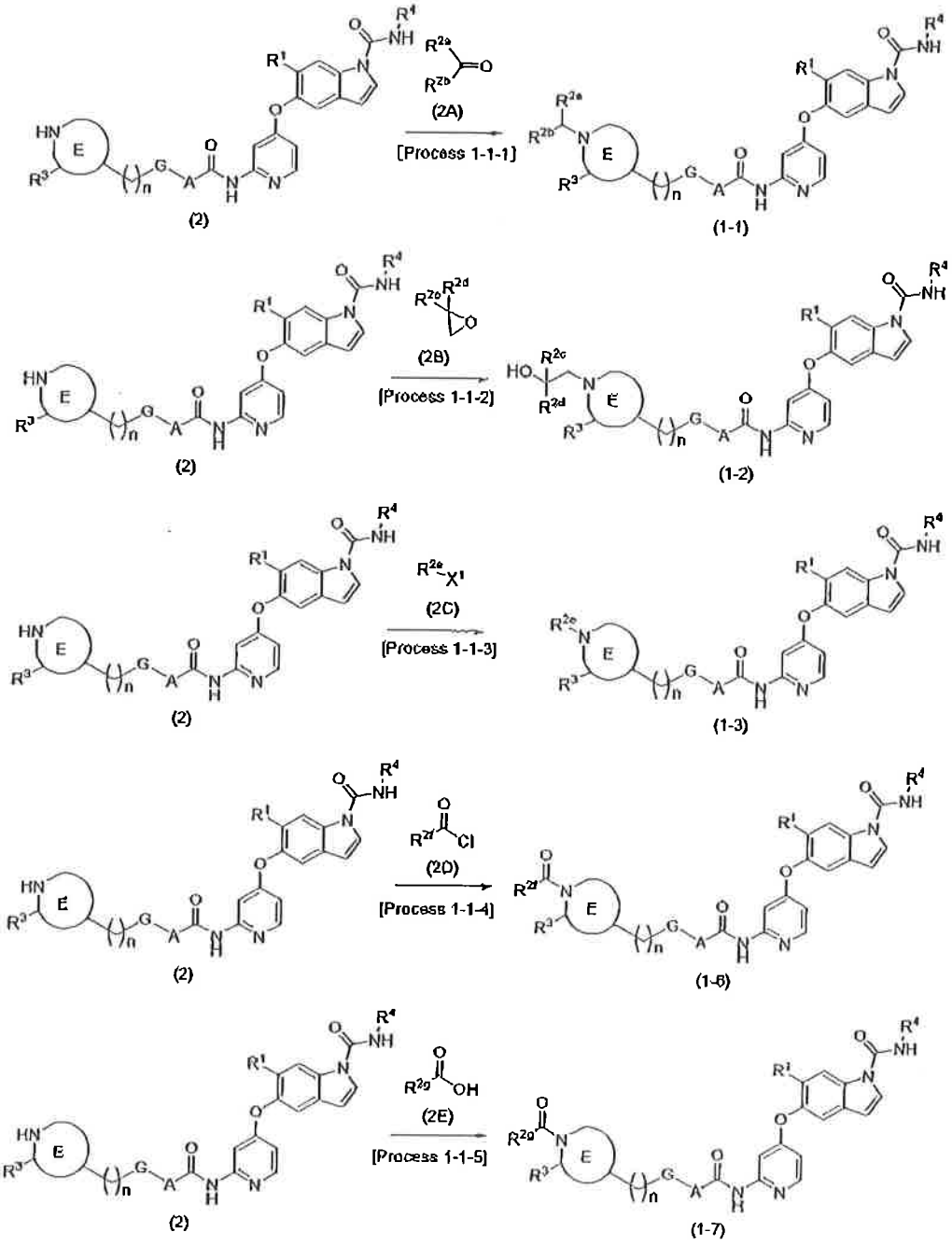


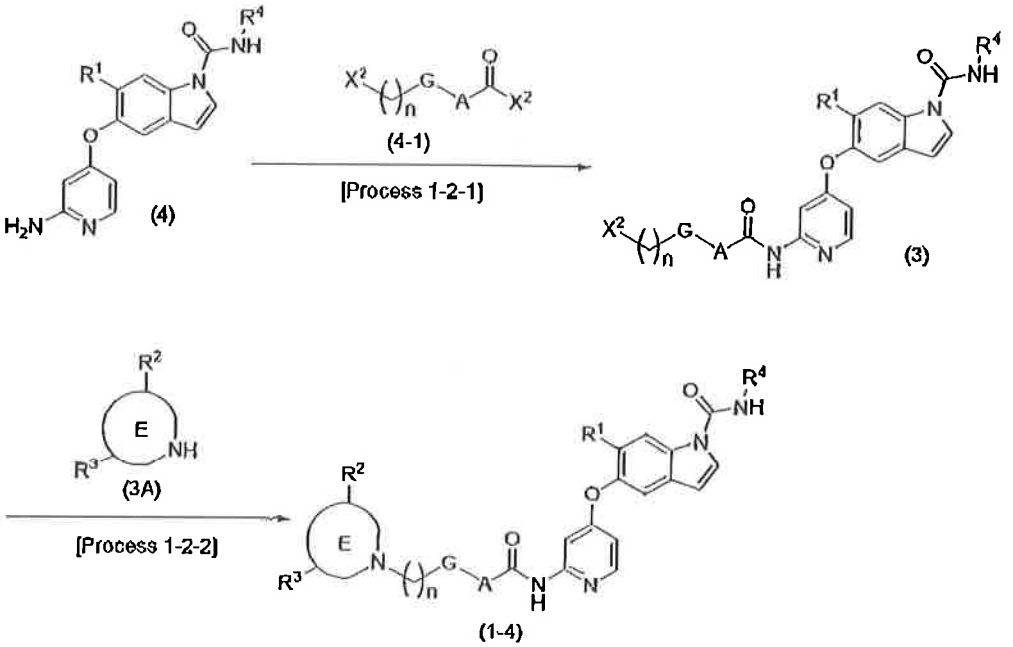
In the above formula, R^1, R^3 (an oxo group is excluded.), R^4, A, E, G and n represent the same as defined above; R^{2a} and R^{2b} each represent a hydrogen atom, a C_{1-5} alkyl group optionally substituted by 1 to 3 halogen atoms, or a hydroxy C_{1-5} alkyl group optionally substituted by 1 to 3 halogen atoms; R^{2c} and R^{2d} each represent a hydrogen atom or a C_{1-4} alkyl group optionally substituted by 1 to 3 halogen atoms; R^{2e} represents a C_{1-6}

to reflux temperature, and the reaction time is from 10 minutes to 24 hours. If R^{2a} is protected by a hydroxyl group or a mono-C_{1-6} alkylamino group, it can be deprotected by a known method.

[0073] [Production Method 1-2]

Production method for compound (1-4)

[Chemical Formula 18]



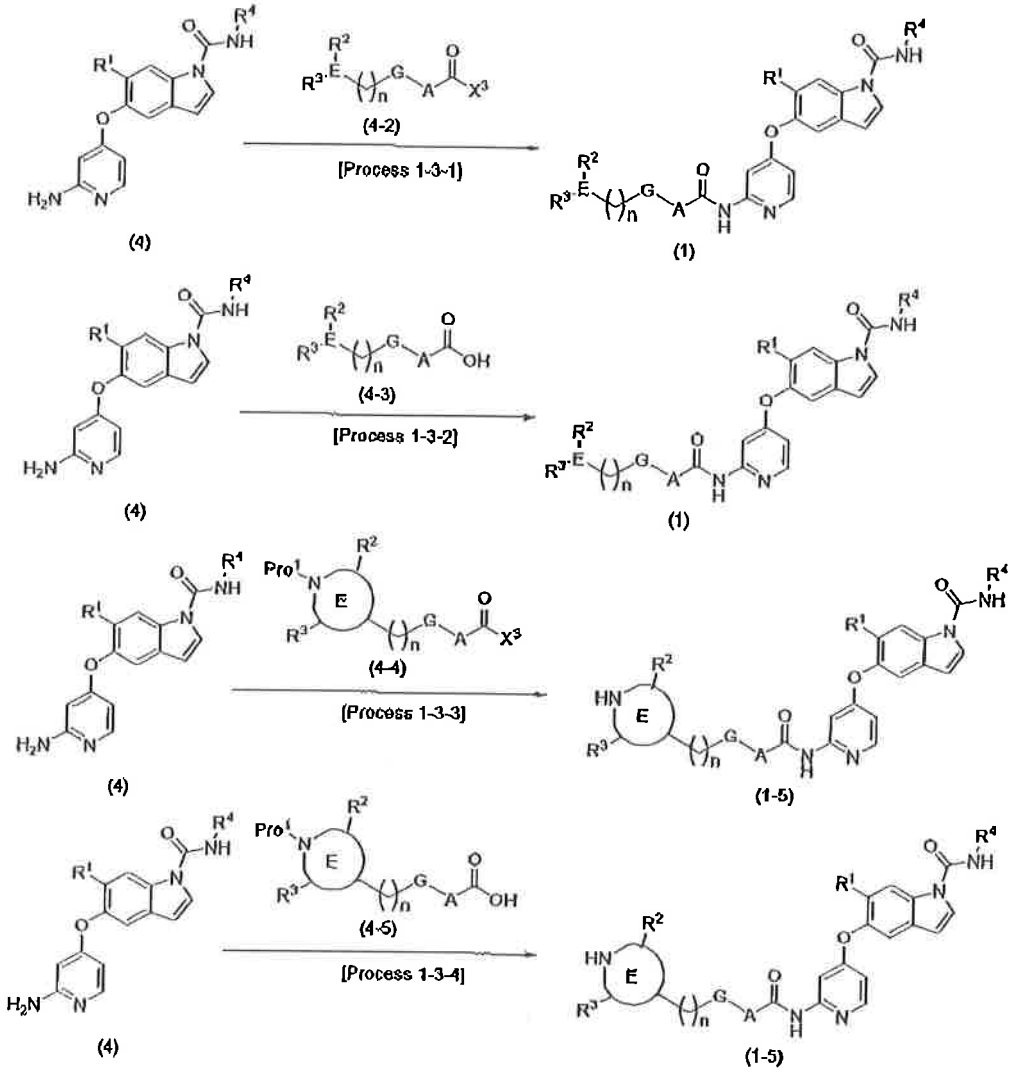
In the above formula, R^1, R^2, R^3, R^4, A, E, G and n represent the same as defined above; and X^2 represents a halogen atom such as a chorine atom or a bromine atom, or a leaving group of sulfonate such as methanesulfonate or a p-toluenesulfonate.

Compounds (3) and (4) can be also produced by methods described in [Production Method 3], production examples of any of the examples described below or the like.

Compounds (3A) and (4-1) can be commercially available products, or can be produced from commercially available products by known methods. Alternatively, these compounds can be produced by methods described in [Production Method 6], production examples of any of the examples described below or the like.

[0074] [Process 1-2-1]

In this process, the compound (4) and the compound (4-1) are reacted with each other to give the compound (3). A solvent used in this reaction is not especially limited as long as it dissolves a starting material to some extent and does not inhibit the reaction, and for



In the above formula, R^1, R^2, R^3, R^4, A, E, G and n represent the same as defined above; X^3 represents a halogen atom such as a chlorine atom or a bromine atom; and Pro^1 represents a known protective group for a nitrogen atom such as a tert-butoxycarbonyl group.

The compound (4) can be produced by a method described in a production example of any of the examples described below, [Production Method 3] or the like.

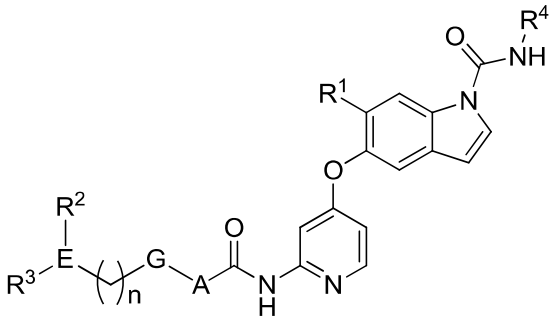
Compounds (4-2), (4-3), (4-4) and (4-5) can be commercially available products, or can be produced from commercially available products by known methods. These compounds can be also produced by methods described in [Production Method 5], production examples of any of the examples described below or the like.

[0077] [Process 1-3-1 or 1-3-3]

In this process, the compound (4) and the compound (4-2) or (4-4) are reacted with

CLAIMS

1. A compound represented by the following formula (IA) or a pharmaceutically acceptable salt thereof:



(IA)

wherein

n represents 0 to 2;

A represents a C_{6-10} arylene group;

G represents a single bond, an oxygen atom or $–CH_2–$;

E represents a C_{3-5} nitrogen-containing non-aromatic heterocycle;

R^1 represents a cyano group, a mono-C_{1-6} alkylamino group, a di-C_{1-6} alkylamino group, a C_{2-6} alkyl group optionally substituted by 1 to 3 halogen atoms, a C_{1-6} alkoxy group optionally substituted by 1 to 3 halogen atoms or one hydroxyl group, a C_{1-6} alkoxy C_{1-6} alkyl group optionally substituted by 1 to 3 halogen atoms, or a C_{1-6} alkoxy C_{1-6} alkoxy group optionally substituted by 1 to 3 halogen atoms;

R^2 represents a hydrogen atom, a halogen atom, a hydroxyl group, a C_{2-6} acyl group optionally substituted by one substituent selected from a group S described below, a C_{1-6} alkyl group optionally substituted by 1 to 3 halogen atoms, a hydroxy C_{1-6} alkyl group optionally substituted by 1 to 3 halogen atoms, or a C_{3-5} nitrogen-containing non-aromatic heterocyclic group;

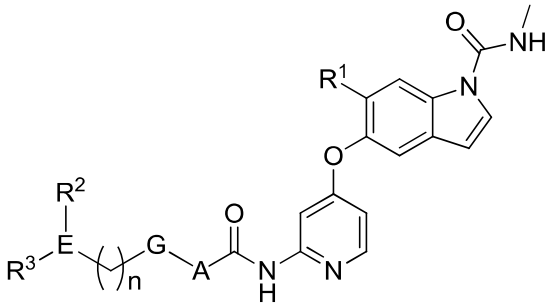
R^3 represents a hydrogen atom, an oxo group, a C_{1-6} alkyl group optionally substituted by 1 to 3 halogen atoms, or a C_{1-6} alkoxy group optionally substituted by 1 to 3 halogen atoms;

R^4 represents a C_{1-6} alkyl group, with the proviso that when E represents an azetidine ring and R^2 or R^3 is present on a nitrogen atom on the azetidine ring, the R^2 or R^3 does not represent a hydrogen atom; and

the group S represents a group consisting of a hydroxyl group, a mono-C_{1-6} alkylamino group, a di-C_{1-6} alkylamino group, a C_{1-6} alkoxy group and a C_{3-5}

nitrogen-containing non-aromatic heterocyclic group.

2. The compound or the pharmaceutically acceptable salt thereof according to claim 1, represented by the following formula (IB):



(IB)

wherein

n represents 0 to 2;

A represents a C_{6-10} arylene group;

G represents a single bond, an oxygen atom or $–CH_2–$;

E represents a C_{3-5} nitrogen-containing non-aromatic heterocycle;

R^1 represents a C_{1-6} alkoxy group optionally substituted by 1 to 3 halogen atoms or one hydroxyl group, or a C_{1-6} alkoxy C_{1-6} alkoxy group optionally substituted by 1 to 3 halogen atoms;

R^2 represents a hydrogen atom, a halogen atom, a hydroxyl group, a C_{1-6} alkyl group optionally substituted by 1 to 3 halogen atoms, a hydroxy C_{1-6} alkyl group optionally substituted by 1 to 3 halogen atoms, or a C_{3-5} nitrogen-containing non-aromatic heterocyclic group; and

R^3 represents a hydrogen atom, an oxo group, a C_{1-6} alkyl group optionally substituted by 1 to 3 halogen atoms, or a C_{1-6} alkoxy group optionally substituted by 1 to 3 halogen atoms, with the proviso that when E represents an azetidine ring and R^2 or R^3 is present on a nitrogen atom on the azetidine ring, the R^2 or R^3 does not represent a hydrogen atom.

3. The compound or the pharmaceutically acceptable salt thereof according to claim 1 or 2, wherein G represents a single bond or an oxygen atom.

4. The compound or the pharmaceutically acceptable salt thereof according to claim 1 or 2, wherein

A represents a phenylene group; and

E represents an azetidine ring, a pyrrolidine ring, a piperidine ring or a piperazine ring.

5. The compound or the pharmaceutically acceptable salt thereof according to claim 1 or 2, wherein

A represents a phenylene group; and

E represents an azetidine ring or a piperidine ring.

6. The compound or the pharmaceutically acceptable salt thereof according to claim 1 or 2, wherein

A represents a phenylene group; and

E represents a piperidine ring.

7. The compound or the pharmaceutically acceptable salt thereof according to any one of claims 4 to 6, wherein

n represents 0; and

G represents a single bond.

8. The compound or the pharmaceutically acceptable salt thereof according to any one of claims1 to 7, wherein

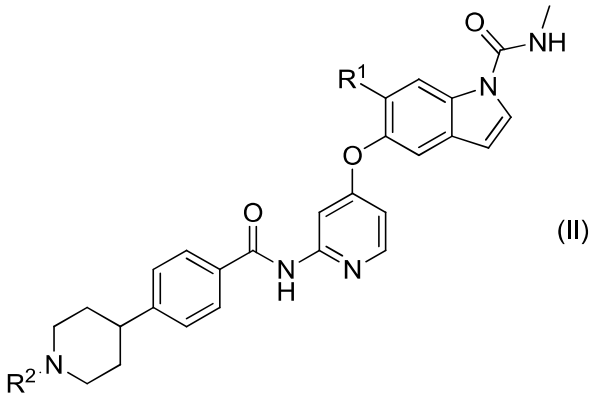
R^1 represents a $C_{1\text{-}6}$ alkoxy group or a $C_{1\text{-}6}$ alkoxy $C_{1\text{-}6}$ alkoxy group;

R^2 represents a hydrogen atom, a hydroxyl group, a $C_{1\text{-}6}$ alkyl group or a hydroxy $C_{1\text{-}6}$ alkyl group; and

R^3 represents a hydrogen atom.

9. The compound or the pharmaceutically acceptable salt thereof according to any one of claims 1 to 8, wherein R^1 represents a $C_{1\text{-}6}$ alkoxy $C_{1\text{-}6}$ alkoxy group.

10. The compound or the pharmaceutically acceptable salt thereof according to claim 1 or 2, represented by the following formula (II):



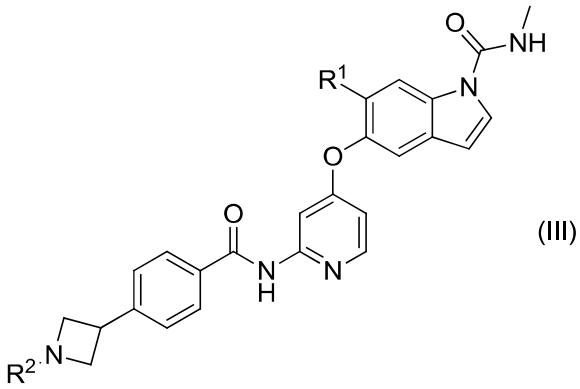
(II)

wherein

R^1 represents a $C_{1\text{-}6}$ alkoxy $C_{1\text{-}6}$ alkoxy group; and

R^2 represents a hydrogen atom, a $C_{1\text{-}6}$ alkyl group or a hydroxy $C_{2\text{-}6}$ alkyl group.

11. The compound or the pharmaceutically acceptable salt thereof according to claim 1 or 2, represented by the following formula (III):



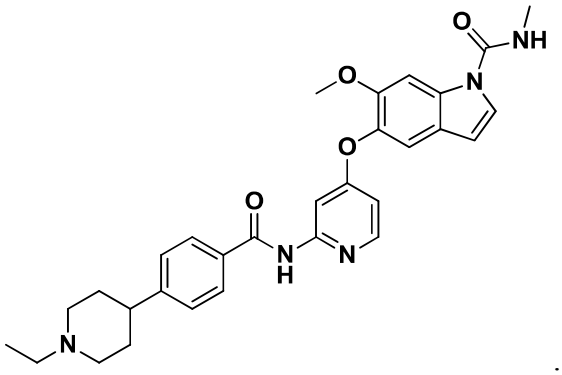
(III)

wherein

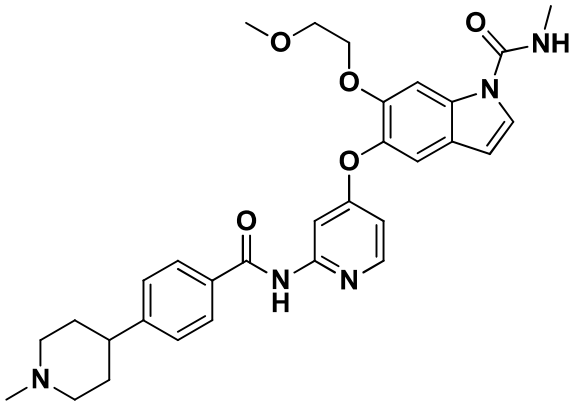
R^1 represents a $C_{1\text{-}6}$ alkoxy $C_{1\text{-}6}$ alkoxy group; and

R^2 represents a $C_{1\text{-}6}$ alkyl group or a hydroxy $C_{2\text{-}6}$ alkyl group.

12. 5-((2-(4-(1-Ethylpiperidin-4-yl)benzamide)pyridin-4-yl)oxy)-6-methoxy-N-methyl-1H-indole-1-carboxamide represented by the following structural formula, or a pharmaceutically acceptable salt thereof:

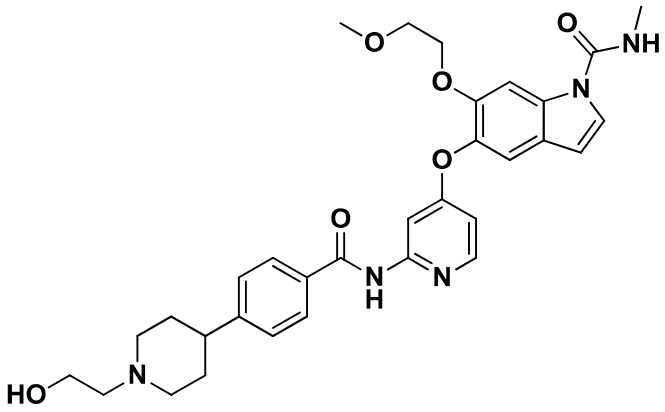


13. 6-(2-Methoxyethoxy)-N-methyl-5-((2-(4-(1-methylpiperidin-4-yl)benzamide)pyridin-4-yl)oxy)-1H-indole-1-carboxamide represented by the following structural formula, or a pharmaceutically acceptable salt thereof:



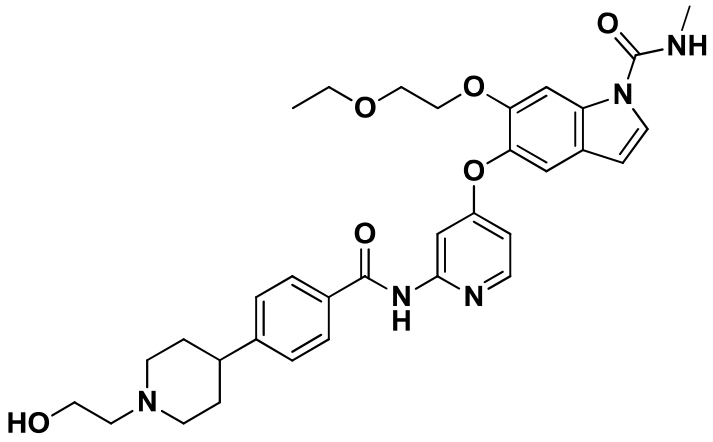
14.

5-((2-(4-(1-(2-Hydroxyethyl)piperidin-4-yl)benzamide)pyridin-4-yl)oxy)-6-(2-met hoxyethoxy)-N-methyl-1H-indole-1-carboxamide represented by the following structural formula, or a pharmaceutically acceptable salt thereof:



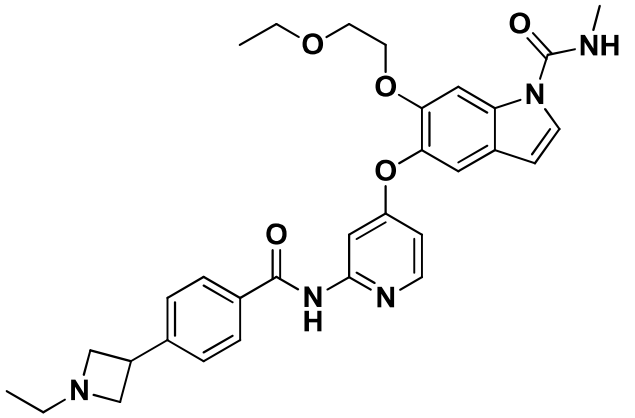
15.

6-(2-Ethoxyethoxy)-5-((2-(4-(1-(2-hydroxyethyl)piperidin-4-yl)benzamide)pyridin -4-yl)oxy)-N-methyl-1H-indole-1-carboxamide represented by the following structural formula, or a pharmaceutically acceptable salt thereof:



16.

6-(2-Ethoxyethoxy)-5-((2-(4-(1-ethylazetidin-3-yl)benzamide)pyridin-4-yl)oxy)-N-methyl-1H-indole-1-carboxamide represented by the following structural formula, or a pharmaceutically acceptable salt thereof:



17. A pharmaceutical composition comprising the compound or the pharmaceutically acceptable salt thereof according to any one of claims 1 to 16.

18. A therapeutic agent for stomach cancer, non-small-cell lung carcinoma, bladder cancer or endometrial cancer comprising the compound or the pharmaceutically acceptable salt thereof according to any one of claims 1 to 16 as an active ingredient.

19. A therapeutic agent for non-small-cell lung carcinoma comprising the compound or the pharmaceutically acceptable salt thereof according to any one of claims 1 to 16 as an active ingredient.

20. A therapeutic agent for squamous cell carcinoma comprising the compound or the pharmaceutically acceptable salt thereof according to any one of claims 1 to 16 as an active ingredient.

21. An FGFR inhibitor for treating non-small-cell lung carcinoma, comprising the compound or the pharmaceutically acceptable salt thereof according to any one of claims 1 to 16 as an active ingredient.

22. The compound or the pharmaceutically acceptable salt thereof according to any one of claims 1 to 16, for use as a therapeutic agent for stomach cancer, non-small-cell lung carcinoma, bladder cancer or endometrial cancer.

23. A use of the compound or the pharmaceutically acceptable salt thereof according to any one of claims 1 to 16, for manufacturing a therapeutic agent for stomach cancer, non-small-cell lung carcinoma, bladder cancer or endometrial cancer.