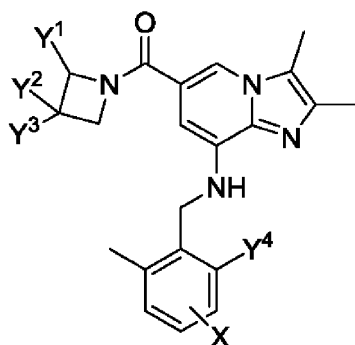


Claims

[Claim 1]

An imidazo[1,2-*a*]pyridine derivative represented by the following formula 1 or a pharmaceutically acceptable salt thereof:

Formula 1



wherein

Y¹, Y² and Y³ are each independently H, halogen, a C₁-C₆ straight or branched chain alkyl unsubstituted or substituted with R¹, hydroxy, a C₁-C₆ alkoxy unsubstituted or substituted with R², or -A-B, or Y² and Y³ may be bonded to each other to form a 4- to 6-membered heterocyclic ring containing one or two heteroatoms selected from the group consisting of N, O and S;

R¹ and R² are each independently hydroxy or C₁-C₆ alkoxy;

A is -C(=O)-, -C(=O)O-, -OC(=O)-, or -S(=O)₂-;

B is H or C₁-C₆ straight or branched chain alkyl;

Y⁴ is H, C₁-C₆ straight or branched chain alkyl, or C₁-C₆ alkoxy; and

X is H or halogen.

[Claim 2]

The imidazo[1,2-*a*]pyridine derivative or the pharmaceutically acceptable salt thereof according to claim 1, wherein

Y¹ is H or a C₁-C₃ straight or branched chain alkyl unsubstituted or substituted with R¹;

Y² and Y³ are each independently H, F, Cl, a C₁-C₃ straight or branched chain alkyl unsubstituted or substituted with R¹, hydroxy, a C₁-C₃ alkoxy unsubstituted or substituted with R², or -A-B, or Y² and Y³ may be bonded to each other to form a 4- to 6-membered heterocyclic ring containing one or two heteroatoms selected from the group consisting of N, O and S;

R¹ and R² are each independently hydroxy or C₁-C₃ alkoxy;

A is -C(=O)-, -C(=O)O-, -OC(=O)-, or -S(=O)₂-;

- B is C₁-C₃ straight or branched chain alkyl;
Y⁴ is H, C₁-C₃ straight or branched chain alkyl, or C₁-C₃ alkoxy; and
X is H, F, or Cl.
- [Claim 3] The imidazo[1,2-*a*]pyridine derivative or the pharmaceutically acceptable salt thereof according to claim 2, wherein
Y¹ is H;
Y² and Y³ are each independently H, F, Cl, a C₁-C₂ straight or branched chain alkyl unsubstituted or substituted with R¹, or hydroxy;
R¹ is hydroxy;
Y⁴ is H or C₁-C₂ straight or branched chain alkyl; and
X is H or F.
- [Claim 4] The imidazo[1,2-*a*]pyridine derivative or the pharmaceutically acceptable salt thereof according to claim 3, wherein
Y¹ is H;
Y² and Y³ are each independently H, F, methyl, hydroxymethyl, or hydroxy;
Y⁴ is H or methyl; and
X is H or F.
- [Claim 5] The imidazo[1,2-*a*]pyridine derivative or the pharmaceutically acceptable salt thereof according to claim 1, wherein the derivative represented by formula 1 is selected from the group consisting of the following compounds:
1) {8-[(2,6-dimethylbenzyl)amino]-2,3-dimethylimidazo[1,2-*a*]pyridin-6-yl}(3-hydroxyazetidin-1-yl)methanone;
2) 1-{8-[(2,6-dimethylbenzyl)amino]-2,3-dimethylimidazo[1,2-*a*]pyridine-6-carbonyl}azetidin-3-yl acetate;
3) {8-[(2,6-dimethylbenzyl)amino]-2,3-dimethylimidazo[1,2-*a*]pyridin-6-yl}(3-methoxyazetidin-1-yl)methanone;
4) {8-[(2,6-dimethylbenzyl)amino]-2,3-dimethylimidazo[1,2-*a*]pyridin-6-yl}(3-ethoxyazetidin-1-yl)methanone;
5) {8-[(2,6-dimethylbenzyl)amino]-2,3-dimethylimidazo[1,2-*a*]pyridin-6-yl}[3-(2-methoxyethoxy)azetidin-1-yl]methanone;
6) azetidin-1-yl{8-[(2,6-dimethylbenzyl)amino]-2,3-dimethylimidazo[1,2-*a*]pyridin-6-yl}methanone;
7) {8-[(2,6-dimethyl)amino]-2,3-dimethylimidazo[1,2-*a*]pyridin-6-yl}(3-fluoroazetidin-1-yl)methanone;
8) {8-[(2,6-dimethylbenzyl)amino]-2,3-dimethylimidazo[1,2-*a*]

-]pyridin-6-yl}(3-methylazetidin-1-yl)methanone;
- 9) {8-[(2,6-dimethylbenzyl)amino]-2,3-dimethylimidazo[1,2-*a*]
]pyridin-6-yl}(3-hydroxy-3-methylazetidin-1-yl)methanone;
- 10) methyl
1-{8-[(2,6-dimethylbenzyl)amino]-2,3-dimethylimidazo[1,2-*a*]pyridine
-6-carbonyl}azetidine-3-carboxylate;
- 11) {8-[(2,6-dimethylbenzyl)amino]-2,3-dimethylimidazo[1,2-*a*]
]pyridin-6-yl}[3-(hydroxymethyl)azetidin-1-yl]methanone;
- 12) {8-[(2,6-dimethylbenzyl)amino]-2,3-dimethylimidazo[1,2-*a*]
]pyridin-6-yl}[3-(methoxymethyl)azetidin-1-yl]methanone;
- 13) {8-[(2,6-dimethylbenzyl)amino]-2,3-dimethylimidazo[1,2-*a*]
]pyridin-6-yl}[3-fluoro-3-(hydroxymethyl)azetidin-1-yl]methanone;
- 14) {8-[(2,6-dimethylbenzyl)amino]-2,3-dimethylimidazo[1,2-*a*]
]pyridin-6-yl}[3-(hydroxymethyl)-3-methylazetidin-1-yl]methanone;
- 15) {8-[(2,6-dimethylbenzyl)amino]-2,3-dimethylimidazo[1,2-*a*]
]pyridin-6-yl}[3-(1-hydroxyethyl)azetidin-1-yl]methanone;
- 16) {8-[(2,6-dimethylbenzyl)amino]-2,3-dimethylimidazo[1,2-*a*]
]pyridin-6-yl}[3-(2-hydroxypropan-2-yl)azetidin-1-yl]methanone;
- 17) {8-[(2,6-dimethylbenzyl)amino]-2,3-dimethylimidazo [1,2-*a*]
]pyridin-6-yl}[2-(hydroxymethyl)azetidin-1-yl]methanone;
- 18) 1-{1-[8-((2,6-dimethylbenzyl)amino)-2,3-dimethylimidazo[1,2-*a*]
]pyridine-6-carbonyl}azetidin-3-yl}ethanone;
- 19) {8-[(2,6-dimethylbenzyl)amino]-2,3-dimethylimidazo[1,2-*a*]
]pyridin-6-yl}[3-(methylsulfonyl)azetidin-1-yl]methanone;
- 20) {8-[(2,6-dimethylbenzyl)amino]-2,3-dimethylimidazo[1,2-*a*]
]pyridin-6-yl}[3-(2-hydroxyethyl)azetidin-1-yl]methanone;
- 21) {8-[(2,6-dimethylbenzyl)amino]-2,3-dimethylimidazo[1,2-*a*]
]pyridin-6-yl}(2,6-diazaspiro[3.3]heptan-2-yl)methanone;
- 22) {8-[(2,6-dimethylbenzyl)amino]-2,3-dimethylimidazo[1,2-*a*]
]pyridin-6-yl}(2-oxa-6-azaspiro[3.3]heptan-6-yl)methanone;
- 23) {2,3-dimethyl-8-[(2-methylbenzyl)amino]imidazo[1,2-*a*]
]pyridin-6-yl}(3-hydroxyazetidin-1-yl)methanone;
- 24) {8-[(5-fluoro-2-methylbenzyl)amino]-2,3-dimethylimidazo[1,2-*a*]
]pyridin-6-yl}(3-hydroxyazetidin-1-yl)methanone;
- 25)
(3-hydroxyazetidin-1-yl){8-[(2-methoxy-6-methylbenzyl)amino]-2,3-di
methylimidazo[1,2-*a*]pyridin-6-yl)methanone;
- 26)

- [3-(hydroxymethyl)azetidin-1-yl]{8-[(2-methoxy-6-methylbenzyl)amino]-2,3-dimethylimidazo[1,2-*a*]pyridin-6-yl}methanone;
- 27) {8-[(4-fluoro-2-methylbenzyl)amino]-2,3-dimethylimidazo[1,2-*a*]pyridin-6-yl}(3-hydroxyazetidin-1-yl)methanone;
- 28) azetidin-1-yl{8-[(4-fluoro-2-methylbenzyl)amino]-2,3-dimethylimidazo[1,2-*a*]pyridin-6-yl}methanone;
- 29) {8-[(4-fluoro-2-methylbenzyl)amino]-2,3-dimethylimidazo[1,2-*a*]pyridin-6-yl}(3-fluoroazetidin-1-yl)methanone;
- 30) {8-[(4-fluoro-2-methylbenzyl)amino]-2,3-dimethylimidazo[1,2-*a*]pyridin-6-yl}(3-methylazetidin-1-yl)methanone;
- 31) {8-[(4-fluoro-2-methylbenzyl)amino]-2,3-dimethylimidazo[1,2-*a*]pyridin-6-yl}(3-hydroxy-3-methylazetidine-1-yl)methanone;
- 32) {8-[(2,6-dimethylbenzyl)amino]-2,3-dimethylimidazo[1,2-*a*]pyridin-6-yl}(3-methoxy-3-methylazetidin-1-yl)methanone;
- 33) {8-[(4-fluoro-2-methylbenzyl)amino]-2,3-dimethylimidazo[1,2-*a*]pyridin-6-yl}(3-(hydroxymethyl)azetidin-1-yl)methanone;
- 34) {8-[(4-fluoro-2,6-dimethylbenzyl)amino]-2,3-dimethylimidazo[1,2-*a*]pyridin-6-yl}(3-hydroxyazetidin-1-yl)methanone;
- 35) azetidin-1-yl{8-[(4-fluoro-2,6-dimethylbenzyl)amino]-2,3-dimethylimidazo[1,2-*a*]pyridin-6-yl}methanone;
- 36) {8-[(4-fluoro-2,6-dimethylbenzyl)amino]-2,3-dimethylimidazo[1,2-*a*]pyridin-6-yl}(3-fluoroazetidin-1-yl)methanone;
- 37) {8-[(4-fluoro-2,6-dimethylbenzyl)amino]-2,3-dimethylimidazo[1,2-*a*]pyridin-6-yl}(3-methylazetidin-1-yl)methanone;
- 38) {8-[(4-fluoro-2,6-dimethylbenzyl)amino]-2,3-dimethylimidazo[1,2-*a*]pyridin-6-yl}(3-hydroxy-3-methylazetidin-1-yl)methanone;
- 39) {8-[(4-fluoro-2,6-dimethylbenzyl)amino]-2,3-dimethylimidazo[1,2-*a*]pyridin-6-yl}[3-(hydroxymethyl)azetidin-1-yl]methanone;
- 40) {8-[(4-fluoro-2,6-dimethylbenzyl)amino]-2,3-dimethylimidazo[1,2-*a*]pyridin-6-yl}[3-(methoxymethyl)azetidin-1-yl]methanone;
- 41) {8-[(3-fluoro-2,6-dimethylbenzyl)amino]-2,3-dimethylimidazo[1,2-*a*]pyridin-6-yl}(3-hydroxyazetidin-1-yl)methanone;
- 42) azetidin-1-yl{8-[(3-fluoro-2,6-dimethylbenzyl)amino]-2,3-dimethylimidazo[1,2-*a*]pyridin-6-yl}methanone;
- 43) {8-[(3-fluoro-2,6-dimethylbenzyl)amino]-2,3-dimethylimidazo[1,2-*a*]pyridin-6-yl}(3-hydroxyazetidin-1-yl)methanone;

a]pyridin-6-yl}(3-fluoroazetidin-1-yl)methanone;
 44) {8-[(3-fluoro-2,6-dimethylbenzyl)amino]-2,3-dimethylimidazo[1,2-*a*]pyridin-6-yl}[3-(hydroxymethyl)azetidin-1-yl]methanone;
 45) azetidin-1-yl{8-[(3-chloro-2,6-dimethylbenzyl)amino]-2,3-dimethylimidazo[1,2-*a*]pyridin-6-yl}methanone;
 46) {8-[(3-chloro-2,6-dimethylbenzyl)amino]-2,3-dimethylimidazo[1,2-*a*]pyridin-6-yl}(3-hydroxyazetidin-1-yl)methanone;
 47) {8-[(3-chloro-2,6-dimethylbenzyl)amino]-2,3-dimethylimidazo[1,2-*a*]pyridin-6-yl}(3-fluoroazetidin-1-yl)methanone; and
 48) {8-[(3-chloro-2,6-dimethylbenzyl)amino]-2,3-dimethylimidazo[1,2-*a*]pyridin-6-yl}[3-(hydroxymethyl)azetidin-1-yl]methanone.

- [Claim 6] A pharmaceutical composition for preventing or treating a disease caused by excessive secretion of gastric acid, the composition containing, as an active ingredient, an imidazo[1,2-*a*]pyridine derivative or a pharmaceutically acceptable salt thereof according to any one of claims 1 to 5.
- [Claim 7] The pharmaceutical composition of claim 6, wherein the disease caused by excessive secretion of gastric acid is a gastrointestinal inflammatory disease or a gastric acid-related disease.
- [Claim 8] The pharmaceutical composition of claim 7, wherein the gastrointestinal inflammatory disease or the gastric acid-related disease is selected from the group consisting of peptic ulcer, gastric and duodenal ulcer, nonsteroidal anti-inflammatory drug (NSAID)-induced ulcer, *Helicobacter pylori* infection, functional indigestion, Zollinger-Ellison syndrome, gastritis, gastroesophageal reflux disease (GERD), and nonerosive reflux disease (NERD).
- [Claim 9] A method for treating a disease caused by excessive secretion of gastric acid, the method comprising administering a therapeutically effective amount of an imidazo[1,2-*a*]pyridine derivative or a pharmaceutically acceptable salt thereof according to any one of claims 1 to 8.
- [Claim 10] Use of an imidazo[1,2-*a*]pyridine derivative or a pharmaceutically acceptable salt thereof according to any one of claims 1 to 8 in preparation of a medicament for treatment of a disease caused by excessive secretion of gastric acid.