}cycloalkyl, heterocyclyl, aryl, heteroaryl, oxo, -CN, -NO_2, -O**R**^{a}, -S**R**^{a}, -SO_2**R**^{a}, -CO**R**^{a}, -CO_2**R**^{a}, -CON**R**^{a}**R**^{b}, -C(=N**R**^{a})N**R**^{b}**R**^{c}, -N**R**^{a}**R**^{b}, -N**R**^{a}CO**R**^{b}, -N**R**^{a}CON**R**^{b}**R**^{c}, -N**R**^{a}CO_2**R**^{b}, -N**R**^{a}SON**R**^{b}**R**^{c}, -N**R**^{a}SO_2N**R**^{b}**R**^{c}, -SO_2N**R**^{a}**R**^{b}, or –N**R**^{a}SO_2**R**^{b}, each of said -C_{1-8}alkyl, -C_{2-8}alkenyl, -C_{2-8}alkynyl, -C_{3-8}cycloalkyl, heterocyclyl, aryl, or heteroaryl is optionally substituted with 1-3 **R**^{d}; or

R_{10} and **R_{11}** together form a spiro 3-to 5-membered carbon ring optionally substituted with 1-3 **R**^{d};

R_{12} and **R_{13}** are each independently hydrogen, -C_{1-8}alkyl, -C_{2-8}alkenyl, -C_{2-8}alkynyl, -C_{3-8}cycloalkyl, heterocyclyl, aryl, heteroaryl, oxo, -CN, -NO_2, -O**R**^{a}, -S**R**^{a}, -SO_2**R**^{a}, -CO**R**^{a}, -CO_2**R**^{a}, -CON**R**^{a}**R**^{b}, -C(=N**R**^{a})N**R**^{b}**R**^{c}, -N**R**^{a}**R**^{b}, -N**R**^{a}CO**R**^{b}, -N**R**^{a}CON**R**^{b}**R**^{c}, -N**R**^{a}CO_2**R**^{b}, -N**R**^{a}SON**R**^{b}**R**^{c}, -N**R**^{a}SO_2N**R**^{b}**R**^{c}, -SO_2N**R**^{a}**R**^{b}, or –N**R**^{a}SO_2**R**^{b}, each of said -C_{1-8}alkyl, -C_{2-8}alkenyl, -C_{2-8}alkynyl, cycloalkyl, heterocyclyl, aryl, or heteroaryl is optionally substituted with 1-3 **R**^{d}; or

R_{12} and **R_{13}** together form a spiro 3-to 5-membered carbon ring optionally substituted with 1-3 **R**^{d};

R_{14} and **R_{15}** are each independently selected from hydrogen or -C_{1-8}alkyl;

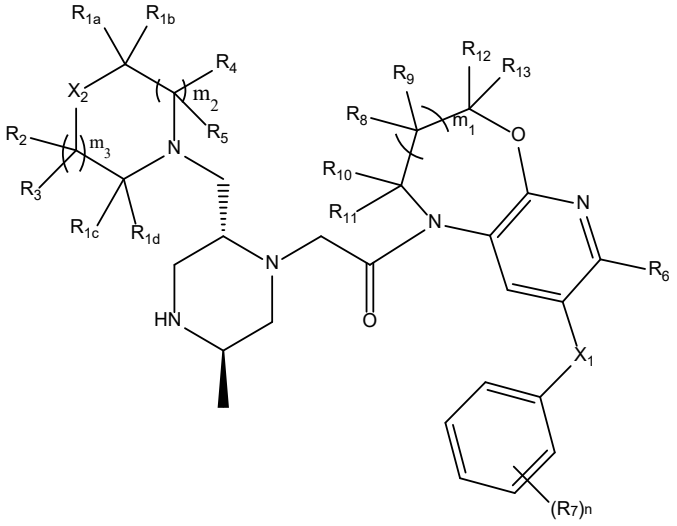
each **R**^{a}, **R**^{b}, and **R**^{c} are independently hydrogen, -C_{1-8}alkyl, -C_{2-8}alkenyl, -C_{2-8}alkynyl, cycloalkyl, heterocyclyl, aryl, or heteroaryl; each of said -C_{1-8}alkyl, -C_{2-8}alkenyl, -C_{2-8}alkynyl, cycloalkyl, heterocyclyl, aryl, or heteroaryl is optionally substituted with 1-3 **R**^{d}; or

(**R**^{a} and **R**^{b}), (**R**^{a} and **R**^{c}) or (**R**^{b} and **R**^{c}), together with the atom(s) to which they are attached, form a 3- to 8-member ring, said ring comprising 0, 1 or 2 additional heteroatoms independently selected from nitrogen, oxygen or optionally oxidized sulfur as ring member(s), said ring is optionally substituted with 1-3 **R**^{d};

R^d, at each of its occurrences, is independently hydrogen, halogen, -C_{1-8}alkyl, -C_{2-8}alkenyl, -C_{2-8}alkynyl, -C_{3-8}cycloalkyl, heterocyclyl, aryl, heteroaryl, oxo, -CN, -NO_2, -O**R**^{e}, -S**R**^{a}, -SO_2**R**^{e}, -SO_2N**R**^{e}**R**^{f}, -CO**R**^{e}, -CO_2**R**^{e}, -CON**R**^{e}**R**^{f}, -C(=N**R**^{e})N**R**^{f}**R**^{g}, -N**R**^{e}**R**^{f}, -N**R**^{e}CO**R**^{f}, -N**R**^{e}CON**R**^{f}**R**^{g}, -N**R**^{e}CO_2**R**^{f}, -N**R**^{e}SON**R**^{f}**R**^{g}, -N**R**^{e}SO_2N**R**^{f}**R**^{g}, or –N**R**^{e}SO_2**R**^{f}, each of said -C_{1-8}alkyl, -C_{2-8}alkenyl, -C_{2-8}alkynyl, -C_{3-8}cycloalkyl, heterocyclyl, aryl, or heteroaryl is optionally substituted with at least one substituent selected from halogen, -C_{1-8}alkyl, -O**R**^{h}, -N**R**^{h}**R**^{i}, cycloalkyl, heterocyclyl, aryl, or heteroaryl; and

$\mathbf{R^e}$, $\mathbf{R^f}$, $\mathbf{R^g}$, $\mathbf{R^h}$, and $\mathbf{R^i}$ are each independently hydrogen, -C_{1-8}alkyl, C_{1-8}alkoxy-C_{1-8}alkyl-, -C_{2-8}alkenyl, -C_{2-8}alkynyl, cycloalkyl, heterocyclyl, aryl, aryl-C_{1-8}alkyl- or heteroaryl.

2. A compound of Formula (**II**):



(**II**)

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

$\mathbf{X_1}$ and $\mathbf{X_2}$ are each independently -O-, -S-, -N$\mathbf{R^a}$-, or -C$\mathbf{R^aR^b}$-;

m_1 is 0;

m_2, and m_3 are each independently 0, 1 or 2;

$\mathbf{R_{1a}}$, $\mathbf{R_{1b}}$, $\mathbf{R_{1c}}$, $\mathbf{R_{1d}}$, and $\mathbf{R_7}$, which may be the same or different, are each independently hydrogen, halogen, -C_{1-8}alkyl, -C_{2-8}alkenyl, -C_{2-8}alkynyl, -C_{3-8}cycloalkyl, heterocyclyl, aryl, heteroaryl, oxo, -CN, -NO_2, -O$\mathbf{R^a}$, -S$\mathbf{R^a}$, -$SO_2\mathbf{R^a}$, -CO$\mathbf{R^a}$, -$CO_2\mathbf{R^a}$, -CON$\mathbf{R^aR^b}$, -C(=N$\mathbf{R^a}$)N$\mathbf{R^bR^c}$, -N$\mathbf{R^aR^b}$, -N$\mathbf{R^a}$CO$\mathbf{R^b}$, -N$\mathbf{R^a}$CON$\mathbf{R^bR^c}$, -N$\mathbf{R^a}$$CO_2\mathbf{R^b}$, -N$\mathbf{R^a}SON\mathbf{R^bR^c}$, -N$\mathbf{R^a}$$SO_2N\mathbf{R^bR^c}$, -$SO_2N\mathbf{R^aR^b}$, or –N$\mathbf{R^a}$$SO_2\mathbf{R^b}$, each of said -$C_{1-8}$alkyl, -$C_{2-8}$alkenyl, -$C_{2-8}$alkynyl, -$C_{3-8}$cycloalkyl, heterocyclyl, aryl, or heteroaryl is optionally substituted with 1-3 $\mathbf{R^d}$;

n is 0, 1, 2, 3 or 4;

$\mathbf{R_3}$ and $\mathbf{R_5}$ are each independently hydrogen, halogen, -C_{3-8}cycloalkyl, or -C_{1-8}alkyl, said -C_{1-8}alkyl or -C_{3-8}cycloalkyl is optionally substituted with at least one halogen or -O$\mathbf{R^a}$;

$\mathbf{R_2}$ and $\mathbf{R_4}$ are each independently hydrogen or -C_{1-8}alkyl; or

$\mathbf{R_4}$ and $\mathbf{R_5}$ together with the same carbon atom to which they are attached form a spiro 3-to 5-membered carbon ring; or

$\mathbf{R_2}$ at one of its occurrences and $\mathbf{R_4}$ at one of its occurrences together form a bridge comprising zero, one or two -CH_2- moieties in the bridge; or

or $\mathbf{R_{1b}}$ and $\mathbf{R_4}$ at one of its occurrences together form a 3- to 6-membered carbon ring;

or $\mathbf{R_{1d}}$ and $\mathbf{R_4}$ at one of its occurrences together form a bridge comprising one or two -CH_2- moieties in the bridge;

$\mathbf{R_6}$ is hydrogen, halogen, -C_{1-8}alkyl, -C_{2-8}alkenyl, -C_{2-8}alkynyl, -C_{3-8}cycloalkyl, heterocyclyl, aryl, heteroaryl, oxo, -CN, -NO_2, -O$\mathbf{R^a}$, -S$\mathbf{R^a}$, -$SO_2$$\mathbf{R^a}$, -CO$\mathbf{R^a}$, -$CO_2$$\mathbf{R^a}$, -CON$\mathbf{R^a}$$\mathbf{R^b}$, -C(=N$\mathbf{R^a}$)N$\mathbf{R^b}$$\mathbf{R^c}$, -N$\mathbf{R^a}$$\mathbf{R^b}$, -N$\mathbf{R^a}CO\mathbf{R^b}$, -N$\mathbf{R^a}CON\mathbf{R^b}$$\mathbf{R^c}$, -N$\mathbf{R^a}$$CO_2$$\mathbf{R^b}$, -N$\mathbf{R^a}SON\mathbf{R^b}$$\mathbf{R^c}$, -N$\mathbf{R^a}$$SO_2N\mathbf{R^b}$$\mathbf{R^c}$, -$SO_2N\mathbf{R^a}$$\mathbf{R^b}$, or –N$\mathbf{R^a}$$SO_2$$\mathbf{R^b}$, each of said -$C_{1-8}$alkyl, -$C_{2-8}$alkenyl, -$C_{2-8}$alkynyl, -$C_{3-8}$cycloalkyl, heterocyclyl, aryl, or heteroaryl is optionally substituted with 1-3 $\mathbf{R^d}$;

$\mathbf{R_8}$ and $\mathbf{R_9}$ are each independently hydrogen, -C_{1-8}alkyl, C_{1-8}alkoxy-C_{1-8}alkyl-, -C_{2-8}alkenyl, -C_{2-8}alkynyl or C_{3-8}cycloalkyl;

$\mathbf{R_{10}}$ and $\mathbf{R_{11}}$ are each independently hydrogen, -C_{1-8}alkyl, -C_{2-8}alkenyl, -C_{2-8}alkynyl, -C_{3-8}cycloalkyl, heterocyclyl, aryl, heteroaryl, oxo, -CN, -NO_2, -O$\mathbf{R^a}$, -S$\mathbf{R^a}$, -$SO_2$$\mathbf{R^a}$, -CO$\mathbf{R^a}$, -$CO_2$$\mathbf{R^a}$, -CON$\mathbf{R^a}$$\mathbf{R^b}$, -C(=N$\mathbf{R^a}$)N$\mathbf{R^b}$$\mathbf{R^c}$, -N$\mathbf{R^a}$$\mathbf{R^b}$, -N$\mathbf{R^a}CO\mathbf{R^b}$, -N$\mathbf{R^a}CON\mathbf{R^b}$$\mathbf{R^c}$, -N$\mathbf{R^a}$$CO_2$$\mathbf{R^b}$, -N$\mathbf{R^a}SON\mathbf{R^b}$$\mathbf{R^c}$, -N$\mathbf{R^a}$$SO_2N\mathbf{R^b}$$\mathbf{R^c}$, -$SO_2N\mathbf{R^a}$$\mathbf{R^b}$, or –N$\mathbf{R^a}$$SO_2$$\mathbf{R^b}$, each of said -$C_{1-8}$alkyl, -$C_{2-8}$alkenyl, -$C_{2-8}$alkynyl, -$C_{3-8}$cycloalkyl, heterocyclyl, aryl, or heteroaryl is optionally substituted with 1-3 $\mathbf{R^d}$; or

$\mathbf{R_{10}}$ and $\mathbf{R_{11}}$ together form a spiro 3-to 5-membered carbon ring optionally substituted with 1-3 $\mathbf{R^d}$;

$\mathbf{R_{12}}$ and $\mathbf{R_{13}}$ are each independently hydrogen, -C_{1-8}alkyl, -C_{2-8}alkenyl, -C_{2-8}alkynyl, -C_{3-8}cycloalkyl, heterocyclyl, aryl, heteroaryl, oxo, -CN, -NO_2, -O$\mathbf{R^a}$, -S$\mathbf{R^a}$, -$SO_2$$\mathbf{R^a}$, -CO$\mathbf{R^a}$, -$CO_2$$\mathbf{R^a}$, -CON$\mathbf{R^a}$$\mathbf{R^b}$, -C(=N$\mathbf{R^a}$)N$\mathbf{R^b}$$\mathbf{R^c}$, -N$\mathbf{R^a}$$\mathbf{R^b}$, -N$\mathbf{R^a}CO\mathbf{R^b}$, -N$\mathbf{R^a}CON\mathbf{R^b}$$\mathbf{R^c}$, -N$\mathbf{R^a}$$CO_2$$\mathbf{R^b}$, -N$\mathbf{R^a}SON\mathbf{R^b}$$\mathbf{R^c}$, -N$\mathbf{R^a}$$SO_2N\mathbf{R^b}$$\mathbf{R^c}$, -$SO_2N\mathbf{R^a}$$\mathbf{R^b}$, or –N$\mathbf{R^a}$$SO_2$$\mathbf{R^b}$, each of said -$C_{1-8}$alkyl, -$C_{2-8}$alkenyl, -$C_{2-8}$alkynyl, cycloalkyl, heterocyclyl, aryl, or heteroaryl is optionally substituted with 1-3 $\mathbf{R^d}$; or

$\mathbf{R_{12}}$ and $\mathbf{R_{13}}$ together form a spiro 3-to 5-membered carbon ring optionally substituted with 1-3 $\mathbf{R^d}$;

each $\mathbf{R^a}$, $\mathbf{R^b}$, and $\mathbf{R^c}$ are independently hydrogen, -C_{1-8}alkyl, -C_{2-8}alkenyl, -C_{2-8}alkynyl, cycloalkyl, heterocyclyl, aryl, or heteroaryl; each of said -C_{1-8}alkyl, -C_{2-8}alkenyl, -C_{2-8}alkynyl, cycloalkyl, heterocyclyl, aryl, or heteroaryl is optionally substituted with 1-3 $\mathbf{R^d}$; or

($\mathbf{R^a}$ and $\mathbf{R^b}$), ($\mathbf{R^a}$ and $\mathbf{R^c}$) or ($\mathbf{R^b}$ and $\mathbf{R^c}$), together with the atom(s) to which they are attached, form a 3- to 8-member ring, said ring comprising 0, 1 or 2 additional heteroatoms independently selected from nitrogen, oxygen or optionally oxidized sulfur as ring member(s), said ring is optionally substituted with 1-3 $\mathbf{R^d}$;

$\mathbf{R^d}$, at each of its occurrences, is independently hydrogen, halogen, -C_{1-8}alkyl, -C_{2-8}alkenyl, -C_{2-8}alkynyl, -C_{3-8}cycloalkyl, heterocyclyl, aryl, heteroaryl, oxo, -CN, -NO_2, -O$\mathbf{R^e}$, -S$\mathbf{R^a}$, -$SO_2$$\mathbf{R^e}$, -$SO_2N\mathbf{R^e}$$\mathbf{R^f}$, -CO$\mathbf{R^e}$, -$CO_2$$\mathbf{R^e}$, -CON$\mathbf{R^e}$$\mathbf{R^f}$, -C(=N$\mathbf{R^e}$)N$\mathbf{R^f}$$\mathbf{R^g}$, -N$\mathbf{R^e}$$\mathbf{R^f}$, -N$\mathbf{R^e}CO\mathbf{R^f}$, -N$\mathbf{R^e}CON\mathbf{R^f}$$\mathbf{R^g}$, -N$\mathbf{R^e}$$CO_2$$\mathbf{R^f}$, -N$\mathbf{R^e}SON\mathbf{R^f}$$\mathbf{R^g}$, -N$\mathbf{R^e}$$SO_2N\mathbf{R^f}$$\mathbf{R^g}$, or –N$\mathbf{R^e}$$SO_2$$\mathbf{R^f}$, each of said -$C_{1-8}$alkyl, -$C_{2-8}$alkenyl, -$C_{2-8}$alkynyl, -$C_{3-8}$cycloalkyl, heterocyclyl, aryl, or heteroaryl is optionally substituted with at least

one substituent selected from halogen, -C_{1-8}alkyl, -O$\mathbf{R^h}$, -N$\mathbf{R^hR^i}$, cycloalkyl, heterocyclyl, aryl, or heteroaryl; and

$\mathbf{R^e}$, $\mathbf{R^f}$, $\mathbf{R^g}$, $\mathbf{R^h}$, and $\mathbf{R^i}$ are each independently hydrogen, -C_{1-8}alkyl, C_{1-8}alkoxy-C_{1-8}alkyl-, -C_{2-8}alkenyl, -C_{2-8}alkynyl, cycloalkyl, heterocyclyl, aryl, aryl-C_{1-8}alkyl- or heteroaryl.

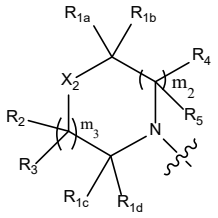
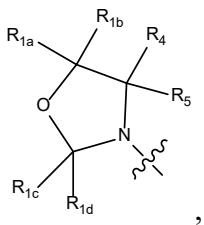
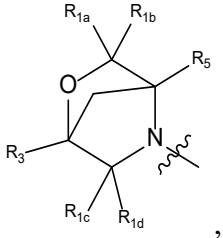
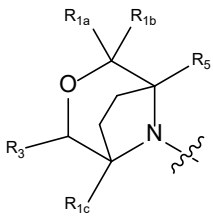
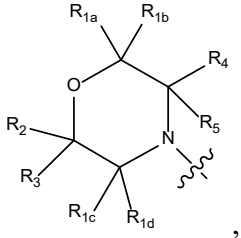
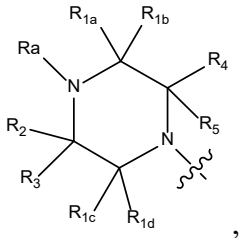
3. The compound according to Claims 1 or 2, wherein $\mathbf{X_1}$ is -O-, -S-, -NH-, or -CH_2-; preferably, $\mathbf{X_1}$ is -CH_2-.

4. The compound according to Claims 1 or 2, wherein $\mathbf{X_2}$ is -O-, -S-, -CH_2- or -NR^a; R^a is H or -C_{1-8}alkyl (methyl or ethyl); preferably, $\mathbf{X_2}$ is -O- or -NR^a-; R^a is hydrogen or -C_{1-8}alkyl (methyl or ethyl).

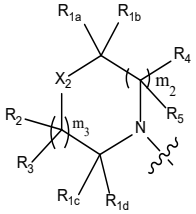
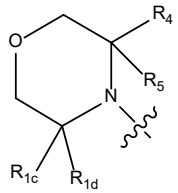
5. The compound according to Claims 1 or 2, wherein m_1 is 0; m_2 is 1; and m_3 is 0 or 1.

6. The compound according to Claims 1 or 2, wherein $\mathbf{R_2}$, $\mathbf{R_3}$, $\mathbf{R_4}$, and $\mathbf{R_5}$ are each hydrogen, methyl or ethyl, -CH_2OH, -CH_2OCH_3, -$CH_2OC_2H_5$, -CHF_2, -$CH_2OCH(CH_3)_2$, cyclopropyl, or CF_3; or

$\mathbf{R_4}$ and $\mathbf{R_5}$ together with the same carbon atom to which they are attached form a spiro 3-to 5-membered carbon ring.

7. The compound according to Claim 1 or 2, wherein  is  ,  ,  ,  , or  ,

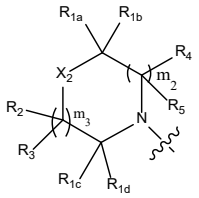
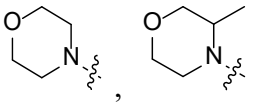
Wherein R_{1a}, R_{1b}, R_{1c}, R_{1d}, R_2, R_3, R_4, R_5 and R_a are defined as for Formula (**I**);

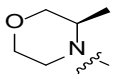
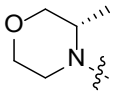
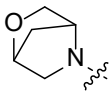
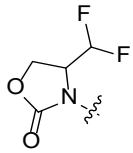
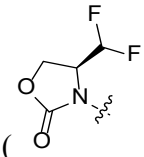
preferably,  is  ; wherein R_{1c}, R_{1d}, R_4 and R_5 are independently hydrogen or -C_{1-8}alkyl.

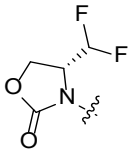
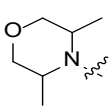
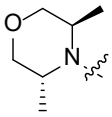
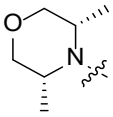
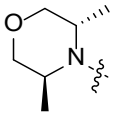
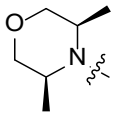
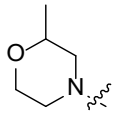
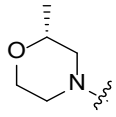
8. The compound according to Claim 7, wherein R_{1c} and R_4 are hydrogen, R_{1d} and R_5 are independently hydrogen or -C_{1-8}alkyl; preferably, R_{1c} and R_4 are hydrogen, R_{1d} and R_5 are methyl.

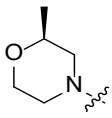
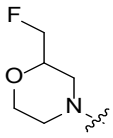
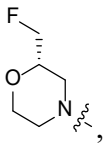
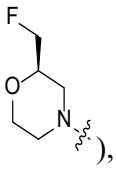
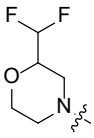
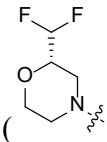
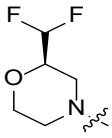
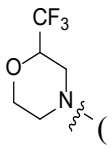
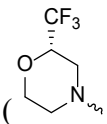
9. The compound according to Claim 7, wherein R_{1a}, R_{1b}, R_{1c}, R_{1d}, R_2, R_3, R_4, R_5 and R_a are each independently hydrogen, halogen, -C_{1-8}alkyl (such as -CH_3 or -C_2H_5), or oxo, wherein said -C_{1-8}alkyl is optionally substituted with at least one halogen (for example 1-3 halogen).

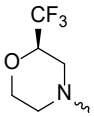
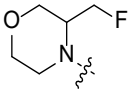
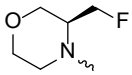
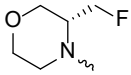
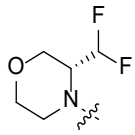
10. The compound according to Claim 9, wherein $\mathbf{R_5}$ is halogen, $-C_2H_5$, $-CH_3$, oxo, cyclopropyl, CHF_2, $-CH_2F$, $-CF_3$, $-CH_2OH$, $-CH_2OCH_3$, $-CH_2OC_2H_5$, $-CH_2OCH(CH_3)_2$; and $\mathbf{R_4}$ is hydrogen or $-CH_3$; or $\mathbf{R_5}$ and $\mathbf{R_4}$ together with the carbon atom attached form a 3-to 5-membered carbon ring; or $\mathbf{R_2}$ and $\mathbf{R_4}$ together form a bridge comprising one $-CH_2-$ moiety in the bridge, and $\mathbf{R_3}$ and $\mathbf{R_5}$ are each hydrogen; or $\mathbf{R_{1b}}$ and $\mathbf{R_4}$ together form a 3-membered carbon ring, and $\mathbf{R_{1a}}$ and $\mathbf{R_5}$ are each hydrogen; or $\mathbf{R_{1d}}$ and $\mathbf{R_4}$ together form a bridge comprising two $-CH_2-$ moieties in the bridge, and $\mathbf{R_{1c}}$ and $\mathbf{R_5}$ are each hydrogen.

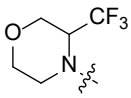
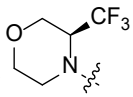
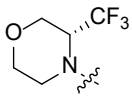
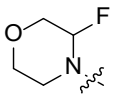
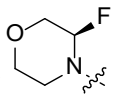
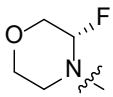
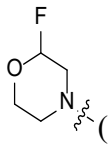
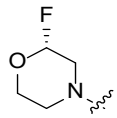
11. The compound according to Claims 7, wherein  is 

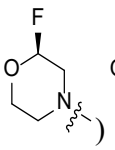
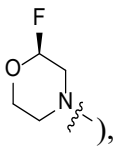
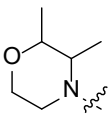
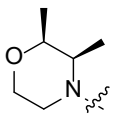
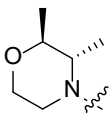
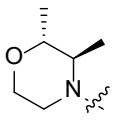
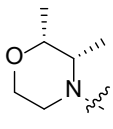
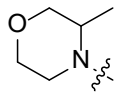
( or ),  ( or ),  ( or

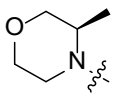
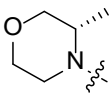
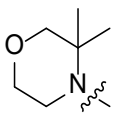
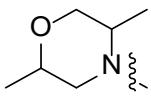
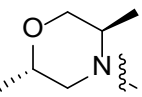
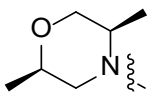
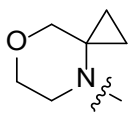
),  ( ,  ,  , ),  ( ,

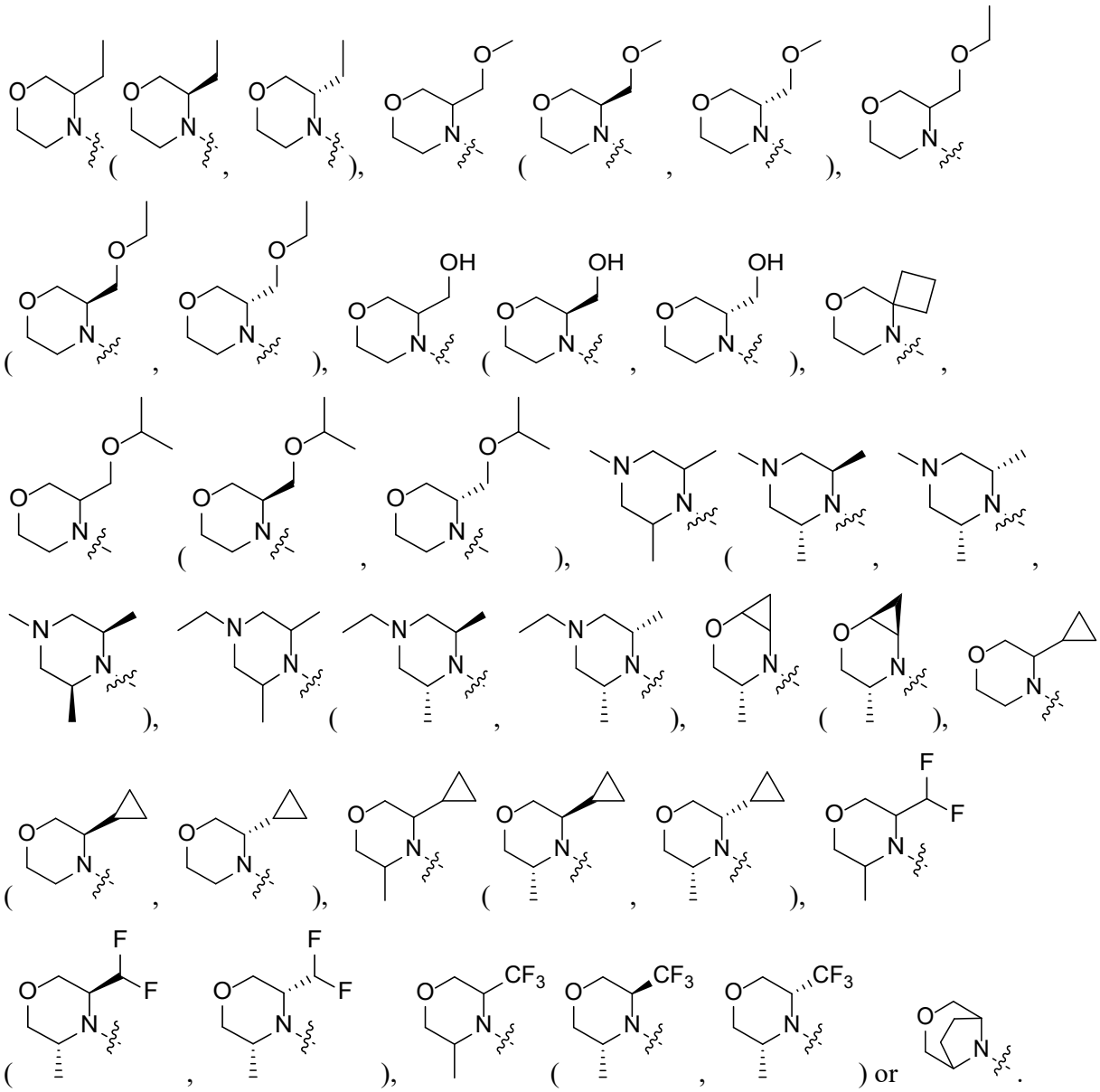
),  ( , ),  ( , ),  ( , or

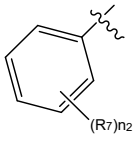
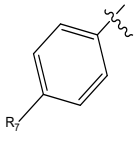
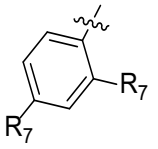
),  ( or ),  ( , or ),

 ( or ),  ( or ),  ( or

) ),  ( or  or  or ), 

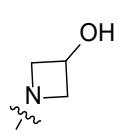
( , ),  ,  ( or ),  ,

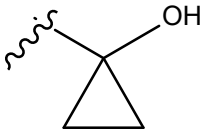


12. The compound according to Claims 1 or 2, wherein  is  or  .

13. The compound according to Claim 12, wherein $\mathbf{R_7}$ is halogen; preferably, $\mathbf{R_7}$ is F.

14. The compound according to Claims 1 or 2, wherein $\mathbf{R_6}$ is hydrogen, -CN, halogen, morpholine, -CON$\mathbf{R^aR^b}$, -N$\mathbf{R^a}$CO$\mathbf{R^b}$, -N$\mathbf{R^a}$S$O_2\mathbf{R^b}$, -O$\mathbf{R^a}$, -N$\mathbf{R^aR^b}$, -$C_{3\text{-}5}$cycloalkyl, phenyl, or -$C_{1\text{-}8}$alkyl, said -$C_{1\text{-}8}$alkyl or -$C_{3\text{-}5}$cycloalkyl is optionally substituted with at least one $\mathbf{R^d}$; $\mathbf{R^a}$ and $\mathbf{R^b}$ are each hydrogen, -$C_{3\text{-}6}$cycloalkyl or -$C_{1\text{-}8}$alkyl; $\mathbf{R^d}$, at each of its occurrences, is independently -

CH_2F, $-CHF_2$, $-CF_3$, -F, -Cl, -Br, -I, -OH, $-NH_2$, -SH, -CN, $-CONH_2$, -H, $-CH_3$, $-C_2H_5$, $-C_3H_7$, CH_2OH, $-OCH_3$, $-OC_2H_5$, morpholino, 

, 

or cyclopropyl.

15. The compound according to Claims 1 or 2, wherein $\mathbf{R_6}$ is $-CONR^aR^b$, $-NR^aR^b$, $-NR^aCO-R^b$, $-NRa-SO_2-R^b$, or $-OR^a$; $\mathbf{R^a}$ and $\mathbf{R^b}$ are each hydrogen, $-C_{3-6}$ cycloalkyl, $-C_{1-8}$alkyl, -5- or 6-membered heterocyclyl, aryl or heteroaryl; each of said $-C_{1-8}$alkyl, $-C_{3-6}$ cycloalkyl, -5- or 6-membered heterocyclyl, aryl, or heteroaryl is optionally substituted with 1-3 $\mathbf{R^d}$; or

$\mathbf{R^a}$ and $\mathbf{R^b}$ together with the atom(s) to which they are attached, form a 3- to 8-member ring, said ring comprising 0, 1 or 2 additional heteroatoms independently selected from nitrogen, oxygen or optionally oxidized sulfur as ring member(s), said ring is optionally substituted with 1-3 $\mathbf{R^d}$;

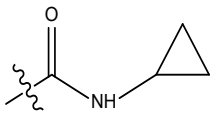
$\mathbf{R^d}$, at each of its occurrences, is independently hydrogen, halogen, $-C_{1-8}$alkyl, $-C_{2-8}$alkenyl, $-C_{2-8}$alkynyl, $-C_{3-8}$cycloalkyl, heterocyclyl, aryl, heteroaryl, oxo, -CN, $-NO_2$, $-OR^e$, $-SR^a$, $-SO_2R^e$, $-SO_2NR^eR^f$, $-COR^e$, $-CO_2R^e$, $-CONR^eR^f$, $-C(=NR^e)NR^fR^g$, $-NR^eR^f$, $-NR^eCOR^f$, $-NR^eCONR^fR^g$, $-NR^eCO_2R^f$, $-NR^eSONR^fR^g$, $-NR^eSO_2NR^fR^g$, or $-NR^eSO_2R^f$, each of said $-C_{1-8}$alkyl, $-C_{2-8}$alkenyl, $-C_{2-8}$alkynyl, $-C_{3-8}$cycloalkyl, heterocyclyl, aryl, or heteroaryl is optionally substituted with at least one substituent selected from halogen, $-C_{1-8}$alkyl, $-OR^h$, $-NR^hR^i$, cycloalkyl, heterocyclyl, aryl, or heteroaryl; and

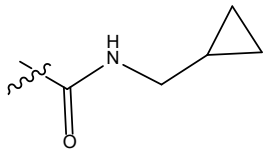
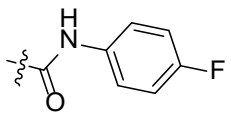
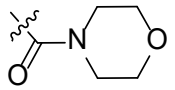
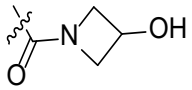
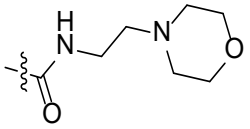
$\mathbf{R^e}$, $\mathbf{R^f}$, $\mathbf{R^g}$, $\mathbf{R^h}$, and $\mathbf{R^i}$ are each independently hydrogen, $-C_{1-8}$alkyl, C_{1-8}alkoxy-C_{1-8}alkyl-, $-C_{2-8}$alkenyl, $-C_{2-8}$alkynyl, cycloalkyl, heterocyclyl, aryl, aryl-C_{1-8}alkyl- or heteroaryl;

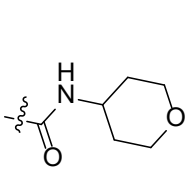
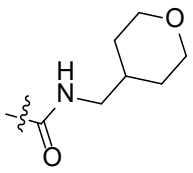
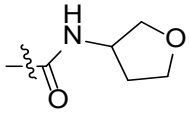
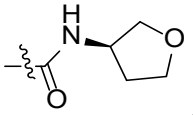
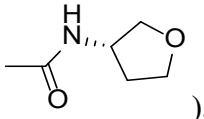
preferably, $\mathbf{R_6}$ is $-CONR^aR^b$ or $-NR^aCO-R^b$, $\mathbf{R^a}$ and $\mathbf{R^b}$ are each hydrogen, $-C_{1-3}$alkyl, $-C_{3-6}$ cycloalkyl, phenyl, 5- or 6- membered heterocyclyl (such as azetidine, pyrrolidine, piperidine, oxazolidine, isoxazolidine, oxazinane, morpholine, piperazine, tetrahydropyran or tetrahydrofuran); said $-C_{1-3}$alkyl, $-C_{3-6}$ cycloalkyl, phenyl, 5- or 6- membered heterocyclyl(such as azetidine, pyrrolidine, piperidine, oxazolidine, isoxazolidine, oxazinane, morpholine, piperazine, tetrahydropyran or tetrahydrofuran) optionally substituted with at least one substituent selected from halogen, $-C_{1-3}$alkyl, morpholine, OR^e or $-NR^eR^f$; $\mathbf{R^e}$ and $\mathbf{R^f}$ are independently hydrogen, halogen, $-C_{1-8}$alkyl or C_{1-8}alkoxy-C_{1-8}alkyl-;

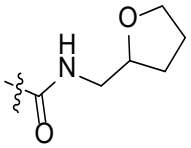
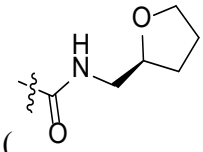
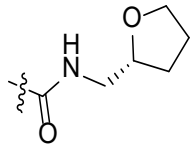
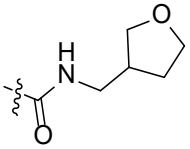
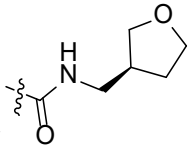
more preferably, $\mathbf{R_6}$ is $-CONR^aR^b$, $\mathbf{R^a}$ and $\mathbf{R^b}$ together with the nitrogen atom to which they are attached, form a 4- to 6-member ring, said ring comprising 0, 1 or 2 additional heteroatoms independently selected from nitrogen, oxygen or optionally oxidized sulfur as ring member(s), said ring is optionally substituted with 1-3 $\mathbf{R^d}$; $\mathbf{R^d}$, at each of its occurrences, is independently halogen, $-C_{1-3}$alkyl, or OR^e; $\mathbf{R^e}$ is independently hydrogen, halogen or $-C_{1-8}$alkyl.

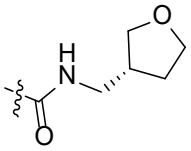
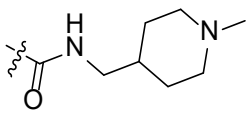
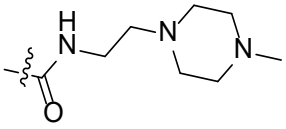
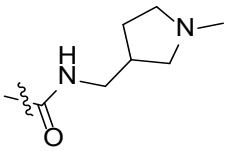
16. The compound according to Claim 15, wherein $\mathbf{R_6}$ is $-NH_2$, $-CONH_2$, $-CONHCH_3$, $-CONHC_2H_5$, $-CON(CH_3)_2$, $-CONHCH_2CF_3$, $-CONHC_2H_4OCH_3$, $-CONHC_2H_4OC_2H_4OCH_3$, -

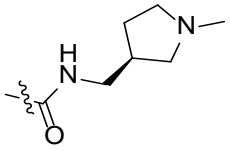
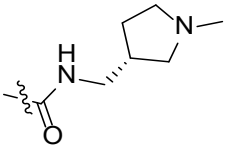
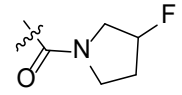
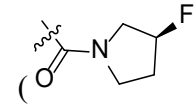
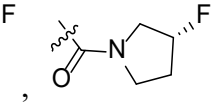
$CONHCH(CH_3)_2$, $-CONHC_2H_4OH$, $-CONHC_2H_4N(CH_3)_2$,  ,

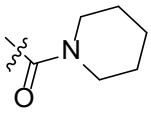
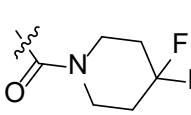
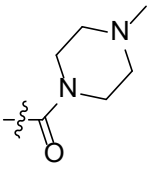
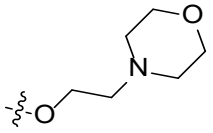
 ,  ,  ,  ,  ,

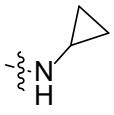
 ,  ,  ,  ,  ,

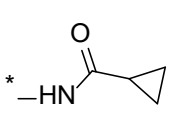
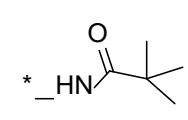
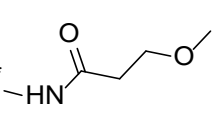
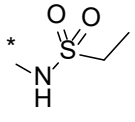
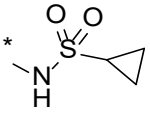
 ,  ,  ,  ,  ,

 ,  ,  ,  ,

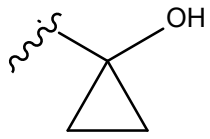
 ,  ,  ,  ,  ,

 ,  ,  , , -O-$(CH_2)_2$-OCH_3, -O-$(CH_2)_2$-OH,  ,

-NH-$(CH_2)_2$-OCH_3, -NH-$(CH_2)_2$-OH,  , -NH-CO-CH_3, -NH-CO-C_2H_5, -NH-CO-$CH(CH_3)_2$,

 ,  ,  ,  ,  , -NHC_2H_5, -NH-CH_2-

CF_3, $CH_3CH_2SO_2NH$-, or CyclopropylSO_2NH-.

17. The compound according to Claim 14, wherein $\mathbf{R_6}$ is hydrogen, halogen, -CN, $-CONH_2$,  , cyclopropyl, $-CH_2OH$, $-CF_3$, -OH, $-CH_3$ or $-OC_2H_5$.

18. The compound according to Claims 1 or 2, wherein $\mathbf{R_{12}}$ and $\mathbf{R_{13}}$ are each independently hydrogen or -$C_{1\text{-}8}$alkyl; preferably, $\mathbf{R_{12}}$ is hydrogen or $-CH_3$**;** $\mathbf{R_{13}}$ is hydrogen or $-CH_3$.

19. The compound according to Claims 1 or 2, wherein

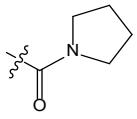
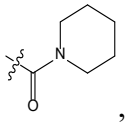
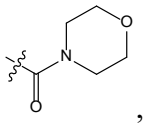
R_{10} and **R_{11}** are each independently hydrogen, -C_{1-8}alkyl, -C_{3-8}cycloalkyl, -C_{5-6}aryl, 5- to 6-membered heteroaryl, or -CON**R^aR^b**, wherein each of said -C_{1-8}alkyl, -C_{3-8}cycloalkyl, -C_{5-6} aryl, or 5- to 6-membered heteroaryl is optionally substituted with 1-3 **R^d**;

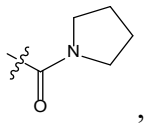
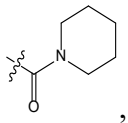
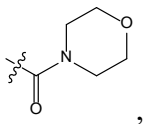
R^a and **R^b** are each independently hydrogen or -C_{1-8}alkyl; or

(**R^a** and **R^b**), together with the nitrogen atom to which they are attached, form a 3- to 6-member ring, said ring comprising 0 or 1 additional oxygen atom; said ring is optionally substituted with one **R^d**;

R^d, at each of its occurrences, is independently -C_{1-8}alkyl, halogen, aryl or -O**R^e**, wherein **R^e** are each independently hydrogen or -C_{1-8}alkyl, phenylethyl, benzyl, or phenyl;

preferably, R_{10} is hydrogen; R_{11} is -CON**R^aR^b**, phenyl, benzyl, pyridinyl, or furyl, wherein each of said phenyl, benzyl, pyridinyl or furyl is optionally substituted with 1-3 **R^d** selected from methyl, methoxy, or halogen; **R^a** and **R^b** each are independently hydrogen or methyl, or (**R^a** and **R^b**), together with the nitrogen atom to which they are attached, form a 5- to 6-member ring, said ring comprising 0 or 1 additional oxygen atom;

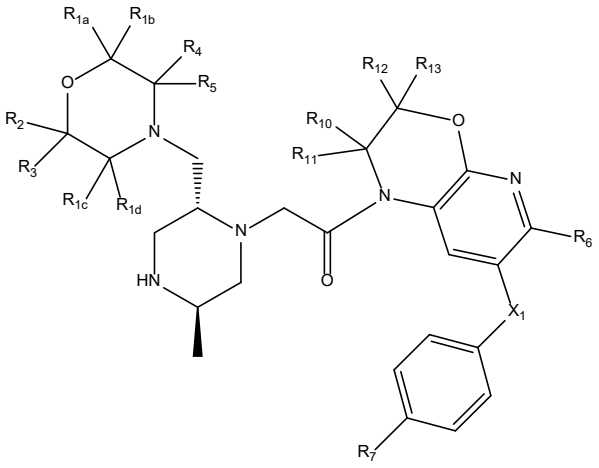
more preferably, **R_{10}** is hydrogen; and **R_{11}** is hydrogen, methyl, ethyl, 1-propyl, 2-propyl, 1-butyl, *tert*-butyl, 1-methylpropyl, 1, 1-dimethylethyl, 1-pentyl, 2-pentyl, 3-pentyl, 2-methyl-2-butyl, 3-methyl-2-butyl, 3-methyl-1-butyl, 2-methyl-1-butyl, 1-hexyl, 2-hexyl, 3-hexyl, 2-methyl-2-pentyl, 3-methyl-2-pentyl, 4-methyl-2-pentyl, 3-methyl-3-pentyl, 2-methyl-3-pentyl, 2, 3-dimethyl-2-butyl, 3, 3-dimethyl-2-butyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, vinyl, -CH_2OH, -CH_2CH_2OH, -$CH_2CH_2OCH_3$, -CH_2OCH_3, -$CH_2OCH(CH_3)_2$, -$CH_2OC_2H_5$, -CH_2F, -CHF_2, -CF_3, -H, -F, -Cl, -Br, -I, -OH, -NH_2, -SH, -$CONH_2$, -$CONHCH_3$, -$CON(CH_3)_2$,  ,  ,  , -CH_2O-Ph, -CH_2-Ph, -CH_2O-CH_2-Ph, phenyl, 4-methyl-phenyl, 4-methoxy-phenyl, 4-F-phenyl, benzyl, pyridinyl (4-pyridinyl, 3-pyridinyl or 2-pyridinyl), or furyl (2-furyl or 3-furyl).

even more preferably, **R_{10}** is hydrogen; and **R_{11}** is hydrogen, methyl, ethyl, 2-propyl, -CF_3, -CHF_2, -$CH_2CH_2OCH_3$, -CH_2OH, -CH_2OCH_3, -$CH_2OCH(CH_3)_2$, -$CH_2OC_2H_5$, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, -$CONH_2$, -$CONHCH_3$, -$CON(CH_3)_2$,  ,  ,  , -CH_2O-Ph, -CH_2O-CH_2-Ph, phenyl, 4-methyl-phenyl, 4-methoxy-phenyl, 4-F-phenyl, benzyl, 4-pyridinyl, 3-pyridinyl, 2-pyridinyl, 2-furyl or 3-furyl.

20. The compound according to any one of Claims 1-19, wherein the carbon atom to which **R_{10}** and **R_{11}** are attached is in (S)-configuration in the case that **R_{10}** and **R_{11}** are different.

21. The compound according to Claims 1 or 2, wherein **R_{10}** and **R_{11}** together form a 3-membered carbon ring.

22. The compound according to Claims 1 or 2, which is

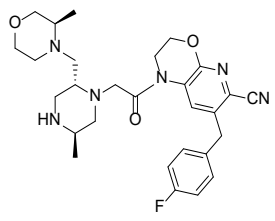
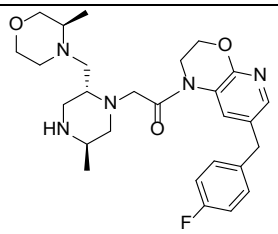
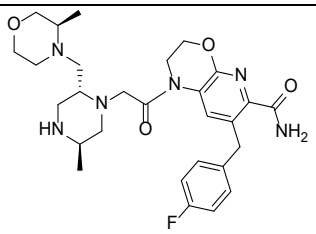
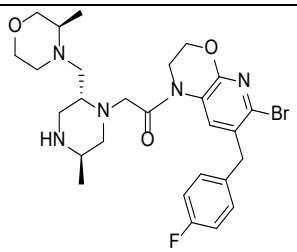
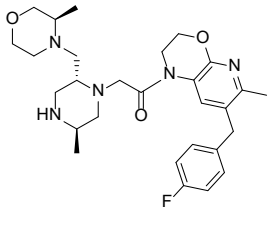
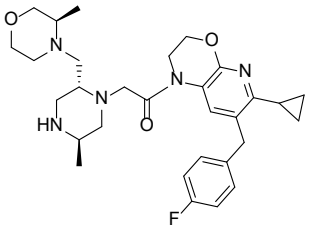


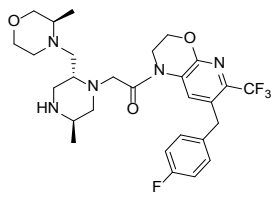
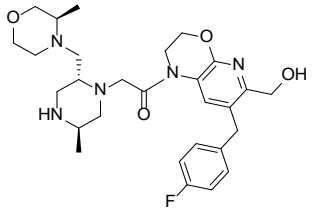
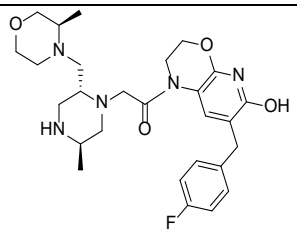
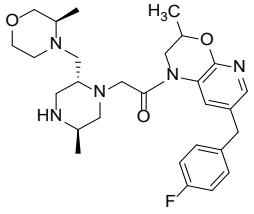
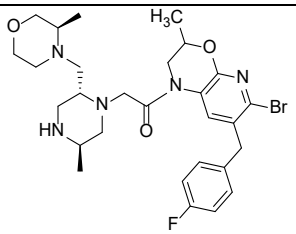
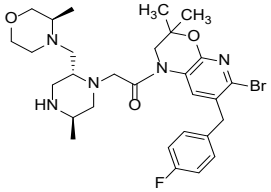
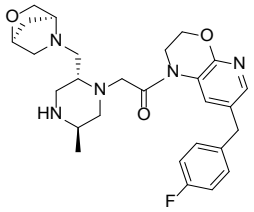
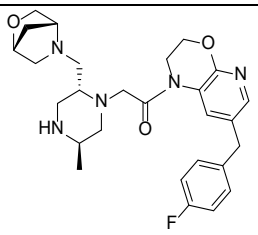
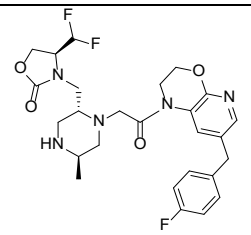
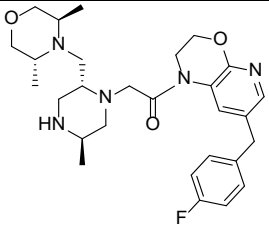
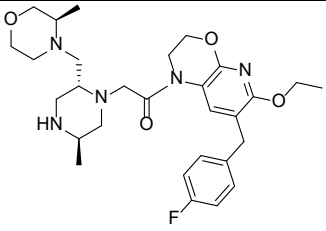
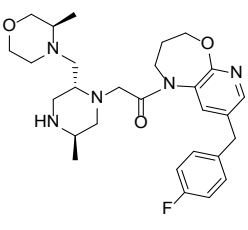
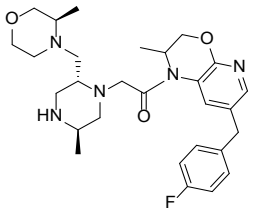
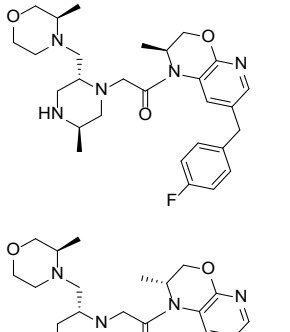
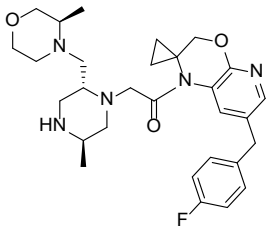
(**III**),

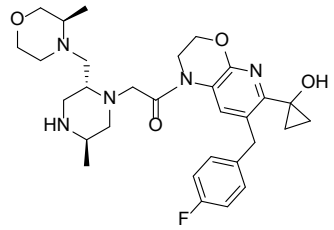
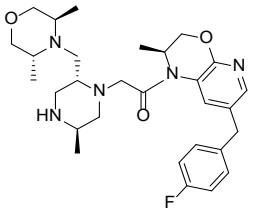
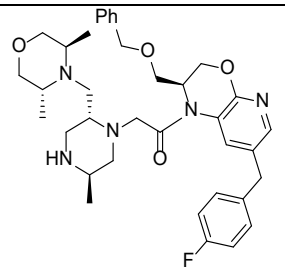
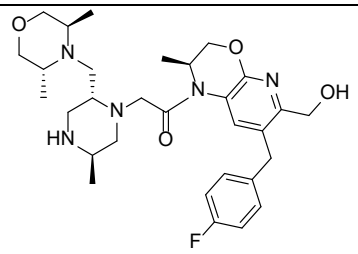
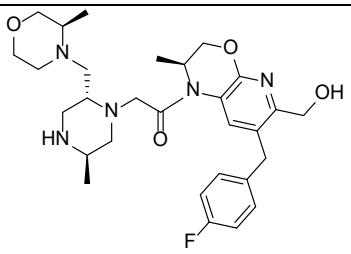
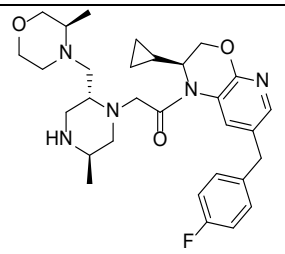
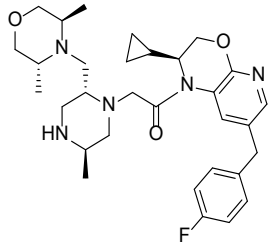
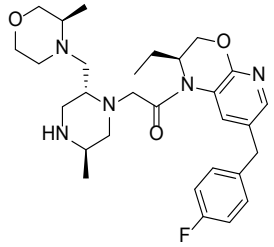
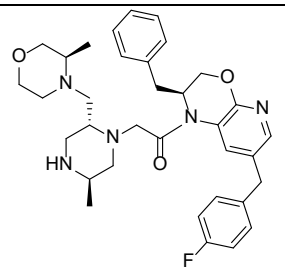
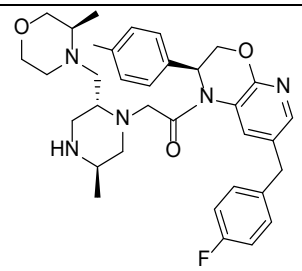
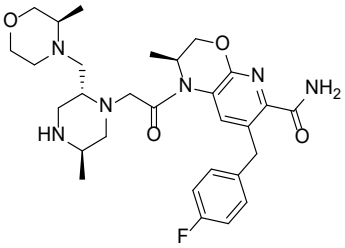
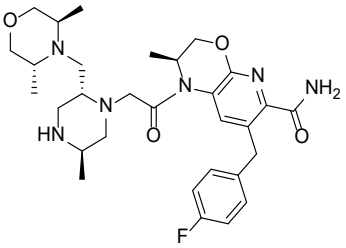
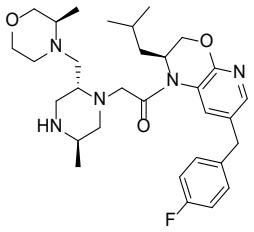
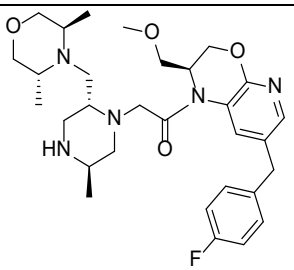
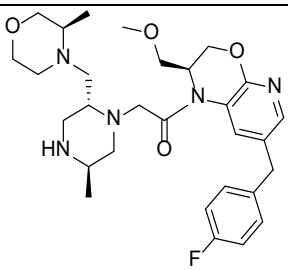
wherein R_{1a}, R_{1b}, R_{1c}, R_{1d}, R_2, R_3, R_4, R_5, R_6, R_7, R_{10}, R_{11}, R_{12}, R_{13} and X_1 are defined as for Formula (**II**).

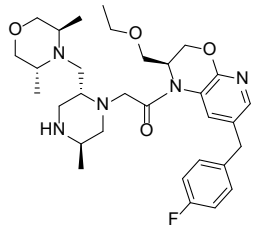
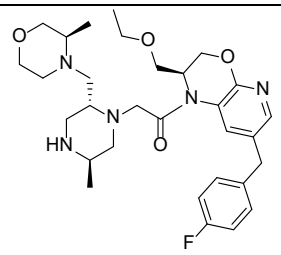
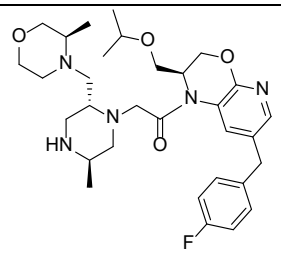
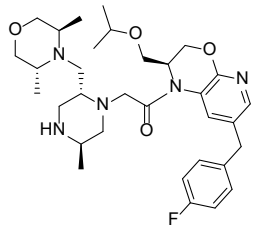
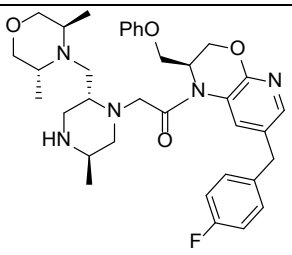
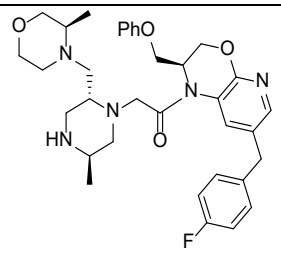
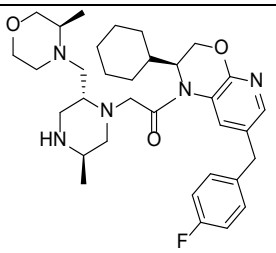
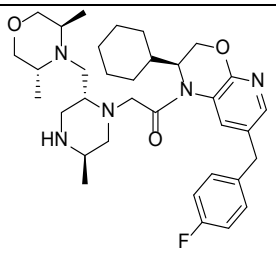
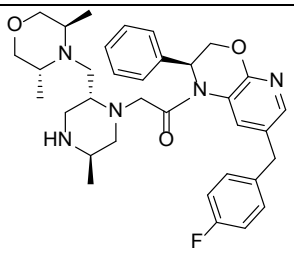
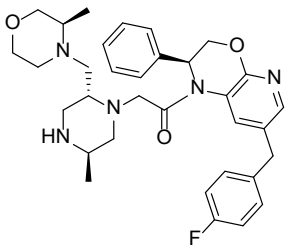
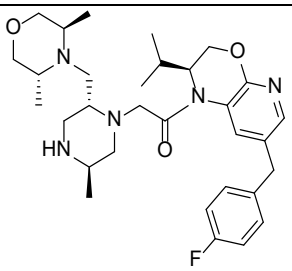
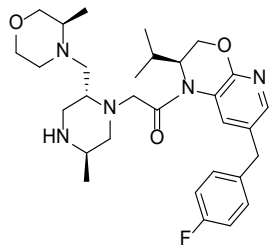
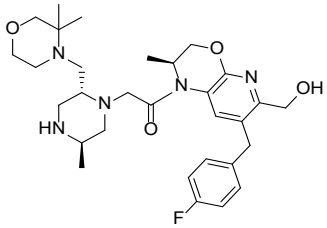
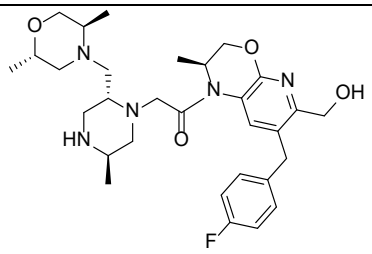
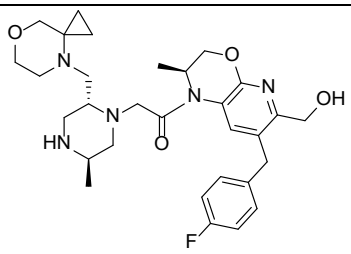
23. The compound according to Claims 1 or 2, wherein **R_{14}** and **R_{15}** are each independently selected from hydrogen or -$C_{1\text{-}8}$alkyl (methyl or ethyl).

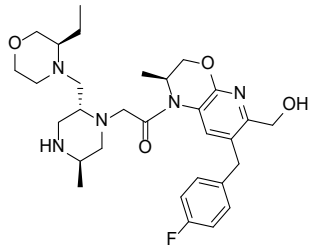
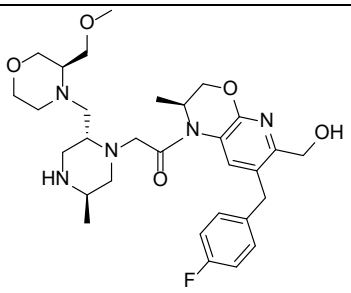
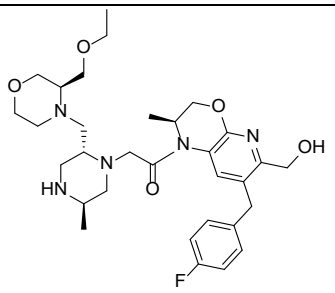
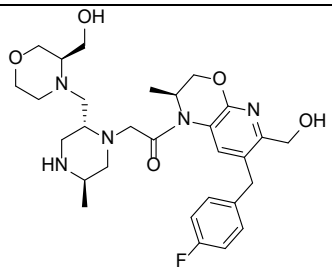
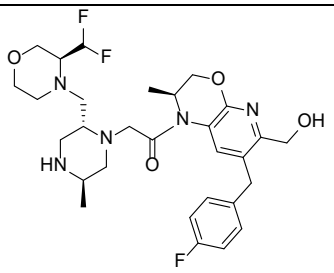
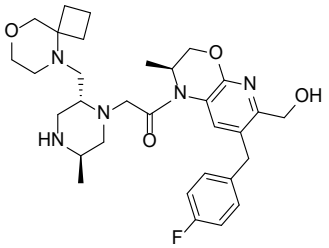
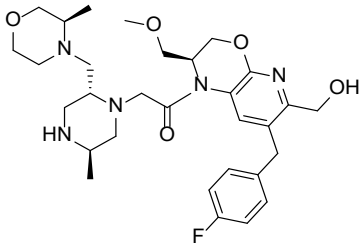
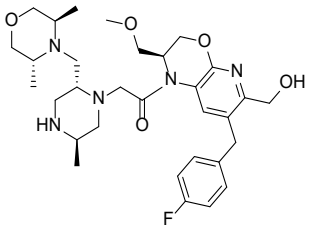
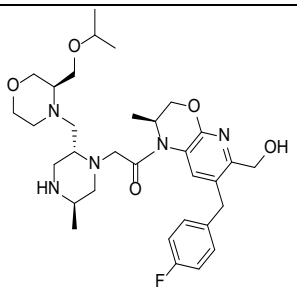
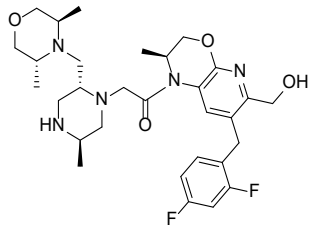
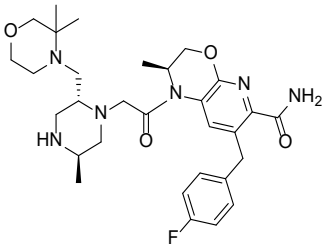
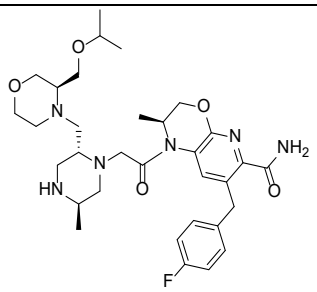
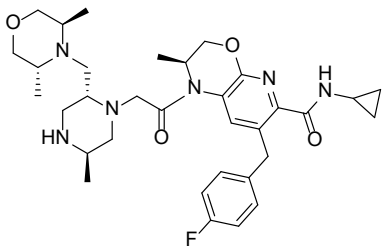
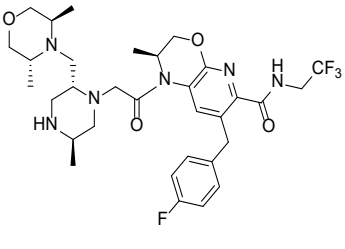
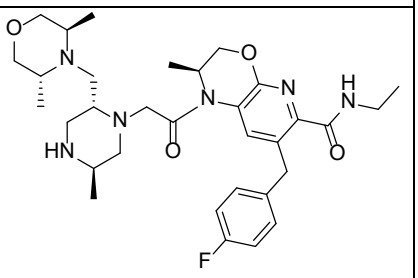
24. The compound according to Claim 1, which is

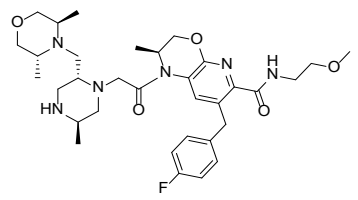
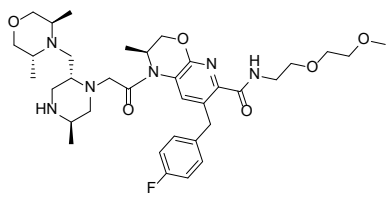
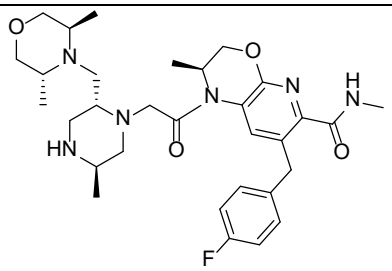
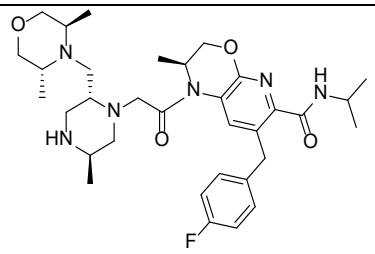
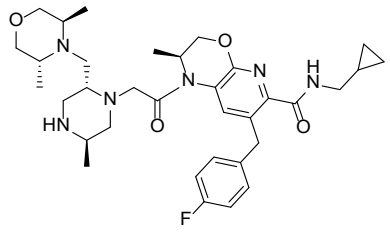
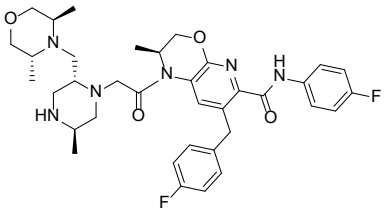
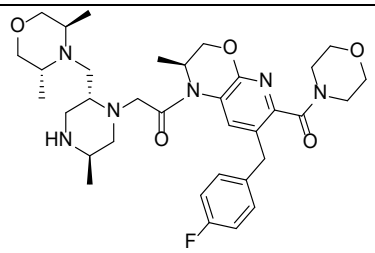
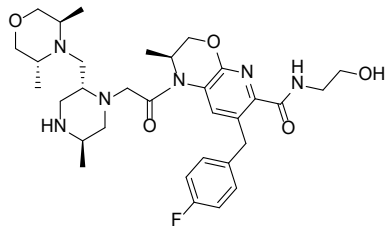
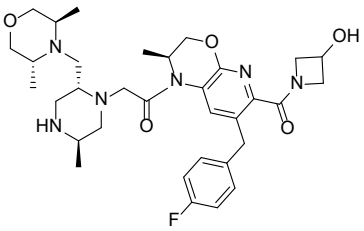
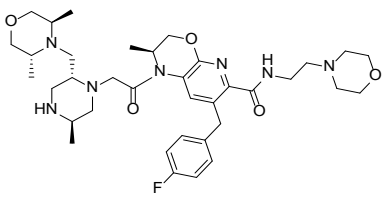
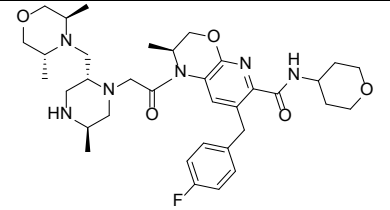
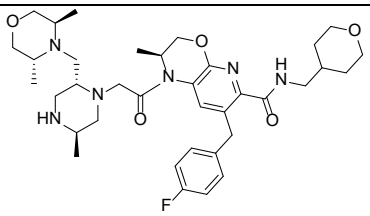
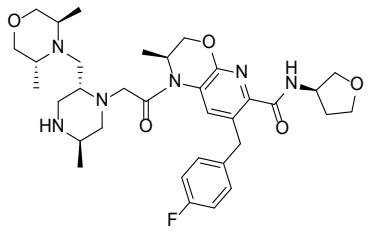
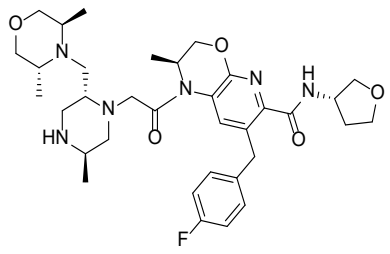
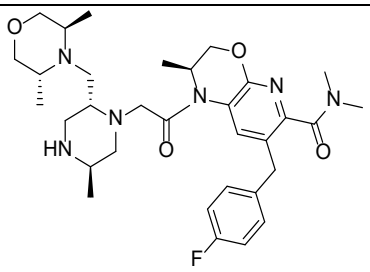
		
1	2	3
		
4	5	6

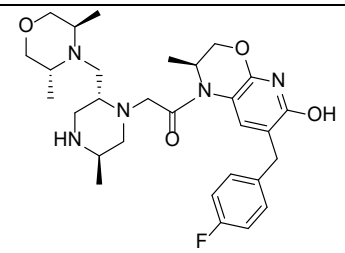
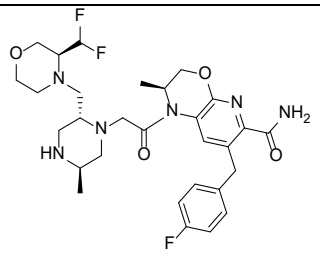
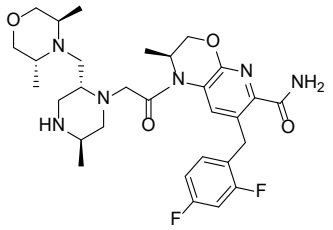
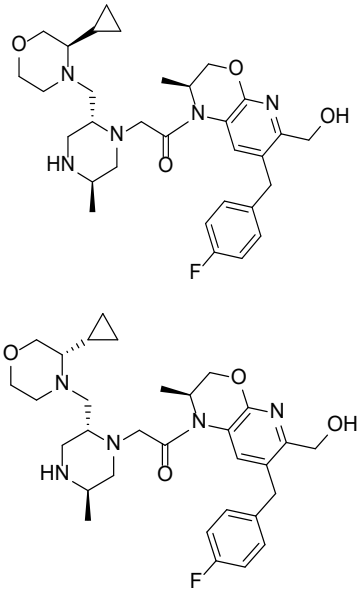
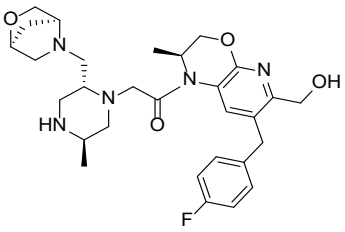
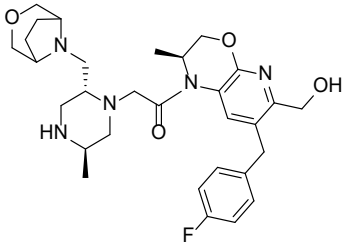
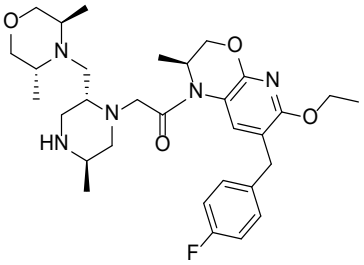
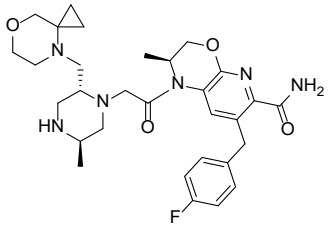
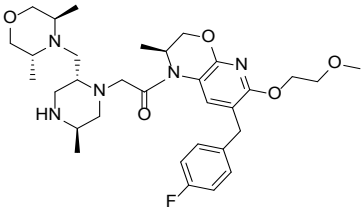
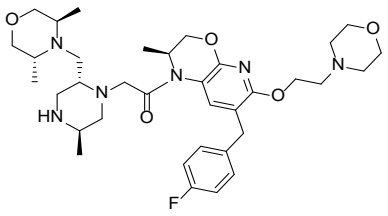
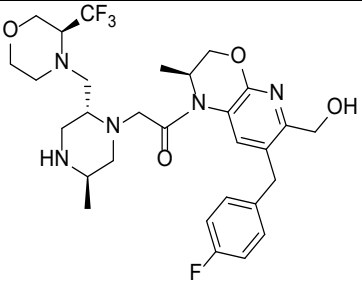
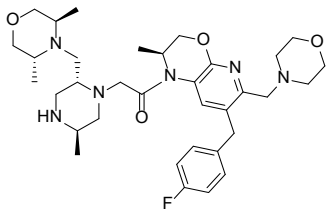
		
7	8	9
		
10	11	12
		
13	14	15
		
16	17	18
		
19	19A/19B	20

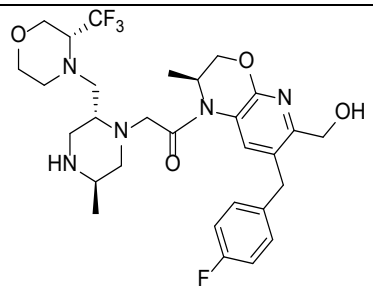
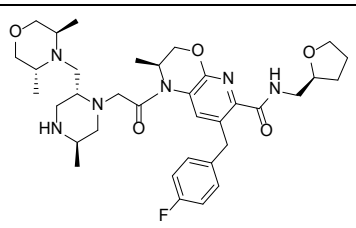
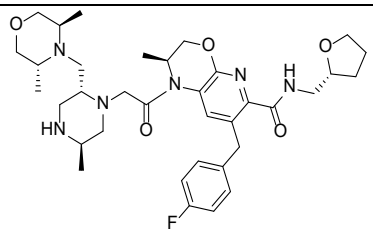
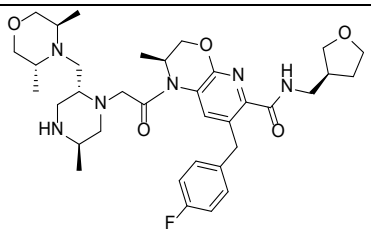
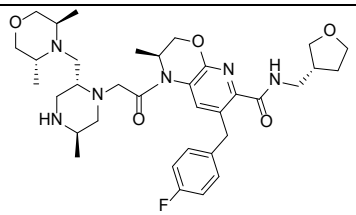
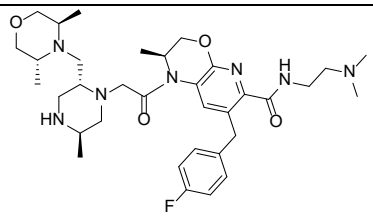
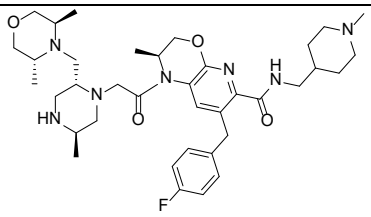
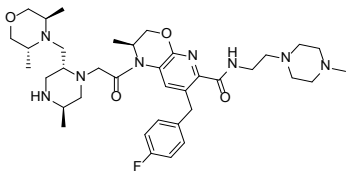
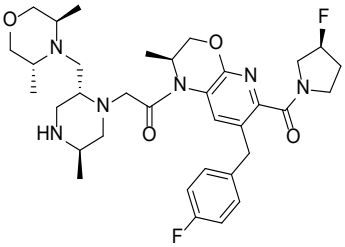
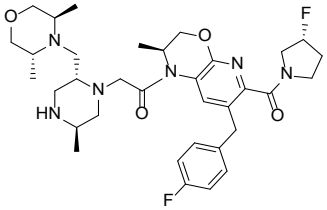
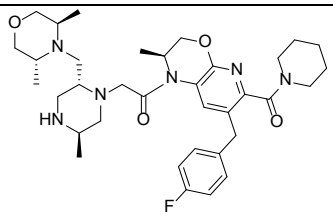
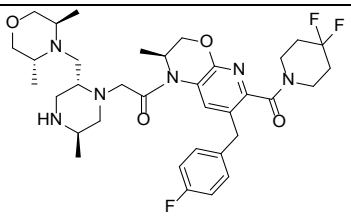
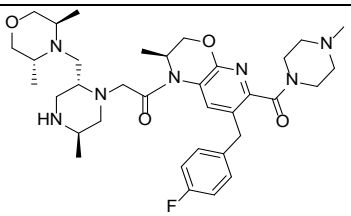
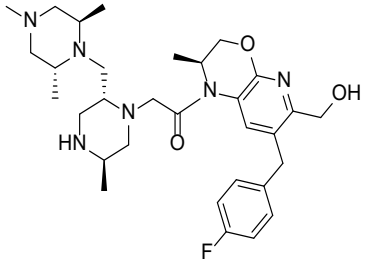
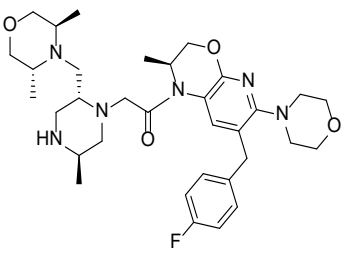
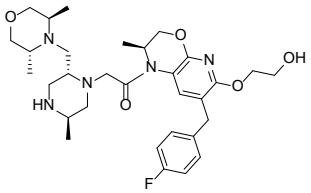
		
21	22	23
		
24	25	26
		
27	28	29
		
30	31	32
		
33	34	35

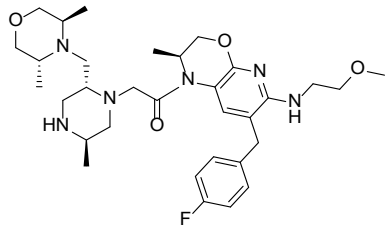
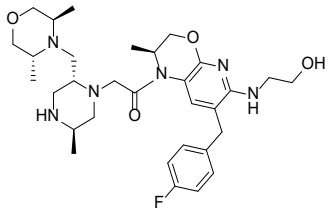
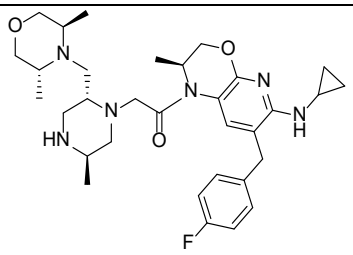
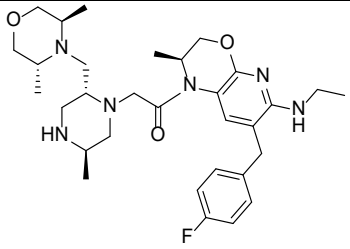
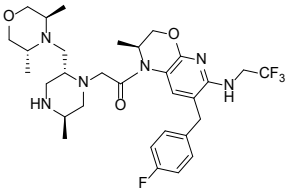
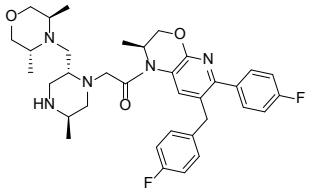
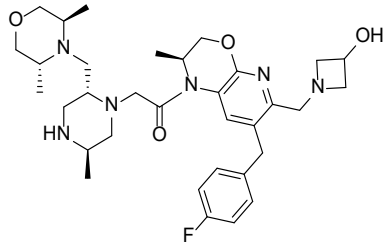
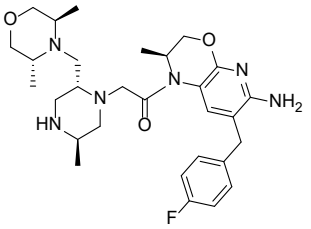
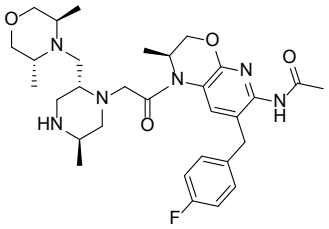
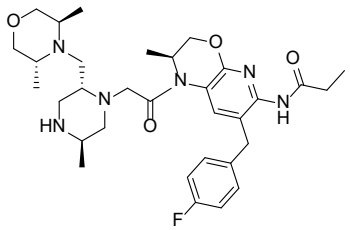
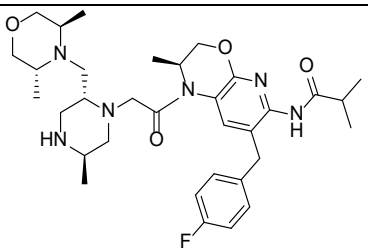
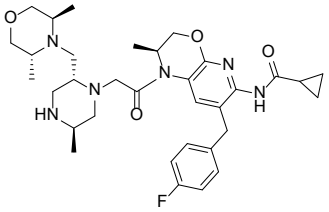
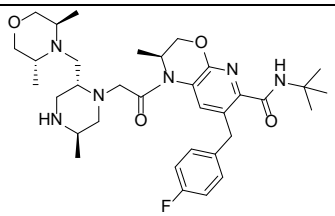
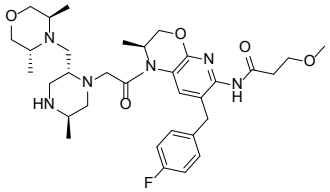
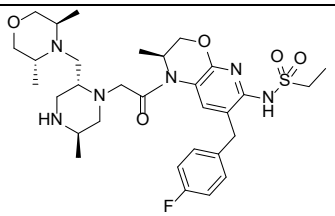
		
36	37	38
		
39	40	41
		
42	43	44
		
45	46	47
		
48	49	50

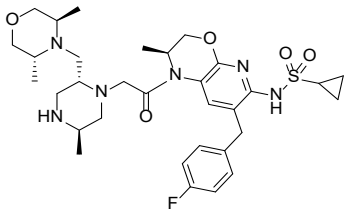
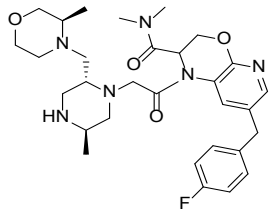
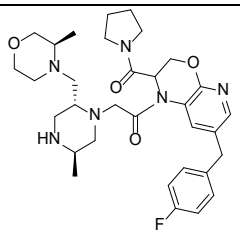
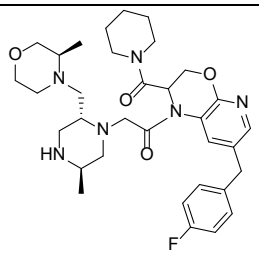
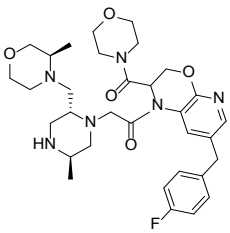
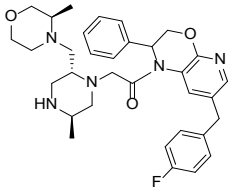
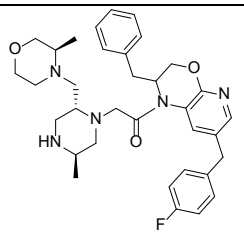
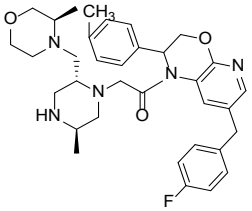
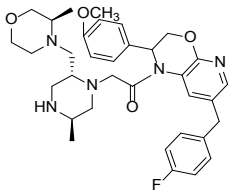
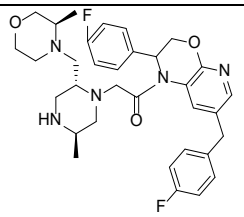
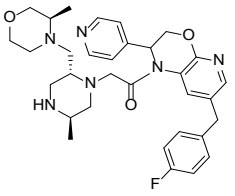
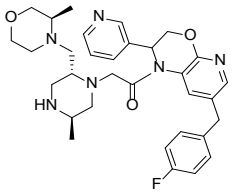
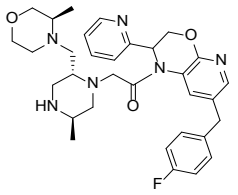
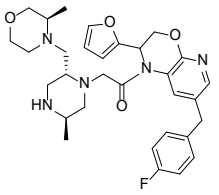
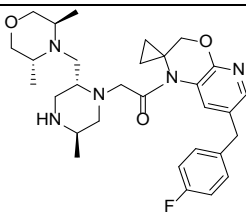
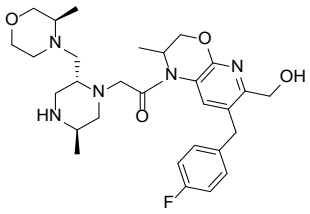
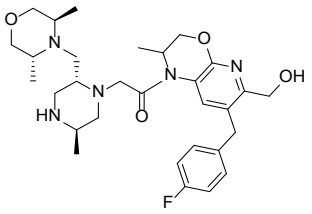
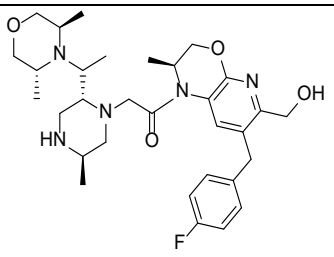
		
51	52	53
		
54	55	56
		
57	58	59
		
60	61	62
		
63	64	65

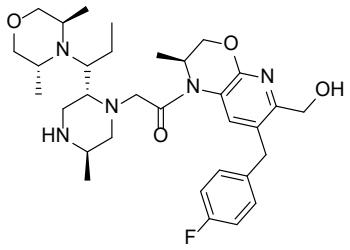
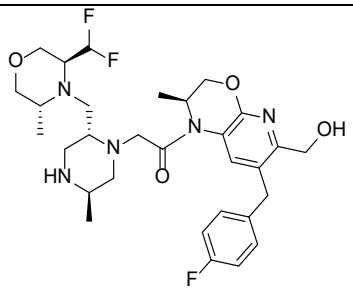
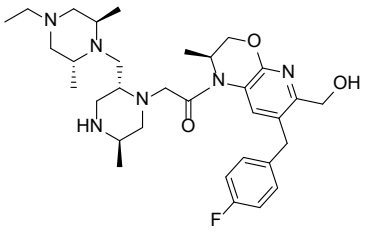
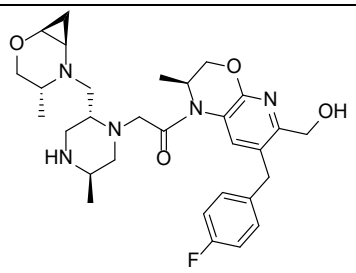
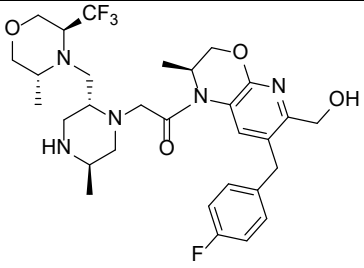
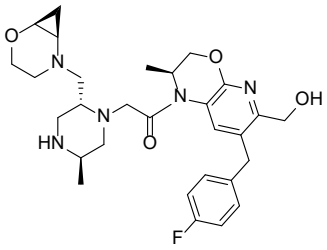
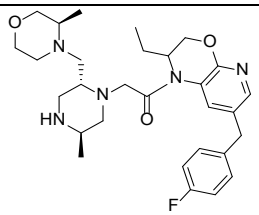
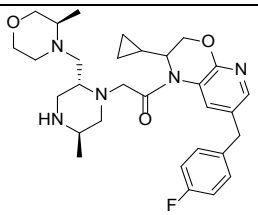
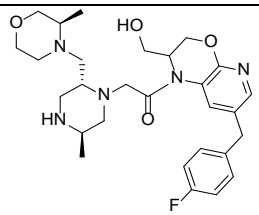
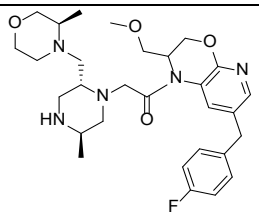
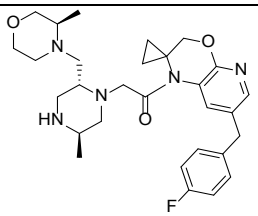
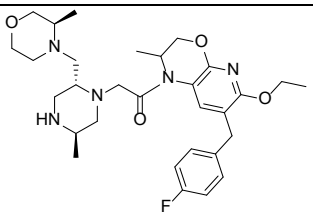
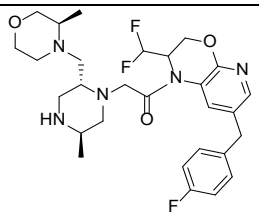
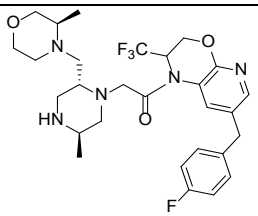
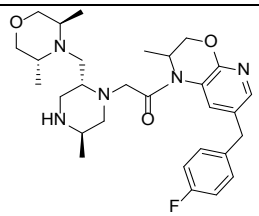
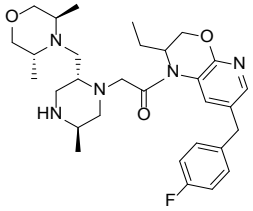
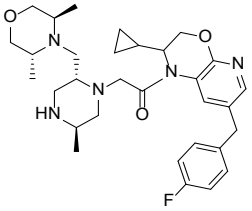
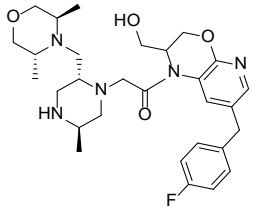
		
66	67	68
		
69	70	71
		
72	73	74
		
75	76	77
		
78	79	80

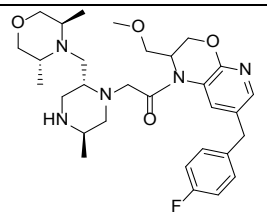
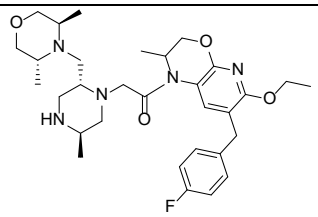
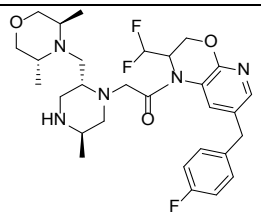
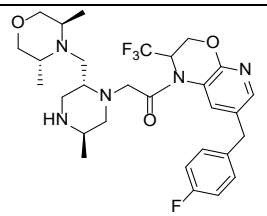
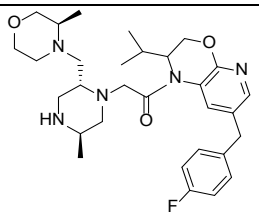
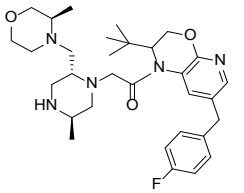
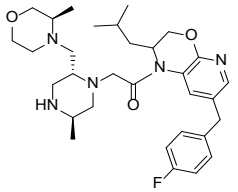
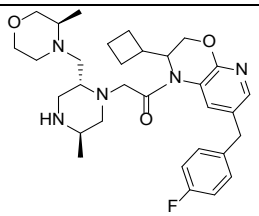
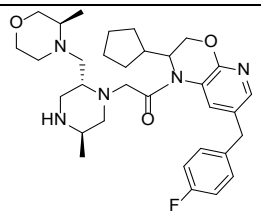
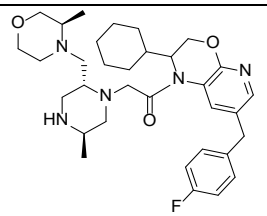
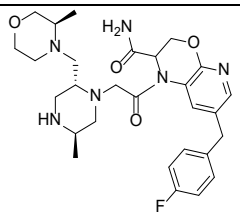
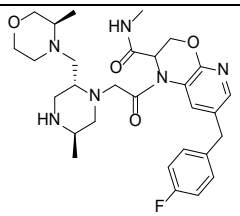
		
81	82	83
		
84A/84B	85	86
		
87	88	89
		

		
90	91A/91B	92
		
93	94	95
		
96	97	98
		
99	100	101
		
102	103	104
		

105	106	107
		
108	109	110
		
111	112	113
		
114	115	116
		
117	118	119
		
120	121	122

		
123	124	125
		
126	127	128
		
129	130	131
		
132	133	134
		
135	136	137
		
138	139	140

		
141	142	143
		
144	145	146
		
147	148	149
		
150	151	152
		
153	154	155
		
156	157	158

		
159	160	161
		
162	163	164
		
165	166	167
		
168	169	170

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

25. A pharmaceutical composition comprising a compound of any one of claims 1-24, or a pharmaceutically acceptable salt thereof, or a stereoisomer, or a tautomer thereof, and at least one pharmaceutically acceptable carrier or excipient.

26. A use of the compound of any one of claims 1-24, or a pharmaceutically acceptable salt, or a stereoisomer, or a tautomer thereof in the manufacture of a medicament for treating cancer modulated by cIAPs.