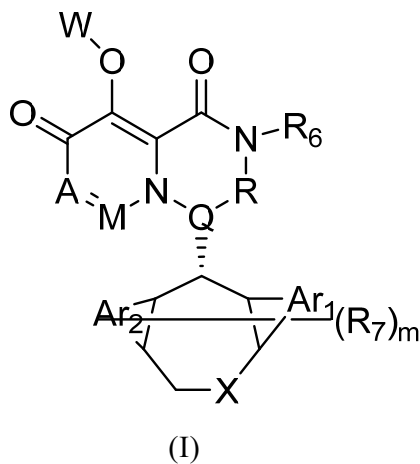


CLAIMS

What is claimed is:

1. A pyridone derivative represented by Formula (I) or a stereoisomer, a pharmaceutically acceptable salt, a solvate or a crystal thereof,



wherein:

- (1) A is selected from N or CR₁, R₁ is selected from hydrogen, cyano, hydroxy, halogen, carboxyl, ester, amide, sulfonyl amide; or, R₁ is selected from the following unsubstituted or substituted groups: C₁₋₆ hydrocarbyl, C₁₋₆ hydrocarbyloxy, C₁₋₆ hydrocarbylamino, C₁₋₆ hydrocarbylsulfydryl, carbonyl hydrazide, C₁₋₆ hydrocarbyl carbonyl, C₁₋₆ hydrocarbylamino carbonyl, C₁₋₆ hydrocarbylcarbonyl amino, C₁₋₆ hydrocarbyloxy carbonyl, C₁₋₆ hydrocarbylsulfinyl, C₁₋₆ hydrocarbylamino carbonylamino, C₃₋₆ cycloalkyl, C₃₋₆ cycloalkoxy, C₃₋₆ cycloalkylamino, C₃₋₆ cycloalkylsulfydryl, C₃₋₆ cycloalkylcarbonyl, C₃₋₆ cycloalkylamino carbonyl, C₃₋₆ cycloalkylcarbonyl amino, C₃₋₆ cycloalkylamino carbonylamino, C₄₋₈ heterocycloalkyl, C₄₋₈ heterocycloalkoxy, C₄₋₈ heterocycloalkylamino, C₄₋₈ heterocycloalkyl sulfydryl, C₄₋₈ heterocycloalkyl carbonyl, C₄₋₈ heterocycloalkylamino carbonyl, C₅₋₁₀ aryl, C₅₋₁₀ aryloxy, C₅₋₁₀ aryloxy hydrocarbyl, C₅₋₁₀ arylamino, C₅₋₁₀ aryl sulfydryl, C₅₋₁₀ aryl carbonyl, C₁₋₆ hydrocarbyl sulfonyl, C₁₋₆ hydrocarbyl sulfonylamino, C₃₋₆ cycloalkyl sulfonyl, C₃₋₆ cycloalkyl sulfonylamino, C₅₋₁₀ aryl sulfonyl, C₅₋₁₀ aryl sulfonylamino, aminooxalyl amino, aminooxalyl, C₅₋₁₀ arylamino carbonyl or C₅₋₁₀ arylamino carbonylamino;

- (2) M is selected from N or CR₂, R₂ is selected from hydrogen, cyano, hydroxy, halogen, carboxyl, ester, amide, sulfonyl amide; or, R₂ is selected from the following unsubstituted or substituted groups: C₁₋₆ hydrocarbyl, C₁₋₆ hydrocarbyloxy, C₁₋₆ hydrocarbylamino, C₁₋₆ hydrocarbylsulfydryl, carbonyl hydrazide, C₁₋₆ hydrocarbyl

carbonyl, C₁₋₆ hydrocarbylamino carbonyl, C₁₋₆ hydrocarbylcarbonyl amino, C₁₋₆ hydrocarbyloxy carbonyl, C₁₋₆ hydrocarbylsulfinyl, C₁₋₆ hydrocarbylamino carbonylamino, ~~C₃₋₆ cycloalkyl, C₃₋₆ cycloalkoxy, C₃₋₆ cycloalkylamino, C₃₋₆ cycloalkylsulfydryl, C₃₋₆ cycloalkylcarbonyl, C₃₋₆ cycloalkylamino carbonyl, C₃₋₆ cycloalkylcarbonyl amino, C₃₋₆ cycloalkylamino carbonylamino, C₄₋₈ heterocycloalkyl, C₄₋₈ heterocycloalkoxy, C₄₋₈ heterocycloalkylamino, C₄₋₈ heterocycloalkyl sulfydryl, C₄₋₈ heterocycloalkyl carbonyl, C₄₋₈ heterocycloalkylamino carbonyl, C₅₋₁₀ aryl, C₅₋₁₀ aryloxy, C₅₋₁₀ aryloxy hydrocarbyl, C₅₋₁₀ arylamino, C₅₋₁₀ aryl sulfydryl, C₅₋₁₀ aryl carbonyl, C₁₋₆ hydrocarbyl sulfonyl, C₁₋₆ hydrocarbyl sulfonylamino, ~~C₃₋₆ cycloalkyl sulfonyl, C₃₋₆ cycloalkyl sulfonylamino, C₅₋₁₀ aryl sulfonyl, C₅₋₁₀ aryl sulfonylamino, aminooxalyl amino, aminooxalyl, C₅₋₁₀ arylamino carbonyl or C₅₋₁₀ arylamino carbonylamino; or, R₁ and R₂ are connected and form a first ring together with carbon atoms connected therewith, or R₂ and R₇ are connected and form a second ring together with carbon atoms connected therewith;~~~~

(3) Q is selected from N or CR₃, R₃ is selected from hydrogen, cyano, carboxyl, ester, amide; or, R₃ is selected from the following unsubstituted or substituted groups: C₁₋₆ hydrocarbyl, ~~C₃₋₆ cycloalkyl~~, C₄₋₈ heterocycloalkyl, C₅₋₁₀ aryl, C₃₋₆ cycloalkyl sulfydryl, spirocyclic ring, bridged cyclic ring, C₃₋₆ cycloalkyl sulfydryl C₁₋₆ hydrocarbyl, C₃₋₆ cycloalkyl C₁₋₆ hydrocarbyl sulfydryl C₁₋₆ hydrocarbyl, ~~C₃₋₆ cycloalkyl C₁₋₆ hydrocarbyl sulfydryl cycloalkyl, C₃₋₆ cycloalkyloxy cycloalkyl, cycloamide C₁₋₆ hydrocarbyl, cycloamide cycloalkyl, cyclosulfonyl C₁₋₆ hydrocarbyl, cyclosulfonyl cycloalkyl;~~

~~or, R₃ and R₄ are connected and form a third ring together with carbon atoms connected therewith;~~

(4) R is selected from NH, carbonyl or CR₄R₅, R₄ and R₅ are independently selected from hydrogen, cyano, carboxyl, ester, amide; or, R₄ and R₅ are independently selected from the following unsubstituted or substituted groups: ~~C₁₋₆ hydrocarbyl, C₁₋₆ hydrocarbyloxy, C₁₋₆ hydrocarbylamino, C₁₋₆ hydrocarbylsulfydryl, C₁₋₆ hydrocarbylcarbonyl, C₁₋₆ hydrocarbylamino carbonyl, C₁₋₆ hydrocarbylcarbonyl amino, C₁₋₆ hydrocarbyloxy carbonyl, C₁₋₆ hydrocarbylamino amide, C₃₋₆ cycloalkyl, C₃₋₆ cycloalkoxy, C₃₋₆ cycloalkylamino, C₃₋₆ cycloalkylsulfydryl, C₃₋₆ cycloalkylcarbonyl, C₃₋₆ cycloalkylamino carbonyl, C₃₋₆ cycloalkylamino carbonylamino, C₃₋₆ cycloalkylcarbonyl amino, C₄₋₈ heterocycloalkyl, C₄₋₈ heterocycloalkoxy, C₄₋₈ heterocycloalkylamino, C₄₋₈ heterocycloalkyl sulfydryl, C₄₋₈ heterocycloalkyl carbonyl, C₄₋₈ heterocycloalkylamino carbonyl, C₅₋₁₀ aryl, C₅₋₁₀ aryloxy, C₅₋₁₀ aryloxy C₁₋₆ hydrocarbyl, C₅₋₁₀ arylamino, C₅₋₁₀ aryl sulfydryl, C₅₋₁₀ aryl carbonyl, C₅₋₁₀ arylamino carbonyl or C₅₋₁₀ arylamino~~

carbonylamino; or, R₄ and R₅ are connected and form a fourth ring together with carbon atoms connected therewith;

(5) R₆ is selected from hydrogen or the following unsubstituted or substituted groups: C₁₋₆ hydrocarbyl, C₁₋₆ hydrocarbyloxy, C₁₋₆ hydrocarbylamino, C₁₋₆ hydrocarbylsulfydryl, carbonyl hydrazide, C₁₋₆ hydrocarbyl carbonyl, C₁₋₆ hydrocarbylamino carbonyl, C₁₋₆ hydrocarbylcarbonyl amino, C₁₋₆ hydrocarbyloxy carbonyl, C₁₋₆ hydrocarbylsulfinyl, C₁₋₆ hydrocarbylamino carbonylamino, C₃₋₆ cycloalkyl, C₃₋₆ cycloalkoxy, C₃₋₆ cycloalkylamino, C₃₋₆ cycloalkylsulfydryl, C₃₋₆ cycloalkylcarbonyl, C₃₋₆ cycloalkylamino carbonyl, C₃₋₆ cycloalkylcarbonyl amino, C₃₋₆ cycloalkylamino carbonylamino, C₄₋₈ heterocycloalkyl, C₄₋₈ heterocycloalkoxy, C₄₋₈ heterocycloalkylamino, C₄₋₈ heterocycloalkyl sulfydryl, C₄₋₈ heterocycloalkyl carbonyl, C₄₋₈ heterocycloalkylamino carbonyl, C₅₋₁₀ aryl, C₅₋₁₀ aryloxy, C₅₋₁₀ aryloxy hydrocarbyl, C₅₋₁₀ arylamino, C₅₋₁₀ aryl sulfydryl, C₅₋₁₀ aryl carbonyl, C₁₋₆ hydrocarbyl sulfonyl, C₁₋₆ hydrocarbyl sulfonylamino, C₃₋₆ cycloalkyl sulfonyl, C₃₋₆ cycloalkyl sulfonylamino, C₅₋₁₀ aryl sulfonyl, C₅₋₁₀ aryl sulfonylamino, aminooxalyl amino, aminooxalyl, C₅₋₁₀ arylamino carbonyl or C₅₋₁₀ arylamino carbonylamino; or, R₆ is a fifth ring; or, R₆ and R are connected and form a sixth ring together with a nitrogen atom both connected therewith, and the sixth ring is monocyclic, a spiro ring, fused cyclic, bridged cyclic or polycyclic, and optionally contains 1, 2, 3 or more groups independently selected from heteroatom, C=O, S=O or -SO₂, in addition to the nitrogen atom which R and R₆ are both connected with; wherein a common carbon atom of the spiro ring and a nitrogen atom shared by the spiro ring and a parent ring are adjacent or spaced by one atom; a ring in the spiro ring that shares the nitrogen atom with a parent ring has an oxygen atom or a nitrogen atom at a position opposite to the nitrogen atom;

(6) m is 0, 1, 2, 3, 4 or 5, and R₇ is selected from hydrogen, hydroxy, cyano, halogen, carboxyl, ester, sulfonyl amide, amide; or, R₇ is selected from the following unsubstituted or substituted groups: C₁₋₆ hydrocarbyl, C₁₋₆ hydrocarbyloxy, C₁₋₆ hydrocarbylamino, C₁₋₆ hydrocarbylsulfydryl, carbonyl hydrazide, C₁₋₆ hydrocarbyl carbonyl, C₁₋₆ hydrocarbylamino carbonyl, C₁₋₆ hydrocarbylcarbonyl amino, C₁₋₆ hydrocarbyloxy carbonyl, C₁₋₆ hydrocarbylsulfinyl, C₁₋₆ hydrocarbylamino carbonylamino, C₃₋₆ cycloalkyl, C₃₋₆ cycloalkoxy, C₃₋₆ cycloalkylamino, C₃₋₆ cycloalkylsulfydryl, C₃₋₆ cycloalkylcarbonyl, C₃₋₆ cycloalkylamino carbonyl, C₃₋₆ cycloalkylcarbonyl amino, C₃₋₆ cycloalkylamino carbonylamino, C₄₋₈ heterocycloalkyl, C₄₋₈ heterocycloalkoxy, C₄₋₈ heterocycloalkylamino, C₄₋₈ heterocycloalkyl sulfydryl, C₄₋₈ heterocycloalkyl carbonyl, C₄₋₈ heterocycloalkylamino carbonyl, C₅₋₁₀ aryl, C₅₋₁₀ aryloxy, C₅₋₁₀ aryloxy hydrocarbyl, C₅₋₁₀ arylamino, C₅₋₁₀ aryl

sulfydryl, C₅₋₁₀ aryl carbonyl, C₁₋₆ hydrocarbyl sulfonyl, C₁₋₆ hydrocarbyl sulfonyl amide, ~~C₃₋₆ cycloalkyl sulfonyl, C₃₋₆ cycloalkyl sulfonyl amide, C₅₋₁₀ aryl sulfonyl, C₅₋₁₀ aryl sulfonyl amide, aminooxalyl amino, aminooxalyl, C₅₋₁₀ arylamino carbonyl or C₅₋₁₀ arylamino carbonylamino;~~

5 ~~or, m is 2, 3, 4 or 5, and one or more pairs of neighboring R₇ are connected and form a seventh ring together with carbon atoms connected therewith; or, R₂ and R₇ are connected and form the second ring together with carbon atoms connected therewith;~~

(76) X is selected from Y(CH₂)_n, -CH(OCH₃), -CH(SCH₃), N, O or S, Y is a single bond, NH, O or S, and n is 0, 1, 2 or 3;

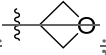
10 ~~(87) W is hydrogen or W is selected from the following groups: (a) -C(=O)-R₈; (b) -C(=O)-(CH₂)_k-R₈, k is selected from 0-3; (c) -C(=O)-O-(CH₂)_k-R₈, k is selected from 0-3; (d) -CH₂-O-R₈; (e) -CH₂-O-C(=O)-R₈; (f) -CH₂-O-C(=O)-O-R₈; (g) -CH(-CH₃)-O-C(=O)-R₈; (h) -CH(-CH₃)-O-C(=O)-O-(CH₂)_k-R₈, k is selected from 0-3; (i) -CH₂-O-P(=O)(OH)₂; (j) -CH₂-O-P(=O)(OPh)(NHR₈); (k) -CH₂-O-P(=O)(OCH₂OC(=O)OR₈)₂; R₈ is selected from the~~
 15 ~~following unsubstituted or substituted groups: C₁₋₆ hydrocarbyl, C₁₋₆ hydrocarbyloxy, C₁₋₆ hydrocarbylamino, C₁₋₆ hydrocarbylsulfydryl, carbonyl hydrazide, C₁₋₆ hydrocarbyl carbonyl, C₁₋₆ hydrocarbylamino carbonyl, C₁₋₆ hydrocarbylcarbonyl amino, C₁₋₆ hydrocarbyloxy carbonyl, C₁₋₆ hydrocarbylsulfinyl, C₁₋₆ hydrocarbylamino carbonylamino, C₄₋₈ heterocycloalkyl, C₄₋₈ heterocycloalkoxy, C₄₋₈ heterocycloalkylamino, C₄₋₈ heterocycloalkyl~~
 20 ~~sulfydryl, C₄₋₈ heterocycloalkyl carbonyl, C₄₋₈ heterocycloalkylamino carbonyl, C₅₋₁₀ aryl, C₅₋₁₀ aryloxy, C₅₋₁₀ aryloxy hydrocarbyl, C₅₋₁₀ arylamino, C₅₋₁₀ aryl sulfydryl, C₅₋₁₀ aryl carbonyl, C₁₋₆ hydrocarbyl sulfonyl, C₁₋₆ hydrocarbyl sulfonylamino, C₅₋₁₀ aryl sulfonyl, C₅₋₁₀ aryl sulfonylamino, aminooxalyl amino, aminooxalyl, C₅₋₁₀ arylamino carbonyl or C₅₋₁₀ arylamino carbonylamino;~~
 25 ~~is hydrogen or a group that is metabolized to a parent drug by chemical means and/or by the action of an enzyme in vivo;~~

(98) Ar₁ and Ar₂ are independently selected from a phenyl ring, or a heteroaromatic ring containing 1, 2, 3 or more heteroatoms;

30 ~~(10) the first ring, the second ring, the third ring, the fourth ring, the fifth ring, and the seventh ring are independently an unsubstituted or substituted carbocyclic ring uninterrupted or interrupted by 1, 2, 3 or more selected from heteroatom, C=O, S=O or SO₂, and the first ring, the second ring, the third ring, the fourth ring, the fifth ring, and the seventh ring are independently monocyclic, spiro, fused cyclic, bridged cyclic or polycyclic; and~~

(11) when the sixth ring is a 4 membered, 5 membered, 6 membered or 7 membered monocyclic ring, Formula (I) further meets at least one of the following conditions:

i) ~~in addition to the nitrogen atom to which both R and R₆ are connected, the sixth ring optionally contains one or two of oxygen atom, another nitrogen atom, C=O, S=O, SO₂;~~

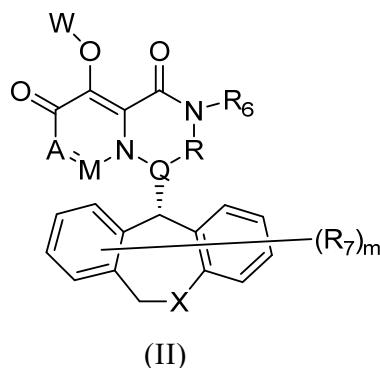
5 ii) ~~the sixth ring has at least one substituent selected from hydroxy, cyano, carboxyl, ester, sulfonyl amide, amide, C₂₋₆ alkenyl, C₃₋₆ cycloalkyl, C₃₋₆ halocycloalkyl, C₃₋₆ cycloalkoxy, C₁₋₆ hydrocarbyloxy, C₁₋₆ hydrocarbyl, C₁₋₆ hydrocarbyloxy C₁₋₆ hydrocarbyloxy, C₁₋₆ hydrocarbylamino, C₁₋₆ hydrocarbylsulfonyl, carbonyl hydrazide, C₁₋₆ hydrocarbyl carbonyl, C₁₋₆ hydrocarbylamino carbonyl, C₁₋₆ hydrocarbyl carbonyl amino or C₁₋₆ hydrocarbyloxy carbonyl, CH₂OCHF₂, CH₂OCF₃, CH₂OH, OCH₂F, OCHF₂, OCF₃ or~~  ~~;~~

10 iii) ~~the sixth ring has an intra carbon-carbon ethylenic bond, or the sixth ring has an exocyclic carbon-carbon ethylenic bond sharing one carbon atom with the sixth ring;~~

iv) ~~at least one of Ar1 and Ar2 is a nitrogen-containing heteroaromatic ring;~~

v) ~~at least one of A and M is N.~~

15 2. The pyridone derivative or the stereoisomer, the pharmaceutically acceptable salt, the solvate or the crystal thereof according to claim 1, wherein Ar1 and Ar2 are both ~~a~~-phenyl rings and the pyridone derivative is represented by Formula (II):



20 or, at least one of Ar1 and Ar2 is a heteroaromatic ring;

and/or, in the heterocyclic ring or the heteroaromatic ring, a heteroatom is dependently selected from N, O, or S.

25 3. The pyridone derivative or the stereoisomer, the pharmaceutically acceptable salt, the solvate or the crystal thereof according to claim 1 or 2, wherein W is selected from the following groups: (a) C(=O) R₈; (b) C(=O) (CH₂)_k R₈, k is selected from 0-3; (c) C(=O) O (CH₂)_k R₈, k is selected from 0-3; (d) CH₂ O R₈; (e) CH₂ O C(=O) R₈; (f) CH₂ O C(=O) O R₈; (g) CH (CH₃) O C(=O) R₈; (h)

- ~~CH(CH₃) O C(C=O) O (CH₂)_k R₈, k is selected from 0-3; (i) CH₂ O P(=O)(OH)₂; (j) CH₂ O P(=O)(OPh)(NHR₈); (k) CH₂ O P(=O)(OCH₂OC(=O)OR₈)₂; R₈ is selected from the following unsubstituted or substituted groups: C₁₋₆ hydrocarbyl, C₁₋₆ hydrocarbyloxy, C₁₋₆ hydrocarbylamino, C₁₋₆ hydrocarbylsulfydryl, carbonyl hydrazide, C₁₋₆ hydrocarbyl carbonyl, C₁₋₆ hydrocarbylamino carbonyl, C₁₋₆ hydrocarbylcarbonyl amino, C₁₋₆ hydrocarbyloxy carbonyl, C₁₋₆ hydrocarbylsulfinyl, C₁₋₆ hydrocarbylamino carbonylamino, C₃₋₆ cycloalkyl, C₃₋₆ cycloalkoxy, C₃₋₆ cycloalkylamino, C₃₋₆ cycloalkylsulfydryl, C₃₋₆ cycloalkylcarbonyl, C₃₋₆ cycloalkylamino carbonyl, C₃₋₆ cycloalkylcarbonyl amino, C₃₋₆ cycloalkylamino carbonylamino, C₄₋₈ heterocycloalkyl, C₄₋₈ heterocycloalkoxy, C₄₋₈ heterocycloalkylamino, C₄₋₈ heterocycloalkyl sulfydryl, C₄₋₈ heterocycloalkyl carbonyl, C₄₋₈ heterocycloalkylamino carbonyl, C₅₋₁₀ aryl, C₅₋₁₀ aryloxy, C₅₋₁₀ aryloxy hydrocarbyl, C₅₋₁₀ arylamino, C₅₋₁₀ aryl sulfydryl, C₅₋₁₀ aryl carbonyl, C₁₋₆ hydrocarbyl sulfonyl, C₁₋₆ hydrocarbyl sulfonylamino, C₃₋₆ cycloalkyl sulfonyl, C₃₋₆ cycloalkyl sulfonylamino, C₅₋₁₀ aryl sulfonyl, C₅₋₁₀ aryl sulfonylamino, aminooxalyl amino, aminooxalyl, C₅₋₁₀ arylamino carbonyl or C₅₋₁₀ arylamino carbonylamino;~~
- 5 ~~and/or, when the sixth ring is a spiro ring, a common carbon atom of the spiro ring and a nitrogen atom shared by the spiro ring and a parent ring are adjacent or spaced by one atom;~~
- 10 ~~and/or, when the sixth ring is a spiro ring, a ring in the spiro ring that shares the nitrogen atom with a parent ring has an oxygen atom, a nitrogen atom or a carbon atom at a position opposite to the nitrogen atom; and/or, when the sixth ring is a spiro ring, a ring in the spiro ring that shares the nitrogen atom with a parent ring is a 5 membered, 6 membered, 7 membered or 8 membered ring, and another ring is a 3 membered, 4 membered, 5 membered or 6 membered~~
- 15 ~~carboatomic, oxygen containing heterocyclic or sulfur containing heterocyclic ring unsubstituted or substituted by a substituent selected from halogen, C₁₋₃ hydrocarbyl, hydroxymethyl, methoxymethyl, methoxyethyl, or C₁₋₃ halo hydrocarbyl.~~
- 20 ~~in the heterocyclic ring or the heteroaromatic ring, a heteroatom is independently selected from N, O, or S;~~
- 25 ~~and/or, R₁ is selected from hydrogen, cyano, hydroxy, halogen, carboxyl, amide or sulfonyl amide; or, R₁ is selected from the following unsubstituted or substituted groups: C₁₋₆ hydrocarbyl, C₁₋₆ hydrocarbyloxy, C₁₋₆ hydrocarbylamino, C₁₋₆ hydrocarbylsulfydryl, carbonyl hydrazide, C₁₋₆ hydrocarbyl carbonyl, C₁₋₆ hydrocarbylamino carbonyl, C₁₋₆ hydrocarbylcarbonyl amino, C₁₋₆ hydrocarbyloxy carbonyl, C₁₋₆ hydrocarbylsulfinyl or C₁₋₆ hydrocarbylamino carbonylamino;~~
- 30 ~~in the heterocyclic ring or the heteroaromatic ring, a heteroatom is independently selected from N, O, or S;~~
- 35 ~~and/or, R₁ is selected from hydrogen, cyano, hydroxy, halogen, carboxyl, amide or sulfonyl amide; or, R₁ is selected from the following unsubstituted or substituted groups: C₁₋₆ hydrocarbyl, C₁₋₆ hydrocarbyloxy, C₁₋₆ hydrocarbylamino, C₁₋₆ hydrocarbylsulfydryl, carbonyl hydrazide, C₁₋₆ hydrocarbyl carbonyl, C₁₋₆ hydrocarbylamino carbonyl, C₁₋₆ hydrocarbylcarbonyl amino, C₁₋₆ hydrocarbyloxy carbonyl, C₁₋₆ hydrocarbylsulfinyl or C₁₋₆ hydrocarbylamino carbonylamino;~~

and/or, R₂ is selected from hydrogen, cyano, hydroxy, halogen, carboxyl, amide or sulfonyl amide; or, R₂ is selected from the following unsubstituted or substituted groups: C₁₋₆ hydrocarbyl, C₁₋₆ hydrocarbyloxy, C₁₋₆ hydrocarbylamino, C₁₋₆ hydrocarbylsulfydryl, carbonyl hydrazide, C₁₋₆ hydrocarbyl carbonyl, C₁₋₆ hydrocarbylamino carbonyl, C₁₋₆ hydrocarbylcarbonyl amino, C₁₋₆ hydrocarbyloxy carbonyl, C₁₋₆ hydrocarbylsulfinyl or C₁₋₆ hydrocarbylamino carbonylamino;

and/or, R₃ is selected from hydrogen, cyano, carboxyl, amide, unsubstituted or substituted C₁₋₆ hydrocarbyl;

and/or, R₇ is selected from hydrogen, hydroxy, cyano, halogen, carboxyl, sulfonyl amide or amide; or, R₇ is selected from the following unsubstituted or substituted groups: C₁₋₆ hydrocarbyl, C₁₋₆ hydrocarbyloxy, C₁₋₆ hydrocarbylamino, C₁₋₆ hydrocarbylsulfydryl, carbonyl hydrazide, C₁₋₆ hydrocarbyl carbonyl, C₁₋₆ hydrocarbylamino carbonyl, C₁₋₆ hydrocarbylcarbonyl amino, C₁₋₆ hydrocarbyloxy carbonyl, C₁₋₆ hydrocarbylsulfinyl or C₁₋₆ hydrocarbylamino carbonylamino;

and/or, R₈ is selected from the following unsubstituted or substituted groups: C₁₋₆ hydrocarbyl, C₁₋₆ hydrocarbyloxy, C₁₋₆ hydrocarbylamino, C₁₋₆ hydrocarbylsulfydryl, carbonyl hydrazide, C₁₋₆ hydrocarbyl carbonyl, C₁₋₆ hydrocarbylamino carbonyl, C₁₋₆ hydrocarbylcarbonyl amino, C₁₋₆ hydrocarbyloxy carbonyl, C₁₋₆ hydrocarbylsulfinyl, C₁₋₆ hydrocarbylamino carbonylamino;

and/or, the substituted groups are groups with its hydrogen atom replaced with 1,2, 3 or more substituents selected from cyano, F, Cl, Br, hydroxy, carboxyl, ester, sulfonyl, sulphonylamino, amide, carbonyl, methylsulfinylamino, ethylsulfinylamino, isopropylsulfinylamino, tert-butylsulfinylamino, amino, acylhydrazino, methyl, ethyl, n-propyl, isopropyl, cyclopropyl, n-butyl, isobutyl, tert-butyl, cyclobutyl, n-pentyl, isopentyl, neopentyl, cyclohexyl, halomethyl, haloethyl, halo-n-propyl, halo-isopropyl, halocyclopropyl, halo-n-butyl, halo-isobutyl, halo-tert-butyl, halocyclobutyl, hydroxymethyl, hydroxyethyl, hydroxy-n-propyl, hydroxyisopropyl, hydroxycyclopropyl, hydroxy-n-butyl, hydroxyisobutyl, hydroxy-tert-butyl, hydroxycyclobutyl, hydroxy-n-pentyl, hydroxyisopentyl, hydroxy neopentyl, hydroxycyclohexyl, methoxy, ethoxy or propoxy.

4. The pyridone derivative or the stereoisomer, the pharmaceutically acceptable salt, the solvate or the crystal thereof according to claim 3, wherein,

R₁ is selected from hydrogen, cyano, hydroxy, halogen, carboxyl, amide or sulfonyl amide; or, R₁ is selected from the following unsubstituted or substituted groups: C₁₋₆ alkyl,

C₁₋₆ alkoxy, C₁₋₆ alkylamino, C₁₋₆ alkylsulfydryl, carbonyl hydrazide, C₁₋₆ alkylcarbonyl, C₁₋₆ alkylamino carbonyl, C₁₋₆ alkylcarbonyl amino, C₁₋₆ alkoxy carbonyl, C₁₋₆ alkylsulfinyl or C₁₋₆ alkylamino carbonylamino;

5 and/or, R₂ is selected from hydrogen, cyano, hydroxy, halogen, carboxyl, amide or sulfonyl amide; or, R₂ is selected from the following unsubstituted or substituted groups: C₁₋₆ alkyl, C₁₋₆ alkoxy, C₁₋₆ alkylamino, C₁₋₆ alkylsulfydryl, carbonyl hydrazide, C₁₋₆ alkyl carbonyl, C₁₋₆ alkylamino carbonyl, C₁₋₆ alkylcarbonyl amino, C₁₋₆ alkoxy carbonyl, C₁₋₆ alkylsulfinyl or C₁₋₆ alkylamino carbonylamino;

10 and/or, R₃ is selected from hydrogen, cyano, carboxyl, amide, unsubstituted or substituted C₁₋₆ alkyl;

and/or, R₇ is selected from hydrogen, hydroxy, cyano, halogen, carboxyl, sulfonyl amide or amide; or, R₇ is selected from the following unsubstituted or substituted groups: C₁₋₆ alkyl, C₁₋₆ alkoxy, C₁₋₆ alkylamino, C₁₋₆ alkylsulfydryl, carbonyl hydrazide, C₁₋₆ alkyl carbonyl, C₁₋₆ alkylamino carbonyl, C₁₋₆ alkylcarbonyl amino, C₁₋₆ alkoxy carbonyl, C₁₋₆ alkylsulfinyl or C₁₋₆ alkylamino carbonylamino;

15 and/or, R₈ is selected from the following unsubstituted or substituted groups: C₁₋₆ alkyl, C₁₋₆ alkoxy, C₁₋₆ alkylamino, C₁₋₆ alkylsulfydryl, carbonyl hydrazide, C₁₋₆ alkyl carbonyl, C₁₋₆ alkylamino carbonyl, C₁₋₆ alkylcarbonyl amino, C₁₋₆ alkoxy carbonyl, C₁₋₆ alkylsulfinyl, C₁₋₆ alkylamino carbonylamino, C₁₋₆ alkyl sulfonyl, C₁₋₆ alkyl sulfonylamino.

20 5. The pyridone derivative or the stereoisomer, the pharmaceutically acceptable salt, the solvate or the crystal thereof according to any one of claims 1 to 4, wherein,

m is 0, 1, 2 or 3;

and/or, A is CR₁, R₁ is hydrogen;

25 and/or, M is CR₂, R₂ is hydrogen;

and/or, Q is N;

and/or, X is S;

and/or, Ar₁ and Ar₂ are both phenyl rings.

30 6. The pyridone derivative or the stereoisomer, the pharmaceutically acceptable salt, the solvate or the crystal thereof according to any one of claims 1 to 5, wherein,

m is 0, 1, 2 or 3;

A is CR₁, R₁ is hydrogen;

M is CR₂, R₂ is hydrogen;

Q is N;

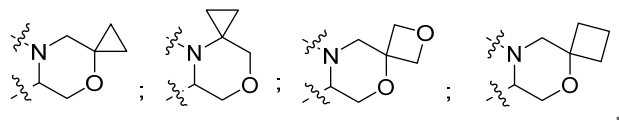
X is S;

Ar1 and Ar2 are both phenyl rings.

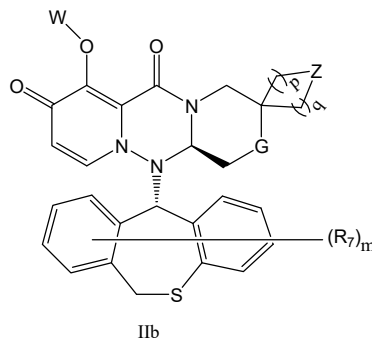
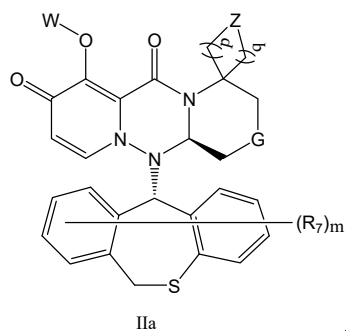
- 5 7. The pyridone derivative or the stereoisomer, the pharmaceutically acceptable salt, the solvate or the crystal thereof according to any one of claims 1 to 6, wherein a ring in the spiro ring that shares the nitrogen atom with a parent ring is a 5-membered, 6-membered, 7-membered or 8-membered ring, and another ring is a 3-membered, 4-membered, 5-membered or 6-membered carboatomic, oxygen-containing heterocyclic or sulfur-containing heterocyclic
 10 ring unsubstituted or substituted by a substituent selected from halogen, C₁₋₃ hydrocarbyl, hydroxymethyl, methoxymethyl, methoxyethyl, or C₁₋₃ halohydrocarbyl.

- 15 48. The pyridone derivative or the stereoisomer, the pharmaceutically acceptable salt, the solvate or the crystal thereof according to any one of claim 3-7, wherein when the another ring has a substituent, the substituent is selected from methyl, fluoro, chloro, bromo, monofluoromethyl, difluoromethyl, trifluoromethyl, hydroxymethyl, methoxymethyl, methoxyethyl, or chloromethyl.

- 20 9. The pyridone derivative or the stereoisomer, the pharmaceutically acceptable salt, the solvate or the crystal thereof according to any one of claims 1 to 6, wherein R₆ and R together with the nitrogen atom connected therewith is selected from the following groups:



- 25 510. The pyridone derivative or the stereoisomer, the pharmaceutically acceptable salt, the solvate or the crystal thereof according to any one of claims 1 to 3, wherein the pyridone derivative is represented by Formula IIa or Formula IIb:



in Formula IIa and Formula IIb,

G is O or CH₂;

Z is selected from CH₂, O or S;

5 p and q are respectively 0, 1 or 2, and the two are not 0 at the same time, and when Z is O or S, p+q is greater than or equal to 2;

definitions of W, R₇ and m are respectively the same as the preceding claims in any one of claims 1 to 3.

10

116. The pyridone derivative or the stereoisomer, the pharmaceutically acceptable salt, the solvate or the crystal thereof according to claim 510, wherein in Formula IIa and Formula IIb, p+q = 1 or 2 or 3, and Z is CH₂; or, p = 1 or 2, q = 1 or 2, and Z is O or S;

and/or, R₇ is selected from hydrogen, hydroxy, cyano, halogen, C₁₋₆ hydrocarbyl, C₁₋₆ halohydrocarbyl, C₃₋₆ cycloalkyl, C₁₋₆ alkoxy C₁₋₆ hydrocarbyl, hydroxy C₁₋₆ hydrocarbyl, C₁₋₆ hydrocarbyloxy; and/or, W is selected from the following groups:

(a) C(=O) R₈; (b) C(=O) (CH₂)_k R₈, k is selected from 0-3; (c) C(=O) O (CH₂)_k R₈, k is selected from 0-3; (d) CH₂ O C(=O) R₈; (e) CH₂ O C(=O) O R₈; (f) CH(CH₃) O C(=O) R₈; (g) CH(CH₃) O C(=O) O (CH₂)_k R₈, k is selected from 0-3; (h) CH₂ O P(=O)(OH)₂; (i) CH₂ O P(=O)(OPh)(NHR₈); (j) CH₂ O P(=O)(OCH₂OC(=O)OR₈)₂; R₈ is selected from methyl, ethyl, isopropyl, or butyl.

12. The pyridone derivative or the stereoisomer, the pharmaceutically acceptable salt, the solvate or the crystal thereof according to claim 10 or 11, wherein in Formula IIa and Formula IIb,

Z is CH₂, and p=0, q=1; or, p=0, q=2; or, p=1, q=0; or, p=1, q=1; or p=1, q=2; or, p=2, q=0; or, p=2, q=1; or

Z is O, and p=1, q=1; or, p=1, q=2; or, p=2, q=1; or, p=2, q=2; or

Z is S, and p=1, q=1; or, p=1, q=2; or, p=2, q=1; or, p=2, q=2.

13. The pyridone derivative or the stereoisomer, the pharmaceutically acceptable salt, the solvate or the crystal thereof according to any one of claims 1 to 12, wherein R₇ is connected to a phenyl ring.

14. The pyridone derivative or the stereoisomer, the pharmaceutically acceptable salt, the solvate or the crystal thereof according to any one of claims 1 to 3 and 5 to 13, wherein R₇ is selected from hydrogen, hydroxy, cyano, halogen, C₁₋₆ hydrocarbyl, C₁₋₆ halohydrocarbyl, C₁₋₆ alkoxy C₁₋₆ hydrocarbyl, hydroxy C₁₋₆ hydrocarbyl, C₁₋₆ hydrocarbyloxy.

15. 15. The pyridone derivative or the stereoisomer, the pharmaceutically acceptable salt, the solvate or the crystal thereof according to any one of claims 1 to 14, wherein R₇ is connected to a phenyl ring, R₇ is selected from F, Cl, Br, difluoromethyl, trifluoromethyl or methyl, and m is 0, 1, 2 or 3.

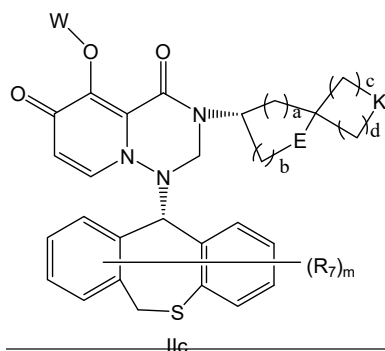
16. The pyridone derivative or the stereoisomer, the pharmaceutically acceptable salt, the solvate or the crystal thereof according to any one of claims 1 to 15, wherein R₇ is connected to a phenyl ring, R₇ is selected from F, Cl, Br, trifluoromethyl or methyl, and m is 0, 1, 2 or 3.

17. The pyridone derivative or the stereoisomer, the pharmaceutically acceptable salt, the solvate or the crystal thereof according to any one of claims 1 to 16, wherein W is hydrogen or W is selected from the following groups: (e) -CH₂-O-C(=O)-R₈; (f) -CH₂-O-C(=O)-O-R₈; (g) -CH(-CH₃)-O-C(=O)-R₈; (h) -CH(-CH₃)-O-C(C=O)-O-(CH₂)_k-R₈, k is selected from 0-3; (i) -CH₂-O-P(=O)(OH)₂; (j) -CH₂-O-P(=O)(OPh)(NHR₈) or (k) -CH₂-O-P(=O)(OCH₂OC(=O)OR₈)₂.

18. The pyridone derivative or the stereoisomer, the pharmaceutically acceptable salt, the solvate or the crystal thereof according to any one of claims 1 to 3 and 5 to 17, wherein R₈ is selected from C₁₋₆ hydrocarbyl or C₁₋₆ hydrocarbyloxy.

19. The pyridone derivative or the stereoisomer, the pharmaceutically acceptable salt, the solvate or the crystal thereof according to any one of claims 1 to 18, wherein the R₈ is selected from methyl, ethyl, isopropyl or butyl.

8. The pyridone derivative or the stereoisomer, the pharmaceutically acceptable salt, the solvate or the crystal thereof according to any one of claims 1 to 3, wherein the pyridone derivative is represented by Formula IIc:



5 in Formula IIc, a, b, c and d are respectively 0, 1, 2 or 3, and a and b are not 0 or 3 at the same time, and c and d are not 0 or 3 at the same time;

E is CH₂ or O;

K is CH₂ or O.

10 9. The pyridone derivative or the stereoisomer, the pharmaceutically acceptable salt, the solvate or the crystal thereof according to claim 8, wherein in Formula IIc, a+b = 1 or 2 or 3, and c+d = 1 or 2 or 3; and/or, in Formula IIc, R₇ is selected from hydrogen, hydroxy, cyano, halogen, C₁₋₆ hydrocarbyl, C₁₋₆ halohydrocarbyl, C₁₋₆ alkoxy C₁₋₆ hydrocarbyl, hydroxy C₁₋₆ hydrocarbyl, C₁₋₆ hydrocarbyloxy, and R₇ is connected to a phenyl ring.

15 10. The pyridone derivative or the stereoisomer, the pharmaceutically acceptable salt, the solvate or the crystal thereof according to any one of claims 1 to 3, wherein when the fifth ring is a bridged ring, the bridged ring is bicyclic or tricyclic, and a bridgehead carbon atom or a non bridgehead carbon atom of the bridged ring is connected to a corresponding nitrogen atom on a parent ring;

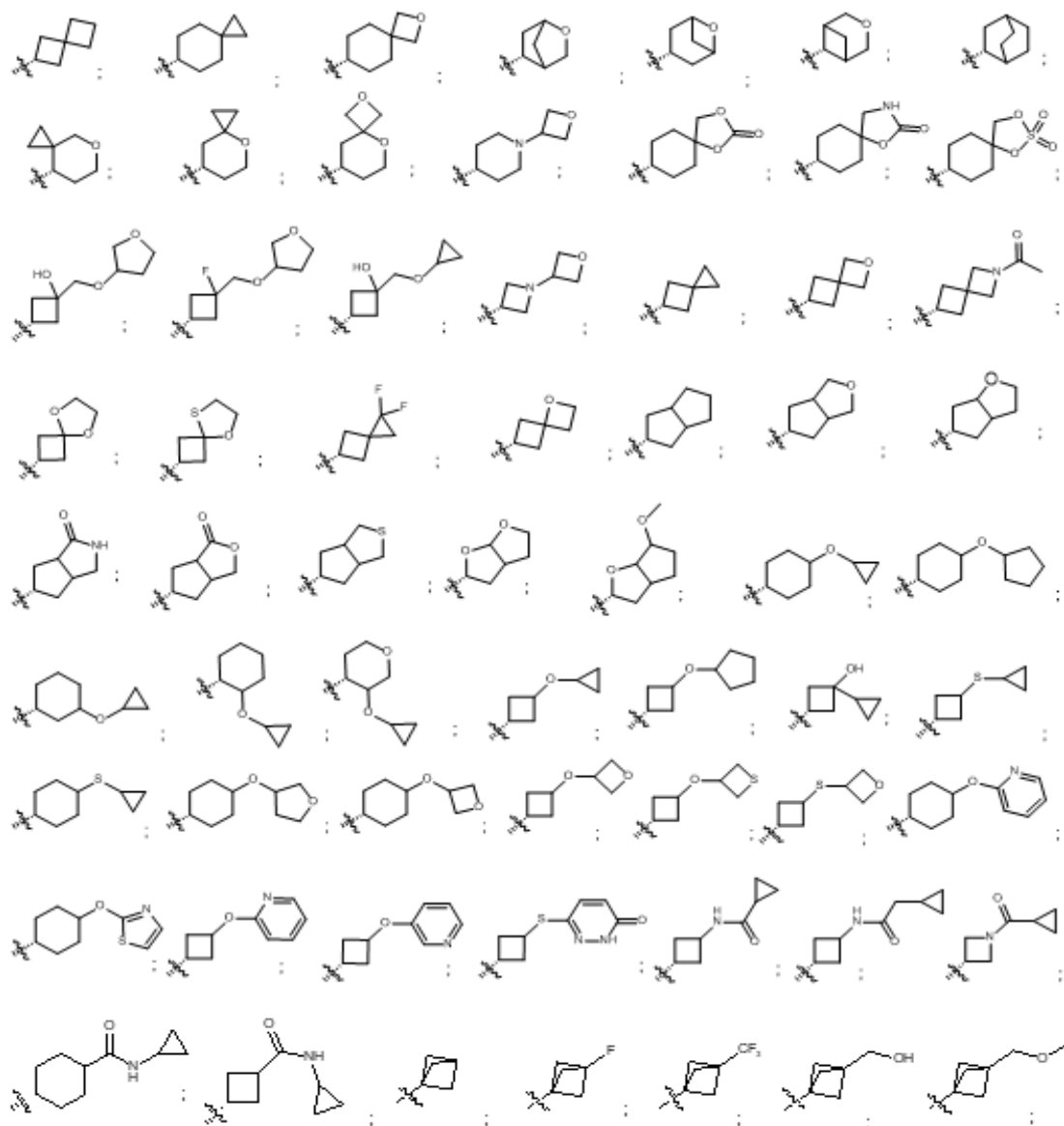
20 and/or, when the fifth ring is a bridged ring, the bridged ring is selected from bicyclo[1.1.1]pentane, bicyclo[2.1.0]pentane, bicyclo[2.1.1]hexane, bicyclo[2.2.0]hexane, bicyclo[3.1.1]heptane, bicyclo[3.2.0]heptane, bicyclo[2.2.1]heptane, bicyclo[3.2.1]octane, bicyclo[3.3.0]octane;

25 and/or, when the fifth ring is a bridged ring, the bridged ring is unsubstituted or substituted by 1, 2, 3 or more substituents selected from fluoro, chloro, bromo, trifluoromethyl, CH₂OH or CH₂OCH₃.

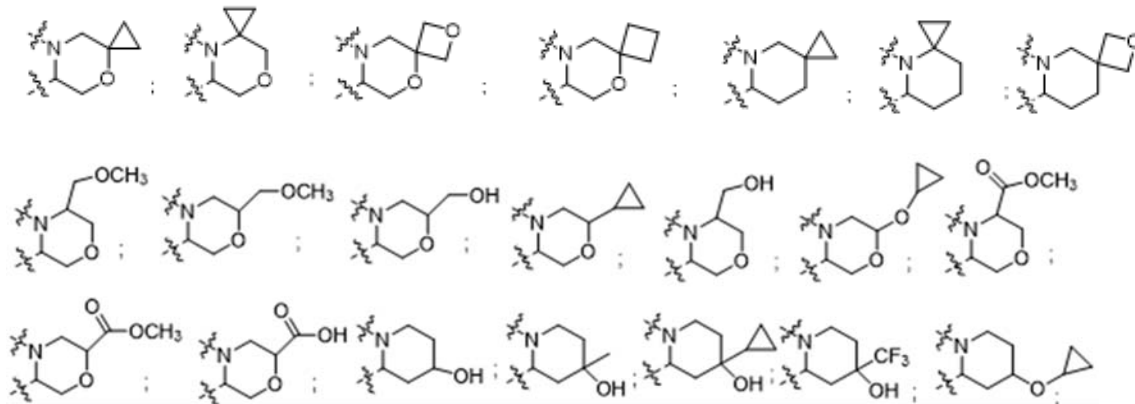


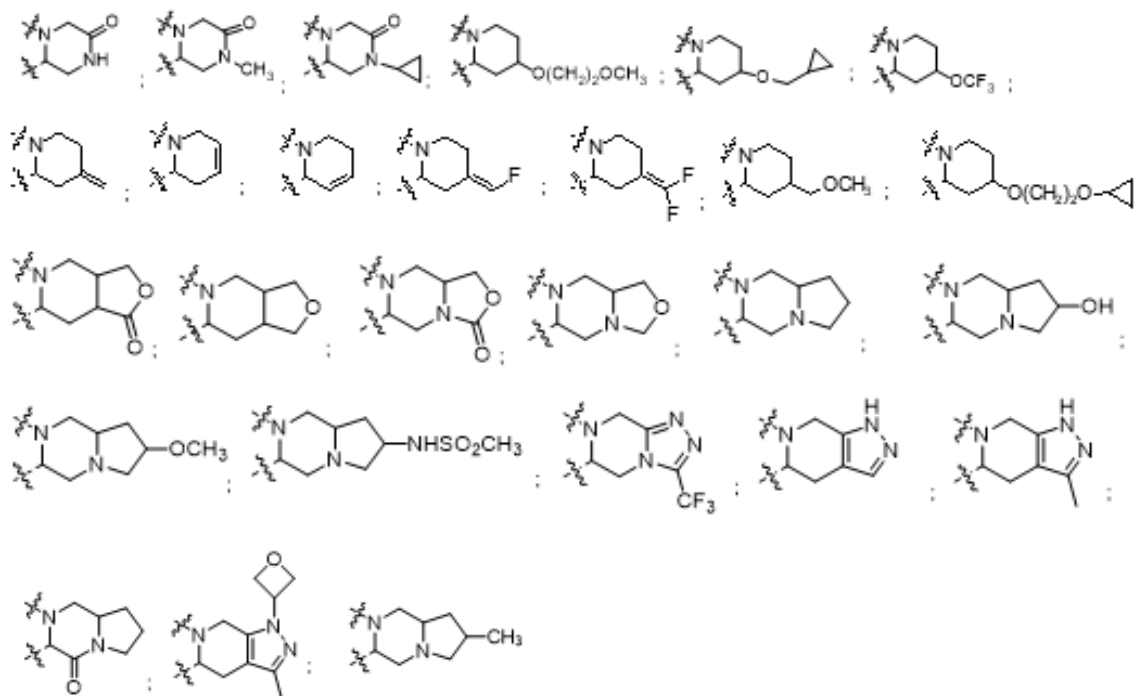
12. The pyridone derivative or the stereoisomer, the pharmaceutically acceptable salt, the solvate or the crystal thereof according to claim 11, wherein R₁₂ is selected from hydrogen, fluoro, chloro, methyl, ethyl, isopropyl, trifluoromethyl, methoxymethyl or hydroxymethyl; and/or, in Formula IIc or IIe, R₇ is selected from hydrogen, hydroxy, cyano, halogen, C₁₋₆ hydrocarbyl, C₁₋₆ halohydrocarbyl, C₁₋₆ alkoxy C₁₋₆ hydrocarbyl, hydroxy C₁₋₆ hydrocarbyl, C₁₋₆ hydrocarbyloxy, and R₇ is connected to a phenyl ring.

13

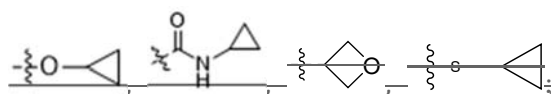


or, the six ring is selected from the following groups:





14. The pyridone derivative or the stereoisomer, the pharmaceutically acceptable salt, the
 5 solvate or the crystal thereof according to claim 1, wherein, in the condition ii), the substituent
 in the sixth ring is selected from $\text{OCH}_2\text{CH}_2\text{OCH}_3$, CH_2OCHF_2 , CH_2OCF_3 , CH_2OH , OH ,
 COOH , COOCH_3 , CONH_2 , OCH_2F , OCHF_2 , OCF_3 , CH_2OCH_3 , CH_2O , ,



and/or, when the sixth ring is a 4-membered, 5-membered, 6-membered or 7-membered
 10 monocyclic ring, the sixth ring contains a total of 2 heteroatoms and the 2 heteroatoms are in
 para or meta positions, and one of the heteroatoms is a nitrogen atom connected to both R and
 R_6 , and the other heteroatom is oxygen or nitrogen, preferably, the two heteroatoms contained in
 the sixth ring are all nitrogen atoms and the two nitrogen atoms are in opposite positions, while
 the sixth ring further has a $\text{C}=\text{O}$;

15 and/or, when the sixth ring is a 4-membered, 5-membered, 6-membered or 7-membered
 monocyclic ring, the sixth ring contains a total of 1 heteroatoms which is the nitrogen atom
 connected to both R and R_6 , while the sixth ring has an intra carbon-carbon ethylenic bond or an
 exocyclic carbon-carbon ethylenic bond;

or, in Formula (I), the sixth ring is an unsubstituted morpholine ring, and further meets at
 20 least one of the following conditions:

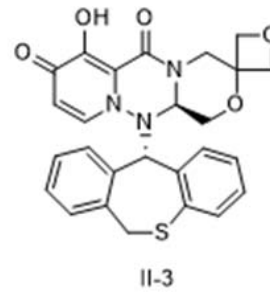
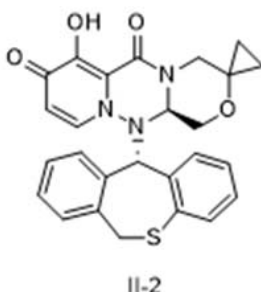
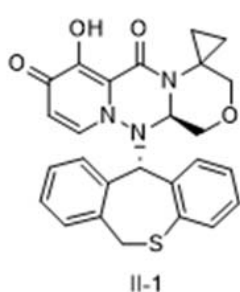
i) one of A and M is N, and the other is correspondingly CR₁ or CR₂, while Q is CH;

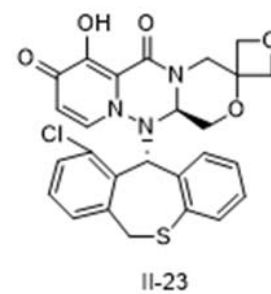
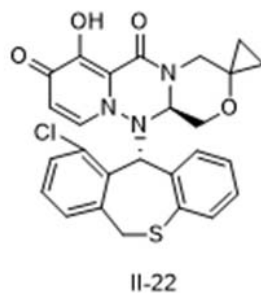
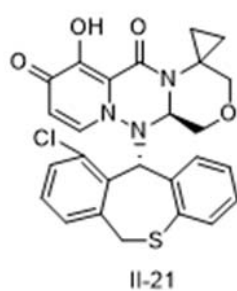
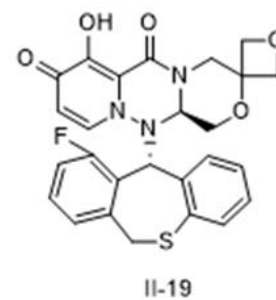
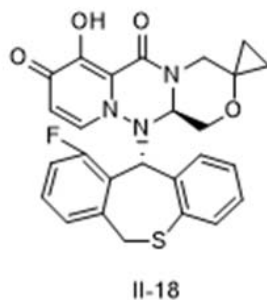
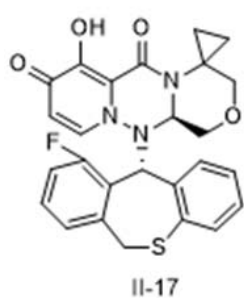
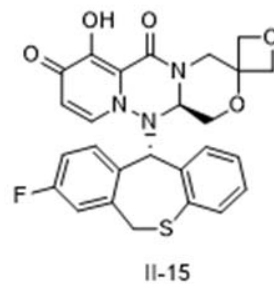
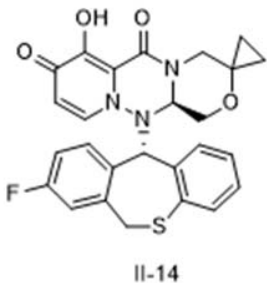
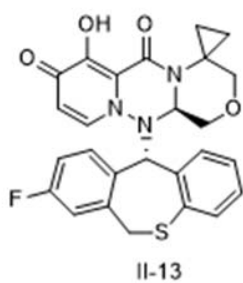
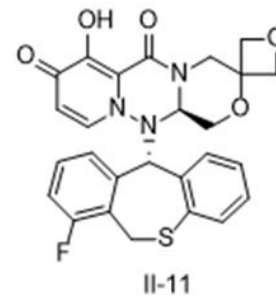
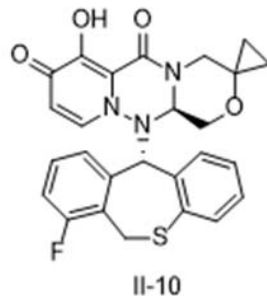
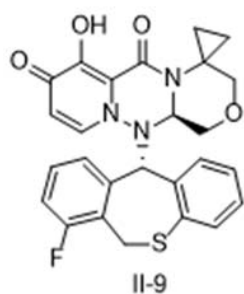
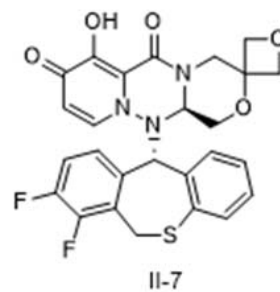
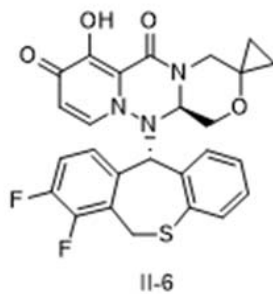
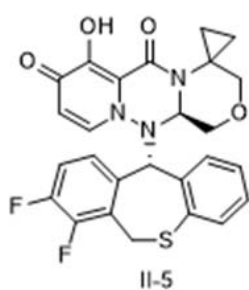
ii) at least one of Ar1 and Ar2 is a nitrogen-containing heteroaromatic ring containing 1 or 2 nitrogen atoms;

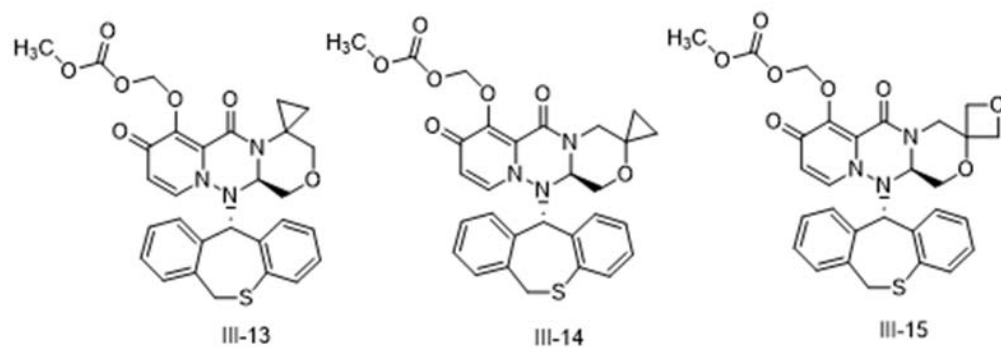
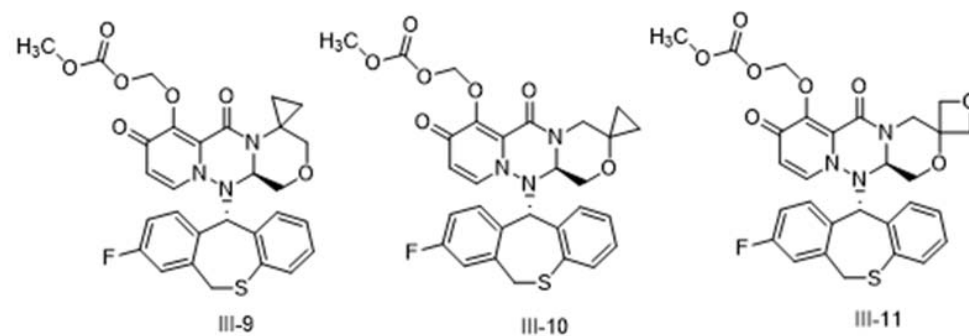
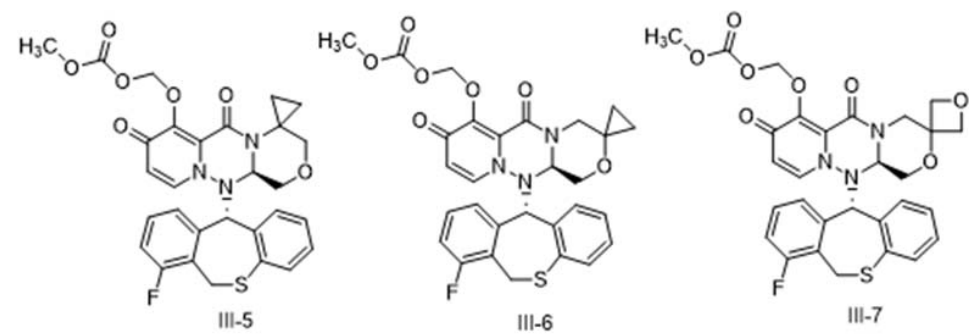
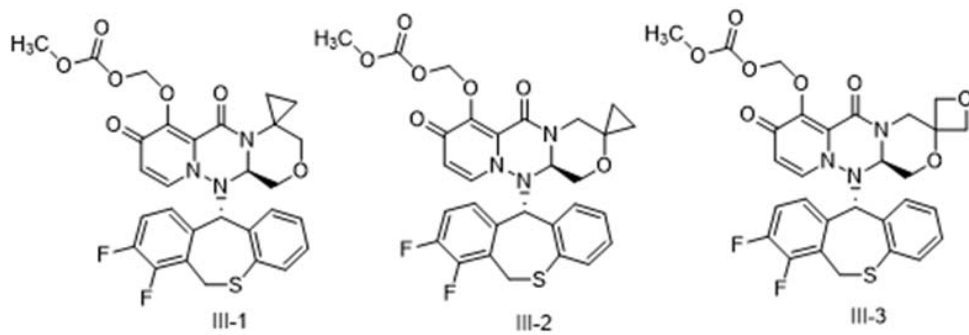
or, the sixth ring is a fused ring, the fused ring is a bicyclic ring, wherein one ring sharing a nitrogen atom with a parent ring is a saturated 5 membered or 6 membered ring and optionally contains one or two groups selected from O, another N, C=O, S=O, SO₂, and the other ring is a 3 membered, 4 membered, 5 membered or 6 membered saturated or unsaturated ring and optionally contains one or two groups selected from O, N, C=O, S=O, SO₂.

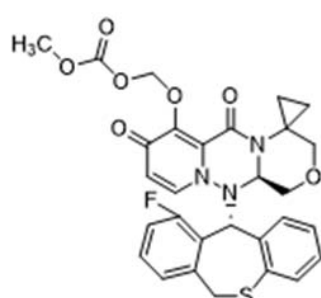
15. The pyridone derivative or the stereoisomer, the pharmaceutically acceptable salt, the solvate or the crystal thereof according to claim 1, wherein when the sixth ring is a fused ring, one ring of the fused ring sharing a nitrogen atom with a parent ring is a piperidine or piperazine ring, and the other ring is a 5 membered or 6 membered heteroaromatic ring or a saturated heterocyclic ring, which is unsubstituted or substituted by 1, 2, 3 or more substituents selected from hydroxy, cyano, carboxyl, ester, sulfonyl amide, amide, C₁₋₆ alkyl, C₂₋₆ alkenyl, C₁₋₆ halohydrocarbyl, C₁₋₃ alkoxy, C₂₋₆ cyclohydrocarbyloxy, C₁₋₆ hydrocarbyloxy C₁₋₆ hydrocarbyl, C₁₋₆ hydrocarbylamino, C₁₋₆ hydrocarbylsulfonyl, carbonyl hydrazide, C₁₋₆ hydrocarbyl carbonyl, C₁₋₆ hydrocarbyl sulfonyl amide, C₁₋₆ hydrocarbylamino carbonyl, C₁₋₆ hydrocarbyl carbonyl amino or C₁₋₆ hydrocarbyloxy carbonyl.

20. The pyridone derivative or the stereoisomer, the pharmaceutically acceptable salt, the solvate or the crystal thereof according to claim 1, wherein the pyridone derivative is selected from the following compounds:

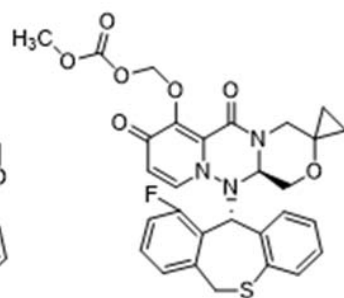




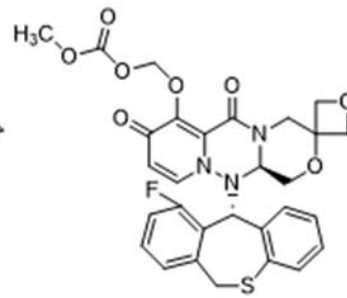




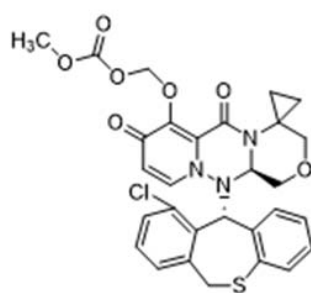
III-17



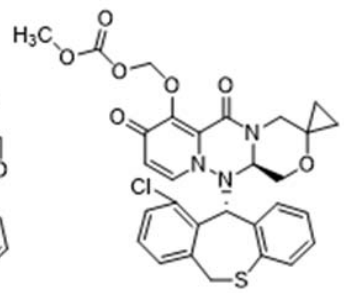
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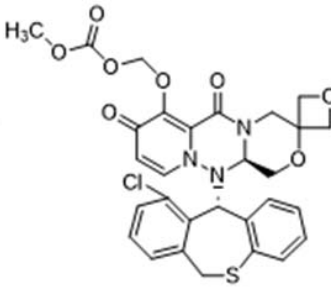
III-19



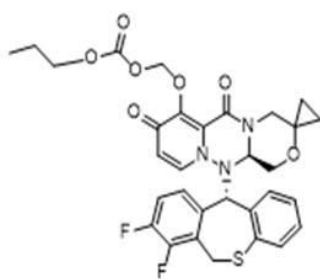
III-21



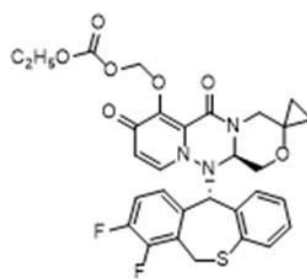
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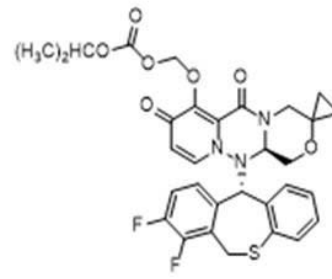
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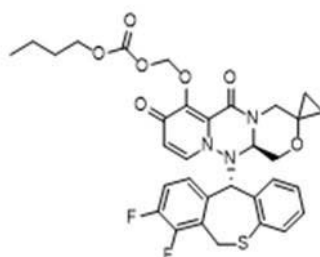
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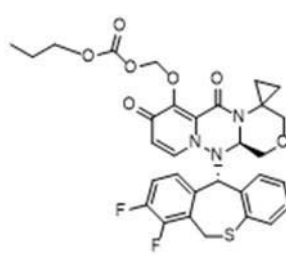
III-50



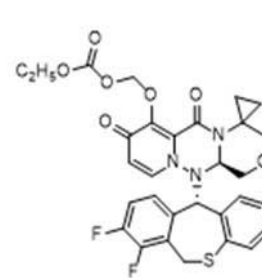
III-51



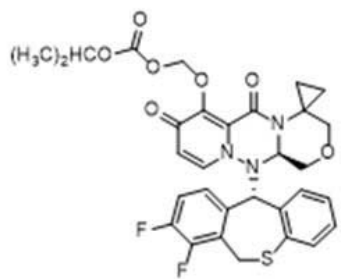
III-52



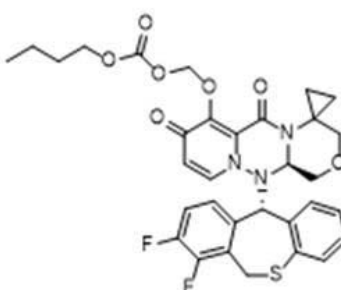
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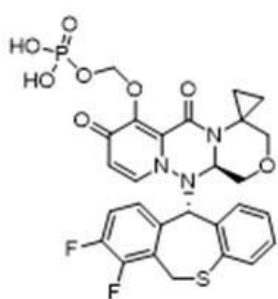
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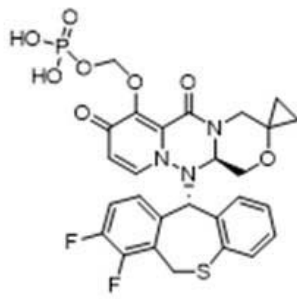
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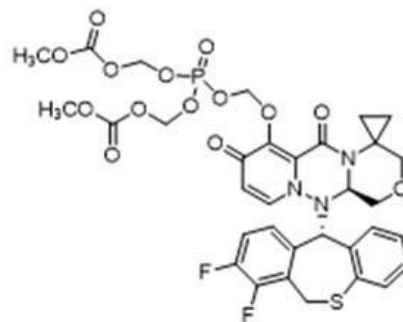
III-56



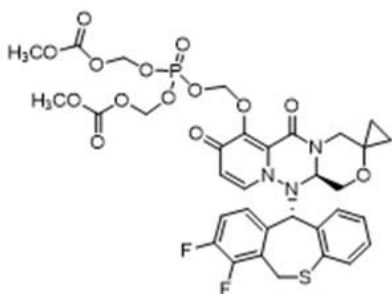
IV-9



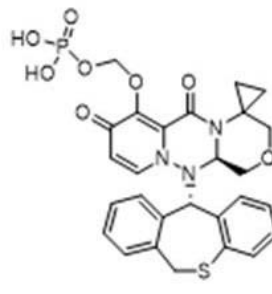
IV-10



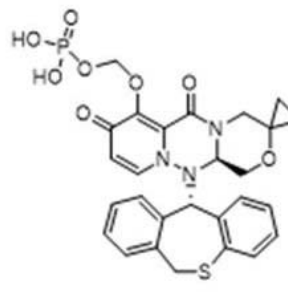
IV-11



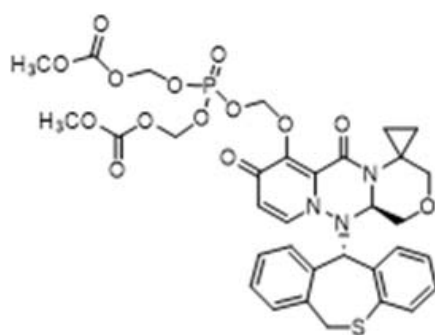
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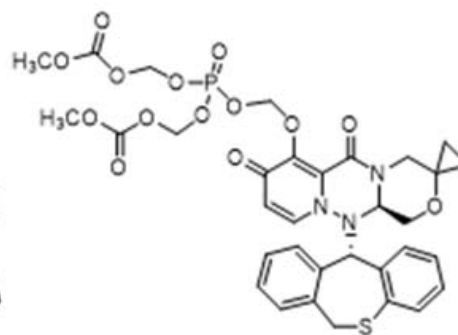
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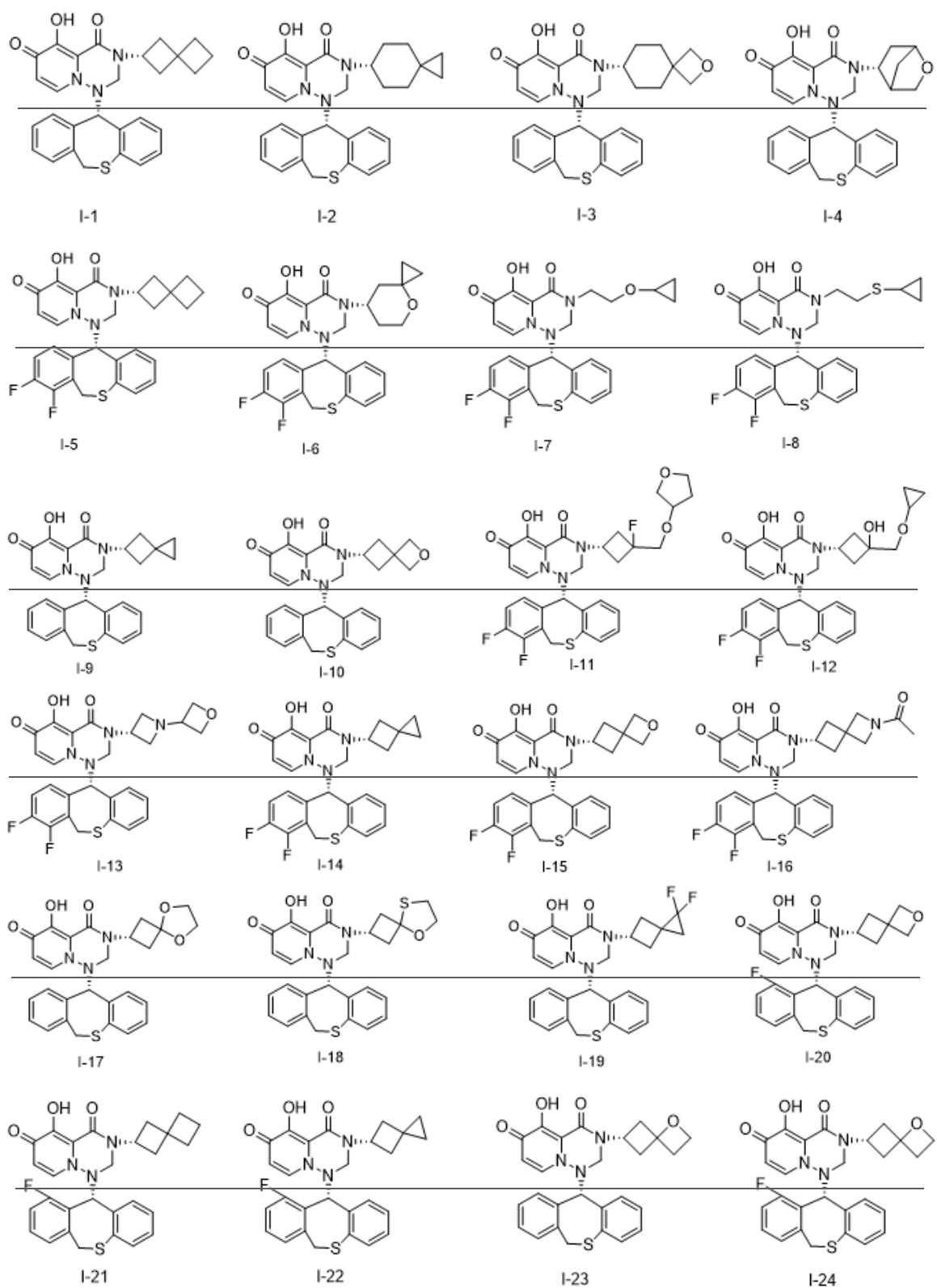
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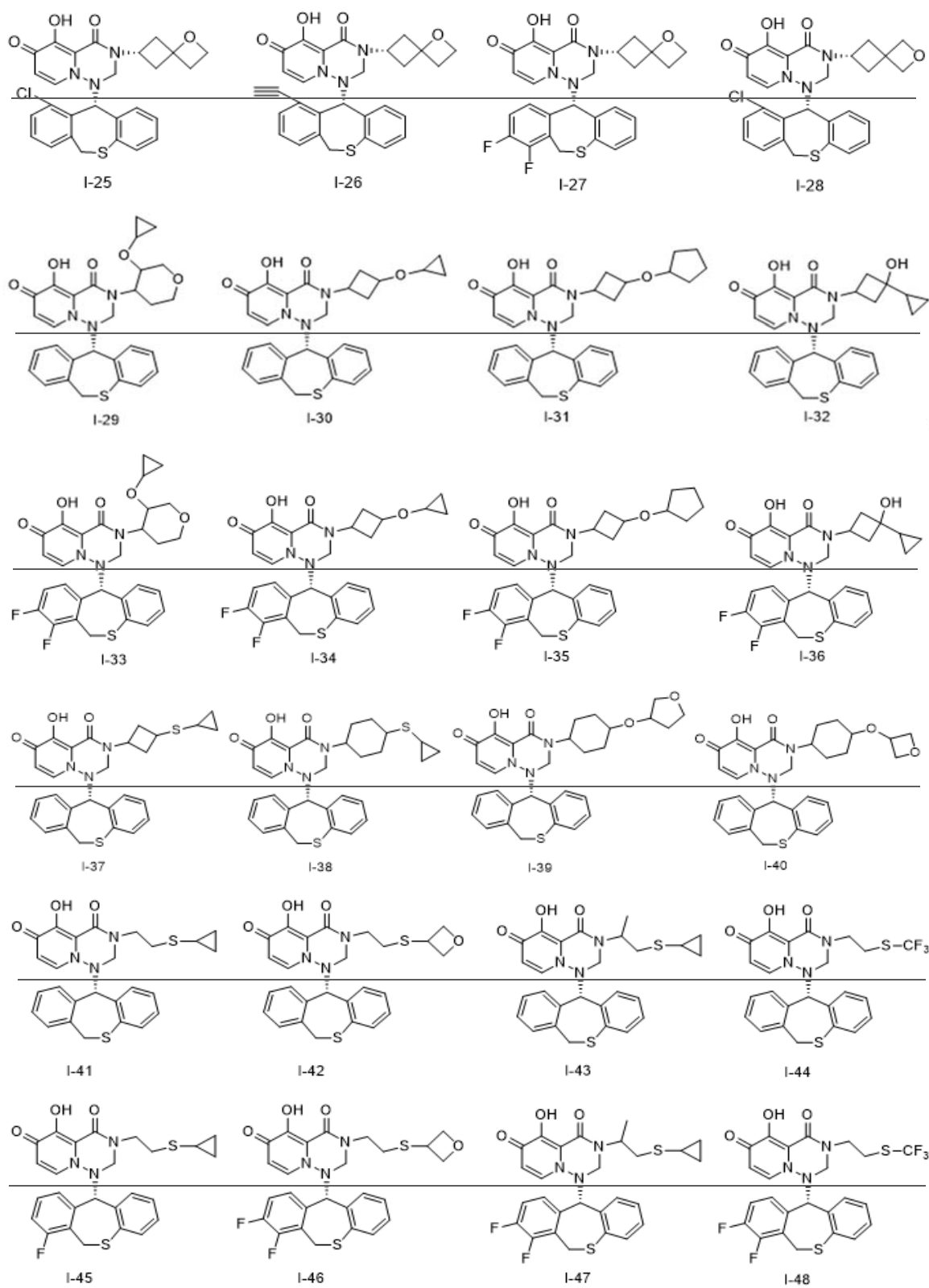


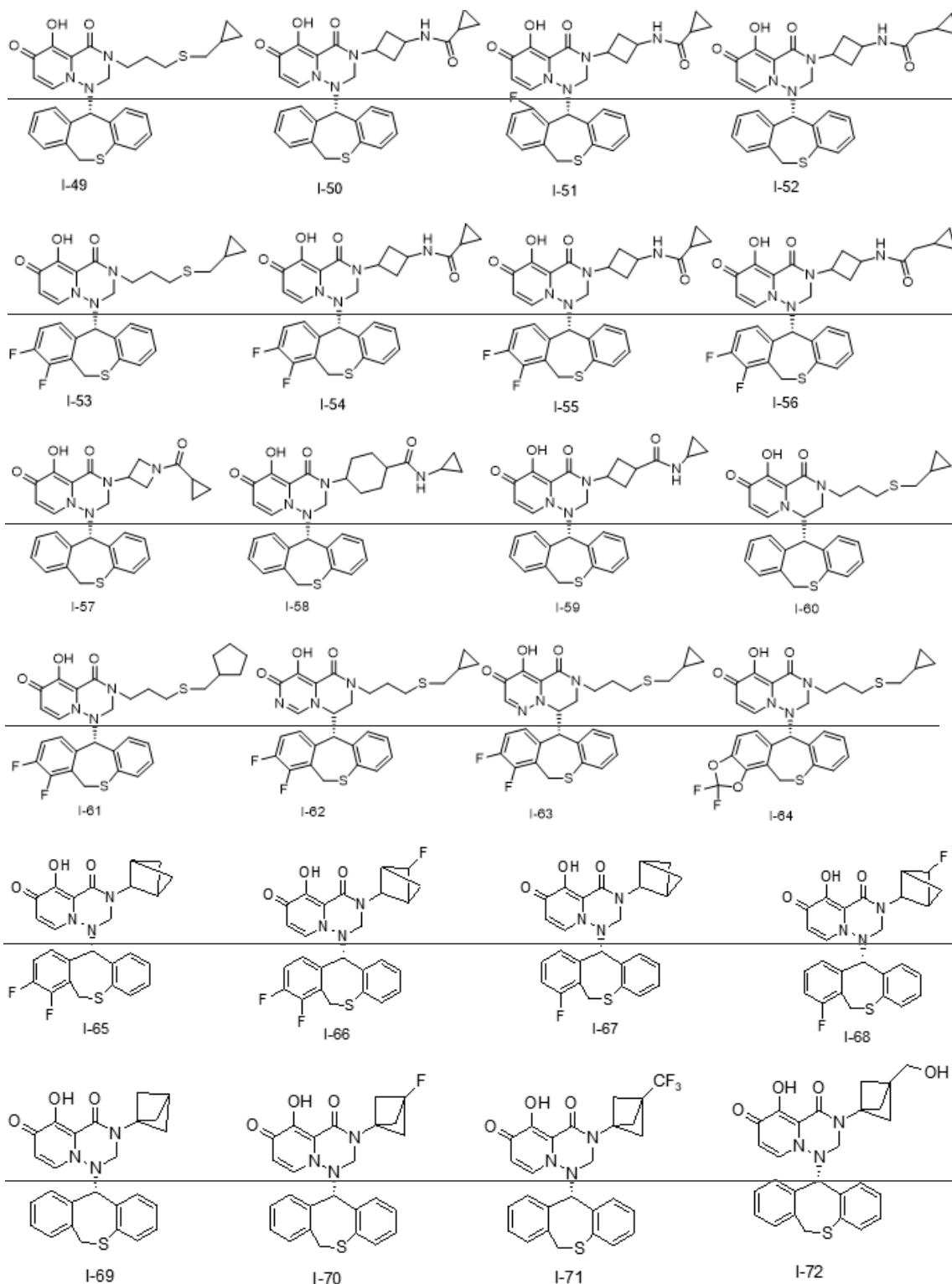
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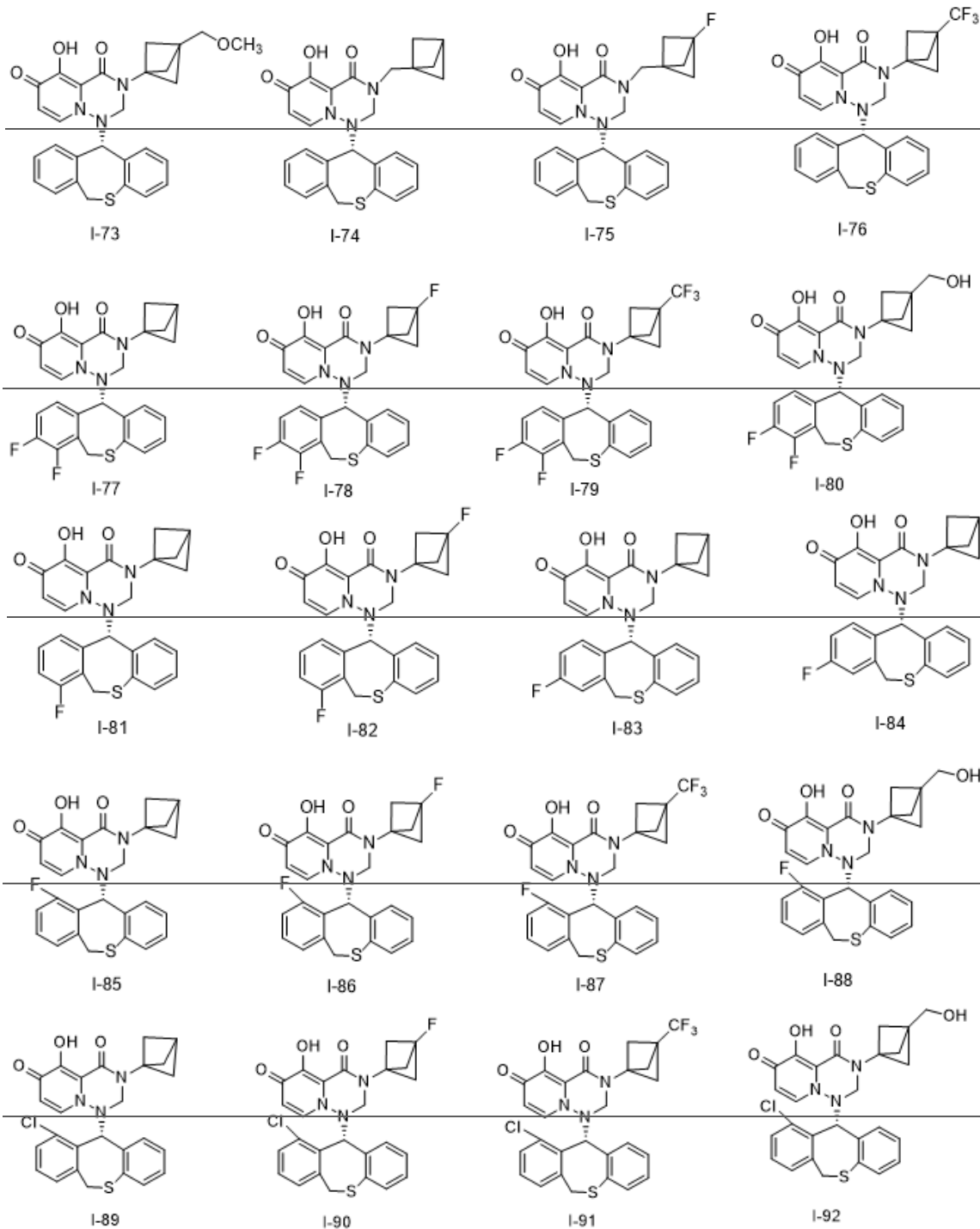


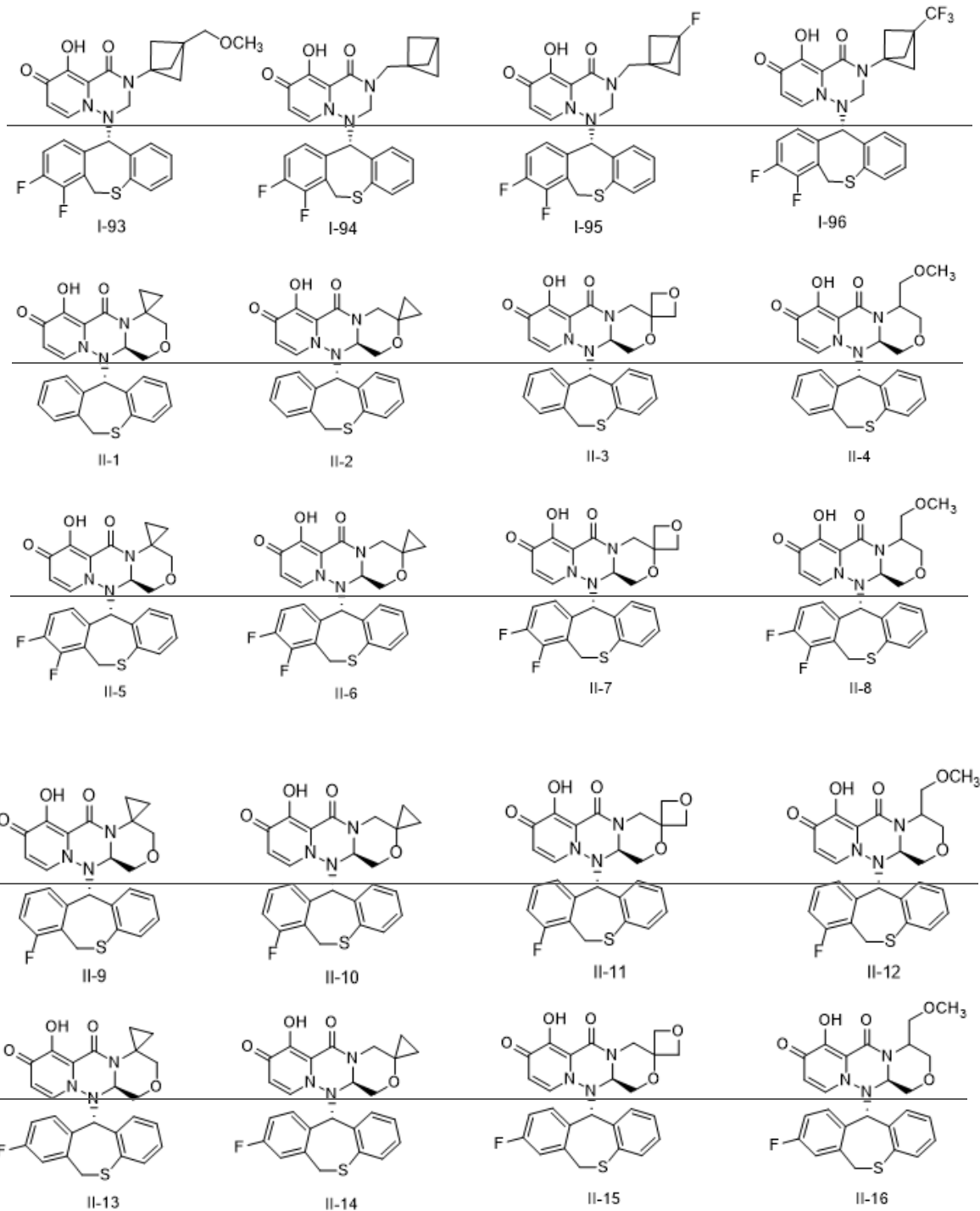
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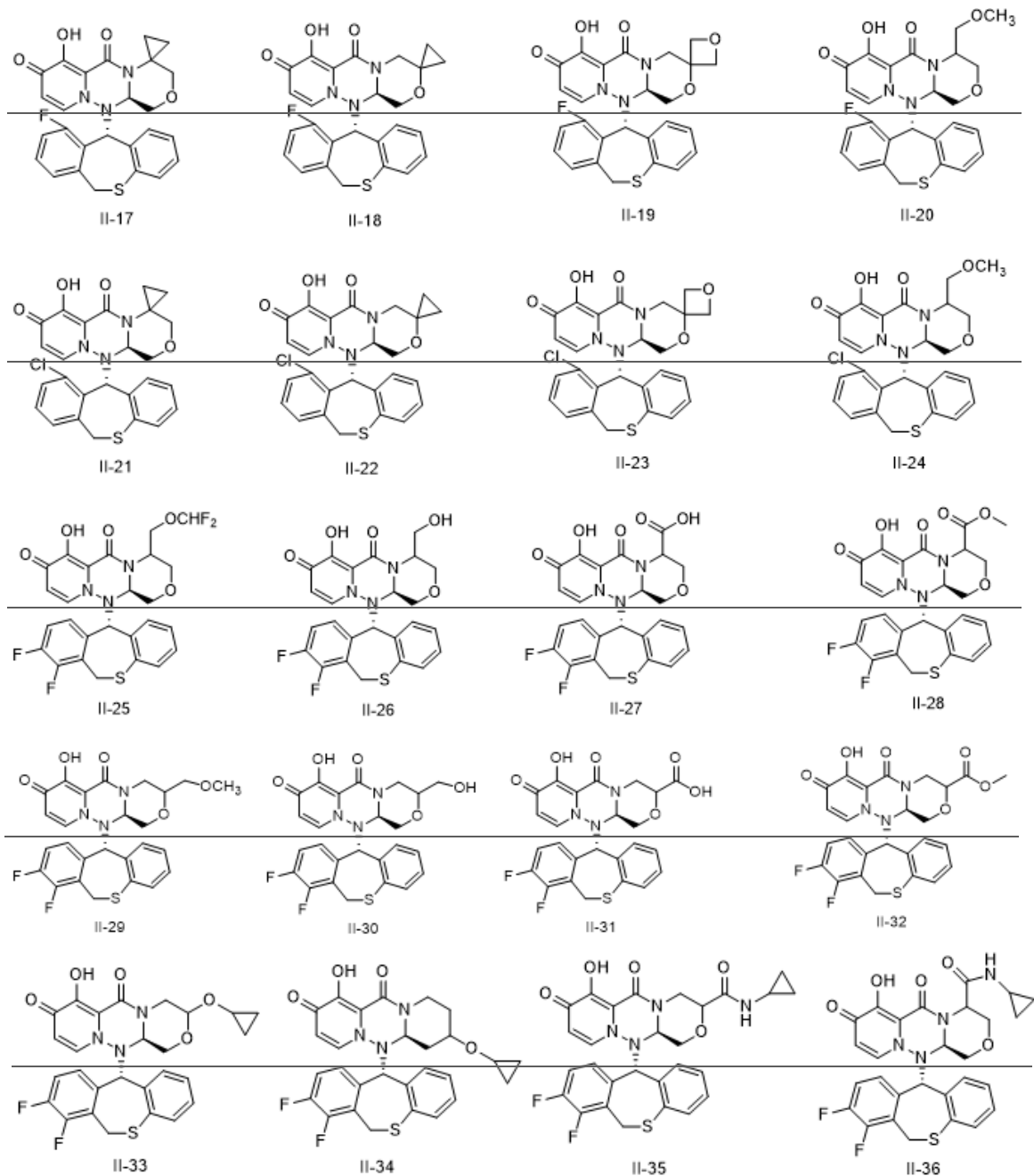


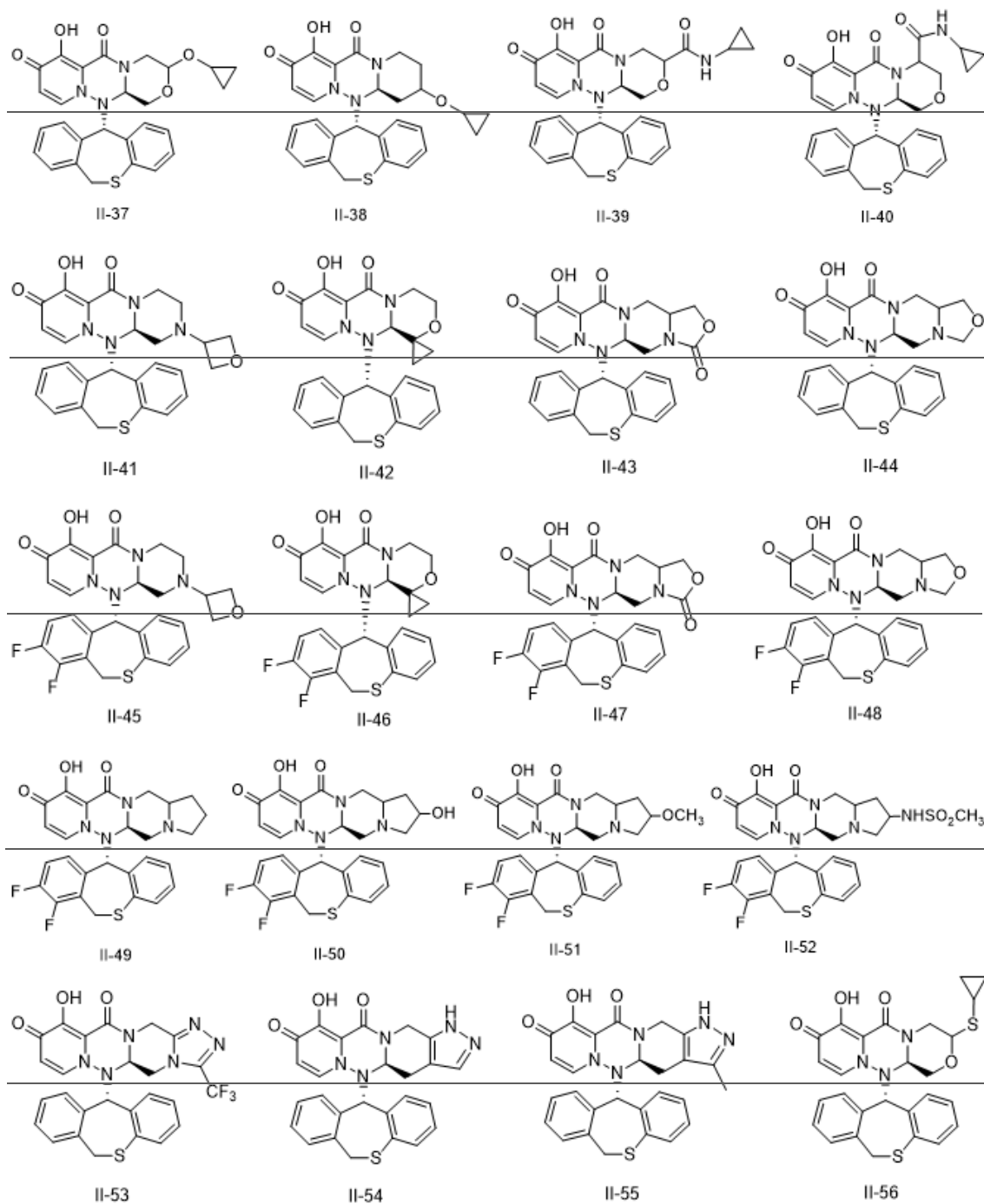


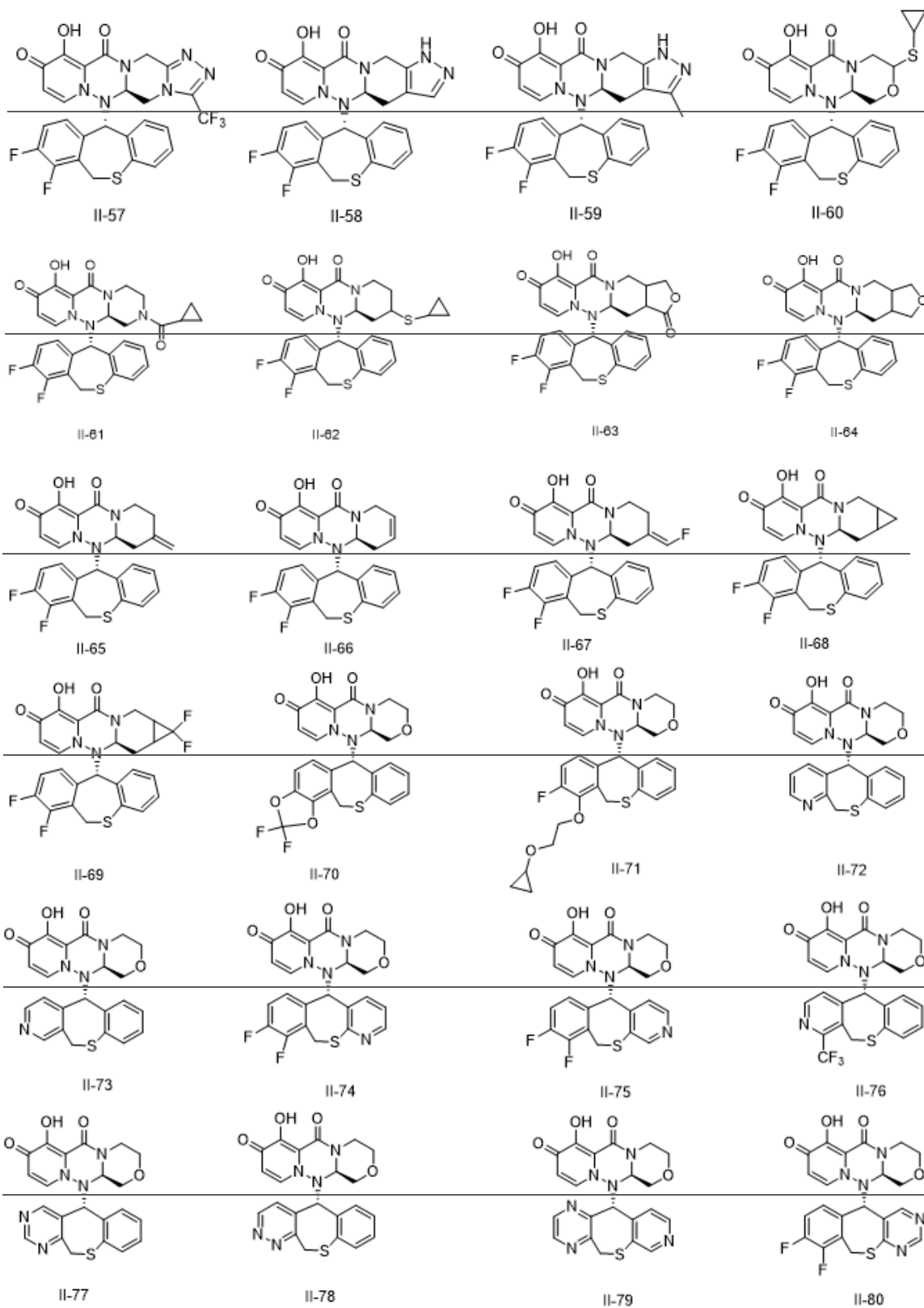


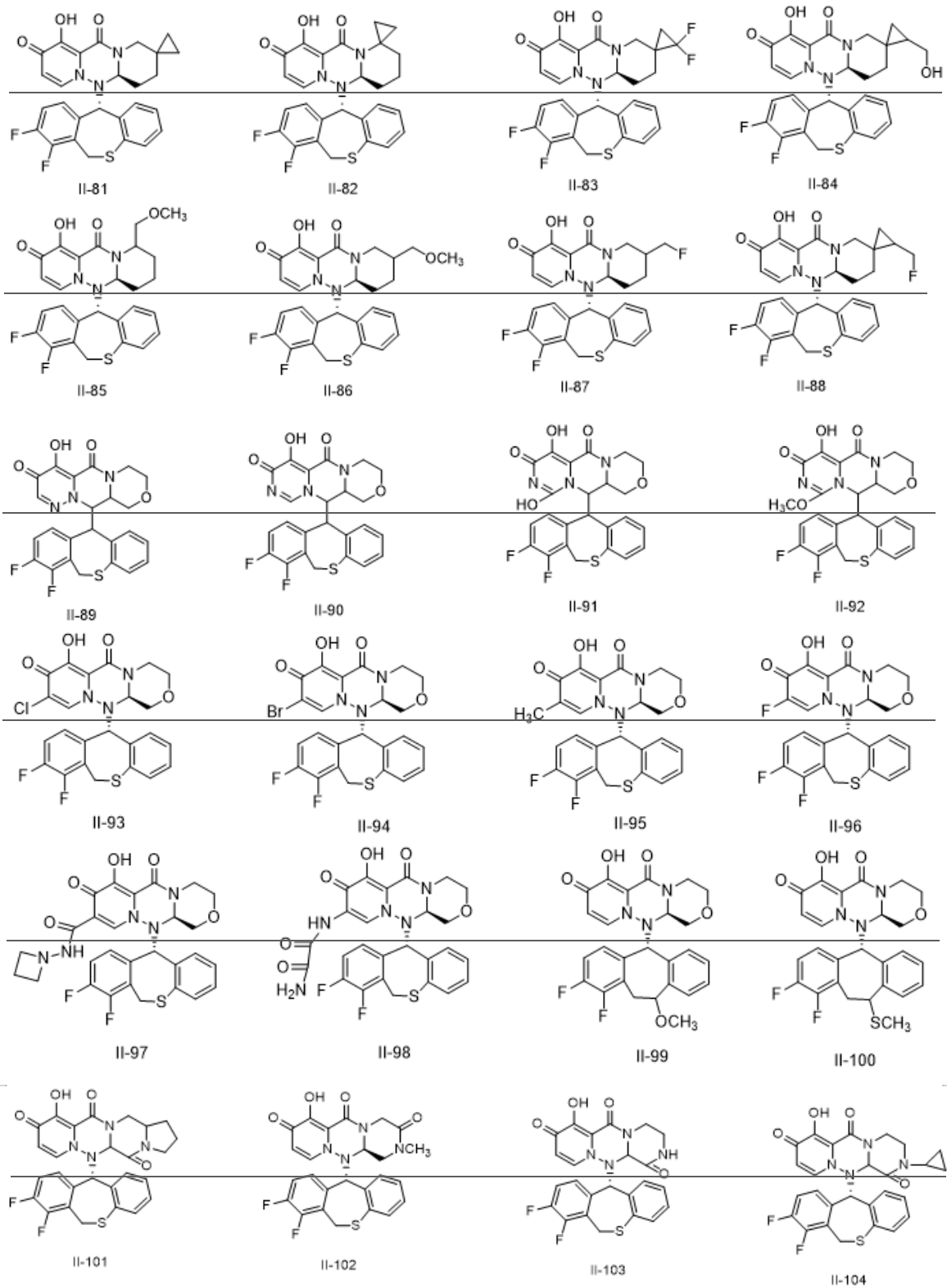


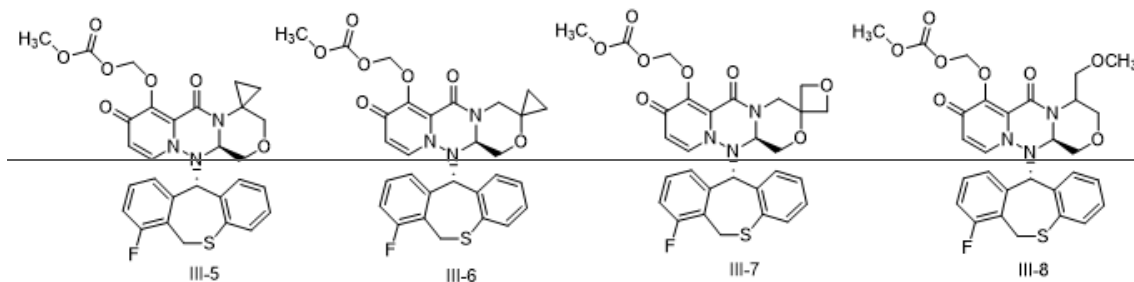
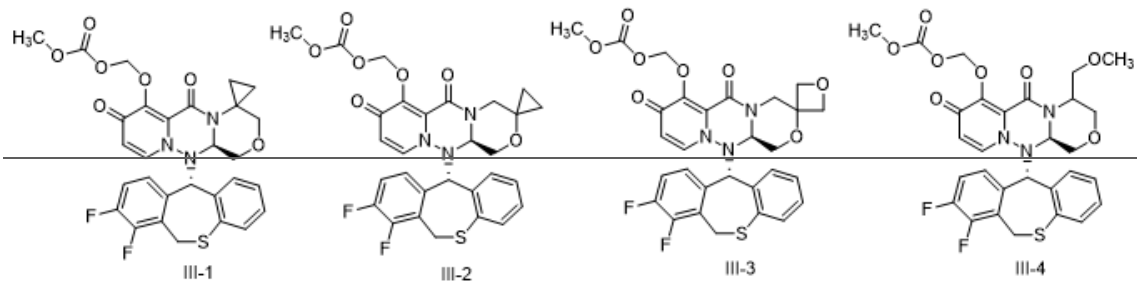
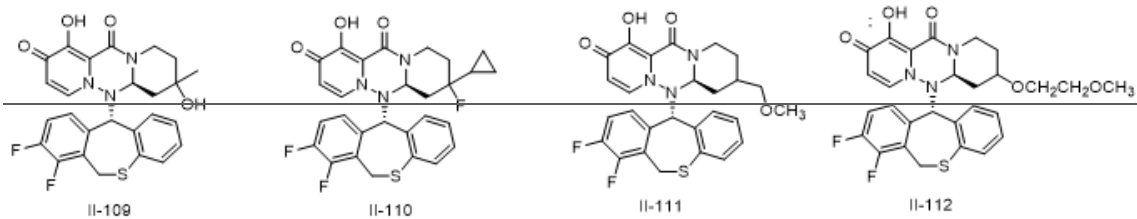
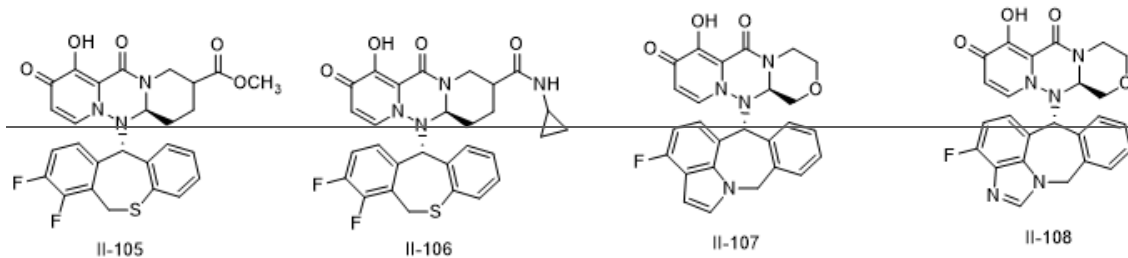


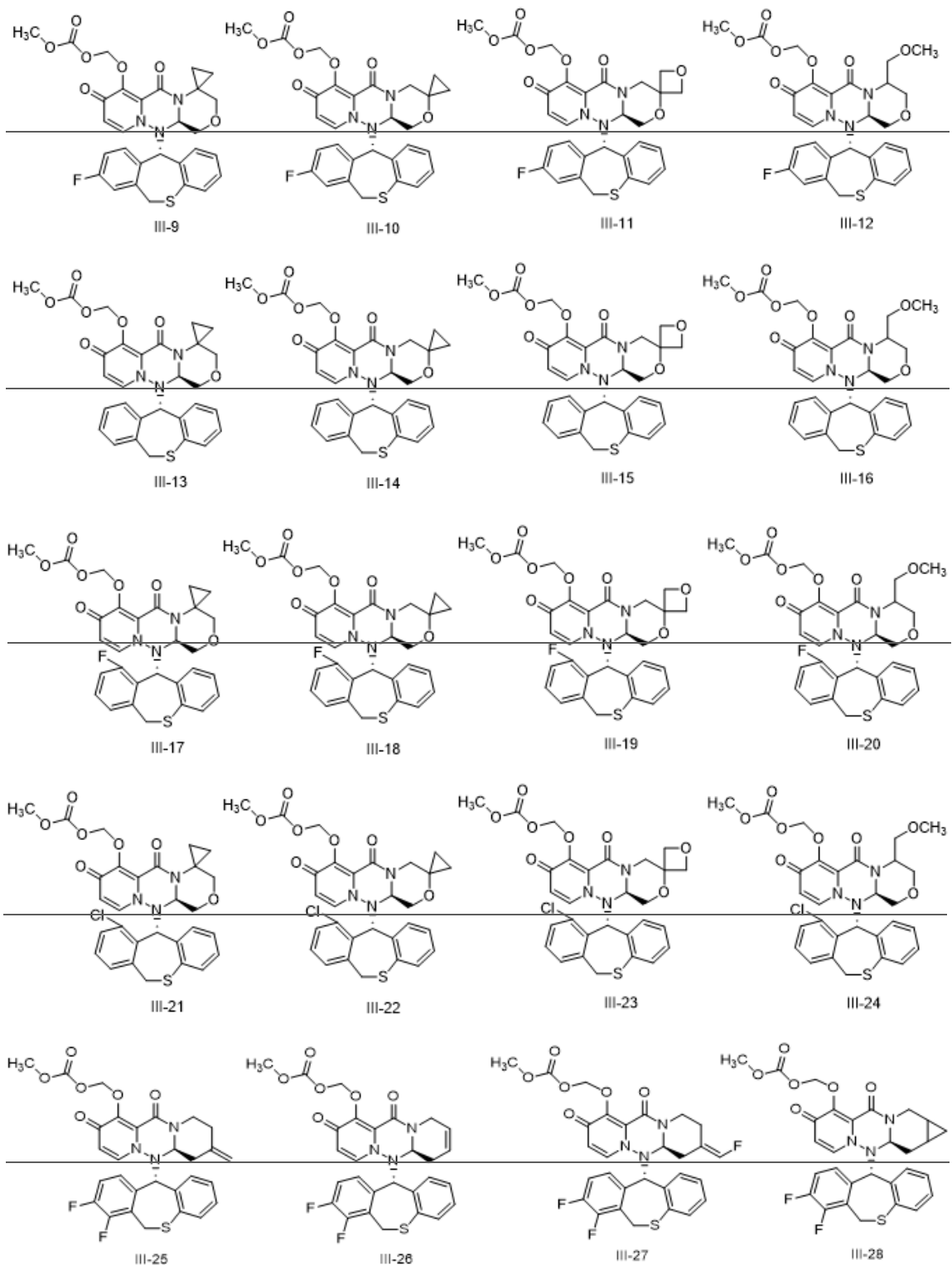


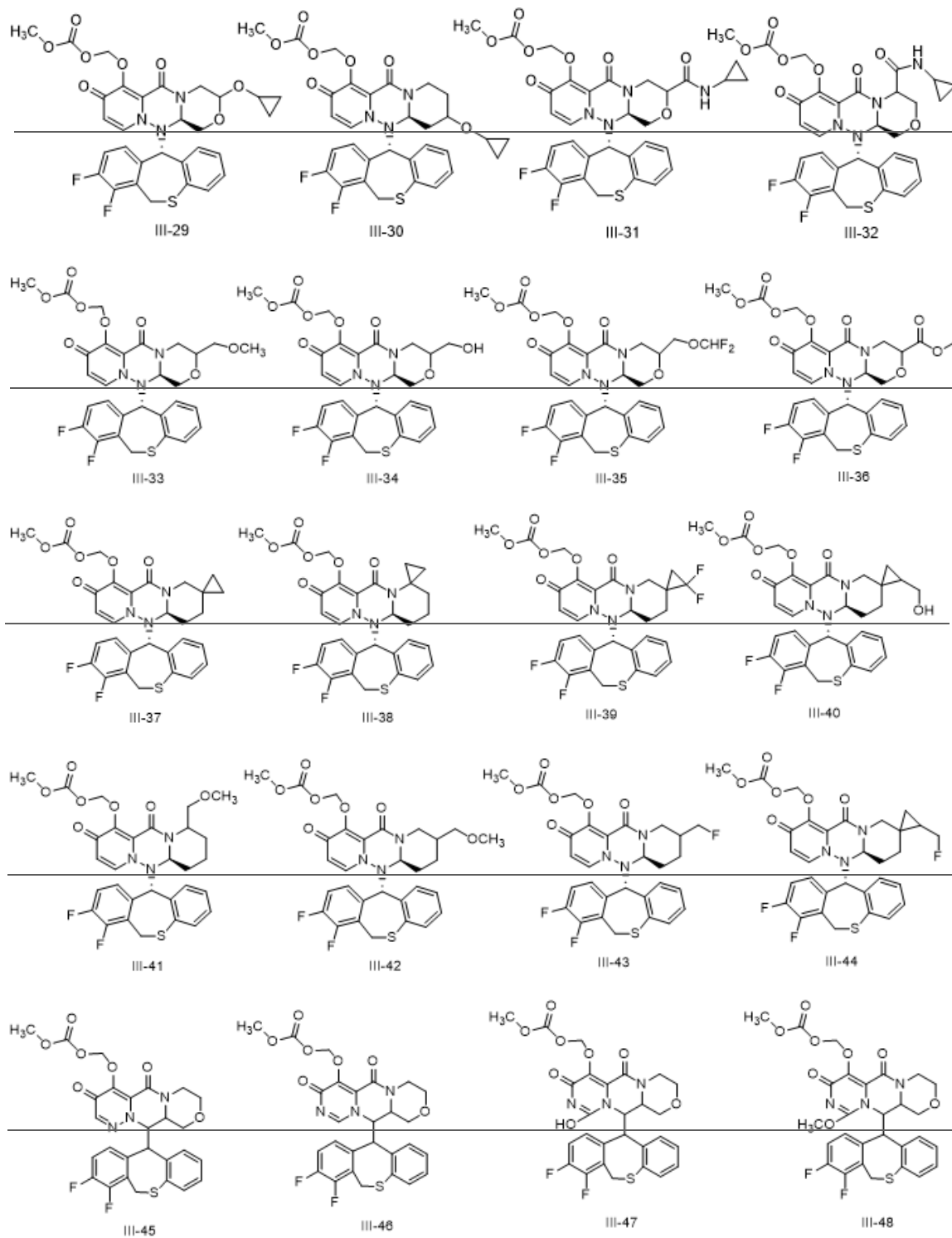


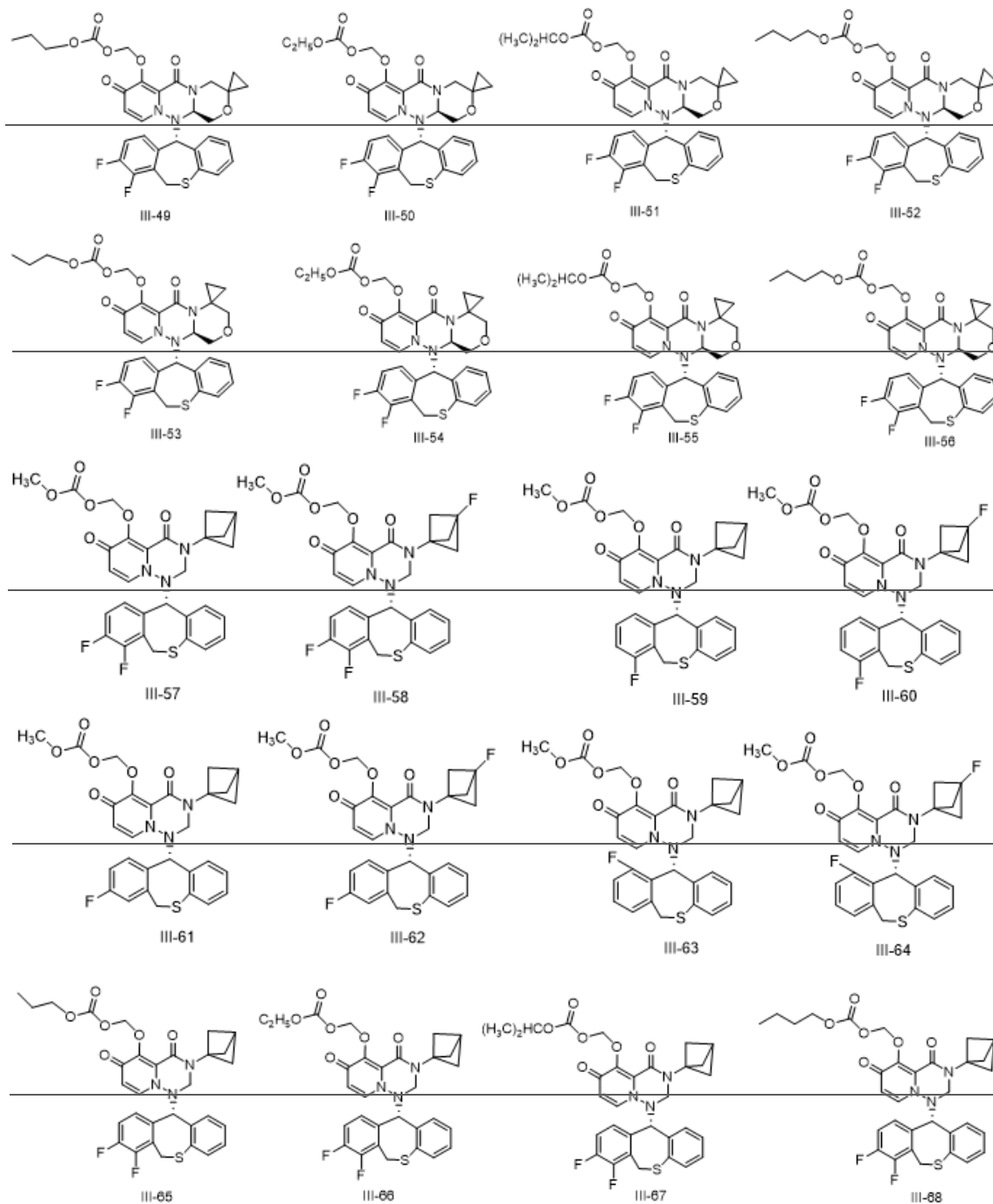


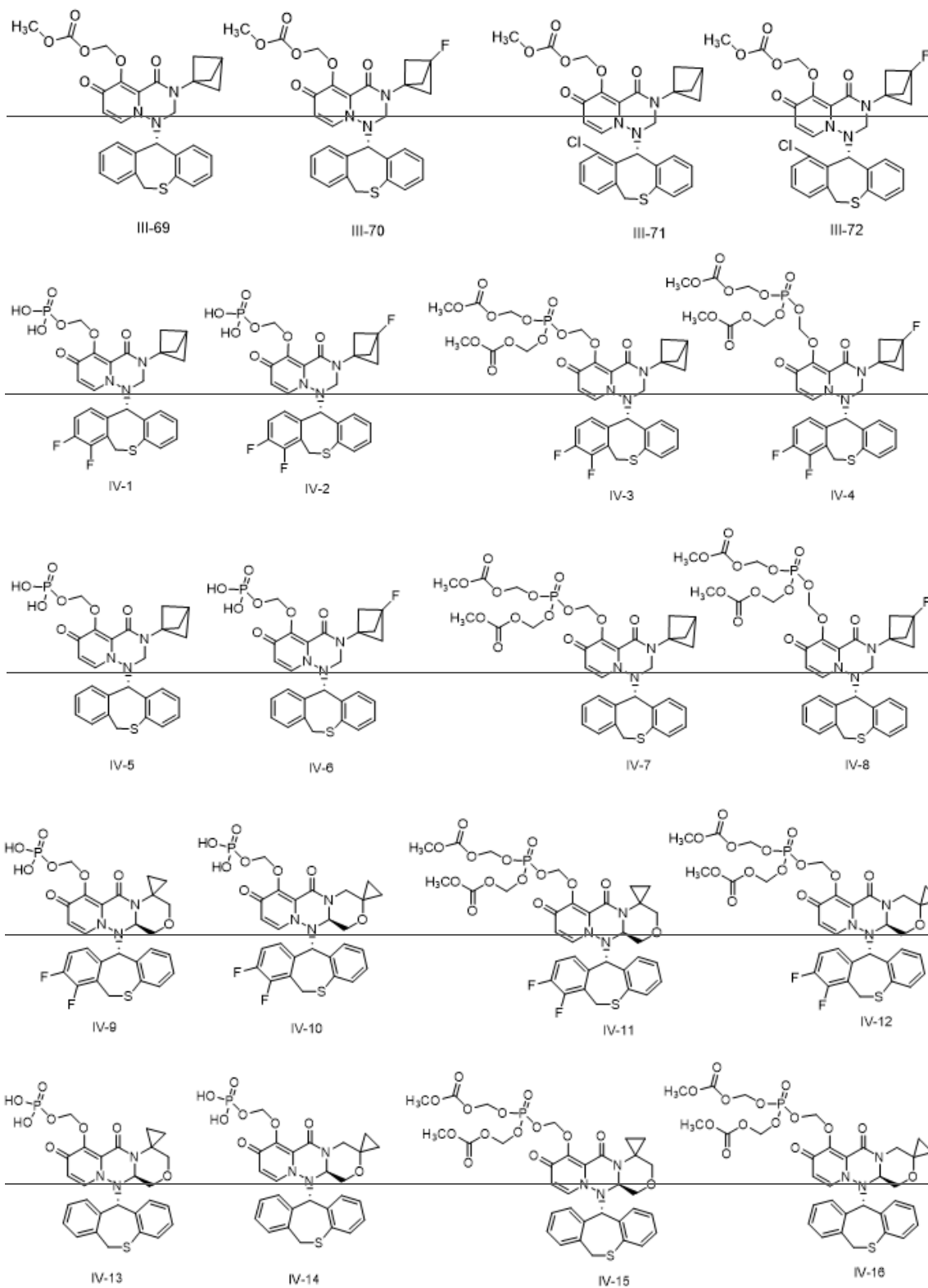


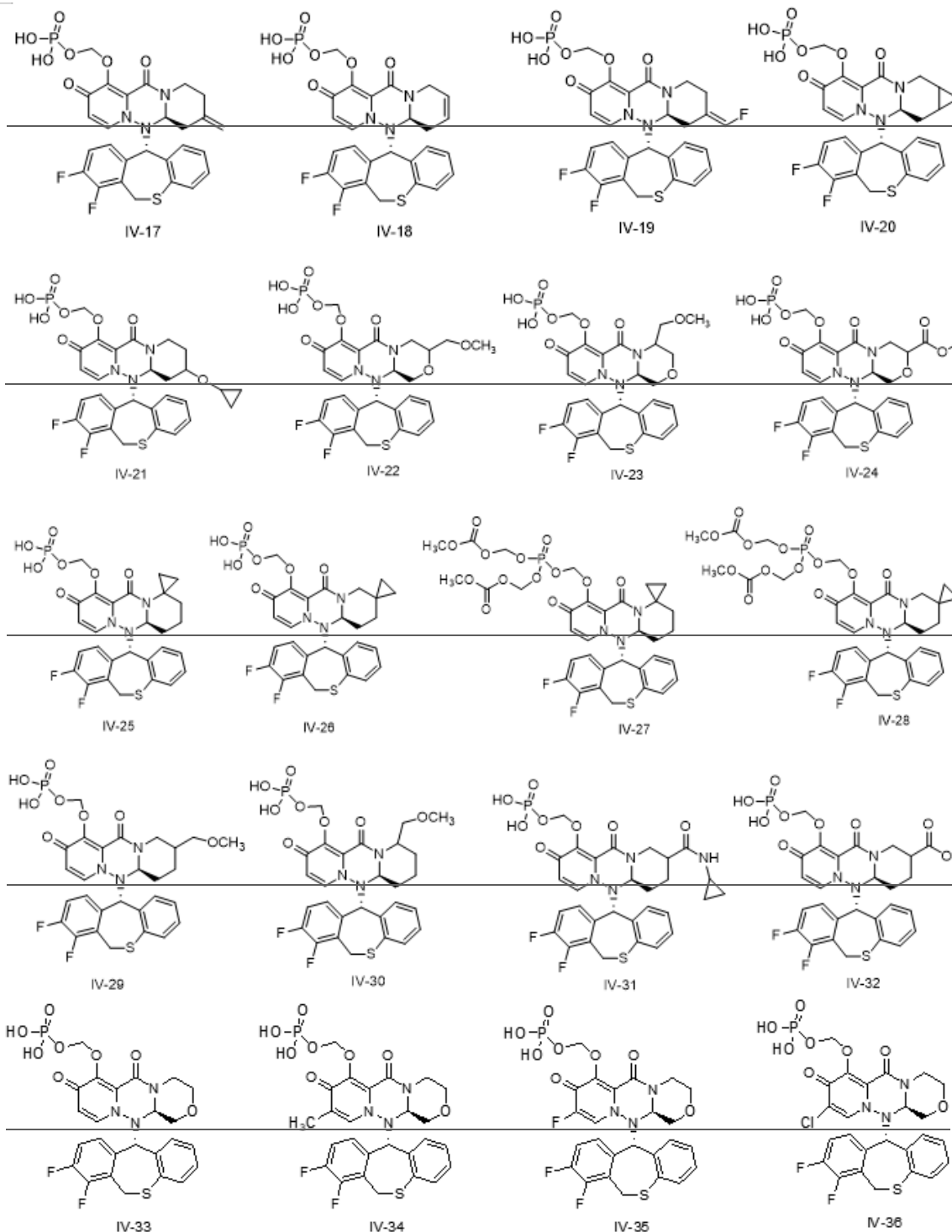




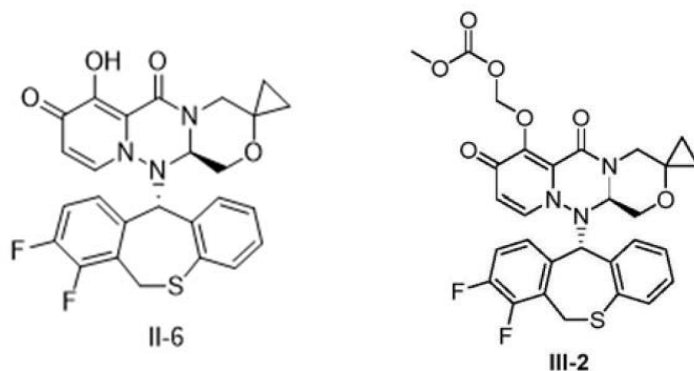








21. A pyridone derivative or the pharmaceutically acceptable salt thereof, wherein the



pyridone derivative is _____ or _____.

~~1227~~. A pharmaceutical composition containing the pyridone derivative represented by Formula (I) or the stereoisomer, the pharmaceutically acceptable salt, the solvate or the crystal thereof according to any one of claims 1 to ~~1620~~, wherein the pharmaceutical composition is an antiviral pharmaceutical composition ~~further~~ optionally comprising one or more therapeutic agents selected from the group consisting of a neuraminidase inhibitor, a nucleoside drug, a PB2 inhibitor, a PB1 inhibitor, an M2 inhibitor ~~or~~ and other anti-influenza drugs; ~~preferably, the pharmaceutical composition is a pharmaceutical preparation selected from a tablet, a powder, a capsule, a granule, an oral liquid, an injection, a powder, a suppository, a pill, a cream, a paste, a gel, a pulvis, an inhalant, a suspension, a dry suspension, a patch, a lotion or a nano preparation.~~

23. A pharmaceutical composition containing the pyridine derivate or the pharmaceutically acceptable salt thereof according to claim 21 and a pharmaceutically acceptable carrier, wherein the pharmaceutical composition is an antiviral pharmaceutical composition optionally comprising one or more therapeutic agents selected from the group consisting of a neuraminidase inhibitor, a nucleoside drug, a PB2 inhibitor, a PB1 inhibitor, an M2 inhibitor and other anti-influenza drugs.

24. The pharmaceutical composition according to claim 22 or 23, wherein the pharmaceutical composition is a pharmaceutical preparation selected from a tablet, a powder, a capsule, a granule, an oral liquid, an injection, a suppository, a pill, a cream, a paste, a gel, a pulvis, an inhalant, a suspension, a dry suspension, a patch, a lotion or a nano preparation.

~~2518~~. Use of the pyridone derivative represented by Formula (I) or the stereoisomer, the pharmaceutically acceptable salt, the solvate or the crystal thereof according to any one of claims 1 to ~~1620~~, or the pharmaceutical composition according to claim ~~1722~~ ~~or~~ 24, or a

combination thereof in the preparation of a drug for preventing and/or treating a viral infection disease, ~~the viral infection disease is preferably influenza type A viral infection disease and/or an influenza type B viral infection disease.~~

5 26. The use according to claim 25, wherein the viral infection disease is an influenza type A viral infection disease and/or an influenza type B viral infection disease.

10 27. Use of the pyridone derivative or the pharmaceutically acceptable salt thereof according to claim 21 or the pharmaceutical composition according to claim 23 in the preparation of a drug for preventing and/or treating a viral infection disease.

28. The use according to claim 27, wherein the viral infection disease is an influenza type A viral infection disease and/or an influenza type B viral infection disease.

15 29. Use of the pyridone derivative represented by Formula (I) or the stereoisomer, the pharmaceutically acceptable salt, the solvate or the crystal thereof according to any one of claims 1 to 20, or the pharmaceutical composition according to claim 22, or a combination thereof in the preparation of an antiviral drug, the antiviral drug is a drug or an agent inhibiting influenza cap-dependent endonuclease activities.

20 30. Use of the pyridone derivative or the pharmaceutically acceptable salt thereof according to claim 21 or the pharmaceutical composition according to claim 23 in the preparation of an antiviral drug, the antiviral drug is a drug or an agent inhibiting influenza cap-dependent endonuclease activities.

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