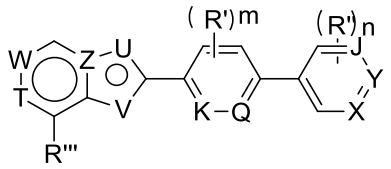
What is claimed is:

1. A heteroaryl compound having a structure of formula (I), or a pharmaceutically acceptable salt, a solvate, a hydrate, an isotopically labeled derivative or a radiolabeled derivative thereof,



(I)

wherein,

Q is CH or N;

X is CH or N;

Y is CR^6 or N;

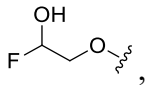
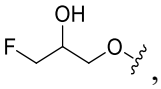
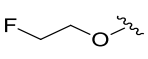
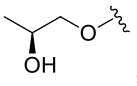
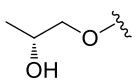
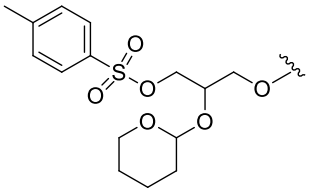
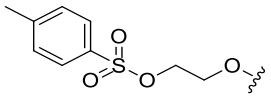
R^6 is selected from the group consisting of H, NH_2 and a C_{1-6} alkoxy, and NH_2 and the C_{1-6} alkoxy is optionally substituted by C_{1-3} alkyl and/or halogen;

J is CH or N;

K is CH or N;

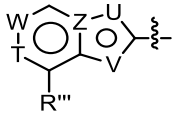
provided that X and Y are not N simultaneously, and J and Y are not N simultaneously;

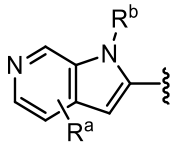
R' is halogen, OH, C_{1-6} alkyl or C_{1-6} alkoxy;

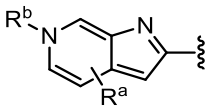
R'' is Br, I, OH, NH_2, , , , ethoxy, , , , , C_{1-6} alkylamino or C_{3-6} heterocycloalkyl, and OH, NH_2, C_{1-6} alkylamino and C_{3-6} heterocycloalkyl of which is optionally substituted by the substituent selected from the group consisting of oxo, OH, halogen, C_{3-6} cycloalkyl, C_{1-4} alkoxy carbonyl, C_{3-6} heterocycloalkyloxy, toluenesulfonyloxy and phenyl which is further optionally substituted by OH and/or C_{1-3} alkoxy;

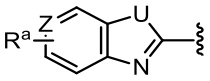
m is 0, 1, 2;

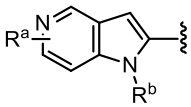
n is 1, 2;

the structural unit  is selected from the group consisting of

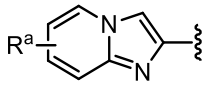

Formula I-(a)


Formula I-(b)


Formula I-(c)


Formula I-(d)

and


Formula I-(e)

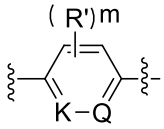
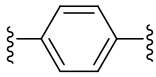
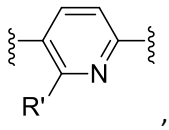
;

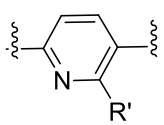
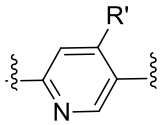
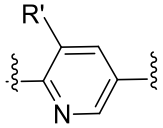
wherein, in Formula I-(c), U is O and Z is N; or, U is S and Z is CH;

R^a is selected from the group consisting of H, OH, halogen, C_{1-3} alkyl, C_{1-3} alkoxy, NH_2, C_{1-3} alkylamino and C_{1-6} alkoxycarbonyl, and OH, C_{1-3} alkyl, C_{1-3} alkoxy, NH_2, C_{1-3} alkylamino or C_{1-6} alkoxycarbonyl of which is optionally substituted by OH, halogen, C_{2-6} heterocycloalkyloxy or toluenesulfonyloxy;

R^b is selected from the group consisting of H, C_{1-6} alkyl, C_{1-6} alkoxycarbonyl, C_{1-3} alkylcarbonyl, benzyl and benzoyl, and the C_{1-6} alkyl, C_{1-6} alkoxycarbonyl, C_{1-3} alkylcarbonyl or benzoyl of which is optionally substituted by halogen, OH, C_{1-3} alkoxy, C_{2-6} heterocycloalkyloxy or toluenesulfonyloxy.

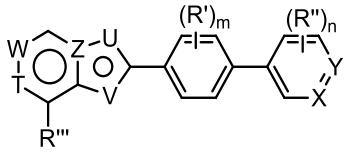
2. The heteroaryl compound having a structure of formula (I), or a pharmaceutically acceptable salt, a solvate, a hydrate, an isotopically labeled derivative or a radiolabeled derivative thereof according to claim 1, wherein the moiety of

 is selected from the group consisting of , ,

, , and , wherein R' is H or F.

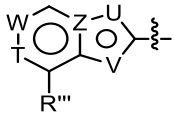
3. The heteroaryl compound having a structure of formula (I), or a pharmaceutically acceptable salt, a solvate, a hydrate, an isotopically labeled derivative or a radiolabeled derivative thereof according to claim 1, which is of the structure of

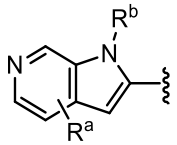
formula (II),



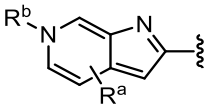
(II)

wherein, X is CH or N; Y is CH or N, provided that X and Y are not N simultaneously;

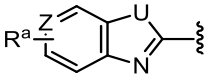
the structural unit  is selected from the group consisting of



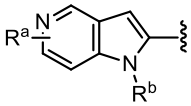
Formula I-(a)



Formula I-(b)

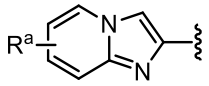


Formula I-(c)



Formula I-(d)

and



Formula I-(e) ;

wherein, in Formula I-(c), U is O and Z is N; or, U is S and Z is CH;

R^a is selected from the group consisting of H, OH, halogen, C_{1-3} alkyl, C_{1-3} alkoxy, NH_2, C_{1-3} alkylamino and C_{1-6} alkoxycarbonyl, and OH, C_{1-3} alkyl, C_{1-3} alkoxy, NH_2, C_{1-3} alkylamino or C_{1-6} alkoxycarbonyl of which is optionally substituted by OH, halogen, C_{3-6} heterocycloalkyloxy or toluenesulfonyloxy;

R^b is selected from the group consisting of H, C_{1-6} alkyl, C_{1-6} alkoxycarbonyl, C_{1-3} alkylcarbonyl, benzyl and benzoyl, and the C_{1-6} alkyl, C_{1-6} alkoxycarbonyl, C_{1-3} alkylcarbonyl or benzoyl of which is optionally substituted by halogen, OH, C_{1-3} alkoxy, C_{3-6} heterocycloalkyloxy or toluenesulfonyloxy.

4. The heteroaryl compound having a structure of formula (I), or a pharmaceutically acceptable salt, a solvate, a hydrate, an isotopically labeled derivative or a radiolabeled derivative thereof according to claim 1, wherein,

R^6 is selected from the group consisting of H, NH_2 and a C_{1-3} alkoxy, and NH_2 and the C_{1-3} alkoxy is optionally substituted by C_{1-3} alkyl and/or F;

and/or, R' is F, C_{1-3} alkyl or C_{1-3} alkoxy;

and/or, R'' is C_{1-3} alkylamino or C_{3-5} heterocycloalkyl, and OH, NH_2, C_{1-3} alkylamino

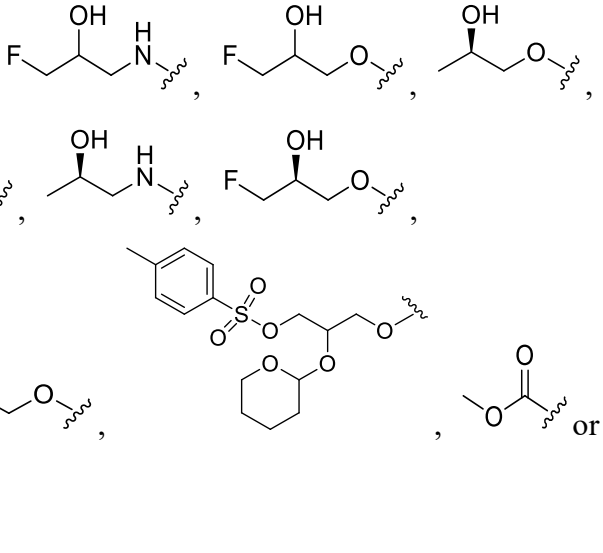
or C_{3-5} heterocycloalkyl of which is optionally substituted by the substituent selected from the group consisting of oxo, OH, F, Cl, C_{3-5} cycloalkyl, C_{1-3} alkoxy carbonyl, C_{3-5} heterocycloalkyloxy, *p*-toluenesulfonyloxy and phenyl which is further optionally substituted by OH, methoxy or ethoxy.

5. The heteroaryl compound having a structure of formula (I), or a pharmaceutically acceptable salt, a solvate, a hydrate, an isotopically labeled derivative or a radiolabeled derivative thereof according to claim 3, wherein,

R^a is selected from the group consisting of H, OH, F, Cl, methyl, ethyl, methoxy, ethoxy, *n*-propoxy, NH_2, N-methylamino, N-ethylamino, N-*n*-propylamino, N,N-dimethylamino, methylethylamino, methoxycarbonyl and *tert*-butoxy carbonyl, and OH, methyl, ethyl, methoxy, ethoxy, *n*-propoxy, NH_2, N-methylamino, N-ethylamino, N-*n*-propylamino, N,N-dimethylamino, methylethylamino, methoxycarbonyl and *tert*-butoxy carbonyl of which is optionally substituted by OH, F, Cl, C_{3-5} heterocycloalkyloxy or toluenesulfonyloxy;

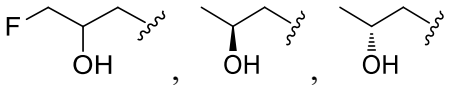
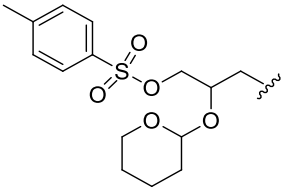
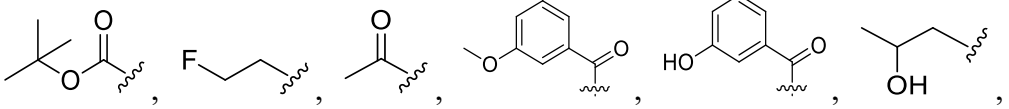
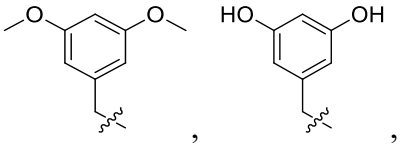
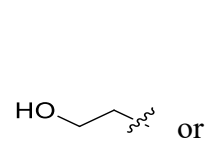
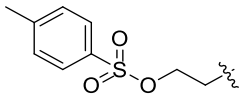
and/or, R^b is H, C_{1-3} alkyl, C_{1-4} alkoxycarbonyl, C_{1-3} alkylcarbonyl, benzyl or benzoyl, and the C_{1-3} alkyl, C_{1-4} alkoxycarbonyl, C_{1-3} alkylcarbonyl or benzoyl of which is optionally substituted by F, Cl, OH, C_{1-3} alkoxy, C_{3-5} heterocycloalkyloxy or toluenesulfonyloxy.

6. The heteroaryl compound having a structure of formula (I), or a pharmaceutically acceptable salt, a solvate, a hydrate, an isotopically labeled derivative or a radiolabeled derivative thereof according to claim 3, wherein,

R^a is H, F, OH, NH_2, methoxy, ethoxy, 

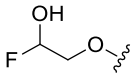
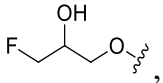
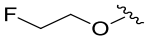
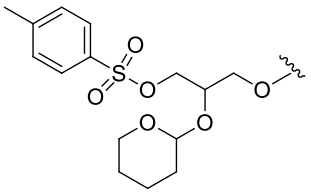
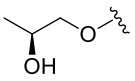
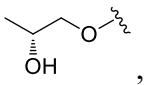
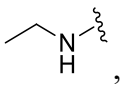
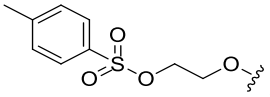
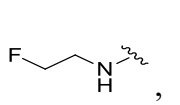
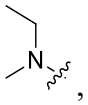
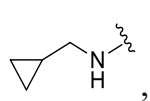
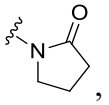
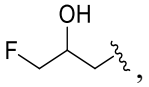
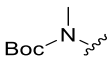
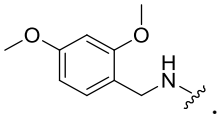
or

;

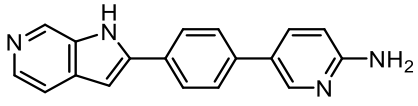
R^b is H, methyl, , , , , , , , , , , or .

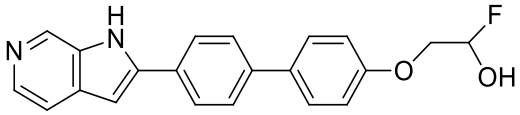
7. The heteroaryl compound having a structure of formula (I), or a pharmaceutically acceptable salt, a solvate, a hydrate, an isotopically labeled derivative or a radiolabeled derivative thereof according to claim 1, wherein,

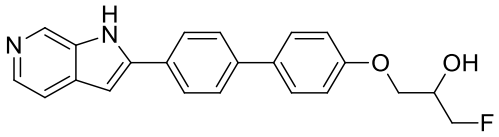
R' is F, OH, methyl or methoxy;

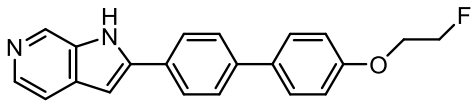
and/or, R'' is OH, NH_2, methyl, , , , ethoxy, , , , , , , , , , , , ,  or .

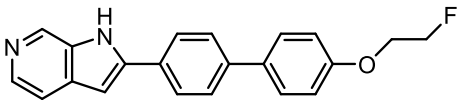
8. A heteroaryl compound having a structure of formula (I), or a pharmaceutically acceptable salt, a solvate, a hydrate, an isotopically labeled derivative or a radiolabeled derivative thereof, which is selected from the group consisting of

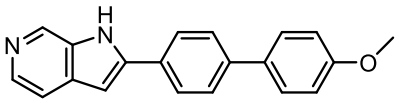


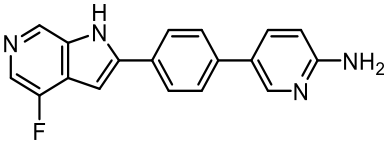


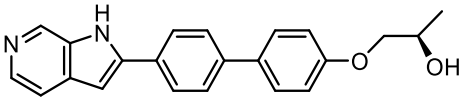


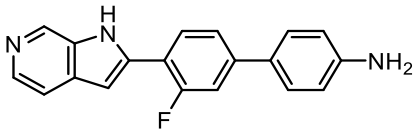


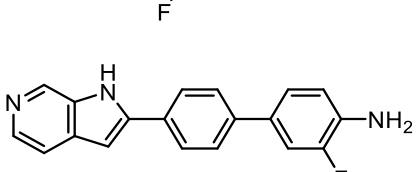


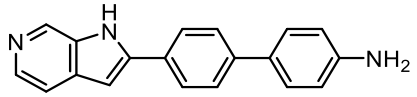


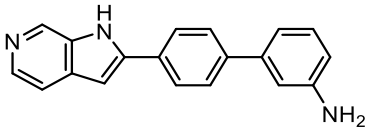


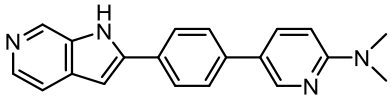


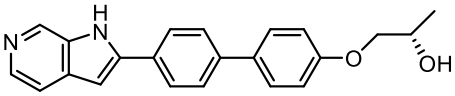


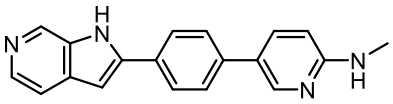


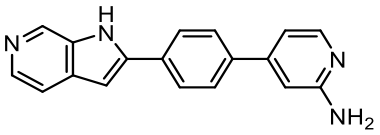


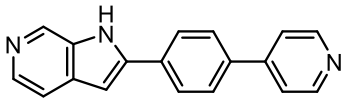


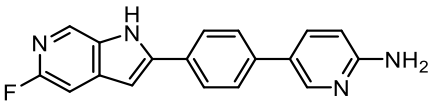


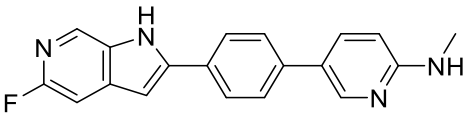


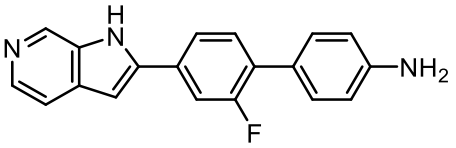


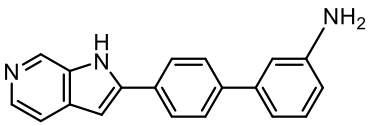


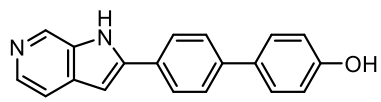


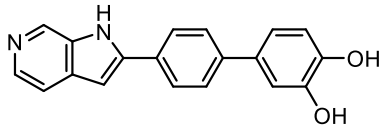


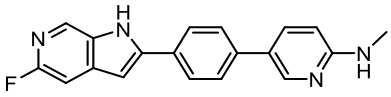


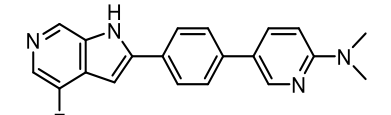


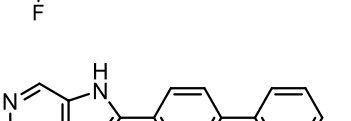


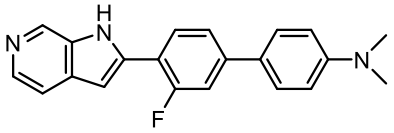


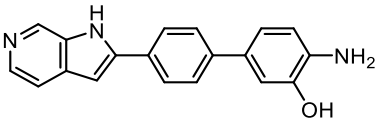


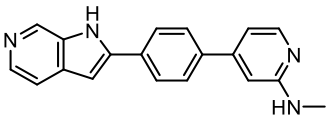


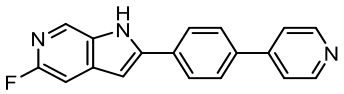


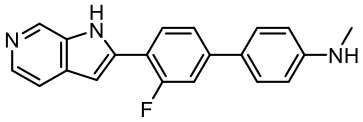


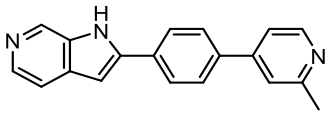


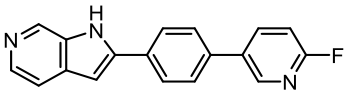


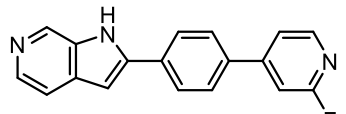




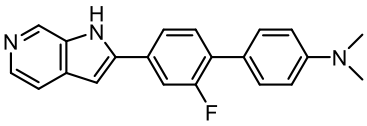


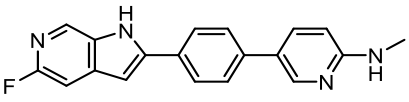


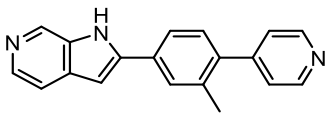


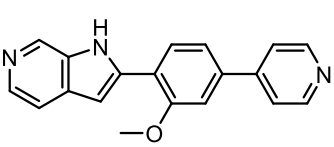


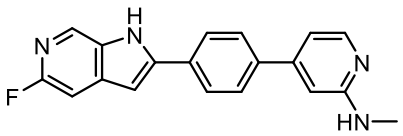


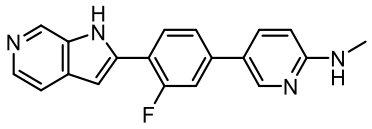


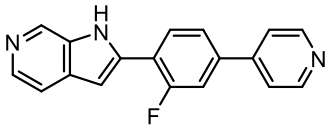


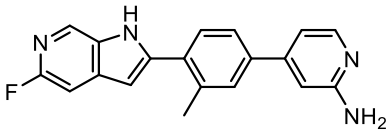


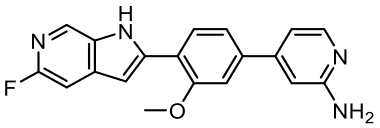


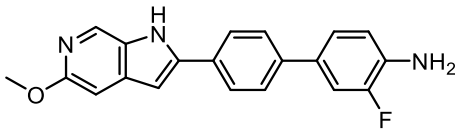


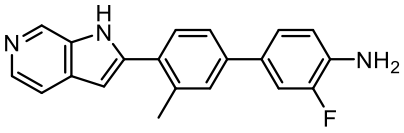


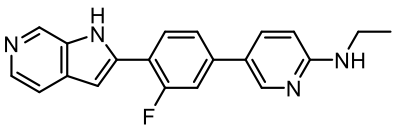


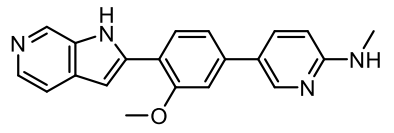


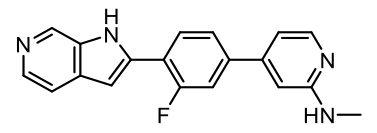


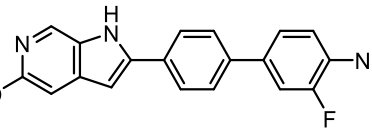


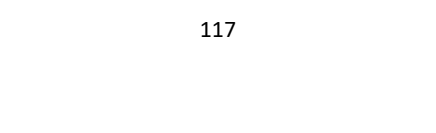


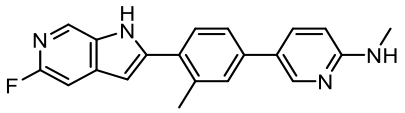


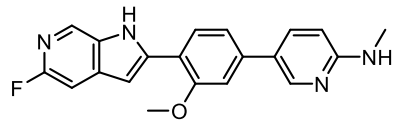


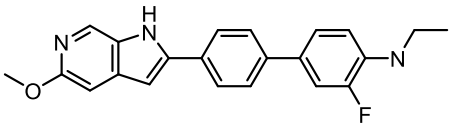


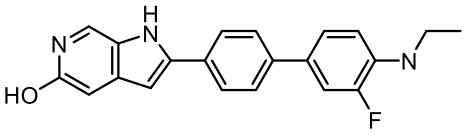


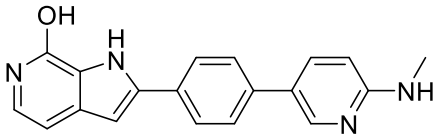


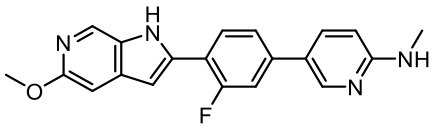


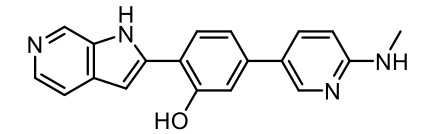


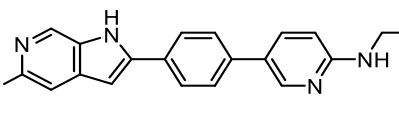


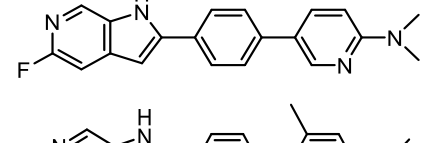


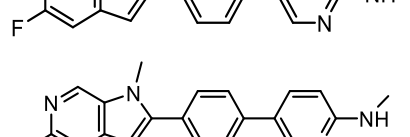


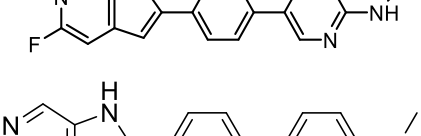


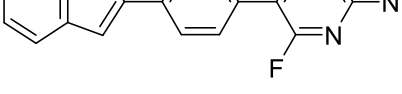


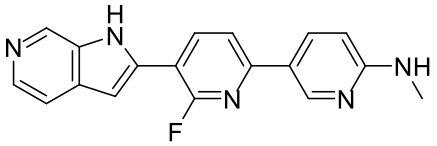


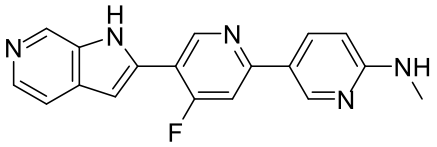


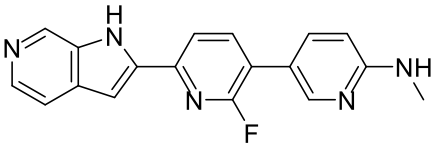


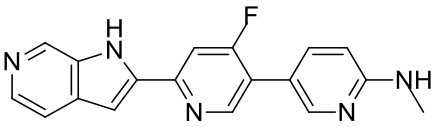


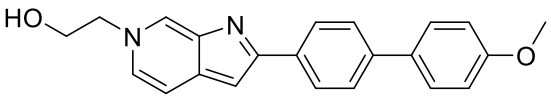


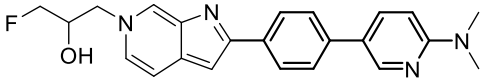


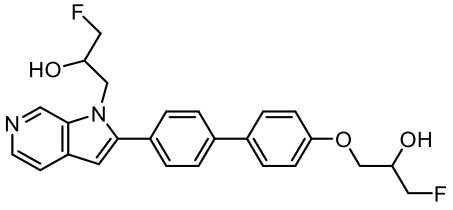


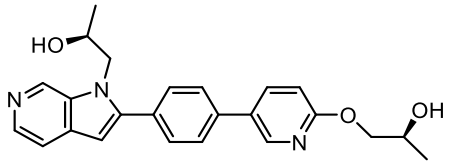


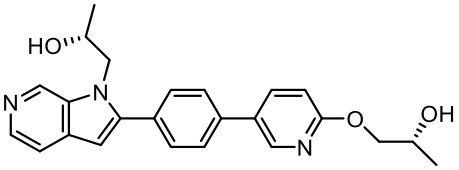


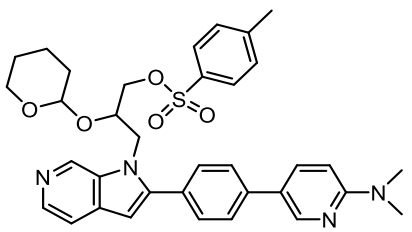


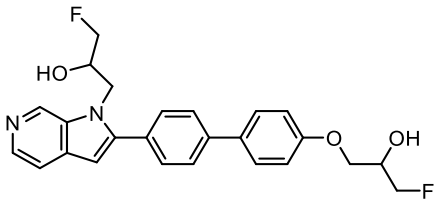
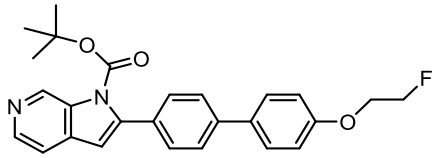
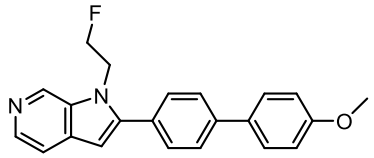
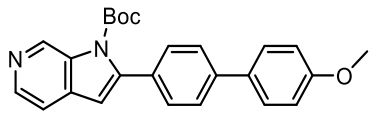
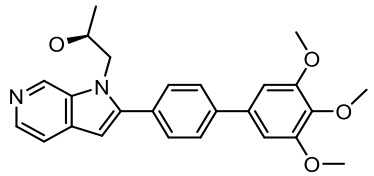
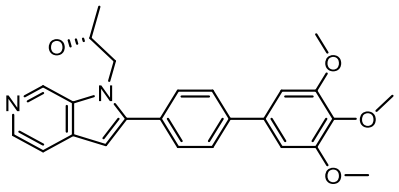
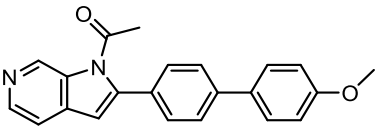
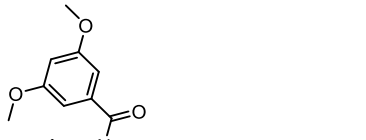
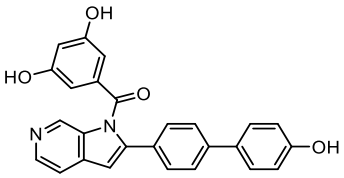


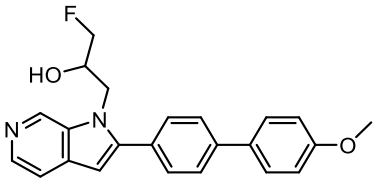


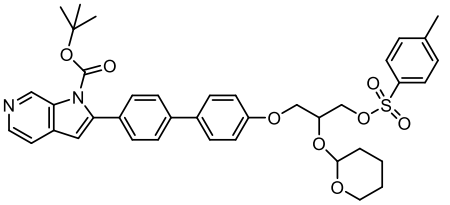


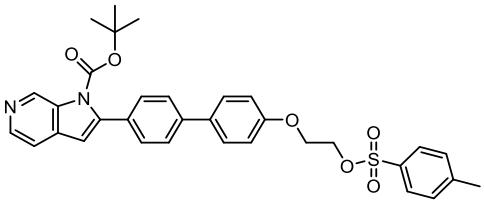


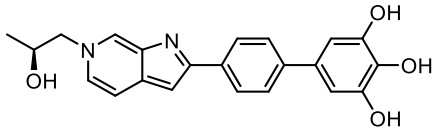


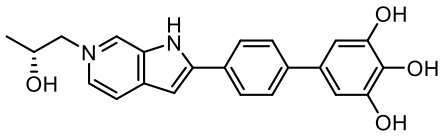










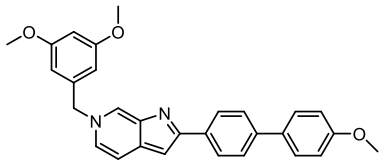


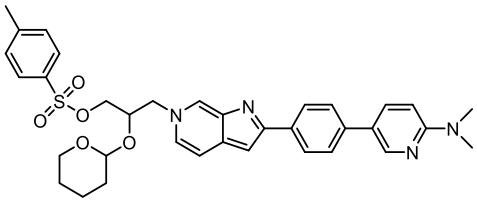


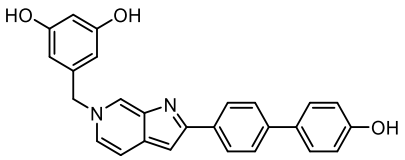


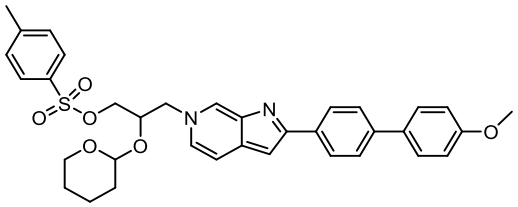


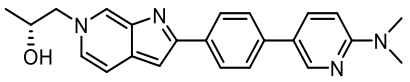


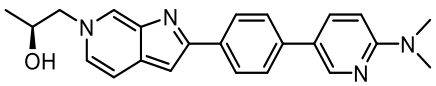


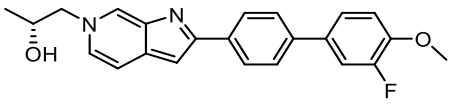


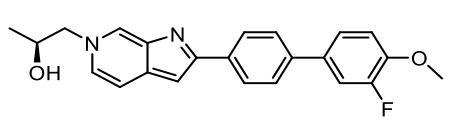


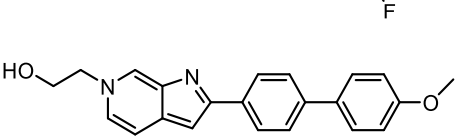


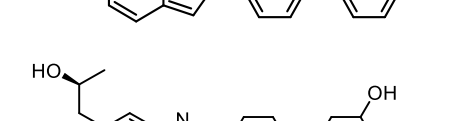


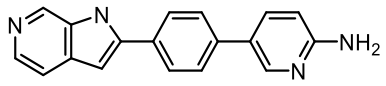


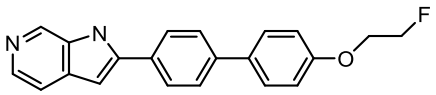


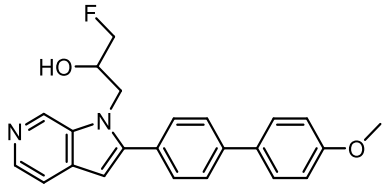


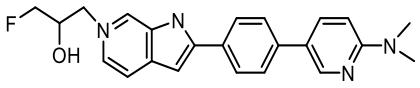


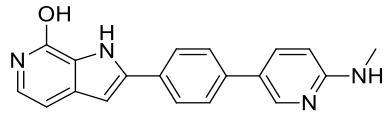


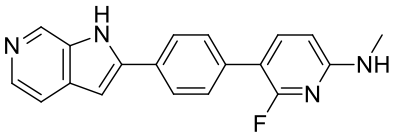


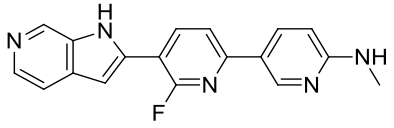


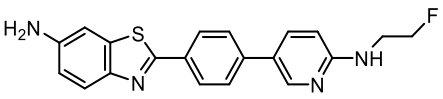


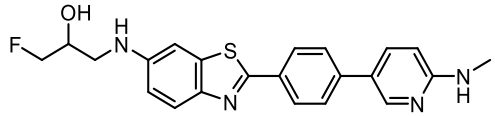


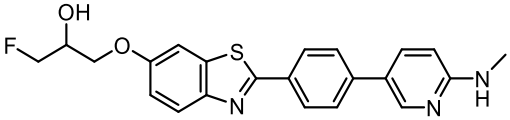


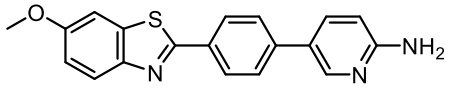


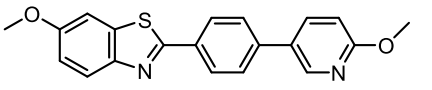


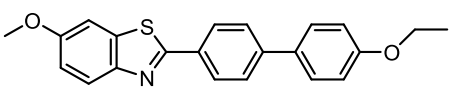


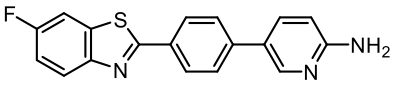


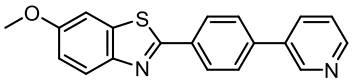


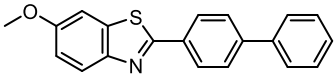


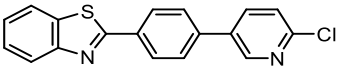


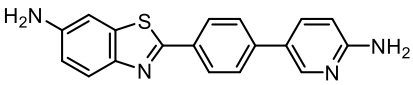


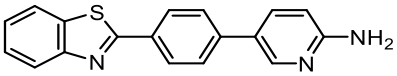


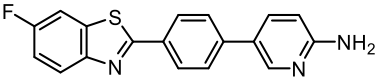


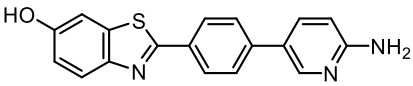


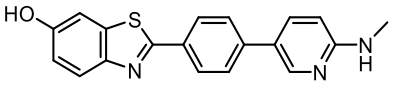


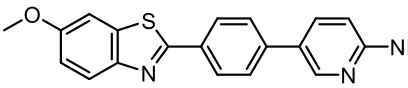


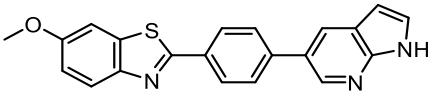


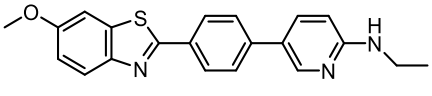


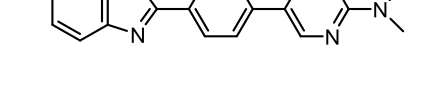


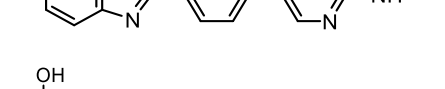


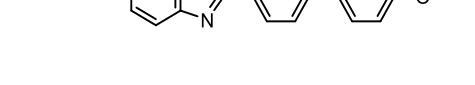




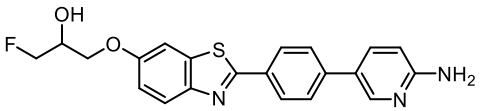
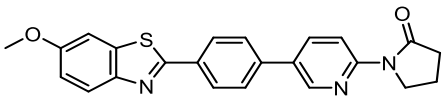
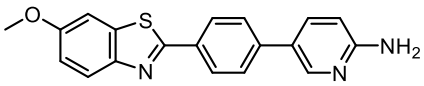
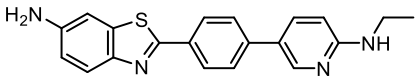
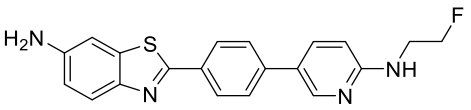
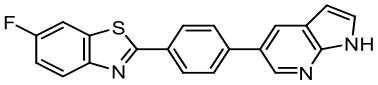
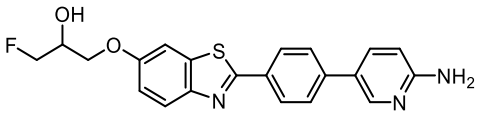
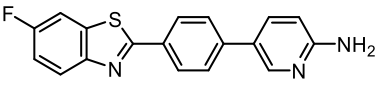
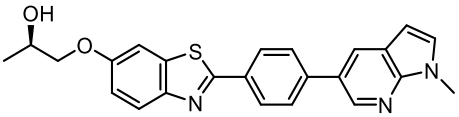
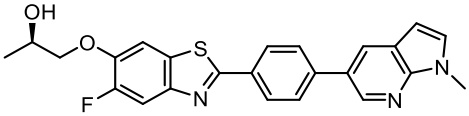
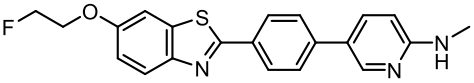
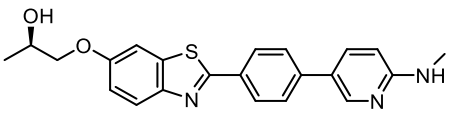
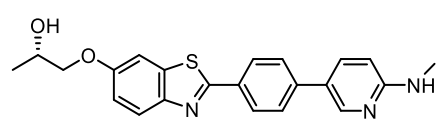
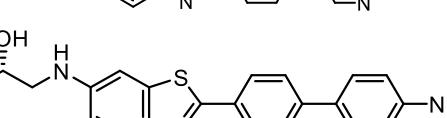


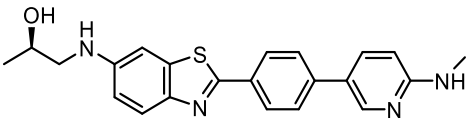


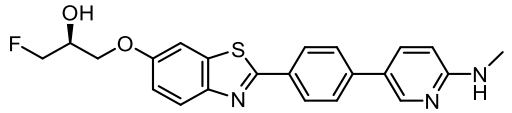


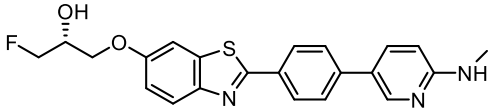


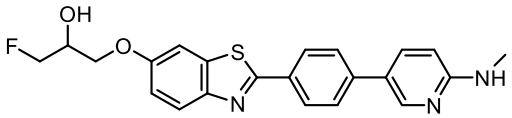


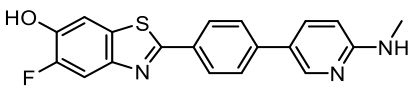















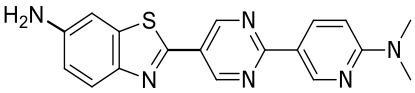


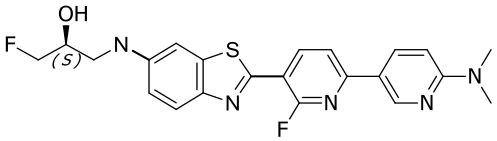


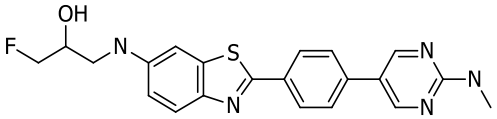


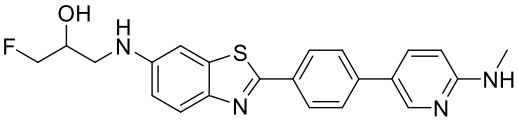


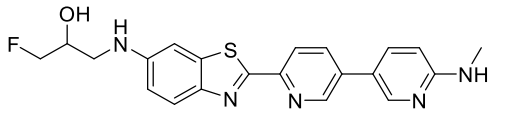


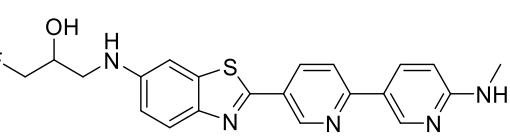


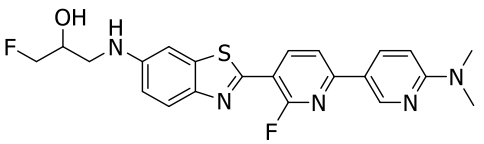


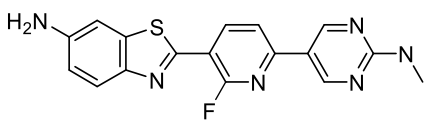


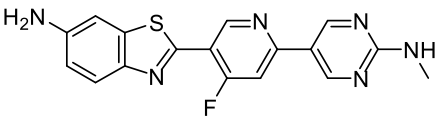


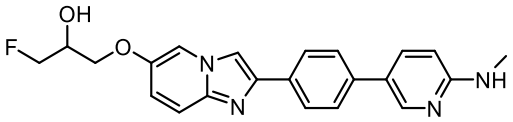


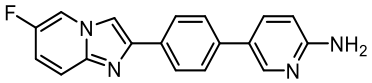


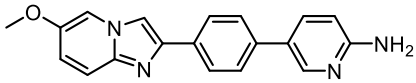


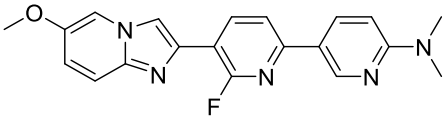


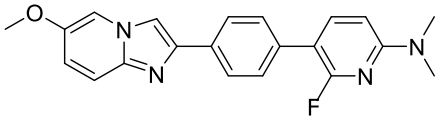


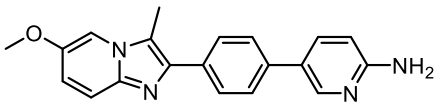


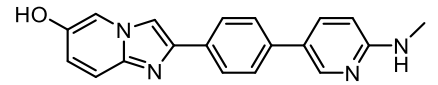


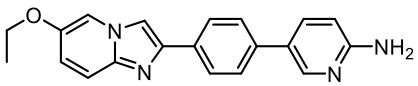


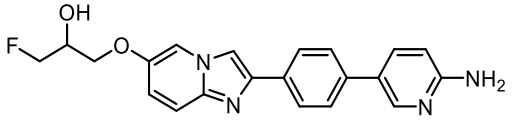


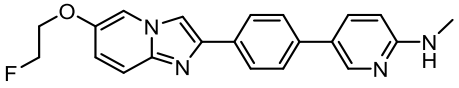


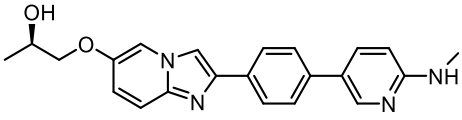


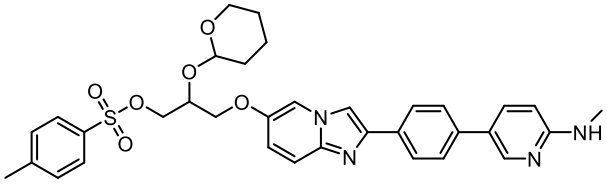


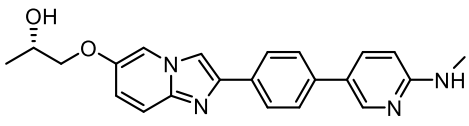


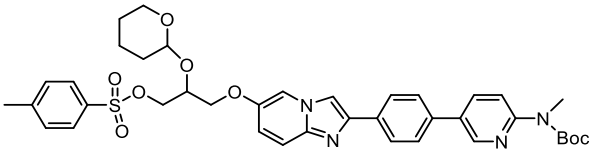


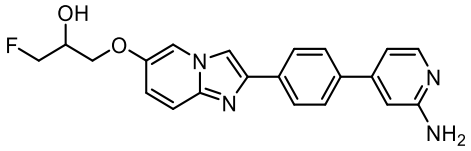


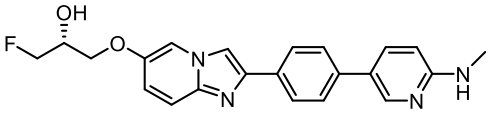


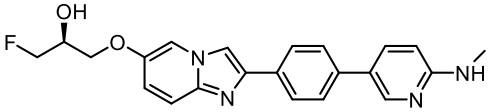


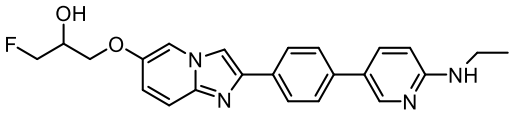


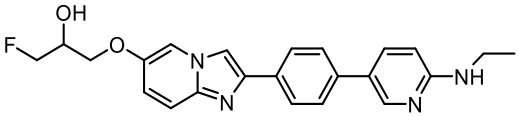


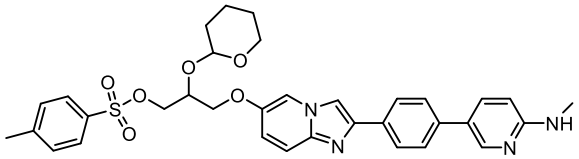


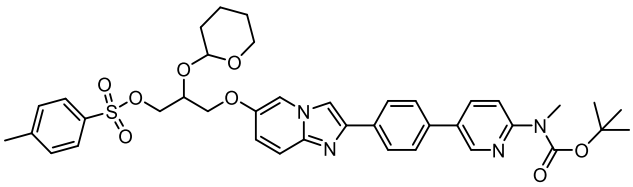


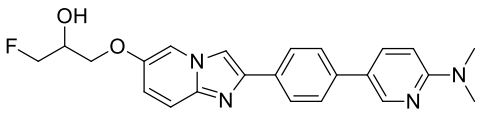


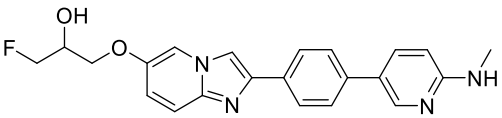


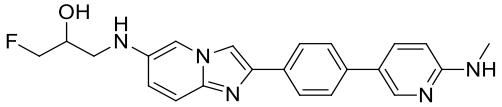


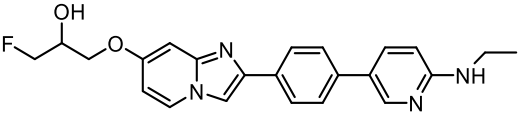


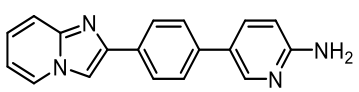


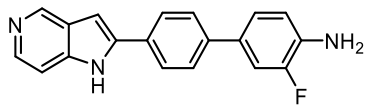


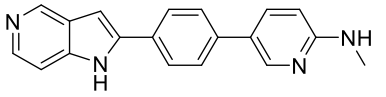


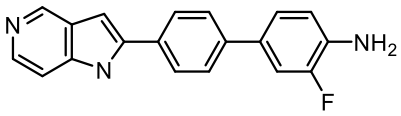


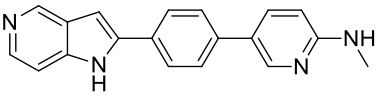


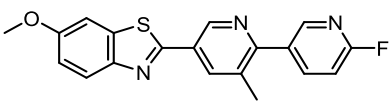


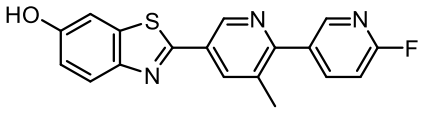


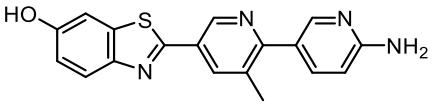


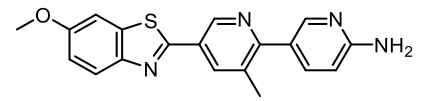


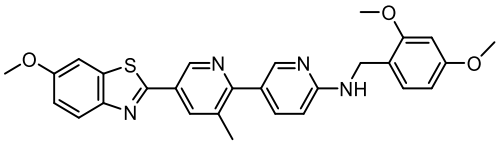


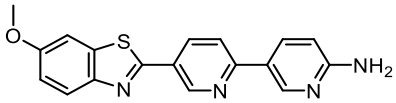


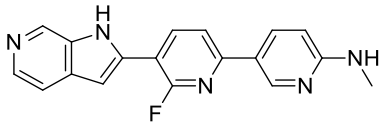


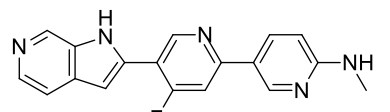


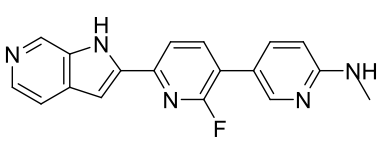


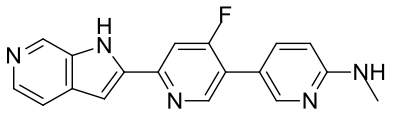
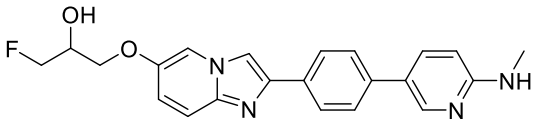
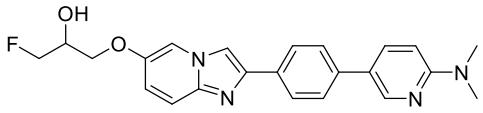
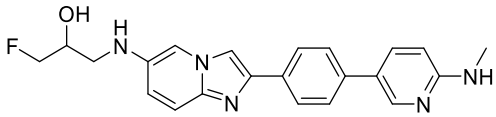
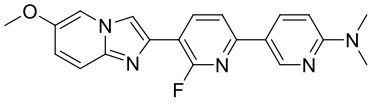
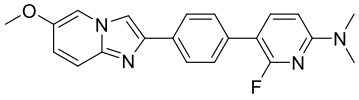
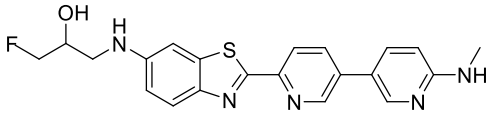
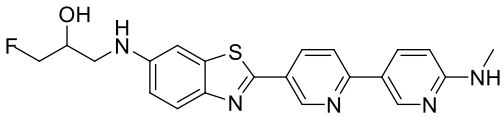
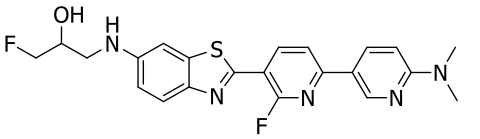
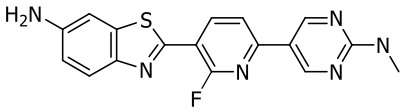
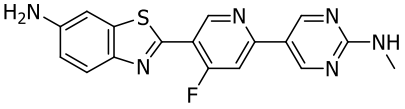






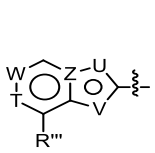
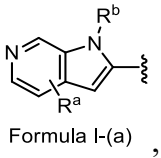




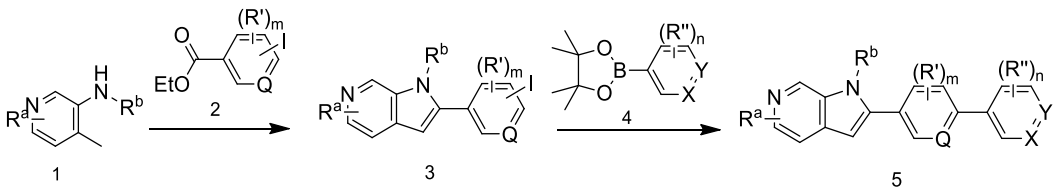
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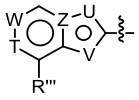
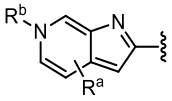
9. A process for preparing the heteroaryl compound having a structure of formula (I), or a pharmaceutically acceptable salt, a solvate, a hydrate, an isotopically labeled derivative or a radiolabeled derivative thereof according to any one of claims 1 to 8,

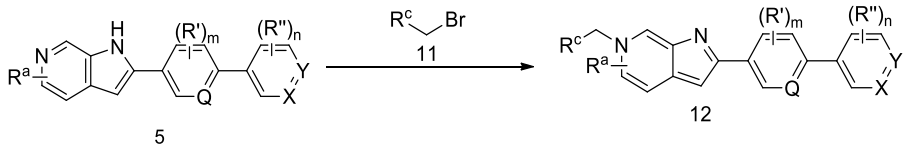
when the structural unit  is  Formula I-(a) , comprising the steps of

(i) reacting compound 1 with compound 2 to give compound 3 at -78℃ in an organic solvent and in the presence of a base;

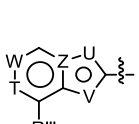
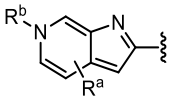
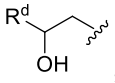
(ii) reacting the compound 3 obtained from step (i) with compound 4 in an organic solvent and in the presence of a base and a Pd catalyst at 80℃;

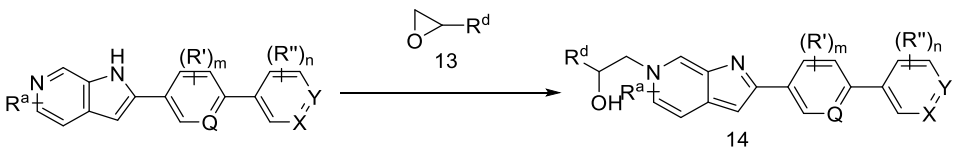


when the structural unit  is  Formula I-(b) and R^b is , comprising reacting compound 5 with compound 11 at 60℃ in an organic solvent and in the presence of a base;



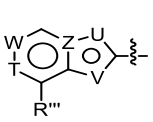
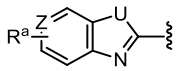
wherein R^c is H, C_{1-5} alkyl, C_{1-5} alkoxycarbonyl, C_{1-2} alkylcarbonyl and phenyl, and the C_{1-5} alkyl, C_{1-5} alkoxycarbonyl, C_{1-2} alkylcarbonyl and phenyl of which is optionally substituted by halogen, OH, C_{1-3} alkoxy, C_{3-6} heterocycloalkyloxy or toluenesulfonyloxy;

when the structural unit  is  Formula I-(b) and R^b is , comprising reacting compound 5 with compound 13 at 50℃ in an organic solvent and in the presence of a base;

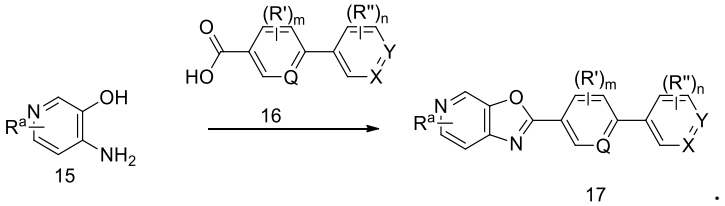


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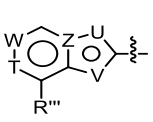
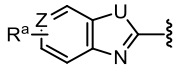
wherein R^d is H or C_{1-3} alkyl;

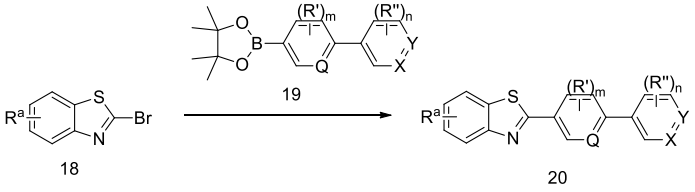
when the structural unit is Formula I-(c) where U is O and Z is N, comprising reacting compound 15 with compound 16 at 120℃ in polyphosphoric acid (PPA);



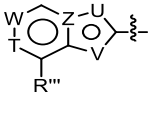
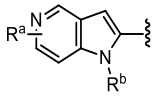
15 16 17 ;

when the structural unit is Formula I-(c) where U is S and Z is C, comprising reacting compound 18 with compound 19 at 90℃ in an organic solvent and in the presence of a base and a Pd catalyst;



18 19 20

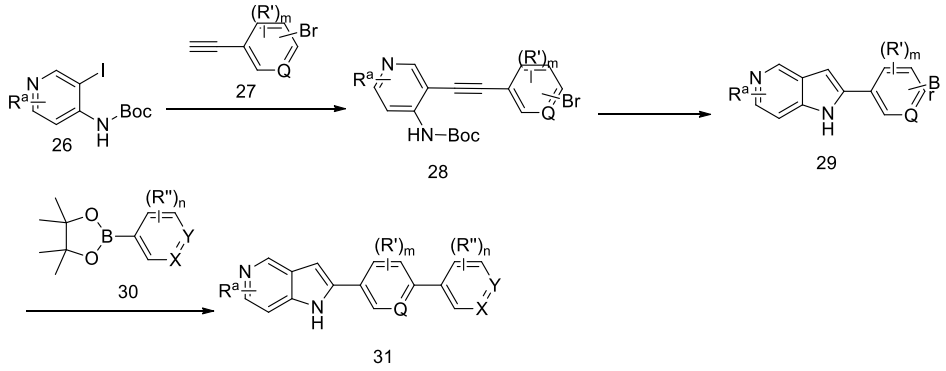



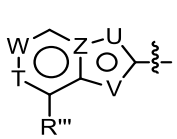
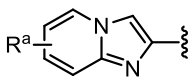
when the structural unit is Formula I-(d) , wherein R^b is H, comprising the steps of

i) reacting compound 26 with compound 27 to form compound 28 in an organic solvent and in the presence of a Pd catalyst, CuI and an organic base at room temperature;

ii) reacting the compound 28 obtained from step i) with DBU to form compound 29 in a mixed solvent of MeOH and H_2O at 80℃;

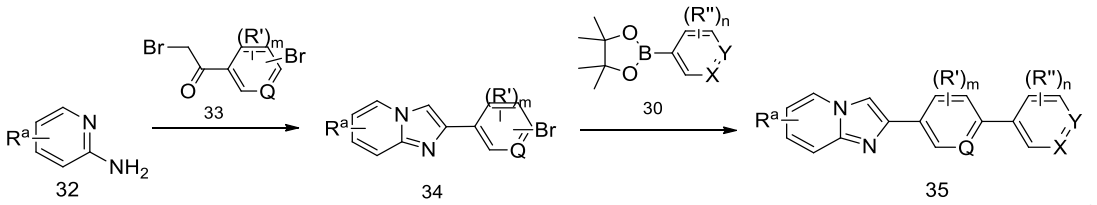
iii) reacting the compound 29 obtained from step ii) with compound 30 to form compound 31 in an organic solvent and in the presence of a Pd catalyst and a base at 80℃;



when the structural unit  is  Formula I-(e) , comprising the steps of

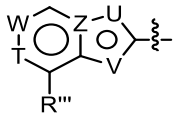
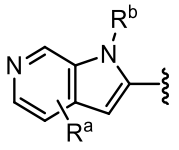
i) reacting compound 32 with compound 33 to form compound 34 in an alcoholic solvent and in the presence of a base at 80℃;

ii) reacting the compound 34 obtained from step i) with compound 30 in an organic solvent and in the presence of a base and a Pd catalyst at 80℃;



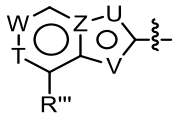
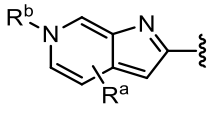
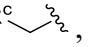
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10. The process according to claim 9, wherein,

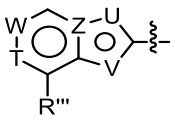
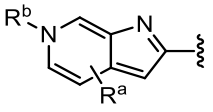
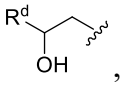
when the structural unit  is  Formula I-(a) , comprising the steps of

(i) reacting compound 1 with compound 2 to give compound 3 at -78℃ in THF and in the presence of *s*-butyllithium;

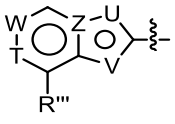
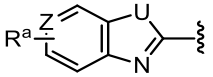
(ii) reacting the compound 3 obtained from step (i) with compound 4 in DMF and in the presence of Na_2CO_3 and $Pd(PPh_3)_4$ at 80℃;

when the structural unit  is  Formula I-(b) and R^b is  ,

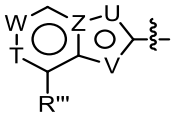
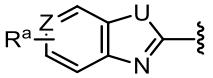
comprising reacting compound 5 with compound 11 at 60℃ in DMF and in the presence of Cs_2CO_3; wherein R^c is a C_{1-3} alkyl or a halogenated C_{1-3} alkyl;

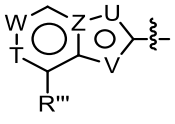
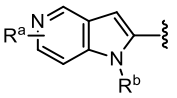
when the structural unit  is  Formula I-(b) and R^b is ,

comprising reacting compound 5 with compound 13 at 50℃ in DMF and in the presence of K_2CO_3;

when the structural unit  is  Formula I-(c) where U is O and Z is N,

comprising reacting compound 15 with compound 16 at 120℃ in polyphosphoric acid (PPA);

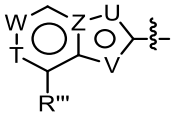
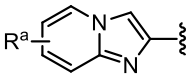
when the structural unit  is  Formula I-(c) where U is S and Z is CH, comprising reacting compound 18 with compound 19 at 90℃ in CH_3CN and in the presence of K_2CO_3 and $Pd(PPh_3)_4$;

when the structural unit  is  Formula I-(d), wherein R^b is H, comprising the steps of

i) reacting compound 26 with compound 27 to form compound 28 in DMF and in the presence of $Pd(PPh_3)_2Cl_2$, CuI and triethanolamine at room temperature;

ii) reacting the compound 28 obtained from step i) with DBU to form compound 29 in a mixed solvent of MeOH and H_2O at 80℃;

iii) reacting the compound 29 obtained from step ii) with compound 30 to form compound 31 in DMF and in the presence of $Pd(PPh_3)_4$ and Na_2CO_3 at 80℃;

when the structural unit  is  Formula I-(e), comprising the steps of

i) reacting compound 32 with compound 33 to form compound 34 in EtOH and in the presence of $NaHCO_3$ at 80℃;

ii) reacting the compound 34 obtained from step i) with compound 30 in DMF and in

the presence of K_2CO_3 and $Pd(PPh_3)_4$ at 80℃.

11. A pharmaceutical composition comprising heteroaryl compound having a structure of formula (I), or pharmaceutically acceptable salt, solvate, hydrate, isotopically labeled derivative or radiolabeled derivative thereof according to any one of claims 1 to 8, and optionally a pharmaceutically acceptable excipient.

12. A use of the heteroaryl compound having a structure of formula (I), or pharmaceutically acceptable salt, solvate, hydrate, isotopically labeled derivative or radiolabeled derivative thereof according to any one of claims 1 to 8 in detecting Tau aggregates *in vitro*, *ex vivo*, and *in vivo*.

13. A use of the heteroaryl compound having a structure of formula (I), or a pharmaceutically acceptable salt, solvate, hydrate, isotopically labeled derivative or a radiolabeled derivative thereof according to any one of claims 1 to 8 in manufacturing an imaging agent for Tau aggregates.

14. A method of Tau imaging, comprising the steps of

(a) administering to a subject an effective amount of (i) the heteroaryl compound having a structure of formula (I), or a pharmaceutically acceptable salt, a solvate, a hydrate, an isotopically labeled derivative or a radiolabeled derivative thereof according to any one of claims 1 to 8, or (ii) the pharmaceutical composition according to claim 11; and

(b) imaging the brain of the subject.