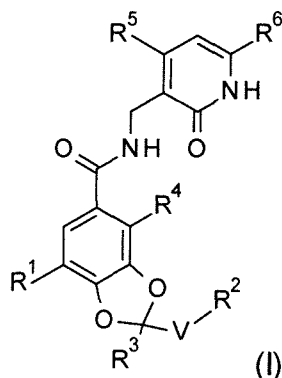


Claims

[Claim 1]

A compound represented by the general formula (I) or a pharmacologically acceptable salt thereof:



wherein

R¹ represents a hydrogen atom, a halogen atom, a C₁-C₆ alkyl group optionally having 1 to 3 halogen atoms, a C₁-C₆ alkoxy group optionally having 1 to 3 halogen atoms, a C₃-C₆ cycloalkyl group, a C₁-C₆ alkylcarbonyl group, a C₂-C₆ alkenyl group, a C₂-C₆ alkynyl group, a C₃-C₆ cycloalkenyl group, a phenyl group, a 5- or 6-membered aromatic heterocyclic group having, in the ring, 1 to 3 heteroatoms independently selected from the group consisting of a nitrogen atom, an oxygen atom, and a sulfur atom, or a 5- or 6-membered aliphatic heterocyclic group optionally having an unsaturated bond in a portion of the ring and having, in the ring, 1 or 2 heteroatoms independently selected from the group consisting of a nitrogen atom, an oxygen atom, and a sulfur atom, wherein

the phenyl group, the 5- or 6-membered aromatic heterocyclic group, and the 5- or 6-membered aliphatic heterocyclic group optionally having an unsaturated bond in a portion of the ring each optionally have 1 to 3 substituents independently selected from group A described below,

V represents a single bond, a C₁-C₆ alkylene group, or an oxy-C₁-C₆ alkylene group,

R² represents a hydrogen atom, a C₁-C₆ alkyl group, a C₃-C₆ cycloalkyl group, a bicyclo-C₅-C₈ cycloalkyl group, a 5- or 6-membered aliphatic heterocyclic group having, in the ring, 1 or 2 heteroatoms independently selected from the group consisting of a nitrogen atom, an oxygen atom, and a sulfur atom, or a spiro ring group containing two rings spiro-fused independently selected from the group consisting of a 4- to 6-membered aliphatic heterocyclic ring having, in the ring, 1 or 2 heteroatoms independently selected from the group consisting of a nitrogen atom, an oxygen atom, and a sulfur atom and a C₃-C₆ cycloalkyl ring, wherein the C₁-C₆ alkyl group, the C₃-C₆ cycloalkyl group, the bicyclo-C₅-C₈ cycloalkyl group, the 5- or 6-membered aliphatic heterocyclic group, and the spiro ring group each optionally have 1 to 3 substituents independently selected from group C described below,

R³ represents a C₁-C₆ alkyl group,

R⁴ represents a halogen atom or a C₁-C₆ alkyl group optionally having 1 to 3 halogen atoms,

R⁵ represents a C₁-C₆ alkyl group or a C₁-C₆ alkoxy group,

R⁶ represents a C₁-C₆ alkyl group,

group A consists of a halogen atom, a C₁-C₆ alkyl group, a C₁-C₆ alkoxy group, and a 5- or 6-membered aliphatic heterocyclic group having, in the ring, 1 or 2 heteroatoms independently selected from the group consisting of a nitrogen atom, an oxygen atom, and a sulfur atom, wherein the C₁-C₆ alkyl group, the C₁-C₆ alkoxy group, and the 5- or 6-membered aliphatic heterocyclic group each optionally have 1 to 3 substituents independently selected from group B described below,

group B consists of a halogen atom, a C₁-C₆ alkyl group, and a 5- or 6-membered aliphatic heterocyclic group having, in the ring, 1 or 2 heteroatoms independently selected from the group consisting of a nitrogen atom, an oxygen atom, and a sulfur atom, and group C consists of a hydroxy group, a formyl group, a C₁-C₆ alkyl group, a C₁-C₆ alkylcarbonyl group, a C₁-C₆ alkoxy group, a C₁-C₆ alkylsulfonyl group, -NR²⁰R²¹, a C₁-C₆ alkoxy-C₁-C₆ alkyl group, a di-C₁-C₆ alkylamino-C₁-C₆ alkyl group, and a 4- to 6-membered aliphatic heterocyclic group having, in the ring, 1 or 2 heteroatoms independently selected from the group

consisting of a nitrogen atom, an oxygen atom, and a sulfur atom, wherein R^{20} and R^{21} each independently represent a hydrogen atom, a formyl group, or a C_1 - C_6 alkyl group.

[Claim 2]

The compound according to claim 1 or a pharmacologically acceptable salt thereof, wherein in the formula (I),

R^1 represents a hydrogen atom, a halogen atom, a C_1 - C_6 alkyl group, a C_1 - C_6 alkoxy group, a C_3 - C_6 cycloalkyl group, a C_2 - C_6 alkenyl group, a C_2 - C_6 alkynyl group, a phenyl group, a C_3 - C_6 cycloalkenyl group, a 5- or 6-membered aromatic heterocyclic group having, in the ring, 1 to 3 heteroatoms independently selected from the group consisting of a nitrogen atom, an oxygen atom, and a sulfur atom, or a 5- or 6-membered aliphatic heterocyclic group optionally having an unsaturated bond in a portion of the ring and having, in the ring, 1 or 2 heteroatoms independently selected from the group consisting of a nitrogen atom, an oxygen atom, and a sulfur atom.

[Claim 3]

The compound according to claim 1 or 2 or a pharmacologically acceptable salt thereof, wherein

R^1 represents a hydrogen atom, a halogen atom, a methyl group, an ethyl group, a methoxy group, an ethoxy group, a cyclopropyl group, a vinyl group, an acetylene

group, a phenyl group, a cyclohexenyl group, a dihydropyranyl group, or a thiazolyl group.

[Claim 4]

The compound according to any one of claims 1 to 3 or a pharmacologically acceptable salt thereof, wherein

R^2 represents a C_1 - C_6 alkyl group, a C_3 - C_6 cycloalkyl group, or a 5- or 6-membered aliphatic heterocyclic group having, in the ring, 1 or 2 heteroatoms independently selected from the group consisting of a nitrogen atom, an oxygen atom, and a sulfur atom, wherein the C_1 - C_6 alkyl group, the C_3 - C_6 cycloalkyl group, and the 5- or 6-membered aliphatic heterocyclic group each optionally have 1 to 3 substituents independently selected from the group consisting of a C_1 - C_6 alkyl group, a C_1 - C_6 alkylsulfonyl group, a C_1 - C_6 alkylamino group, and a di- C_1 - C_6 alkylamino group.

[Claim 5]

The compound according to any one of claims 1 to 4 or a pharmacologically acceptable salt thereof, wherein

V represents a single bond or a methylene group,

R^2 represents a methyl group, a cyclohexyl group, a tetrahydropyranyl group, or a piperidyl group, and

R^3 represents a methyl group, wherein the cyclohexyl group, the tetrahydropyranyl group, and the piperidyl group each have one substituent independently selected from the group consisting of a methyl group, an ethyl group, an ethylsulfonyl group, a

methylamino group, a dimethylamino group, and an ethylmethylamino group.

[Claim 6]

The compound according to claim 1, wherein the compound is a compound selected from the following group or a pharmacologically acceptable salt thereof:

7-bromo-N-[(4,6-dimethyl-2-oxo-1,2-dihydropyridin-3-yl)methyl]-2-(1-ethyl-4-piperidyl)-2,4-dimethyl-1,3-benzodioxole-5-carboxamide,

7-bromo-2-[trans-4-(dimethylamino)cyclohexyl]-N-[(4,6-dimethyl-2-oxo-1,2-dihydropyridin-3-yl)methyl]-2,4-dimethyl-1,3-benzodioxole-5-carboxamide,

(2R)-7-bromo-2-[trans-4-(dimethylamino)cyclohexyl]-N-[(4,6-dimethyl-2-oxo-1,2-dihydropyridin-3-yl)methyl]-2,4-dimethyl-1,3-benzodioxole-5-carboxamide,

7-bromo-2-[trans-4-(dimethylamino)cyclohexyl]-N-[(4-methoxy-6-methyl-2-oxo-1,2-dihydropyridin-3-yl)methyl]-2,4-dimethyl-1,3-benzodioxole-5-carboxamide,

7-bromo-2-[trans-4-(dimethylamino)cyclohexyl]-N-[(4-ethyl-6-methyl-2-oxo-1,2-dihydropyridin-3-yl)methyl]-2,4-dimethyl-1,3-benzodioxole-5-carboxamide,

7-bromo-2-[trans-4-(dimethylamino)cyclohexyl]-2,4-dimethyl-N-[(6-methyl-2-oxo-4-propyl-1,2-dihydropyridin-3-yl)methyl]-1,3-benzodioxole-5-carboxamide,

7-bromo-N-[(4,6-dimethyl-2-oxo-1,2-dihydropyridin-3-yl)methyl]-2-[trans-4-[N-ethyl(N-

methyl)amino]cyclohexyl]-2,4-dimethyl-1,3-benzodioxole-5-carboxamide,

7-bromo-2-[[cis-4-(dimethylamino)cyclohexyl]methyl]-N-[(4,6-dimethyl-2-oxo-1,2-dihydropyridin-3-yl)methyl]-2,4-dimethyl-1,3-benzodioxole-5-carboxamide,

7-chloro-N-[(4,6-dimethyl-2-oxo-1,2-dihydropyridin-3-yl)methyl]-2,4-dimethyl-2-[trans-4-(dimethylamino)cyclohexyl]-1,3-benzodioxole-5-carboxamide,
7-chloro-2-[trans-4-(dimethylamino)cyclohexyl]-N-[(4,6-dimethyl-2-oxo-1,2-dihydropyridin-3-yl)methyl]-2,4-dimethyl-1,3-benzodioxole-5-carboxamide,

(2R)-7-chloro-2-[trans-4-(dimethylamino)cyclohexyl]-N-[(4,6-dimethyl-2-oxo-1,2-dihydropyridin-3-yl)methyl]-2,4-dimethyl-1,3-benzodioxole-5-carboxamide,

7-chloro-2-[trans-4-(dimethylamino)cyclohexyl]-N-[(4-methoxy-6-methyl-2-oxo-1,2-dihydropyridin-3-yl)methyl]-2,4-dimethyl-1,3-benzodioxole-5-carboxamide,

7-chloro-2-[trans-4-(dimethylamino)cyclohexyl]-N-[(4-ethyl-6-methyl-2-oxo-1,2-dihydropyridin-3-yl)methyl]-2,4-dimethyl-1,3-benzodioxole-5-carboxamide,

2-[trans-4-(dimethylamino)cyclohexyl]-N-[(4,6-dimethyl-2-oxo-1,2-dihydropyridin-3-yl)methyl]-7-fluoro-2,4-dimethyl-1,3-benzodioxole-5-carboxamide,

2-[trans-4-(dimethylamino)cyclohexyl]-N-[(4,6-dimethyl-2-oxo-1,2-dihydropyridin-3-yl)methyl]-2,4,7-trimethyl-1,3-benzodioxole-5-carboxamide,

(2S)-2-[trans-4-(dimethylamino)cyclohexyl]-N-[(4,6-dimethyl-2-oxo-1,2-dihydropyridin-3-yl)methyl]-2,4,7-trimethyl-1,3-benzodioxole-5-carboxamide,

4,7-dichloro-2-[trans-4-(dimethylamino)cyclohexyl]-N-[(4,6-dimethyl-2-oxo-1,2-dihydropyridin-3-yl)methyl]-2-methyl-1,3-benzodioxole-5-carboxamide,

7-(cyclopenten-1-yl)-2-[trans-4-(dimethylamino)cyclohexyl]-N-[(4,6-dimethyl-2-oxo-1,2-dihydropyridin-3-yl)methyl]-2,4-dimethyl-1,3-benzodioxole-5-carboxamide,

2-[trans-4-(dimethylamino)cyclohexyl]-N-[(4,6-dimethyl-2-oxo-1,2-dihydropyridin-3-yl)methyl]-2,4-dimethyl-7-phenyl-1,3-benzodioxole-5-carboxamide,

7-(cyclohexen-1-yl)-2-[trans-4-(dimethylamino)cyclohexyl]-N-[(4,6-dimethyl-2-oxo-1,2-dihydropyridin-3-yl)methyl]-2,4-dimethyl-1,3-benzodioxole-5-carboxamide,

7-(3,6-dihydro-2H-pyran-4-yl)-2-[trans-4-(dimethylamino)cyclohexyl]-N-[(4,6-dimethyl-2-oxo-1,2-dihydropyridin-3-yl)methyl]-2,4-dimethyl-1,3-benzodioxole-5-carboxamide,

2-[trans-4-(dimethylamino)cyclohexyl]-N-[(4,6-dimethyl-2-oxo-1,2-dihydropyridin-3-yl)methyl]-2,4-dimethyl-7-vinyl-1,3-benzodioxole-5-carboxamide,

2-(trans-4-(dimethylamino)cyclohexyl)-N-[(4,6-dimethyl-2-oxo-1,2-dihydropyridin-3-yl)methyl]-7-ethynyl-2,4-dimethyl-1,3-benzodioxole-5-carboxamide,

7-cyclopropyl-2-[trans-4-(dimethylamino)cyclohexyl]-N-[(4,6-dimethyl-2-oxo-1,2-dihydropyridin-3-yl)methyl]-2,4-dimethyl-1,3-benzodioxole-5-carboxamide,

2-[trans-4-(dimethylamino)cyclohexyl]-N-[(4,6-dimethyl-2-oxo-1,2-dihydropyridin-3-yl)methyl]-2,4-dimethyl-1,3-benzodioxole-5-carboxamide, and

2-[trans-4-(dimethylamino)cyclohexyl]-N-[(4,6-dimethyl-2-oxo-1,2-dihydropyridin-3-yl)methyl]-7-ethyl-2,4-dimethyl-1,3-benzodioxole-5-carboxamide.

[Claim 7]

The compound according to claim 1, wherein the compound is (2R)-7-chloro-2-[trans-4-(dimethylamino)cyclohexyl]-N-[(4,6-dimethyl-2-oxo-1,2-dihydropyridin-3-yl)methyl]-2,4-dimethyl-1,3-benzodioxole-5-carboxamide or a pharmacologically acceptable salt thereof.

[Claim 8]

The compound according to claim 1, wherein the compound is (2R)-7-Chloro-2-[trans-4-(dimethylamino)cyclohexyl]-N-[(4,6-dimethyl-2-oxo-1,2-dihydropyridin-3-yl)methyl]-2,4-dimethyl-1,3-benzodioxole-5-carboxamide p-toluenesulfonate.

[Claim 9]

The compound according to claim 1, wherein the compound is selected from the following group or a pharmacologically acceptable salt thereof:

7-bromo-2-[trans-4-(dimethylamino)cyclohexyl]-N-
[(4,6-dimethyl-2-oxo-1,2-dihydropyridin-3-yl)methyl]-2,4-
dimethyl-1,3-benzodioxole-5-carboxamide,

(2R)-7-bromo-2-[trans-4-(dimethylamino)cyclohexyl]-
N-[(4,6-dimethyl-2-oxo-1,2-dihydropyridin-3-yl)methyl]-
2,4-dimethyl-1,3-benzodioxole-5-carboxamide,

7-chloro-2-[trans-4-(dimethylamino)cyclohexyl]-N-
[(4,6-dimethyl-2-oxo-1,2-dihydropyridin-3-yl)methyl]-2,4-
dimethyl-1,3-benzodioxole-5-carboxamide,

(2R)-7-chloro-2-[trans-4-(dimethylamino)cyclohexyl]-
N-[(4,6-dimethyl-2-oxo-1,2-dihydropyridin-3-yl)methyl]-
2,4-dimethyl-1,3-benzodioxole-5-carboxamide,

2-[trans-4-(dimethylamino)cyclohexyl]-N-[(4,6-
dimethyl-2-oxo-1,2-dihydropyridin-3-yl)methyl]-2,4,7-
trimethyl-1,3-benzodioxole-5-carboxamide,

(2S)-2-[trans-4-(dimethylamino)cyclohexyl]-N-[(4,6-
dimethyl-2-oxo-1,2-dihydropyridin-3-yl)methyl]-2,4,7-
trimethyl-1,3-benzodioxole-5-carboxamide,

4,7-dichloro-2-[trans-4-(dimethylamino)cyclohexyl]-
N-[(4,6-dimethyl-2-oxo-1,2-dihydropyridin-3-yl)methyl]-2-
methyl-1,3-benzodioxole-5-carboxamide,

2-[trans-4-(dimethylamino)cyclohexyl]-N-[(4,6-
dimethyl-2-oxo-1,2-dihydropyridin-3-yl)methyl]-2,4-
dimethyl-1,3-benzodioxole-5-carboxamide, and

2-[trans-4-(dimethylamino)cyclohexyl]-N-[(4,6-
dimethyl-2-oxo-1,2-dihydropyridin-3-yl)methyl]-7-ethyl-
2,4-dimethyl-1,3-benzodioxole-5-carboxamide.

[Claim 10]

A pharmaceutical composition comprising a compound according to any one of claims 1 to 9 or a pharmacologically acceptable salt thereof as an active ingredient.

[Claim 11]

An EZH1 and/or EZH2 enzyme activity inhibitor comprising a compound according to any one of claims 1 to 9 or a pharmacologically acceptable salt thereof as an active ingredient.

[Claim 12]

A therapeutic agent for use in the treatment of tumors, wherein the therapeutic agent is capable of treating the tumor by inhibiting EZH1 and/or EZH2 enzyme activity and comprises a compound according to any one of claims 1 to 9 or a pharmacologically acceptable salt thereof as an active ingredient.

[Claim 13]

An antitumor agent comprising a compound according to any one of claims 1 to 9 or a pharmacologically acceptable salt thereof as an active ingredient.

[Claim 14]

The antitumor agent according to claim 13, wherein the tumor is lymphoma, a rhabdoid tumor, leukemia, lung cancer, stomach cancer, prostate cancer, colorectal cancer, ovarian cancer, or liver cancer.

[Claim 15]

Use of a compound according to any one of claims 1 to 9 or a pharmacologically acceptable salt thereof in the manufacture of a medicament for the treatment of tumors.

[Claim 16]

Use according to claim 15, wherein the tumor is lymphoma, a rhabdoid tumor, leukemia, lung cancer, stomach cancer, prostate cancer, colorectal cancer, ovarian cancer, or liver cancer.