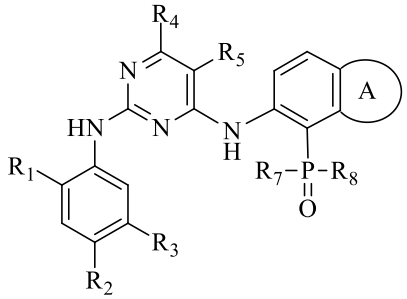
What is claimed is:

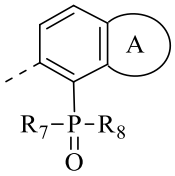
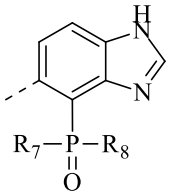
1. A compound of formula (I) or a pharmaceutically acceptable salt thereof,



(I) ,

wherein,

ring A is selected from phenyl, 5- to 6-membered heteroaryl, 5- to 7-membered heterocycloalkyl, C_{5-7} cycloalkenyl and C_{5-7} cycloalkyl, wherein said phenyl, 5- to 6-membered heteroaryl, 5- to 7-membered heterocycloalkyl, C_{5-7} cycloalkenyl and C_{5-7} cycloalkyl are optionally substituted with R_6;

and the structural unit  is not selected from:  ,

R_1 is selected from H, halogen, C_{1-6} alkyl, C_{1-6} heteroalkyl, C_{2-6} alkenyloxy, and C_{3-6} cycloalkyloxy, wherein the C_{1-6} alkyl, C_{1-6} heteroalkyl, C_{2-6} alkenyloxy and C_{3-6} cycloalkyloxy are optionally substituted with 1, 2 or 3 R groups;

R_2 is selected from H, halogen, CN, OH, NO_2, NH_2, C_{1-6} alkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, C_{3-14} cycloalkyl, C_{3-6} cycloalkenyl, C_{4-6} cycloalkynyl, phenyl, and 3- to 14-membered heterocyclic groups, wherein said NH_2, C_{1-6} alkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, C_{3-14} cycloalkyl, C_{3-6} cycloalkenyl, C_{4-6} cycloalkynyl, phenyl and 3- to 14-membered heterocyclic group are optionally substituted with 1, 2 or 3 R groups;

R_3 is selected from H, halogen, C_{1-6} alkoxy, C_{2-6} alkenyloxy, C_{3-6} cycloalkyloxy, -OC(=O)NH_2, -OC(=O)NHR, -OC(=O)NRR, -NRC(=O)OR, -NHC(=O)OR, -NHC(=O)OH, -O$(CH_2)_n$NR_aR_b, C_{1-6} alkyl, C_{3-6} cycloalkyl and 5- to 6-membered heterocyclic group containing 1, 2, or 3 N or O atoms, wherein said C_{1-6} alkyl, C_{3-6} cycloalkyl, and 5- to 6-membered heterocyclic group containing 1, 2 or 3 N or O atoms are optionally substituted with 1, 2 or 3 R groups;

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

R_a and R_b are each independently selected from H, C_{1-5} alkyl and C_{1-5} heteroalkyl, and said C_{1-5} alkyl and C_{1-5} heteroalkyl are optionally substituted with 1, 2 or 3 R groups;

or alternatively R_a and R_b are bonded together to form a 5- to 6-membered heterocyclic ring;

R_4 and R_5 are each independently selected from H, halogen, CN, NH_2, C_{1-4} alkyl, C_{1-4} heteroalkyl, C_{3-6} cycloalkyl, phenyl, and 5- to 6-membered heterocyclic group, wherein said NH_2, C_{1-4} alkyl, C_{1-4} heteroalkyl, C_{3-6} cycloalkyl, phenyl and 5- to 6-membered heterocyclic group are optionally substituted with 1, 2 or 3 R groups;

or alternatively, R_4 and R_5 are bonded together to form a 5- to 6-membered ring containing 1, 2, or 3 atoms independently selected from N, S or O, wherein the 5- to 6-

membered ring is optionally substituted with 1, 2 or 3 R groups;

each R_6 is independently selected from H, halogen, CN, OH, NH_2, C_{1-6} alkyl, C_{1-6} heteroalkyl, =O and =S;

R_7 and R_8 are each independently selected from H or C_{1-6} alkyl;

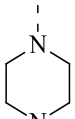
or alternatively R_7 and R_8 are bonded together to form a 5- to 6-membered heterocyclic ring, and the 5- to 6-membered heterocyclic ring is optionally substituted with 1, 2 or 3 R groups;

R is selected from halogen, CN, OH, NH_2, C_{1-6} alkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, C_{3-6} cycloalkyl, C_{3-6} cycloalkenyl, C_{4-6} cycloalkynyl, C_{1-6} heteroalkyl, 3- to 6-membered heterocycloalkyl, phenyl, and 5- to 6-membered heteroaryl, wherein said C_{1-6} alkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, C_{3-6} cycloalkyl, C_{3-6} cycloalkenyl, C_{4-6} cycloalkynyl, C_{1-6} heteroalkyl, 3- to 6-membered heterocycloalkyl, phenyl, and 5- to 6-membered heteroaryl are optionally substituted with 1, 2 or 3 R' groups;

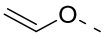
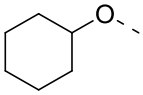
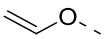
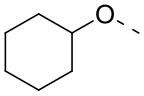
R' is selected from H, F, Cl, Br, I, CN, OH, NH_2, CH_3, CH_3CH_2, $CH_3CH_2CH_2$, $(CH_3)_2CH$, CH_3O, CF_3, CHF_2 and CH_2F;

"hetero" represents a heteroatom or a heteroatom group, and each "hetero" group in said 5- to 6-membered heterocyclic group, 5- to 6-membered heterocyclic ring, 5- to 7-membered heterocycloalkyl, 3- to 14-membered heterocyclic group, C_{1-4} heteroalkyl, C_{1-5} heteroalkyl, C_{1-6} heteroalkyl, 3- to 6-membered heterocycloalkyl, and 5- to 6-membered heteroaryl is independently selected from -C(=O)N(R)-, -N(R)-, -C(=NR)-, -(R)C=N-, $-S(=O)_2N(R)-$, -S(=O)N(R)-, N, -NH-, -O-, -S-, -C(=O)O-, -C(=O)-, -C(=S)-, -S(=O)-, $-S(=O)_2-$ and -N(R)C(=O)N(R)-;

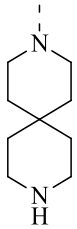
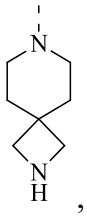
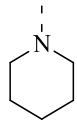
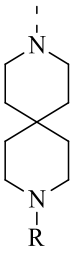
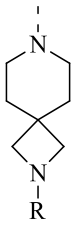
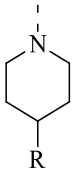
in any one of the cases as described above, the number of the heteroatom or heteroatomic group is each independently selected from 1, 2, or 3.

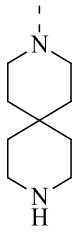
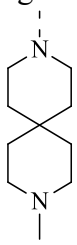
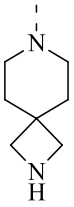
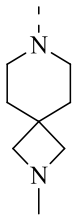
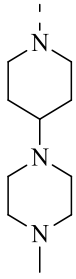
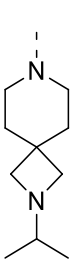
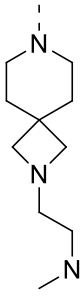
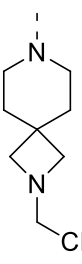
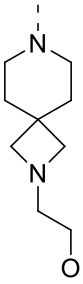
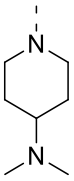
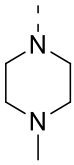
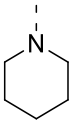
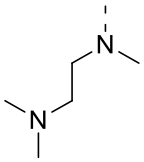
2. The compound or the pharmaceutically acceptable salt thereof according to claim 1, wherein R is selected from F, Cl, Br, I, CN, OH, NH_2, CH_3, CH_3CH_2, $CH_3CH_2CH_2$, $(CH_3)_2CH$, CH_3O, $(CH_3)_2N$, , , ,  , and .

3. The compound or the pharmaceutically acceptable salt thereof according to claim 1 or 2, wherein R_1 is selected from H, halogen, C_{1-3} alkyl, C_{1-3} heteroalkyl, C_{2-5} alkenyloxy, and C_{4-6} cycloalkyloxy, wherein said C_{1-3} alkyl, C_{1-3} heteroalkyl, C_{2-5} alkenyloxy and C_{4-6} cycloalkyloxy are optionally substituted with 1, 2, or 3 R groups.

4. The compound or the pharmaceutically acceptable salt thereof according to claim 3, wherein R_1 is selected from H, F, Cl, Br, I, CH_3, CH_3CH_2, $CH_3CH_2CH_2$, $(CH_3)_2CH$, CH_3O, CH_3CH_2O, $CH_3CH_2CH_2O$, $(CH_3)_2CHO$,  and  , wherein said CH_3, CH_3CH_2, $CH_3CH_2CH_2$, $(CH_3)_2CH$, CH_3O, CH_3CH_2O, $CH_3CH_2CH_2O$, $(CH_3)_2CHO$,  and  are optionally substituted with 1, 2 or 3 R groups.

5. The compound or the pharmaceutically acceptable salt thereof according to claim 1 or 2, wherein R_2 is selected from H, halogen, CN, OH, NO_2, NH_2, C_{3-12} cycloalkyl, and 3- to 12-membered heterocycloalkyl, wherein said NH_2, C_{3-12} cycloalkyl and 3- to 12-membered heterocycloalkyl are optionally substituted with 1, 2 or 3 R groups.

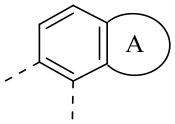
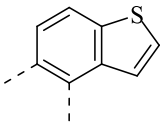
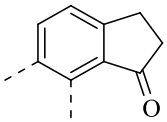
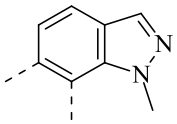
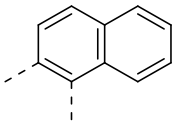
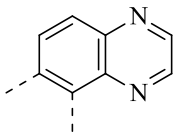
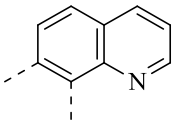
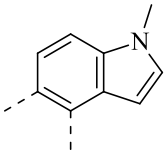
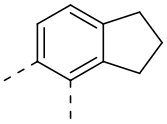
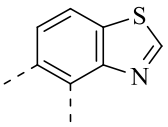
6. The compound or the pharmaceutically acceptable salt thereof according to claim 5, wherein R_2 is selected from H, halogen, CN, OH, NH_2, NO_2, -NHR, -N(R)$_2$,  ,  ,  ,  ,  ,  and .

7. The compound or the pharmaceutically acceptable salt thereof according to claim 6, wherein R_2 is selected from H, F, Cl, Br, CN, OH, NH_2, NO_2,  ,  ,  ,  ,  ,  ,  ,  ,  ,  ,  ,  , -$NHCH_2CH_3$, -$NHCH_3$, -N$(CH_3)_2$ and  .

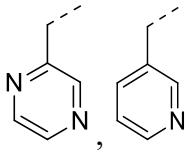
8. The compound or thea pharmaceutically acceptable salt thereof according to claim 1 or 2, wherein R_6 is selected from H, F, Cl, Br, CN, OH, NH_2, CH_3, CH_3CH_2, $CH_3CH_2CH_2$, $(CH_3)_2CH$, CH_3O, =S and =O.

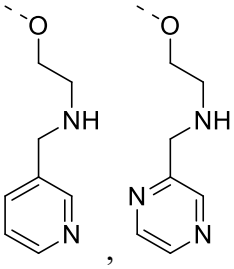
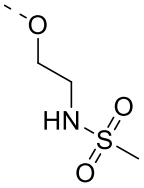
9. The compound or the pharmaceutically acceptable salt thereof according to claim 1 or 2, wherein ring A is selected from phenyl, thienyl, pyridyl, pyrazinyl, pyrazolyl,

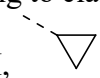
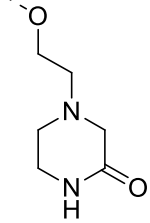
cyclopentanonyl, cyclopentenyl, thiazolyl, isothiazolyl, and pyrrolyl, wherein said phenyl, thienyl, pyridyl, pyrazinyl, pyrazolyl, cyclopentanonyl, cyclopentenyl, thiazolyl, isothiazolyl, and pyrrolyl are optionally substituted with R_6.

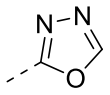
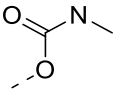
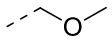
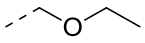
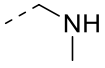
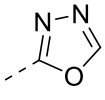
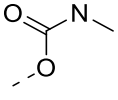
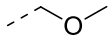
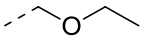
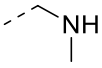
10. The compound or the pharmaceutically acceptable salt thereof according to claim 9, wherein the structural unit  is selected from  ,  ,  ,  ,  ,  ,  ,  , and  .

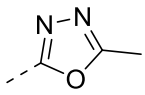
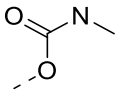
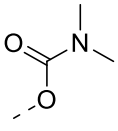
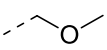
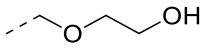
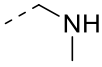
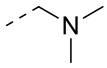
11. The compound or the pharmaceutically acceptable salt thereof according to claim 1 or 2, wherein R_a and R_b are each independently selected from H, CH_3, CH_3CH_2, and -$S(=O)_2CH_3$, wherein said CH_3, CH_3CH_2 and -$S(=O)_2CH_3$ are optionally substituted with 1, 2 or 3 R groups.

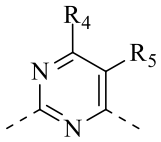
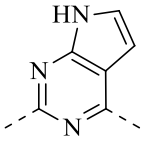
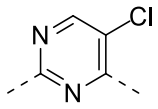
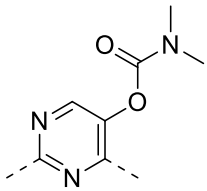
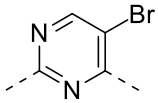
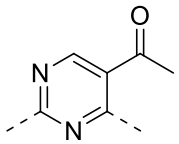
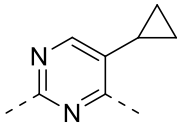
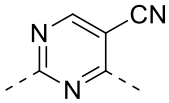
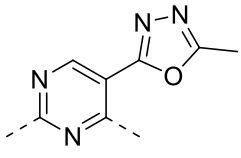
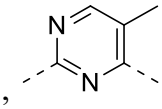
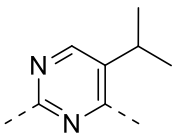
12. The compound or the pharmaceutically acceptable salt thereof according to claim 11, wherein R_a and R_b are each independently selected from H,  , and -$S(=O)_2CH_3$.

13. The compound or the pharmaceutically acceptable salt thereof according to claim 12, wherein R_3 is selected from  , and  .

14. The compound or the pharmaceutically acceptable salt thereof according to claim 1 or 2, wherein R_3 is selected from H, F, Cl, Br, CH_3, CH_3CH_2, $(CH_3)_2CH$,  and  .

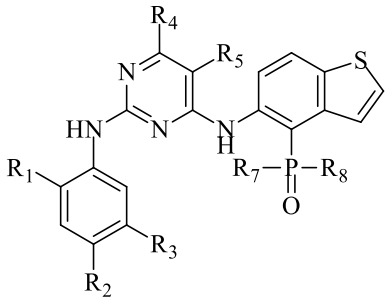
15. The compound or the pharmaceutically acceptable salt thereof according to claim 1 or 2, wherein R_5 is selected from H, F, Cl, Br, I, CN, CH_3, CH_3CH_2, $CH_3CH_2CH_2$, $(CH_3)_2CH$,  ,  , , ,  ,  and  , wherein said CH_3, CH_3CH_2, $CH_3CH_2CH_2$, $(CH_3)_2CH$,  ,  , , ,  ,  and  are optionally substituted with 1, 2 or 3 R groups.

16. The compound or the pharmaceutically acceptable salt thereof according to claim 15, wherein R_5 is selected from H, Cl, Br, CN, CH_3, CH_3CH_2, $CH_3CH_2CH_2$, $(CH_3)_2CH$,  ,  ,  , , ,  ,  ,  and  .

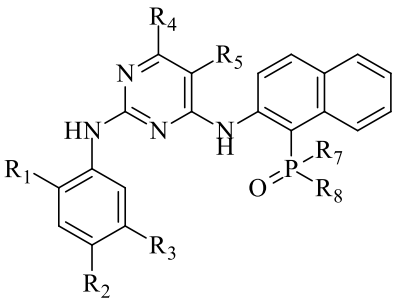
17. The compound or the pharmaceutically acceptable salt thereof according to claim 1 or 2, wherein the structural unit  is selected from  ,  ,  ,  ,  ,  ,  ,  ,  and  .

18. The compound or the pharmaceutically acceptable salt thereof according to claim 1 or 2, wherein R_7 and R_8 are each independently selected from H or CH_3.

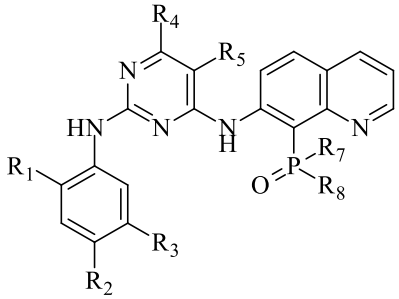
19. The compound or the pharmaceutically acceptable salt thereof according to any one of claims 1 to 18, which is selected from



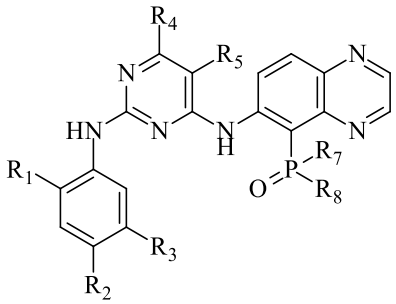
(II) ,



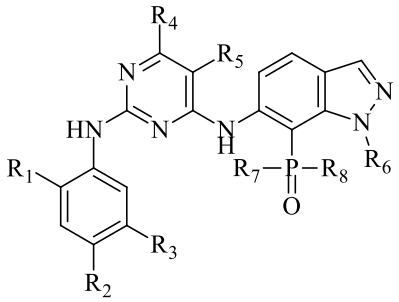
(III) ,



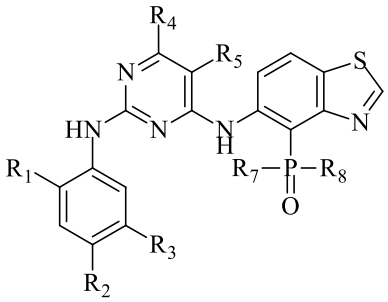
(IV) ,



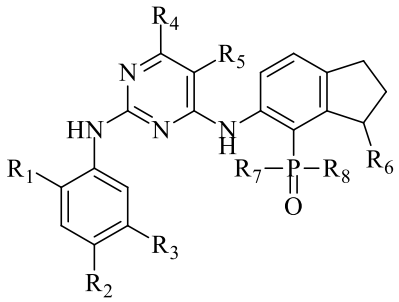
(V) ,



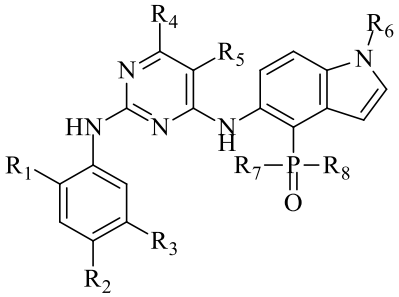
(VI) ,



(VII) ,



(VIII) ,



(IX) ,

wherein,

R_1 is as defined in any one of claims 1-4,

R_2 is as defined in any one of claims 1-2 or 5-7,

R_3 is as defined in any one of claims 1-2 or 13-14,

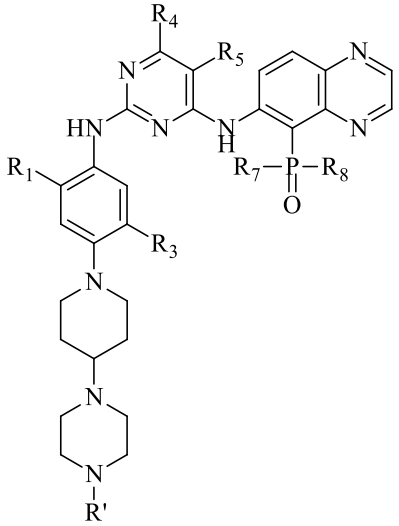
R_4 is as defined in claims 1-2 or 17,

R_5 is as defined in any one of claims 1-2 or 15-17,

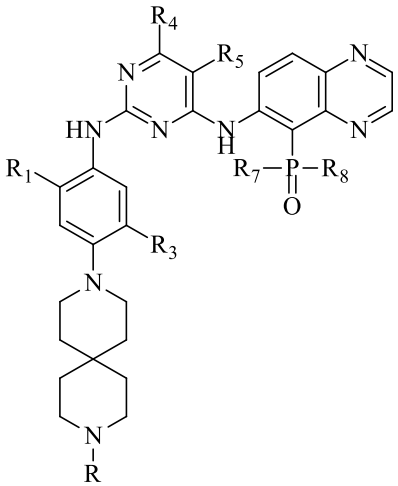
R_6 is as defined in any one of claims 1-2 or 8,

R_7 and R_8 are as defined in any one of claims 1-2 or 18.

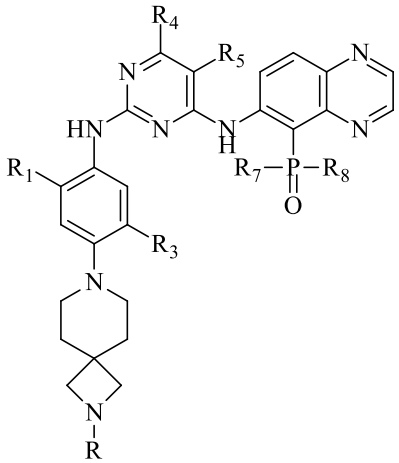
20. The compound or the pharmaceutically acceptable salt thereof according to claim 19, which is selected from



(V-1) ,



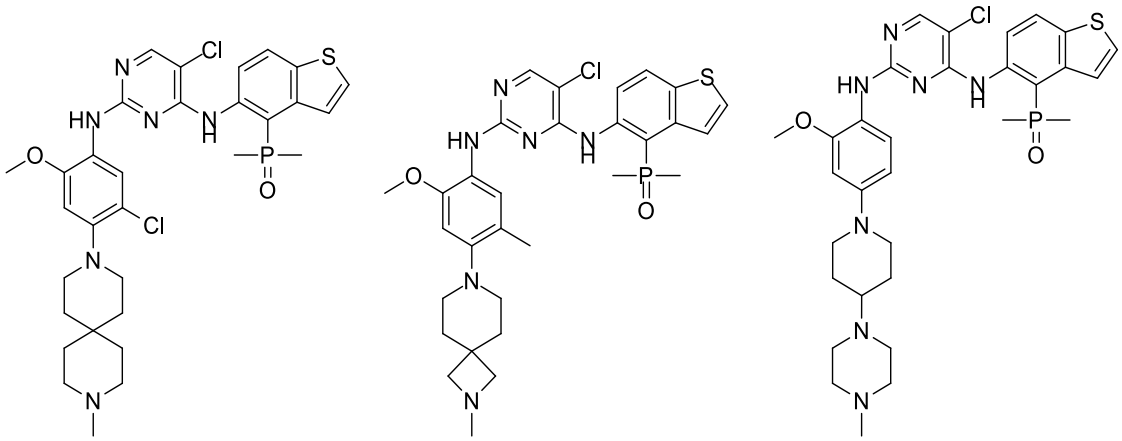
(V-2) ,

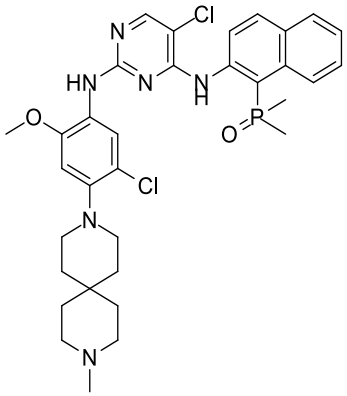


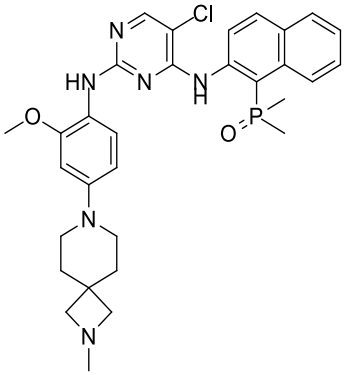
(V-3) ,

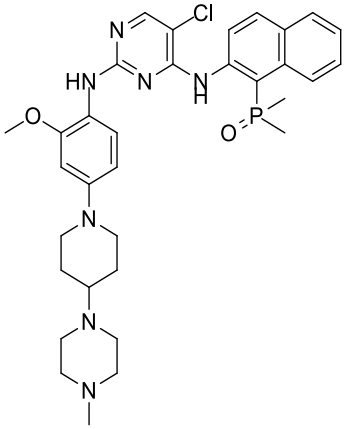
wherein R_1, R_3, R_4, R_5, R_7, R_8, R and R' are as defined in claim 19.

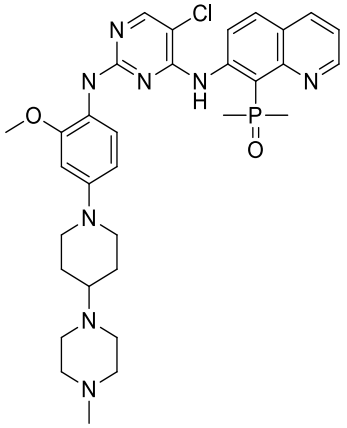
21. A compound or a pharmaceutically acceptable salt thereof, which is selected from

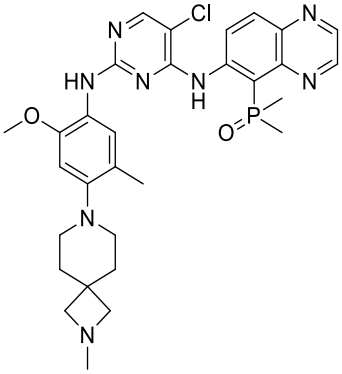


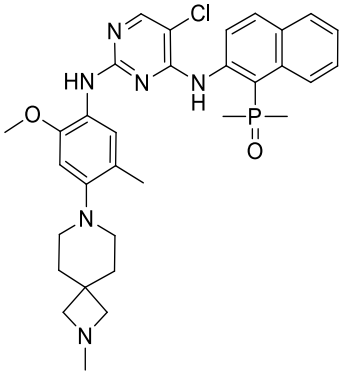


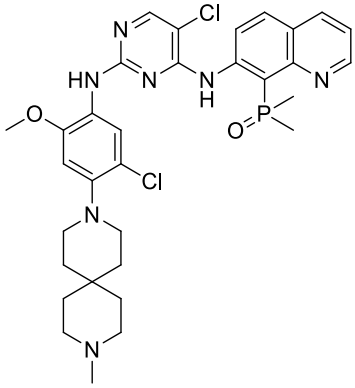


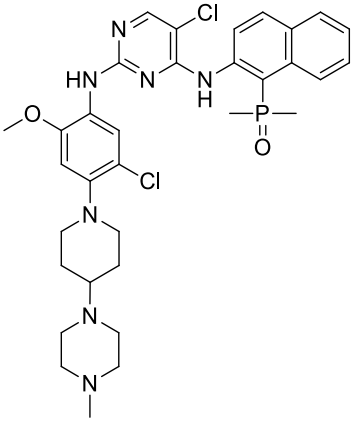


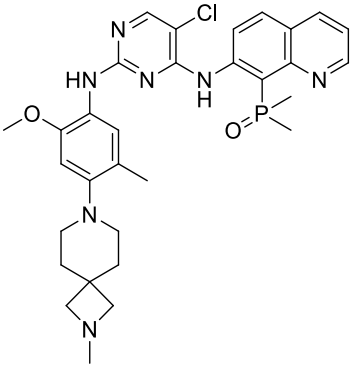


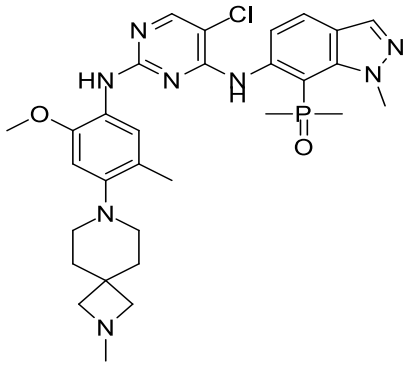


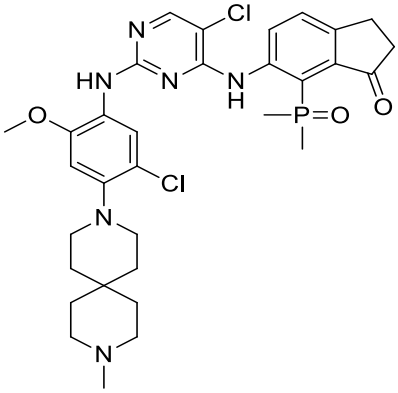


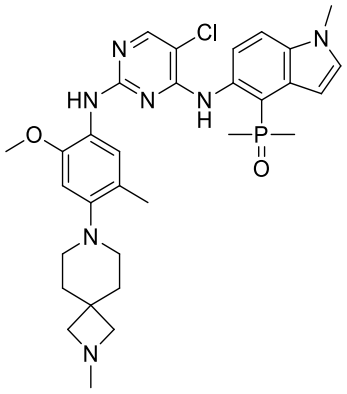


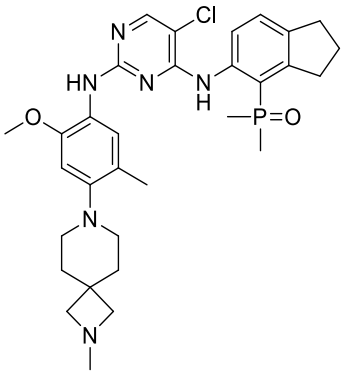


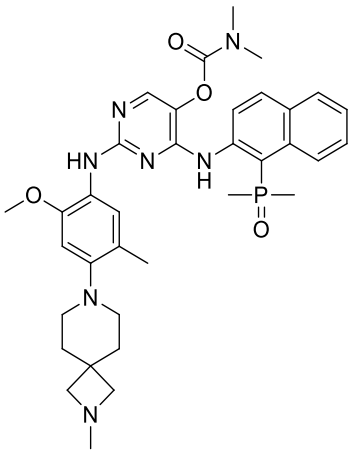


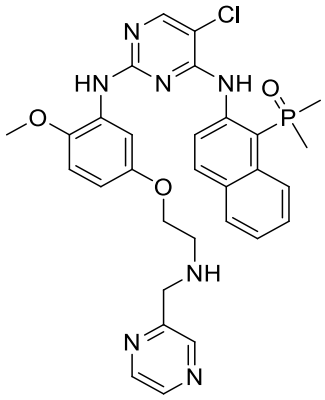


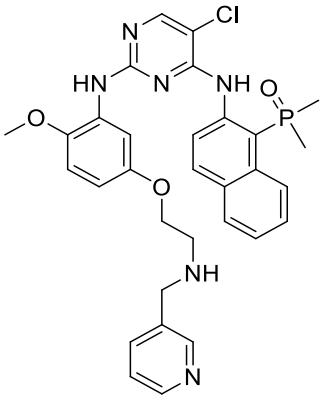


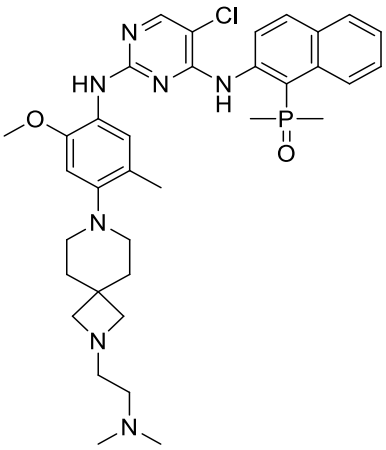


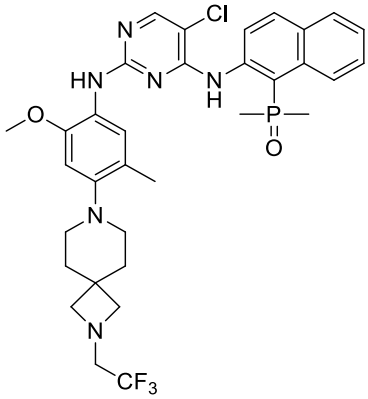


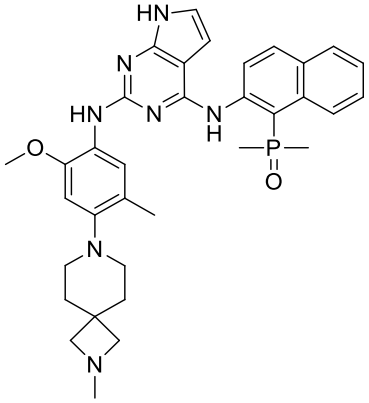


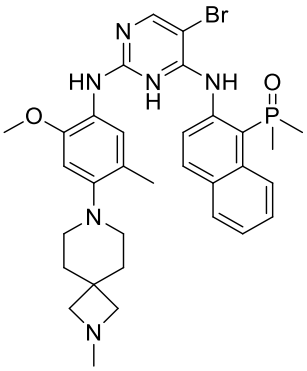


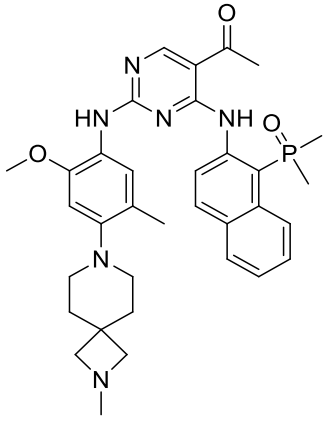


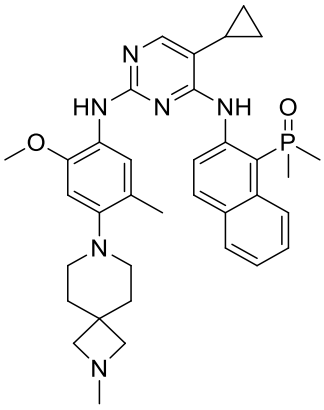


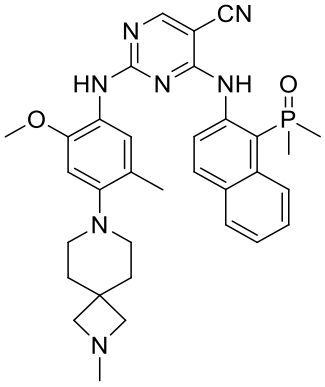


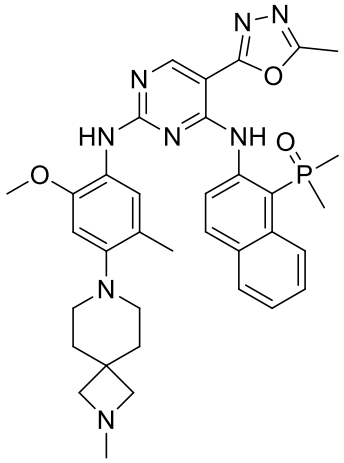


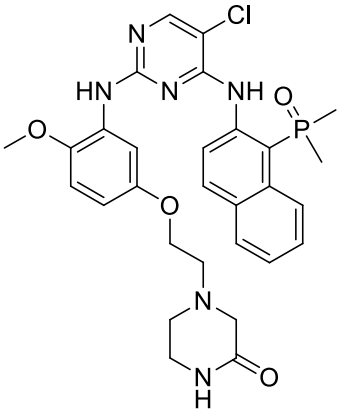


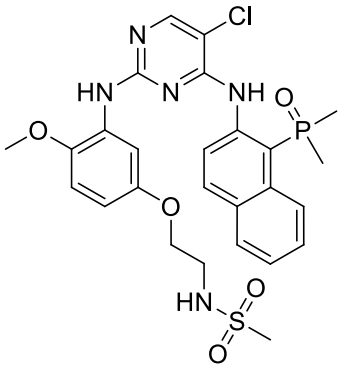


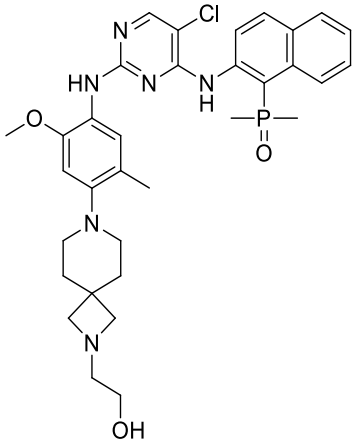


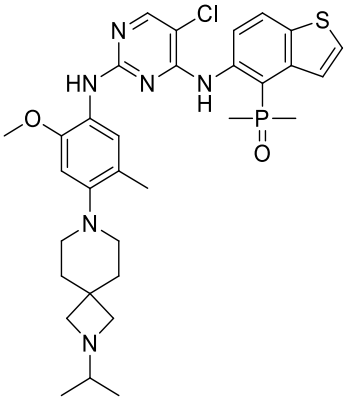


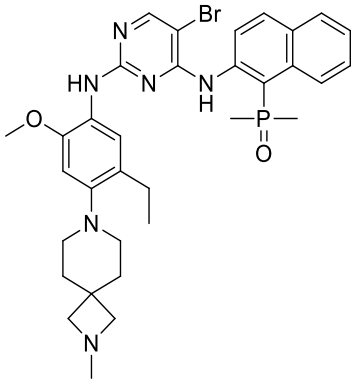


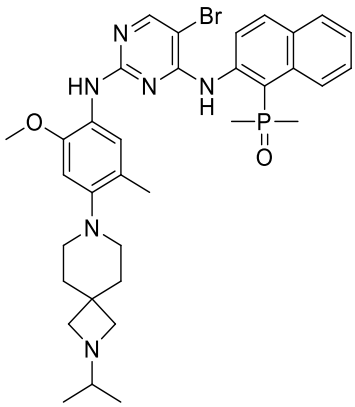


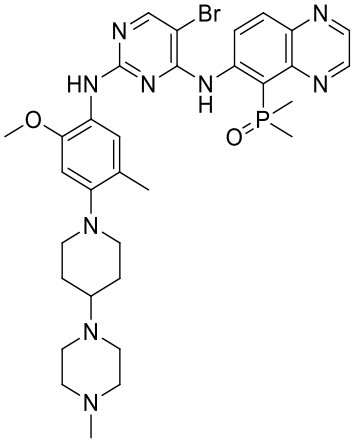


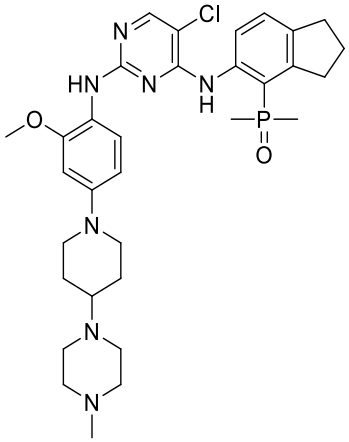


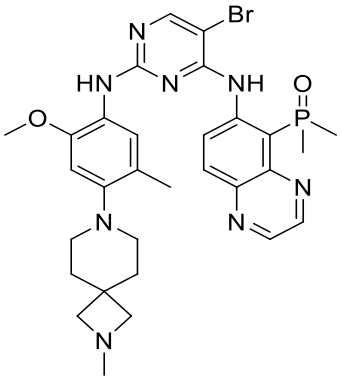


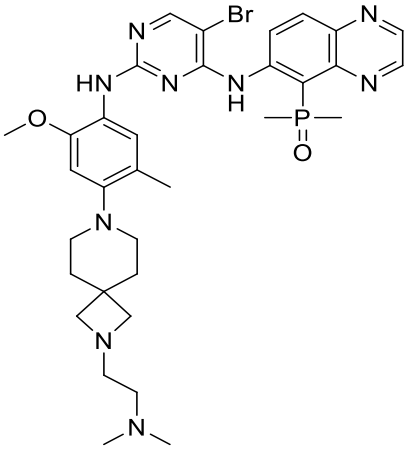


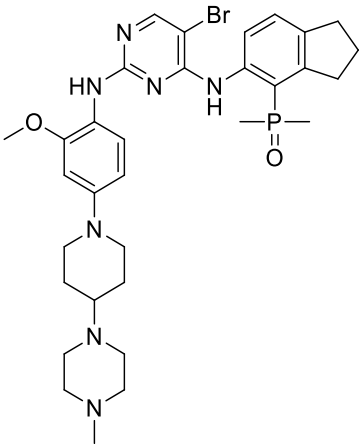


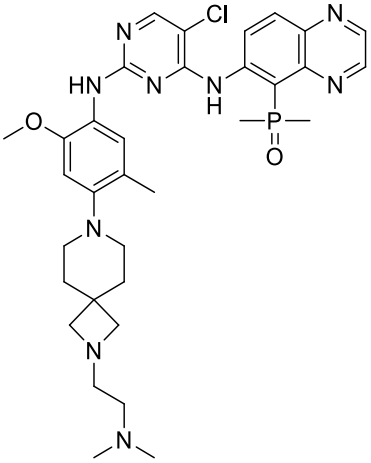


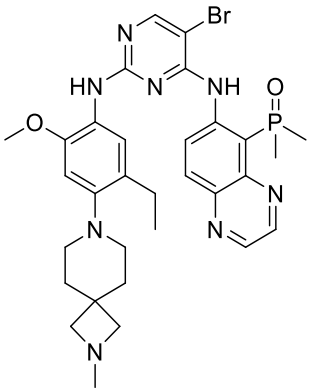


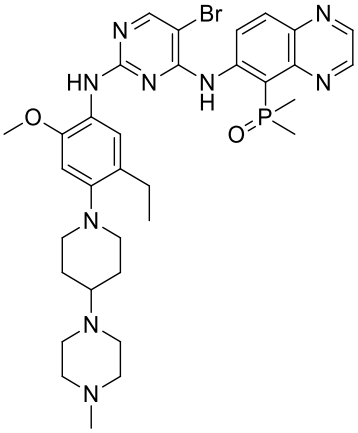


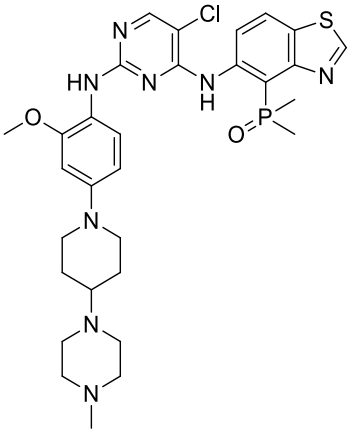


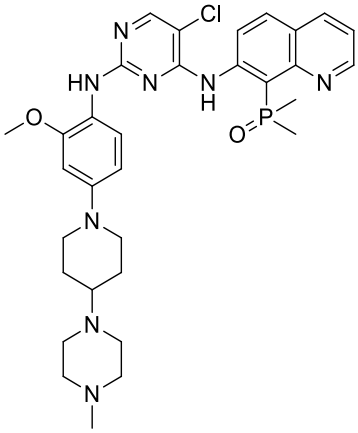


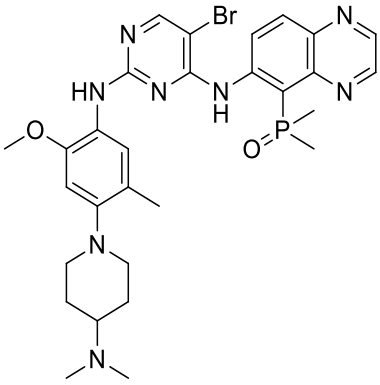


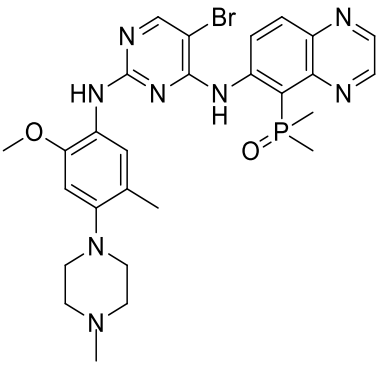


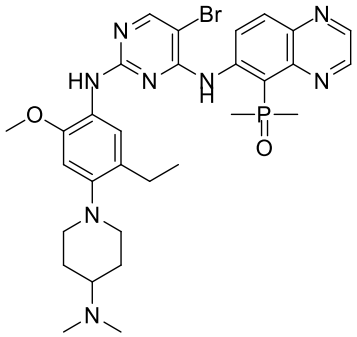


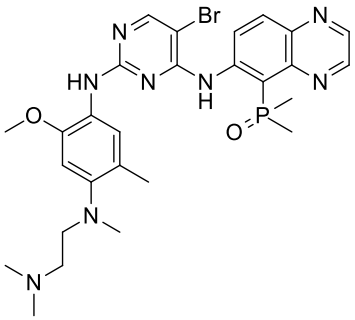


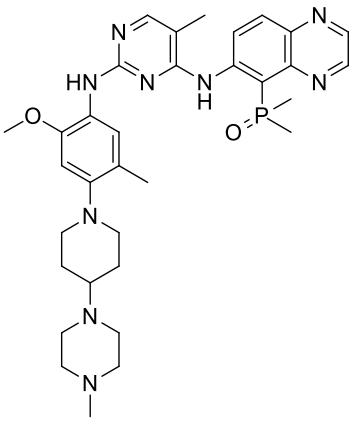


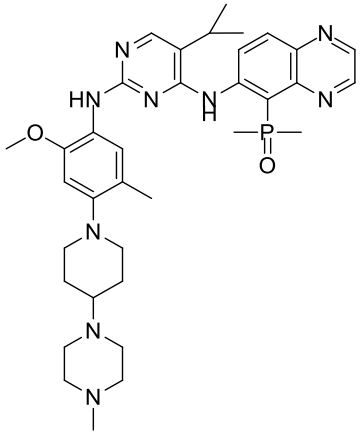


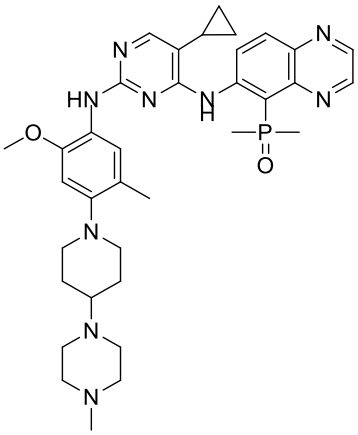


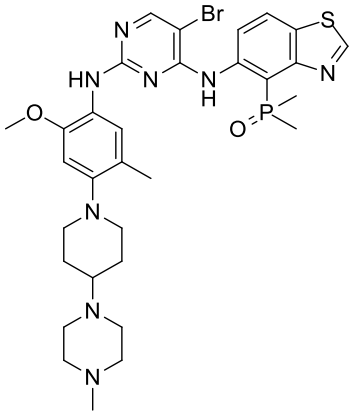


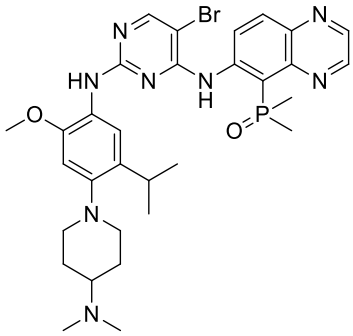


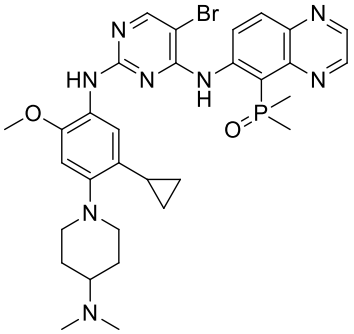


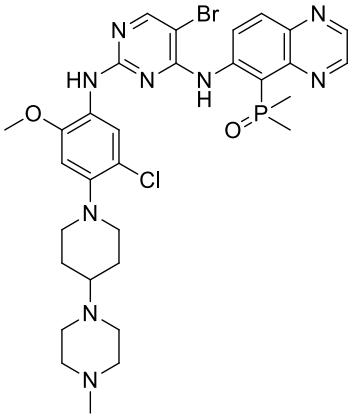


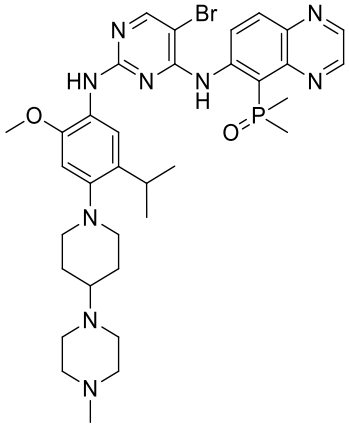


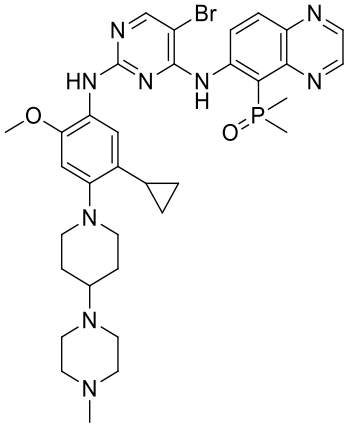


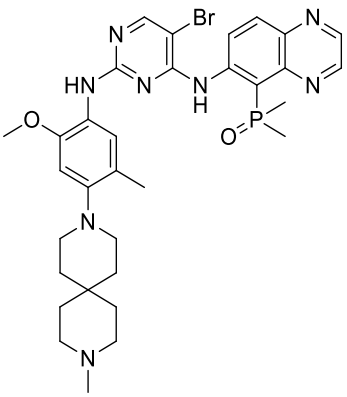


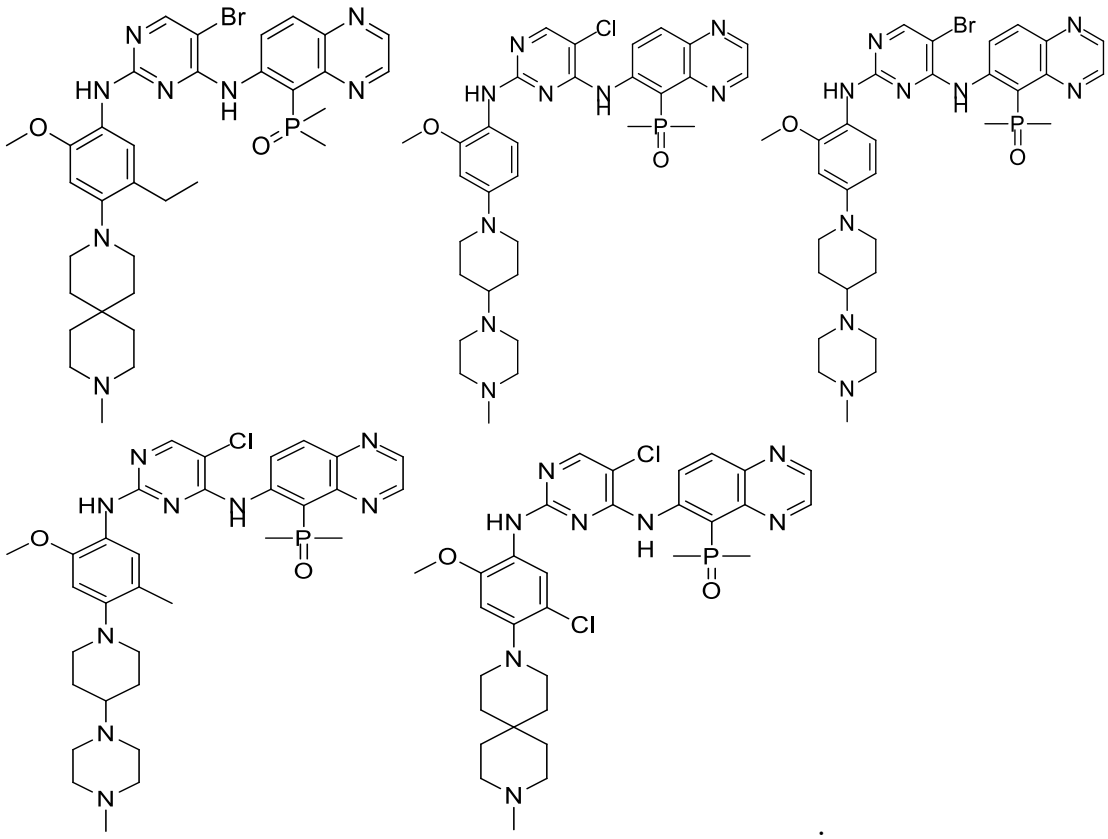












22. A pharmaceutical composition comprising a therapeutically effective amount of the compound or the pharmaceutically acceptable salt thereof according to any one of claims 1 to 21, and a pharmaceutically acceptable carrier.

23. Use of the compound or the pharmaceutically acceptable salt thereof according to any one of claims 1 to 21, or the pharmaceutical composition according to claim 22 in preparing a medicament for treating lung cancer.

24. Use of the compound or the pharmaceutically acceptable salt thereof according to any one of claims 1 to 21 or the pharmaceutical composition according to claim 22 in combination with an EGFR monoclonal antibody in preparing a medicament for treating lung cancer.