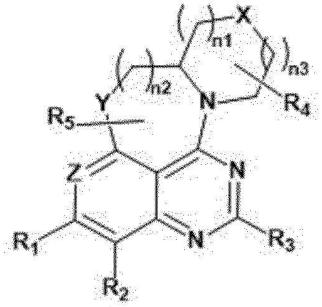
Claims

[Claim 1] A compound of the following Formula 1, or a stereoisomer, diastereomer, enantiomer or atropisomer thereof, a solvate thereof, an isotopic variant thereof, a tautomer thereof, or a pharmaceutically acceptable salt thereof:

[Formula 1]



wherein in the formula above,

R^1 is phenyl, pyridinyl, naphthyl, indazolyl, benzothiazolyl, or benzothiophenyl, being unsubstituted or

optionally substituted with one or more substituents independently selected from hydroxy, halogen, C_{1-3} haloalkyl, C_{1-3} alkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, C_{3-6} cycloalkyl, C_{1-3} alkoxy, amino, and cyano;

R^2 is hydrogen or a halogen;

R^3 is hydrogen, C_{1-3} alkyl, C_{3-6} cycloalkyl, 4-10 membered heterocycle, or -O-$(L)_m$-A_1, wherein A_1 is C_{1-3} alkyl, C_{3-6} cycloalkyl, a 4-10 membered heterocycle, a 6-10 membered aryl, a 5-10 membered heteroaryl, or a 5-10 membered fused heteroaryl, each of which is unsubstituted or substituted with one or more R^7;

L is C_{1-3} alkylene or C_{3-8} cycloalkylene, each of which is unsubstituted or substituted with R^7;

each R^7 is independently a halogen, oxo(=O), $=CH_2$, $-OCF_3$, $-OCHF_2$, amino, cyano, $-N(C_{1-3}$ alkyl$)_2$, $-NH(C_{1-3}$ alkyl), a substituted or unsubstituted

C_{1-3} alkyl, a substituted or unsubstituted C_{1-3} haloalkyl, a substituted or unsubstituted C_{1-3} alkoxy, a substituted or unsubstituted C_{3-4} cycloalkyl, or a substituted or unsubstituted heterocycle;

each R^4 is independently hydrogen, hydroxy, a halogen, C_{1-3} haloalkyl, C_{1-3} alkyl, or C_{1-3} alkoxy;

X is O, CH_2 or NR^8;

R^8 is hydrogen or is C_{1-6} alkyl, C_{3-6} cycloalkyl or C_{3-6} heterocycloalkyl optionally substituted 1-3 times with R^9;

R^9 is independently oxygen, hydroxy, -C_{1-4} alkyl or -O-C_{1-4} alkyl in each case;

Y is NH, O, S, SO, or SO_2;

Z is CR^6 or N;

R^5 is hydrogen, C_{1-3} alkyl, cyano, or amino;

R^6 is hydrogen, hydroxy, a halogen, or C_{1-3} alkyl;

n1, n2, n3, and m are each an integer of 1 to 3;

wherein heterocycles, heteroaryls, and fused heteroaryls each comprise one or more of N, S or O as a heteroatom.

[Claim 2] The compound of claim 1,

wherein R^1 is phenyl, naphthyl, benzothiazolyl, or benzothiophenyl, being unsubstituted or optionally substituted with one or more substituents independently selected from hydroxy, halogen, C_{1-3} haloalkyl, C_{1-3} alkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, C_{3-6} cycloalkyl, C_{1-3} alkoxy, amino, and cyano;

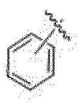
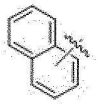
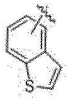
X is O, CH_2, or NH;

Y is O.

[Claim 3] The compound of claim 1,

wherein R^3 is -O-$(L)_m$-A_1, where A_1 is a 4-10 membered heterocycle or a 5-10 membered fused heteroaryl, each of which is unsubstituted or substituted with one or more R^7.

[Claim 4] The compound of claim 1,

wherein R^1 is  ,  ,  , or  , being unsubstituted or optionally substituted with one or more substituents independently selected from hydroxy, halogen, C_{1-3} alkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, C_{3-6} cycloalkyl, amino, and cyano;

R^3 is -O-$(L)_m$-A_1, where A_1 is a 4-10 membered heterocycle or a 5-10 membered fused heteroaryl, each of which is unsubstituted or substituted with one or more R^7;

L is C_{1-3} alkylene or C_{3-8} cycloalkylene;

each R^7 is independently a halogen, oxo (=O), $=CH_2$, $-OCF_3$, $-OCHF_2$, amino, cyano, C_{1-3} alkyl, C_{1-3} haloalkyl, or C_{1-3} alkoxy;

R^4 is hydrogen;

X is O, CH_2, or NH;

Z is CR^6 or N;

R^5 is hydrogen or C_{1-3} alkyl;

R^6 is a halogen;

and n1, n2, n3, and m are each independently an integer of 1 to 3.

[Claim 5] The compound of claim 1,

wherein when Z is N,

R^1 is phenyl or naphthyl, being unsubstituted or optionally substituted with one or more substituents independently selected from hydroxy, a halogen, C_{1-3} haloalkyl, C_{1-3} alkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, C_{3-6} cycloalkyl, C_{1-3} alkoxy, amino, and cyano;

wherein when Z is CR^6,

R^1 is benzothiazolyl or benzothiophenyl, being unsubstituted or optionally substituted with one or more substituents independently selected from hydroxy, halogen, C_{1-3} haloalkyl, C_{1-3} alkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, C_{3-6} cycloalkyl, C_{1-3} alkoxy, amino, and cyano.

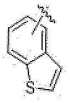
[Claim 6] The compound of claim 1, wherein R^3 is $-O-(L)_m-A_2$, where A_2 is ,

, , , , , or ,

each of which is unsubstituted or optionally substituted with one or more substituents independently selected from a halogen, C_{1-3} alkyl, C_{1-3} alkoxy, and $=CH_2$;

and $-(L)_m-$ is methylene or .

[Claim 7] The compound of claim 1,

wherein R^1 is , , , or , being unsubstituted or optionally substituted with one or more substituents independently selected from hydroxy, a halogen, C_{1-3} alkyl, C_{2-6} alkenyl, C_{2-6} alkynyl, C_{3-6} cycloalkyl, amino, and cyano;

R^2 is a halogen;

R^3 is $-O-(L)_m-A_1$, where A_1 is , , , , or ,

each of which is unsubstituted or optionally substituted with one or more substituents independently selected from a halogen, C_{1-3} alkyl, C_{1-3} alkoxy, and $=CH_2$, where $-(L)_m-$ is methylene or ;

R^4 is hydrogen;

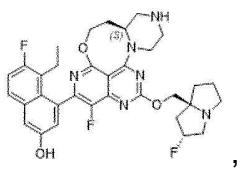
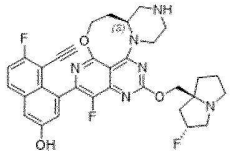
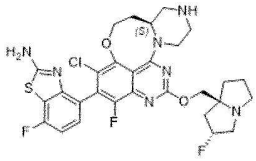
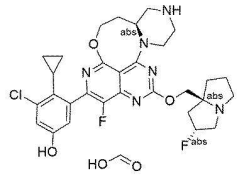
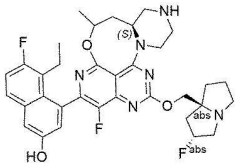
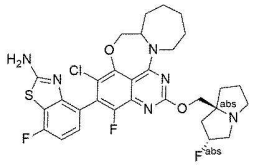
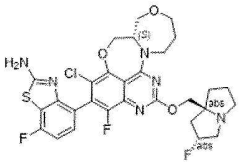
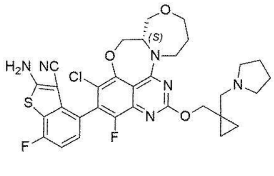
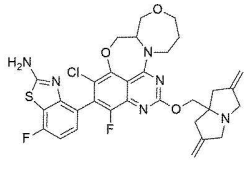
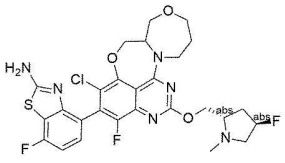
X is O, CH_2, or NH;

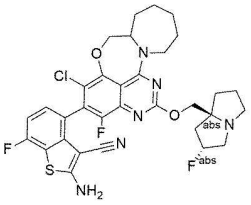
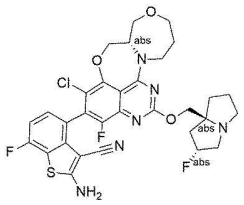
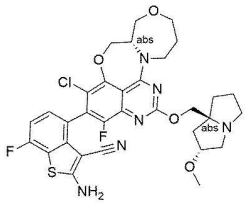
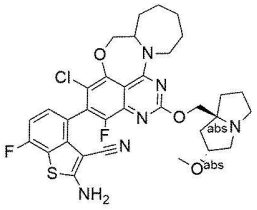
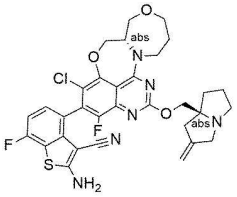
Y is O;

Z is CH, C(C_{1-3} alkyl), or N;

and R^5 is hydrogen or C_{1-3} alkyl.

[Claim 8] The compound of claim 1, wherein the compound of Formula 1 is any one compound selected from the group consisting of the following compounds, or a stereoisomer, diastereomer, enantiomer, or atropisomer thereof, a solvate thereof, an isotopic variant thereof, a tautomer thereof, or a pharmaceutically acceptable salt thereof:


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[Claim 9] Use of a compound of any one of claims 1 to 8, or a stereoisomer, diastereomer, enantiomer, or atropisomer thereof, a solvate thereof, an isotopic variant thereof, a tautomer thereof, or a pharmaceutically acceptable salt thereof in the manufacture of a medicament for preventing or treating cancer.

[Claim 10] The use of claim 9, wherein the compound exhibits KRAS protein inhibitory activity.