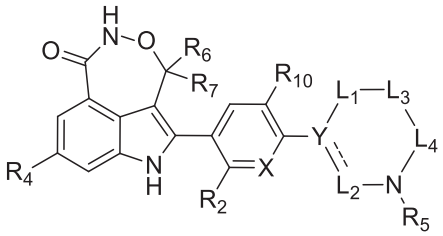
CLAIMS

1. A compound of formula (II), ~~an isomer~~ a stereoisomer thereof or a pharmaceutically acceptable salt thereof,



(II)

wherein,

 is selected from the group consisting of a single bond and a double bond;

X is selected from the group consisting of CR_3 and N;

Y is selected from the group consisting of CR_1 and C;

L_1 is selected from the group consisting of a single bond and $-(CR_8R_9)_n$;

L_2 is selected from the group consisting of a single bond, $-CR_8R_9-$ and =CH-;

L_1 and L_2 are not single bonds at the same time;

when L_2 is selected from a single bond, is selected from a single bond;

L_3 and L_4 are each independently selected from $-CR_8R_9-$;

n is 1 or 2;

R_1 is selected from the group consisting of H, D, F, Cl, Br, I and C_{1-3} alkyl, wherein the C_{1-3} alkyl is optionally substituted with 1, 2 or 3 R_a, and when L_2 is selected from =CH-, R_1 is absent;

R_2 and R_{10} are each independently selected from the group consisting of H, F, Cl, Br, I and C_{1-3} alkyl, wherein the C_{1-3} alkyl is optionally substituted with 1, 2 or 3 R_b;

R_3 is selected from the group consisting of H, F, Cl, Br, I, CN and C_{1-3} alkyl, wherein the C_{1-3} alkyl is optionally substituted with 1, 2 or 3 R_c;

R_4 is selected from the group consisting of H and F;

R_5 is selected from the group consisting of H and C_{1-3} alkyl, wherein the C_{1-3} alkyl is optionally substituted with 1, 2 or 3 R_d;

R_6 and R_7 are each independently selected from the group consisting of H and D;

R_8 and R_9 are each independently selected from the group consisting of H, F, Cl, Br, I and C_{1-3} alkyl, wherein the C_{1-3} alkyl is optionally substituted with 1, 2 or 3 R_e~~;~~; ~~or~~

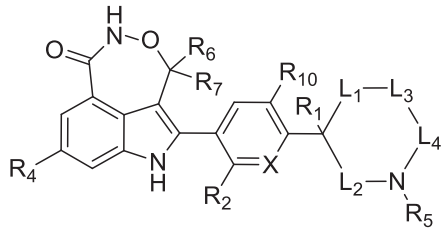
~~R_8 and R_9, together with a same carbon atom connected thereto, form ring A optionally substituted with 1, 2 or 3 R_g;~~

~~ring A is selected from the group consisting of C_{3-8} cycloalkyl and 3-8 membered heterocycloalkyl;~~

R_a, R_b, R_c, R_d, and R_e ~~and R_g~~ are each independently selected from the group consisting of F, Cl, Br, I, OH, CN, NH_2, COOH, $C(=O)NH_2$, CH_3, CH_3CH_2, CF_3, CHF_2, CH_2F, $NHCH_3$ and $N(CH_3)_2$;

the 3-8 membered heterocycloalkyl comprises 1, 2, 3 or 4 atoms or groups of atoms each independently selected from the group consisting of O, N, S and NH.

2. The compound, the ~~isomer~~stereoisomer thereof or the pharmaceutically acceptable salt thereof according to claim 1, selected from formula (II-1)



(II-1) , wherein

R_1, R_2, X, R_4, R_5, R_6, R_7, R_{10}, L_1, L_2, L_3 and L_4 are as defined in claim 1.

3. The compound, the ~~isomer~~stereoisomer thereof or the pharmaceutically acceptable salt thereof according to claim 1, wherein R_1 is selected from the group consisting of H, D, F and CH_3.

4. The compound, the ~~isomer~~stereoisomer thereof or the pharmaceutically acceptable salt thereof according to claim 1, wherein R_2 and R_{10} are each independently selected from the group consisting of H and F.

5. The compound, the ~~isomer~~stereoisomer thereof or the pharmaceutically acceptable salt thereof according to claim 1, wherein R_3 is selected from the group consisting of H, F, CN, Cl and CF_3; preferably, R_3 is selected from the group consisting of H and F.

6. The compound, the ~~isomer~~stereoisomer thereof or the pharmaceutically acceptable salt thereof according to claim 1, wherein R_5 is selected from the group consisting of H, methyl, ethyl, propyl and isopropyl, wherein the methyl, ethyl, propyl and isopropyl are optionally substituted with 1, 2, or 3 R_d; preferably, R_5 is selected from the group consisting of H, methyl,  and isopropyl.

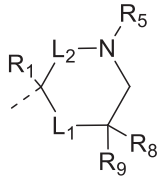
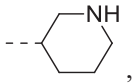
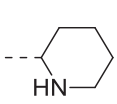
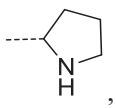
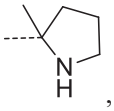
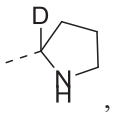
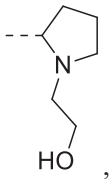
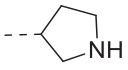
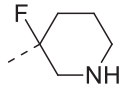
7. The compound, the ~~isomer~~stereoisomer thereof or the pharmaceutically acceptable salt thereof according to claim 1, wherein L_1 is selected from the group consisting of a single bond and $-CR_8R_9-$.

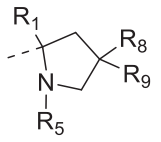
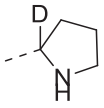
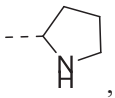
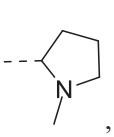
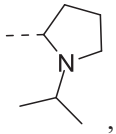
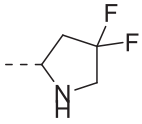
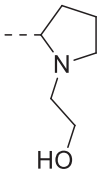
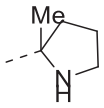
8. The compound, the ~~isomer~~stereoisomer thereof or the pharmaceutically acceptable salt thereof according to claim 1, wherein L_1 is selected from $-CR_8R_9-$, and L_2 is selected from $-CR_8R_9-$.

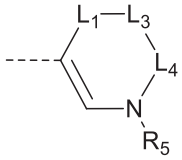
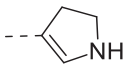
9. The compound, the ~~isomer~~stereoisomer thereof or the pharmaceutically acceptable salt thereof according to claim 1, wherein L_1 is selected from $-CR_8R_9-$, and L_2 is selected from a single bond.

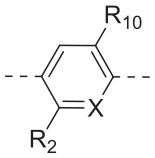
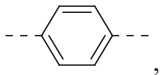
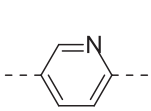
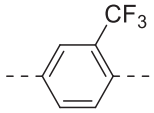
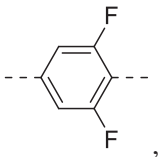
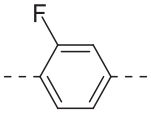
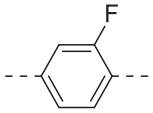
10. The compound, the ~~isomer~~stereoisomer thereof or the pharmaceutically acceptable salt thereof according to claim 1, wherein R_8 and R_9 are each independently selected from the group consisting of H and F; preferably, both R_8 and R_9 are selected from H, or one of R_8 and R_9 is selected from H and the other is selected from F.

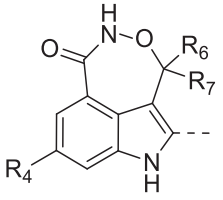
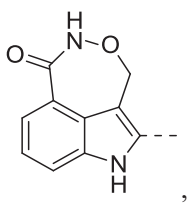
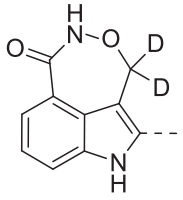
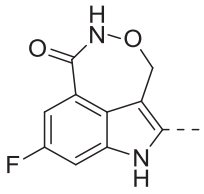
11. The compound, the ~~isomer~~stereoisomer thereof or the pharmaceutically acceptable salt thereof according to claim 1, wherein R_6 and R_7 are both H.

12. The compound, the ~~isomer~~stereoisomer thereof or the pharmaceutically acceptable salt thereof according to claim 1, wherein the structural unit  is selected from the group consisting of , , , , , ,  and .

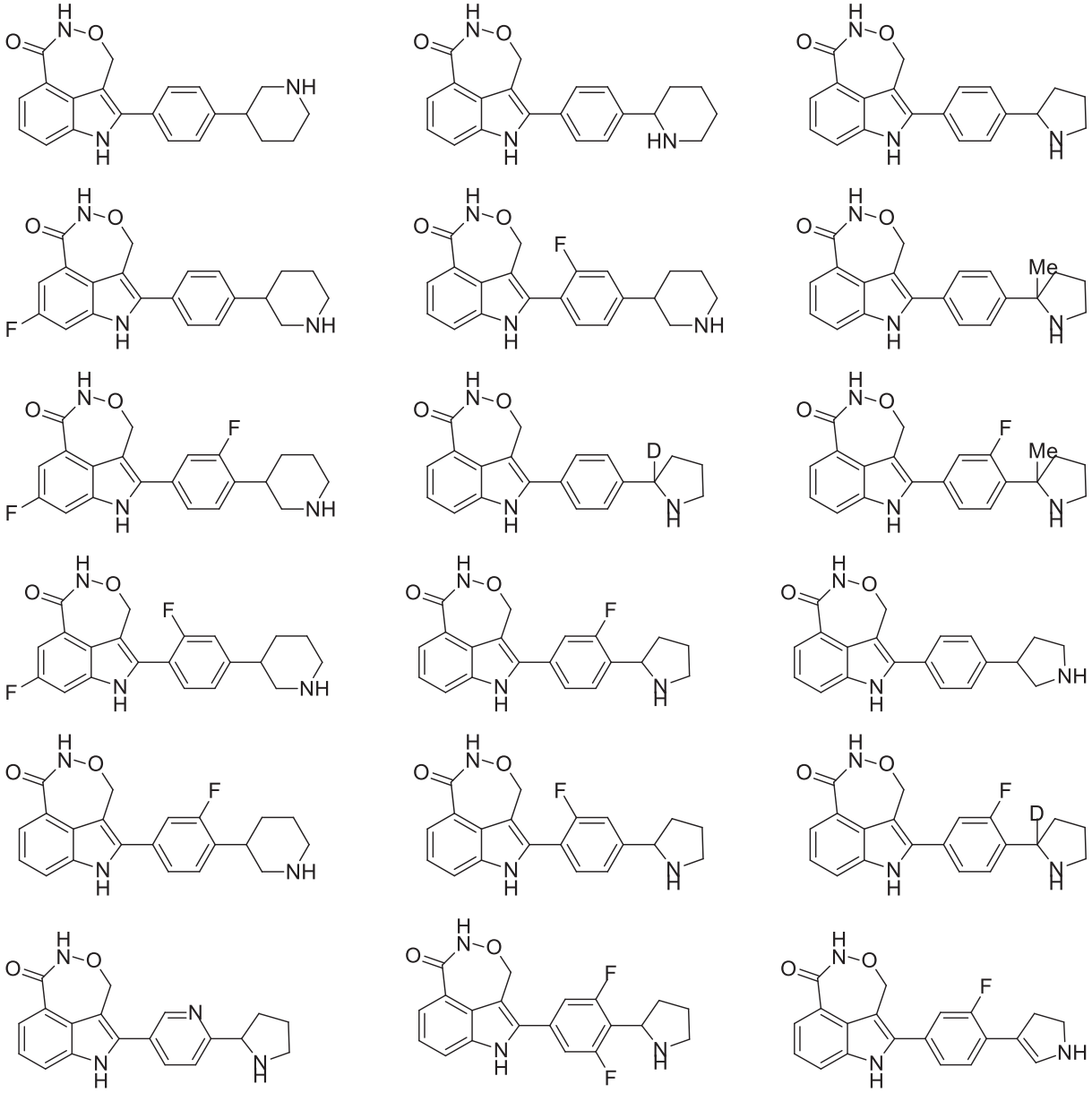
13. The compound, the ~~isomer~~stereoisomer thereof or the pharmaceutically acceptable salt thereof according to claim 1, wherein the structural unit  is selected from the group consisting of , , , , ,  and .

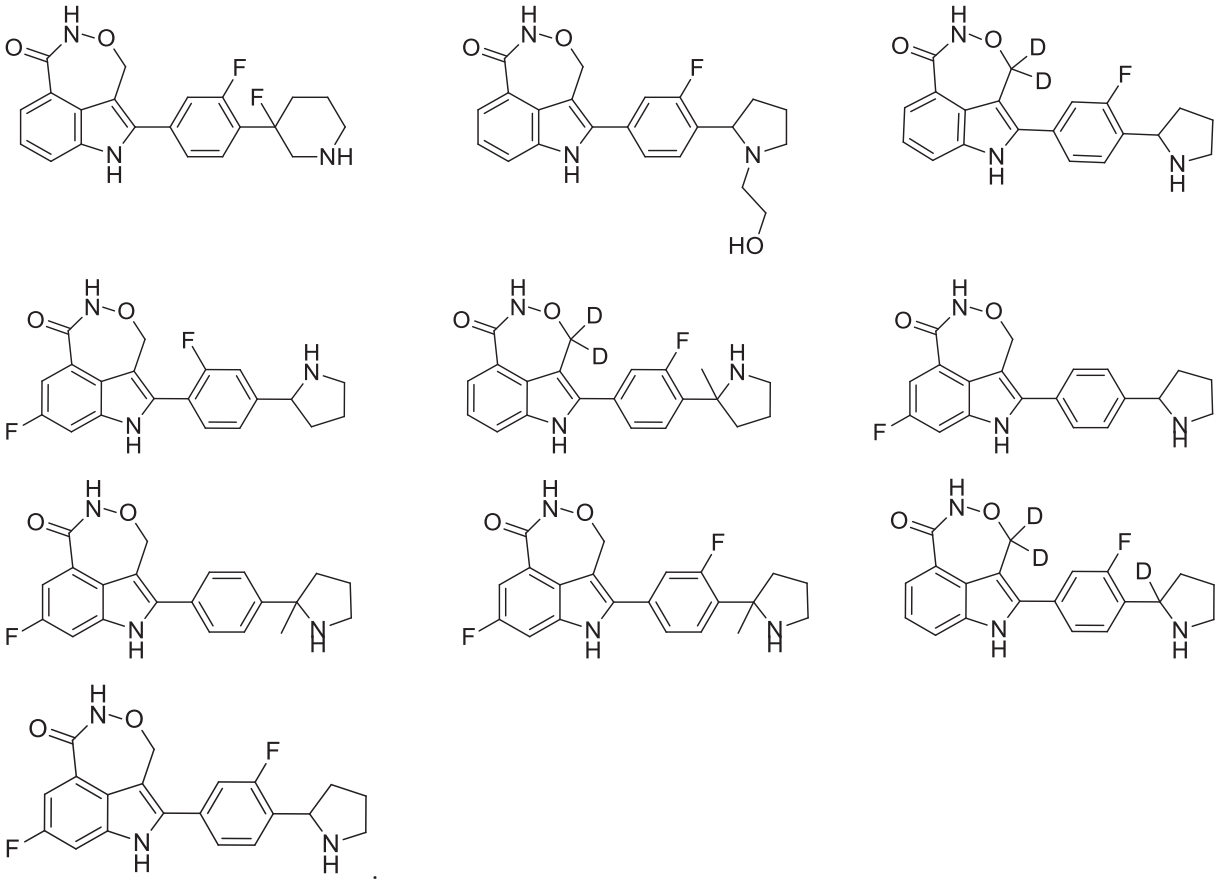
14. The compound, the ~~isomer~~stereoisomer thereof or the pharmaceutically acceptable salt thereof according to claim 1, wherein the structural unit  is selected from .

15. The compound, the ~~isomer~~stereoisomer thereof or the pharmaceutically acceptable salt thereof according to claim 1, wherein the structural unit  is selected from the group consisting of , , , ,  and .

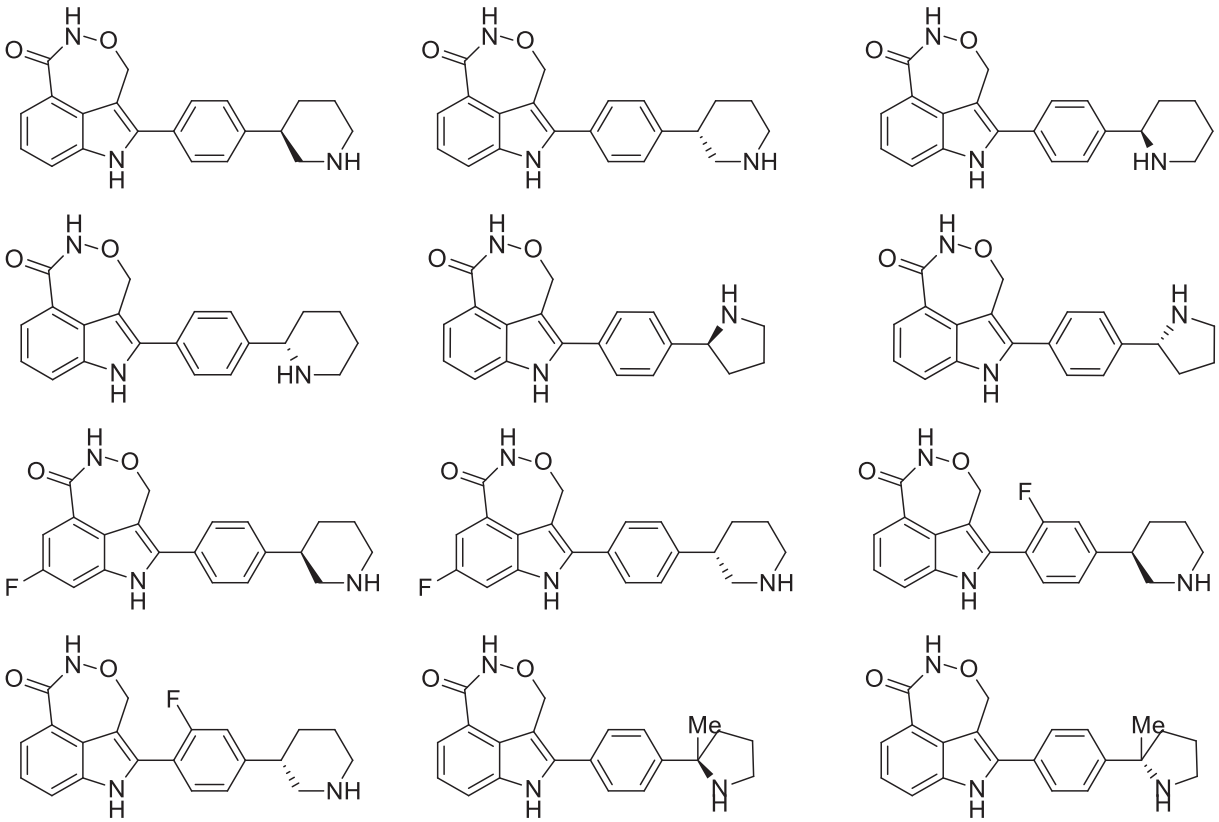
16. The compound, the ~~isomer~~stereoisomer thereof or the pharmaceutically acceptable salt thereof according to claim 1, wherein the structural unit  is selected from the group consisting of ,  and .

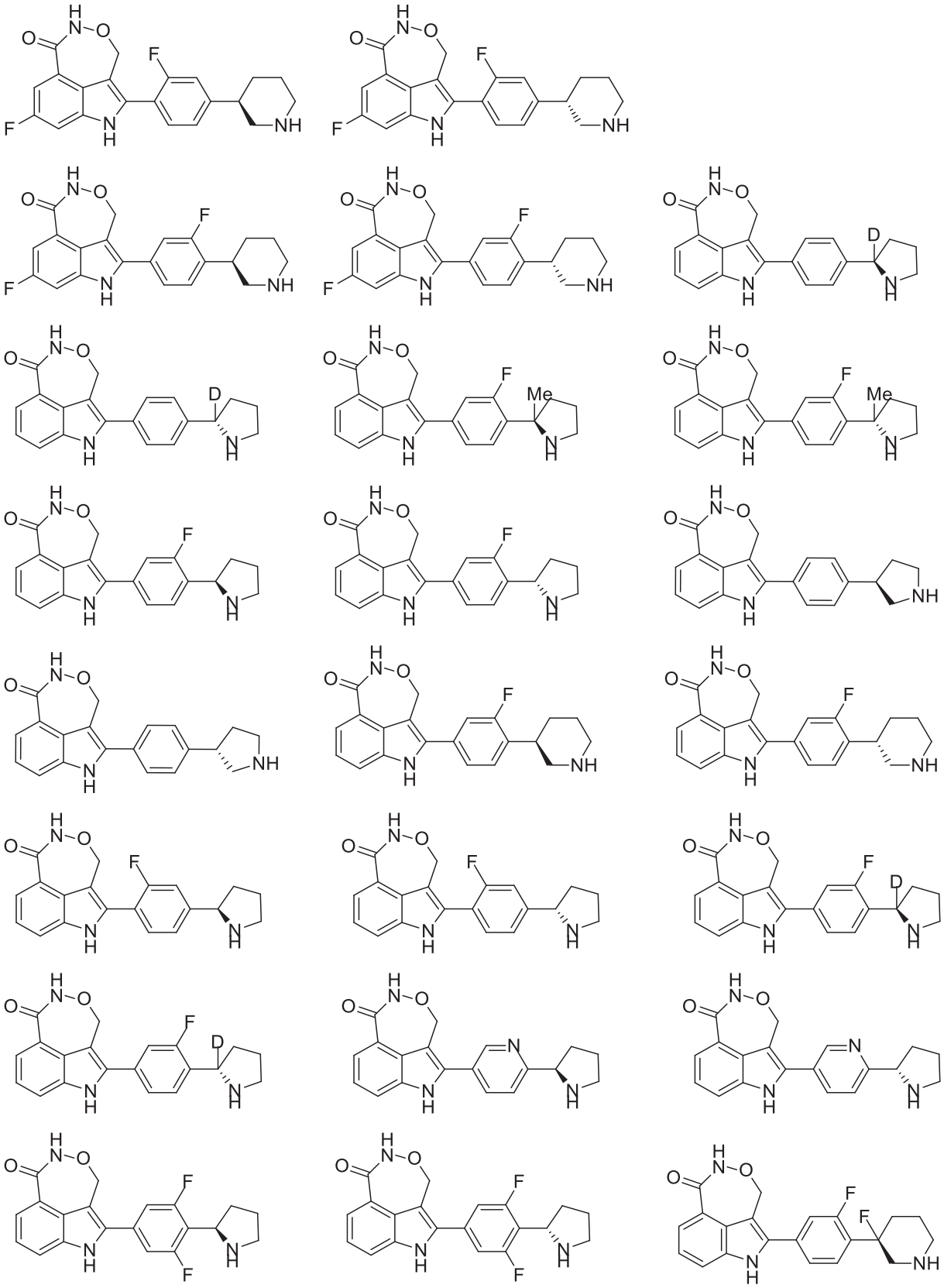
17. A compound of a formula below, a~~n~~ ~~isomer~~stereoisomer thereof or a pharmaceutically acceptable salt thereof, selected from the group consisting of

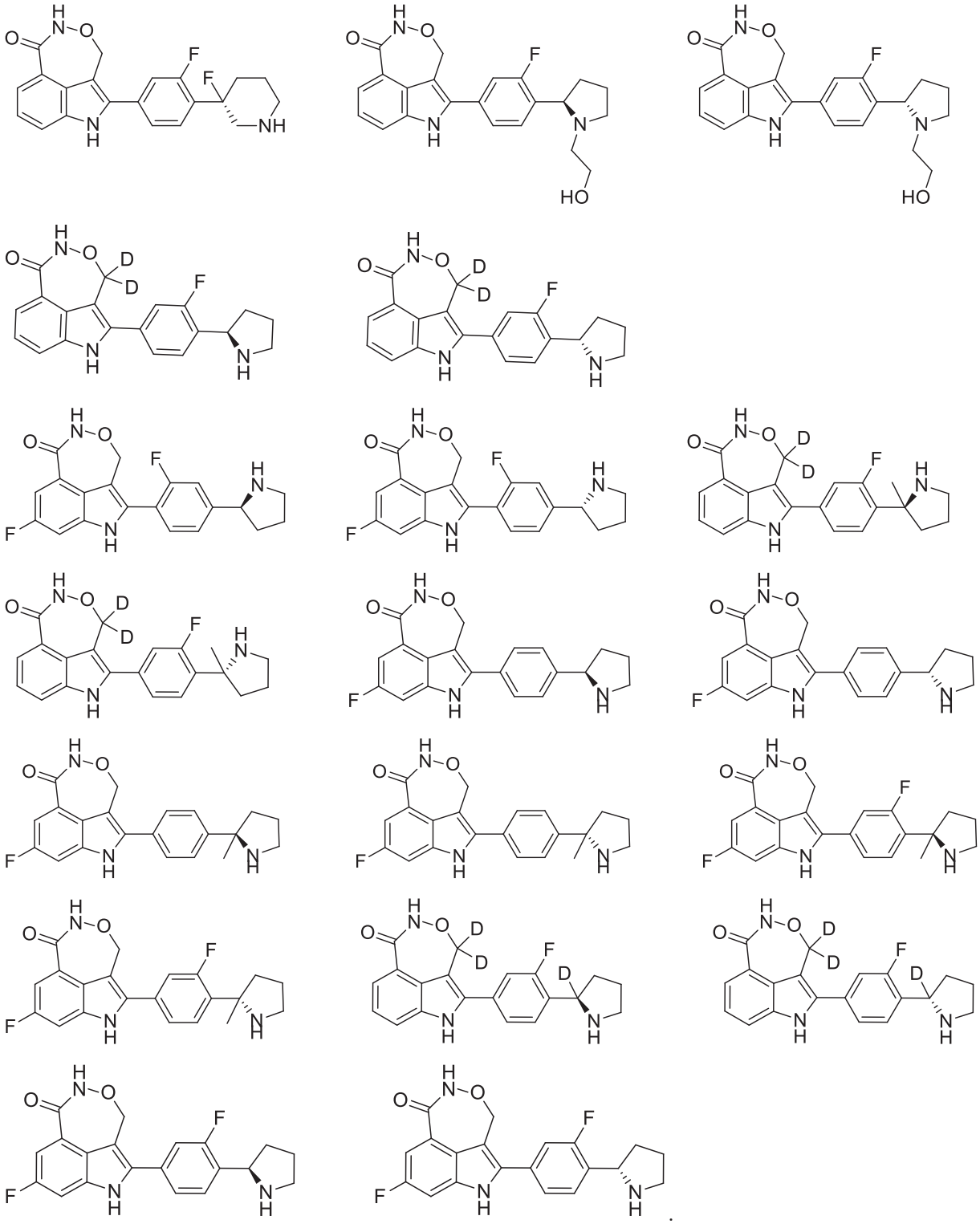




18. The compound, the ~~isomer~~stereoisomer thereof or the pharmaceutically acceptable salt thereof according to claim 17, selected from the group consisting of







19. A pharmaceutical composition comprising a therapeutically effective amount of the compound, the ~~isomer~~stereoisomer thereof or the pharmaceutically acceptable salt thereof according to any one of claims 1-18 and a pharmaceutically acceptable carrier.

20. Use of the compound, the ~~isomer~~stereoisomer thereof or the pharmaceutically acceptable salt thereof according to any one of claims 1-18 in preparing a medicament for use in treating ~~a disease related to PARP receptor~~ a tumor or a cancer.

~~21. A method for treating a disease related to PARP receptor, comprising administering to a mammal, preferably a human, in need of such treatment a therapeutically effective amount of the compound, the isomer thereof or the pharmaceutically acceptable salt thereof according to any one of claims 1-18.~~