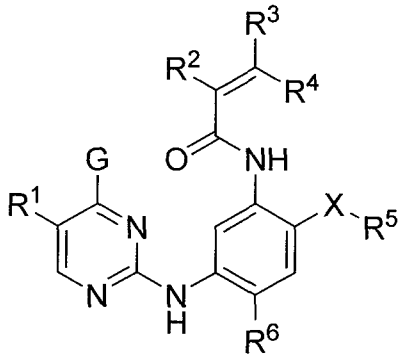
CLAIMS

What is claimed is:

1. A compound of formula **I**:



I

or a pharmaceutically acceptable salt, solvate, or prodrug thereof, wherein:

G is selected from substituted or unsubstituted 1*H*-indol-3-yl, substituted or unsubstituted *1H*-indazol-3-yl, substituted or unsubstituted 2*H*-indazol-3-yl, and substituted or unsubstituted pyrazolo[1,5-*a*]-pyridin-3-yl, and substituted or unsubstituted 4,5,6,7-tetrahydropyrazolo[1,5-*a*]pyridin-3-yl;

X is selected from oxygen, sulfur, and methylene;

R^1 is selected from hydrogen, halogen, methyl, trifluoromethyl, and cyano;

R^2, R^3, and R^4 are the same or different and are independently selected from hydrogen, halogen, and trifluoromethyl;

R^5 is selected from lower alkyl, optionally substituted 3- to 6-membered heterocyclyl, R^7R^8N-(lower alkyl), and R^7R^8N-(cycloalkylalkyl), wherein R^7 and R^8 are the same or different and are independently selected from hydrogen and lower alkyl; and

R^6 is selected from lower alkoxy and lower alkyl.

2. The compound of claim 1, or a pharmaceutically acceptable salt, solvate, or prodrug thereof, wherein:

G is selected from the group consisting of *1H*-indol-3-yl, 1-methyl-*1H*-indol-3-yl, 1-(2-fluoroethyl)-*1H*-indol-3-yl, 1,2-dimethyl-*1H*-indol-3-yl, pyrazolo[1,5-*a*]-pyridin-3-yl, 4,5,6,7-tetrahydropyrazolo[1,5-*a*]pyridin-3-yl, 1-methyl-*1H*-indazol-3-yl, and 2-methyl-2*H*-indazol-3-yl.

3. The compound of claim 1 or 2, or a pharmaceutically acceptable salt, solvate, or prodrug thereof, wherein:

R^5 is selected from C_1-C_6 alkyl, substituted or unsubstituted azetidinyl, substituted or unsubstituted pyrrolidinyl, substituted or unsubstituted piperidinyl, R^7R^8N-$(CH_2)_n$- (n = 1 to 5), R^7R^8N-(C_3-C_6 cycloalkyl)-$(CH_2)_m$- (m = 1 to 3), wherein R^7 and R^8 are the same or different and are independently selected from hydrogen and lower alkyl.

4. The compound of claim 3, or a pharmaceutically acceptable salt, solvate, or prodrug thereof, wherein:

R^5 is selected from methyl, 1-(dimethylamino)-cyclopropylmethyl, 3-(dimethylamino)cyclobutyl, 1-methylazetidin-3-yl, (*R*)-1-methylpyrrolidin-3-yl, (*S*)-1-methylpyrrolidin-3-yl, and 1-methylpiperidin-4-yl, and 2-dimethylamino-ethyl.

5. The compound of any one of claims 1 to 4, or a pharmaceutically acceptable salt, solvate, or prodrug thereof, wherein R^1 is hydrogen, halogen, or methyl.

6. The compound of claim 5, or a pharmaceutically acceptable salt, solvate, or prodrug thereof, wherein R^1 is hydrogen.

7. The compound of any one of claims 1 to 6, or a pharmaceutically acceptable salt, solvate, or prodrug thereof, wherein R^2 is hydrogen or halogen.

8. The compound of any one of claims 1 to 7, or a pharmaceutically acceptable salt, solvate, or prodrug thereof, wherein R^4 is hydrogen.

9. The compound of any one of claims 1 to 6, or a pharmaceutically acceptable salt, solvate, or prodrug thereof, wherein:

R^2 is hydrogen, F, or Cl;

R^3 is hydrogen, F, Cl, or $-CF_3$; and

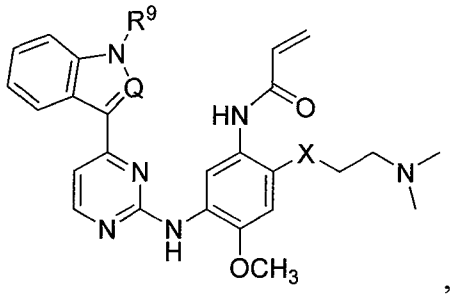
R^4 is hydrogen.

10. The compound of any one of claims 1 to 9, or a pharmaceutically acceptable salt, solvate, or prodrug thereof, wherein X is oxygen.

11. The compound of any one of claims 1 to 9, or a pharmaceutically acceptable salt, solvate, or prodrug thereof, wherein X is sulfur.

12. The compound of any one of claims 1 to 9, or a pharmaceutically acceptable salt, solvate, or prodrug thereof, wherein X is $-CH_2-$.

13. The compound of claim 1, characterized by a structure of formula **II**:



II

or a pharmaceutically acceptable salt, solvate, or prodrug thereof, wherein:

X is O, S, or CH_2;

Q is C-R^{10} or N;

R^9 is CH_3 or CH_2CH_2F; and

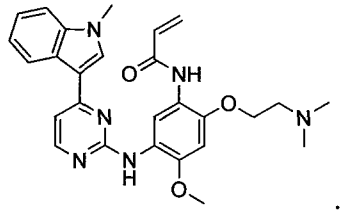
R^{10} is H or CH_3.

14. The compound of claim 13, or a pharmaceutically acceptable salt, solvate, or prodrug thereof, wherein: Q is C-R^{10}.

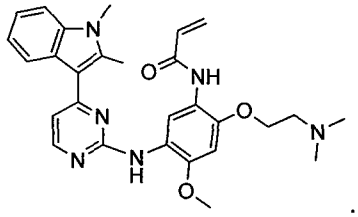
15. The compound of claim 13 or 14, or a pharmaceutically acceptable salt, solvate, or prodrug thereof, wherein R^9 is CH_3.

16. The compound of any one of claims 13 to 15, or a pharmaceutically acceptable salt, solvate, or prodrug thereof, wherein X is O.

17. The compound of claim 16, or a pharmaceutically acceptable salt, solvate, or prodrug thereof, wherein the compound has the following structure:

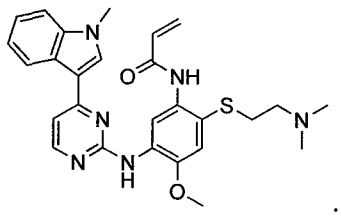


18. The compound of claim 16, or a pharmaceutically acceptable salt, solvate, or prodrug thereof, wherein the compound has the following structure:



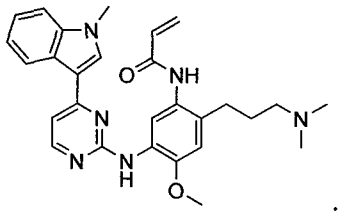
19. The compound of any one of claims 13 to 15, or a pharmaceutically acceptable salt, solvate, or prodrug thereof, wherein X is S.

20. The compound of claim 19, or a pharmaceutically acceptable salt, solvate, or prodrug thereof, wherein the compound has the following structure:



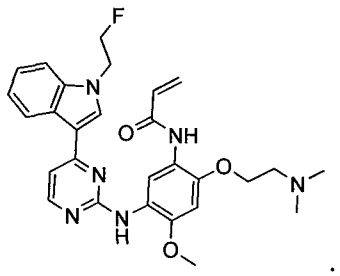
21. The compound of any one of claims 13 to 15, or a pharmaceutically acceptable salt, solvate, or prodrug thereof, wherein X is CH_2.

22. The compound of claim 21, or a pharmaceutically acceptable salt, solvate, or prodrug thereof, wherein the compound has the following structure:



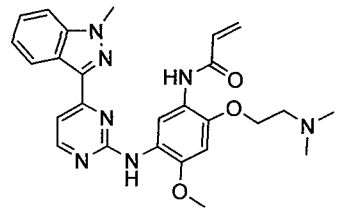
23. The compound of claim 13 or 14, or a pharmaceutically acceptable salt, solvate, or prodrug thereof, wherein R^9 is CH_2CH_2F.

24. The compound of claim 23, or a pharmaceutically acceptable salt, solvate, or prodrug thereof, wherein the compound has the following structure:

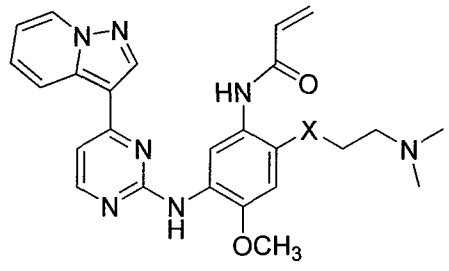


25. The compound of claim 13, or a pharmaceutically acceptable salt, solvate, or prodrug thereof, wherein Q is N.

26. The compound of claim 25, or a pharmaceutically acceptable salt, solvate, or prodrug thereof, wherein the compound has the following structure:



27. The compound of claim 1, characterized by formula **V**:

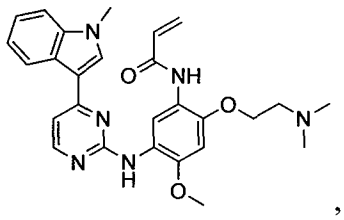


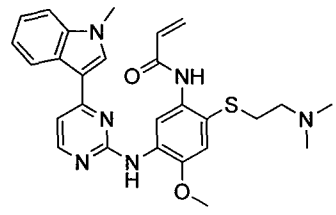
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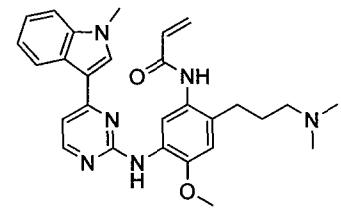
or a pharmaceutically acceptable salt, solvate, or prodrug thereof, wherein X is O, S, or CH_2.

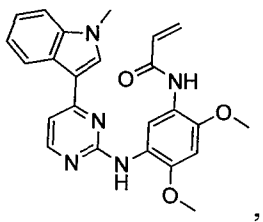
28. The compound of claim 23, or a pharmaceutically acceptable salt, solvate, or prodrug thereof, wherein X is O.

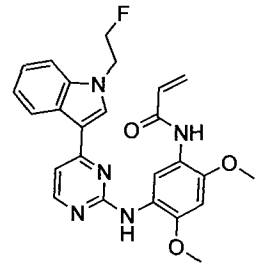
29. The compound of claim 1, selected from the group consisting of:

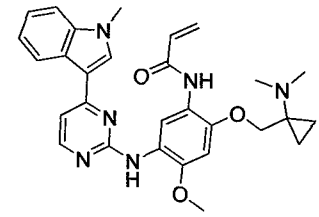


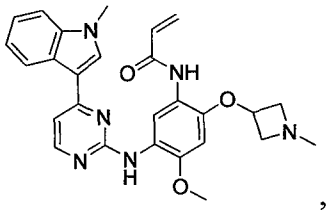


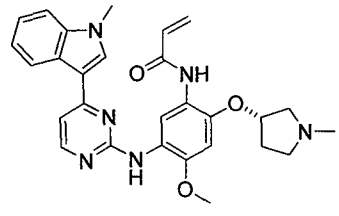


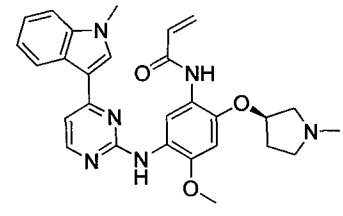


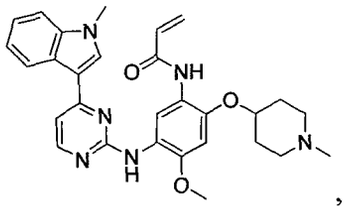
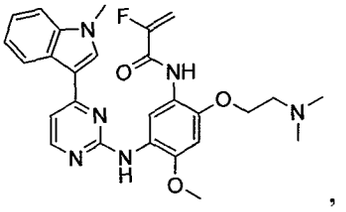
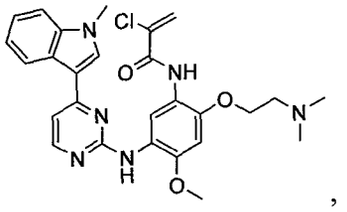
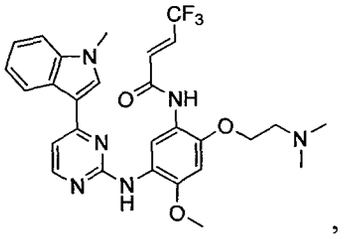
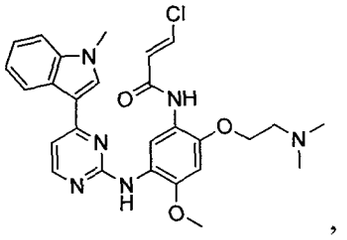
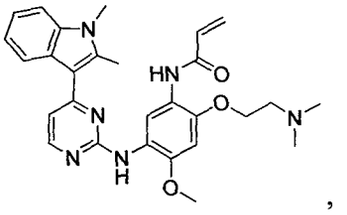
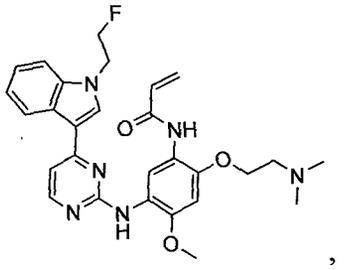
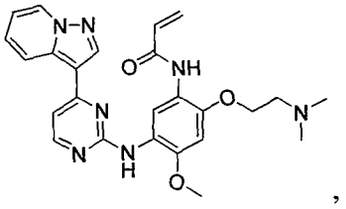
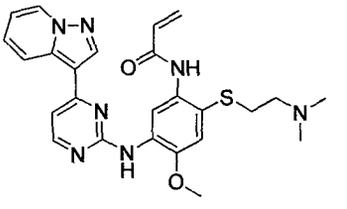
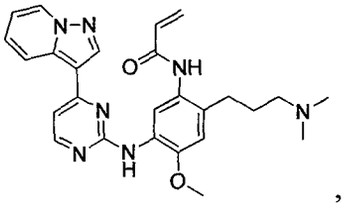
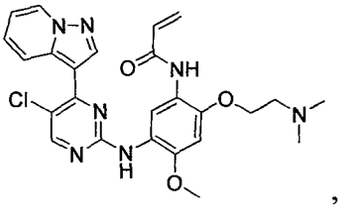
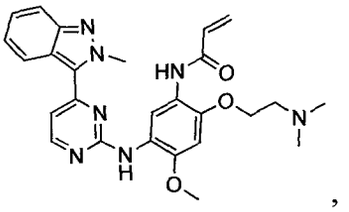
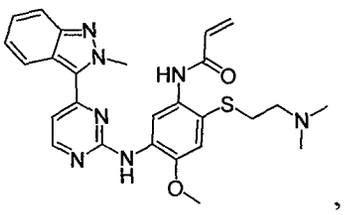
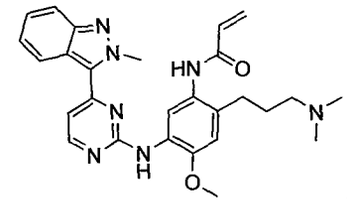
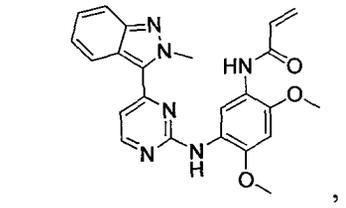
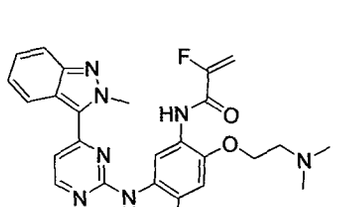
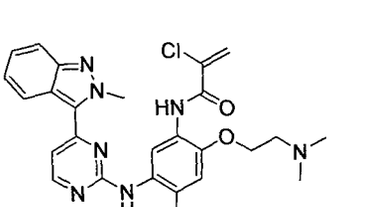
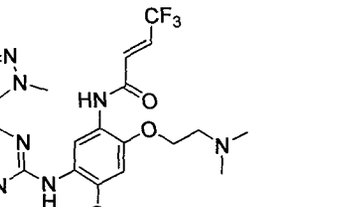
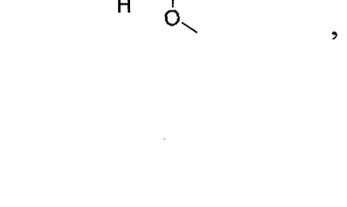
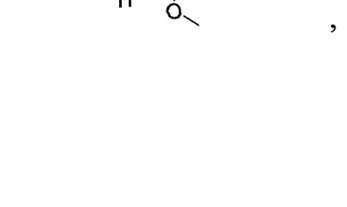
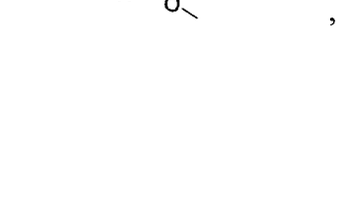








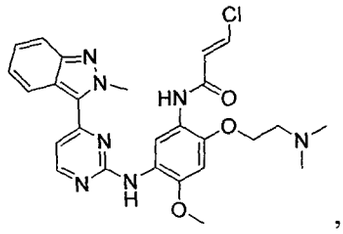
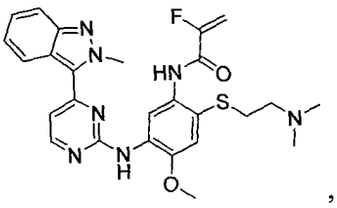
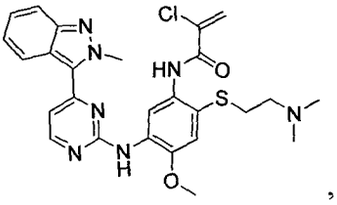
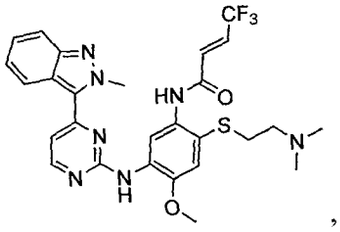
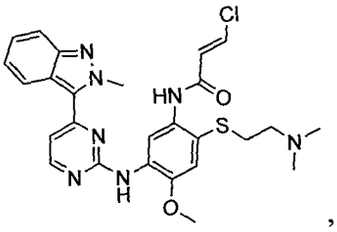
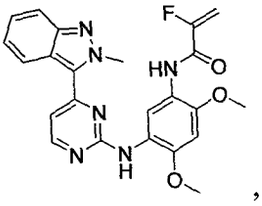
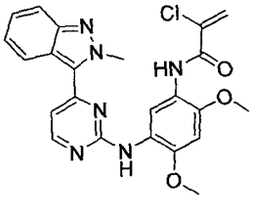
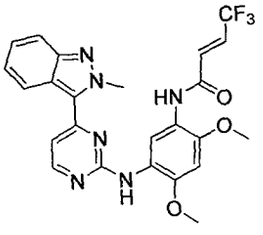
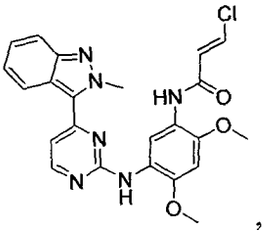
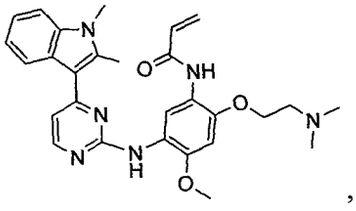
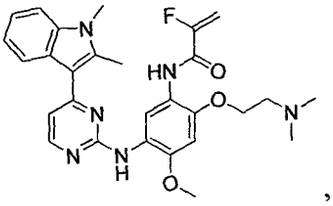
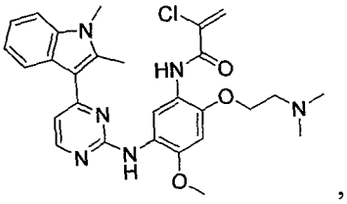
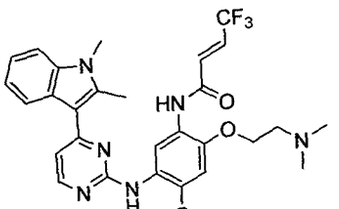
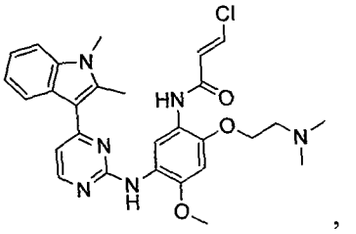
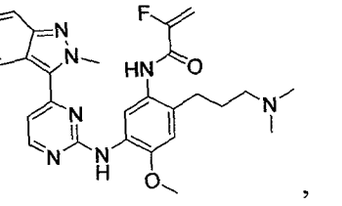
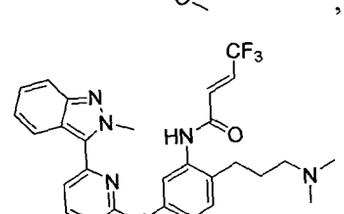
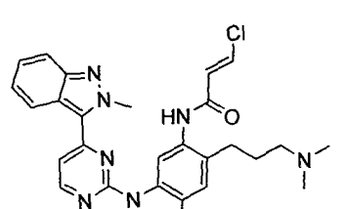


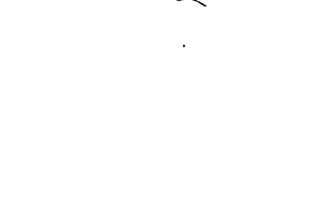

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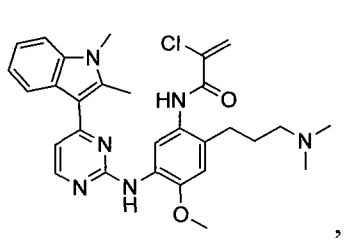
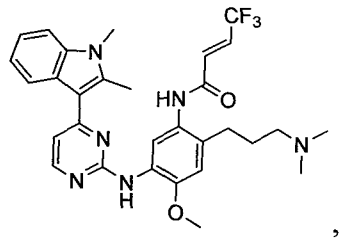
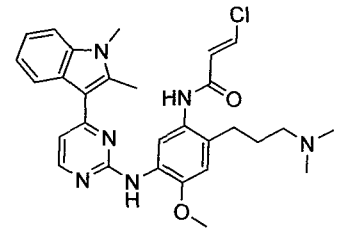
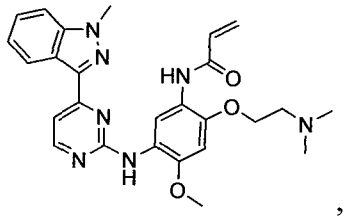
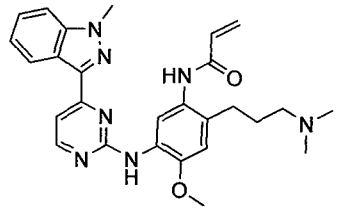
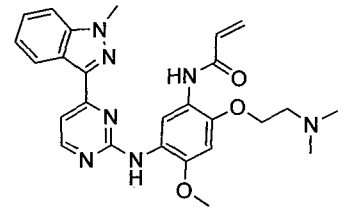
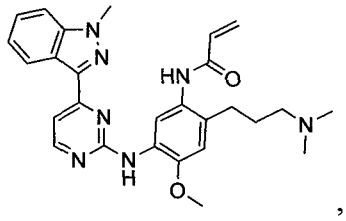
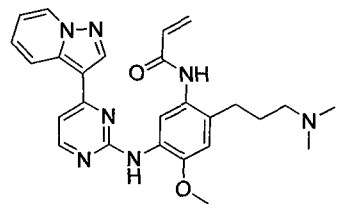
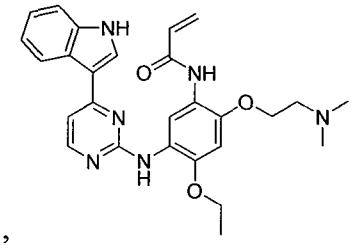
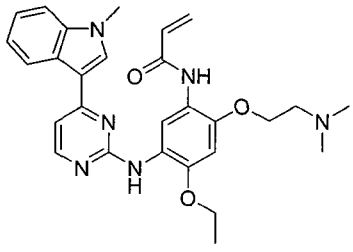
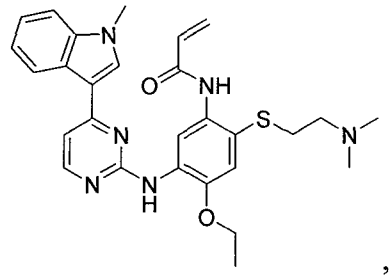
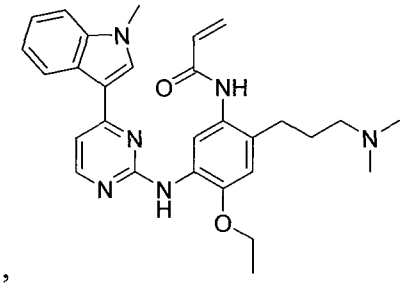
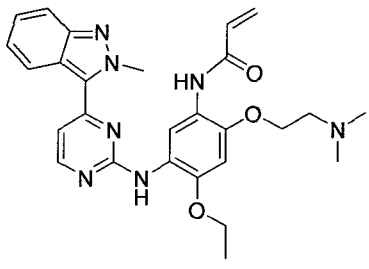
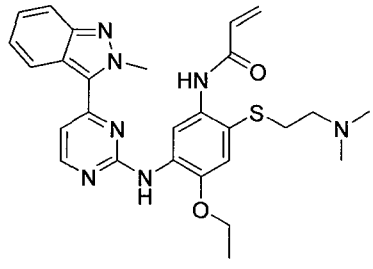
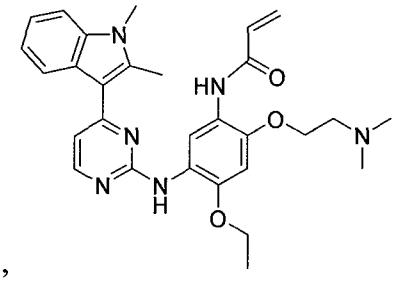
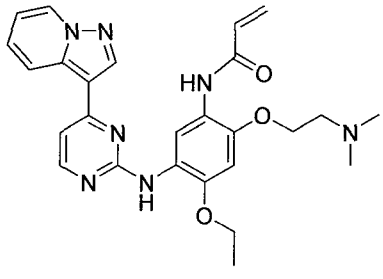
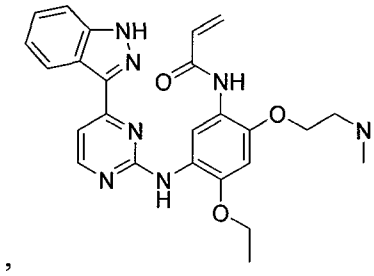
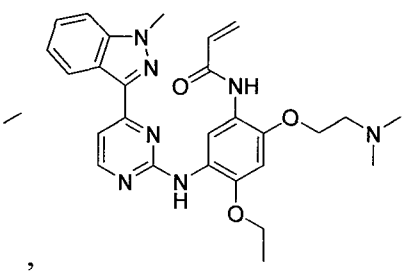
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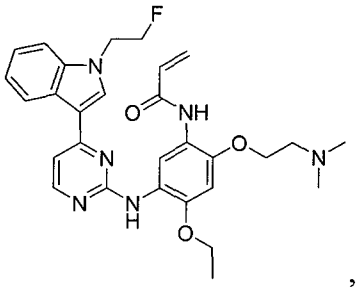
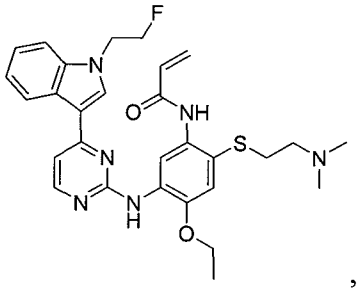
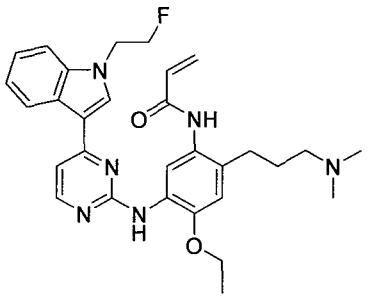
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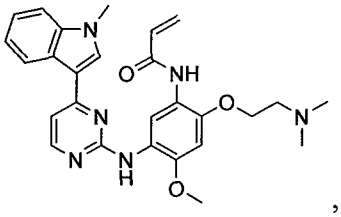
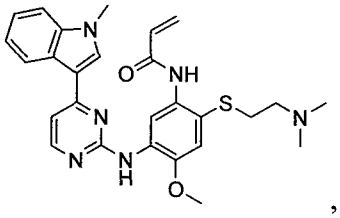
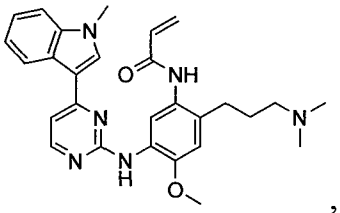
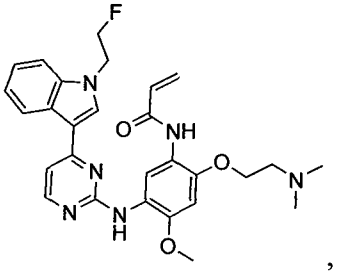
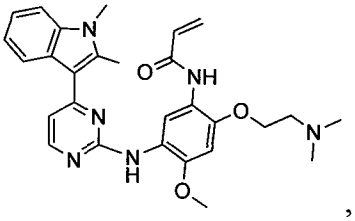
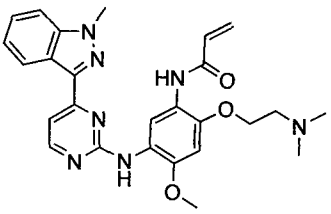
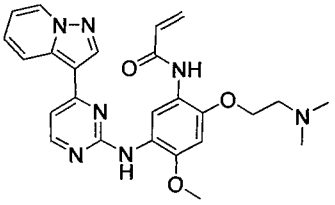
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or a pharmaceutically acceptable salt, solvate, or prodrug thereof.

30. The compound of claim 29, or a pharmaceutically acceptable salt, solvate, or prodrug thereof, selected from the group consisting of:


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31. A composition comprising a compound according to any one of claims 1 to 30, or a pharmaceutically acceptable salt, solvate, or prodrug thereof, and a pharmaceutically acceptable carrier, adjuvant, diluent, or vehicle.

32. A compound according to any one of claims 1 to 30, or a pharmaceutically acceptable salt, solvate, or prodrug thereof, or a composition of claim 31 for use in therapy.

33. Use of a compound according to any one of claims 1 to 30, or a pharmaceutically acceptable salt, solvate, or prodrug thereof, or a composition of claim 1, in the manufacture of a medicament for treatment of a disease or disorder,

wherein said disease or disorder is associated with one or more mutants of EGFR.

34. The use of claim 33, wherein said mutant or mutants of EGFR are selected from L858R activating mutants L858R, delE746-A750, G719S; the Exon 19 deletion activating mutant; and the T790M resistance mutant.

35. The use of claim 33 or 34, wherein said disease or disorder is a cancer.

36. The use of claim 35, wherein the cancer is selected from the group consisting of brain cancer, lung cancer, kidney cancer, bone cancer, liver cancer, bladder cancer, head and neck cancer, esophageal cancer, stomach cancer, colon cancer, rectum cancer, breast cancer, ovarian cancer, melanoma, skin cancer, adrenal cancer, cervical cancer, lymphoma, and thyroid tumors and their complications.