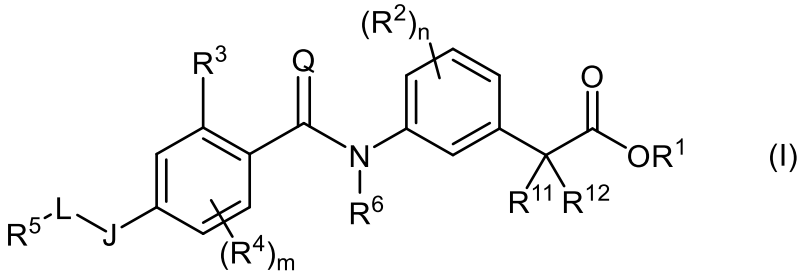
CLAIMS

1. A compound represented by general formula (I):

[Chemical 1]



(I)

wherein R^1 represents a hydrogen atom, a C1-4 alkyl, or benzyl group,

R^2, R^3, and R^4 each independently represent (1) a halogen atom, (2) a C1-4 alkyl group optionally substituted with a halogen atom, or (3) a C1-4 alkoxy group optionally substituted with a halogen atom,

when there is a plurality of each R^2s or R^4s, they may be the same or different,

J represents a bond, -O-, or -S-,

L represents a bond, a C1-6 alkylene, C2-6 alkenylene, or C2-6 alkynylene group,

R^5 represents a hydrogen atom, a C3-10 carbocycle, or a 3- to 10-membered heterocycle,

the C3-10 carbocycle and the 3- to 10-membered heterocycle in R^5 may be substituted with 1 to 6 R^7s,

provided that when L is a bond, R^5 is not a hydrogen atom,

R^7 represents (1) a halogen atom, (2) a C1-4 alkyl group optionally substituted with a halogen atom, or (3) a C1-4 alkoxy group optionally substituted with a halogen atom,

when there is a plurality of R^7s, they may be the same or different,

Q represents an oxygen atom or a sulfur atom,

provided that when Q is an oxygen atom, (1) L is a C1-6 alkylene, C2-6 alkenylene, or C2-6 alkynylene group, and R^5 is a C3-8 monocyclic carbocycle or a 3- to 8-membered monocyclic heterocycle, or (2) L is a bond, and R^5 is a C3-10 carbocycle or a 3- to 10-membered heterocycle,

R^6 represents a hydrogen atom or a C1-4 alkyl group,

R^{11} represents a hydrogen atom, a halogen atom, or a C1-4 alkyl group optionally substituted with a halogen atom,

R^{12} represents a hydrogen atom, a halogen atom, or a C1-4 alkyl group optionally substituted with a halogen atom,

R^{11} and R^{12} may be taken together with a carbon atom to which they are attached to form a C3-6 saturated carbocycle,

n represents an integer of 0 to 4, and

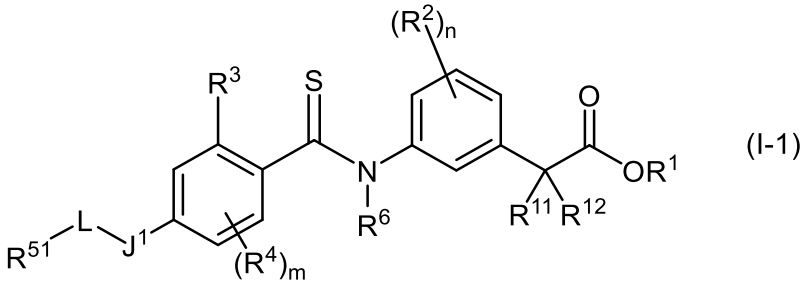
m represents an integer of 0 to 3, or

a pharmaceutically acceptable salt thereof.

2. The compound or the pharmaceutically acceptable salt thereof according to claim 1, wherein Q is a sulfur atom.

3. The compound according to claim 1 or 2, represented by general formula (I-1):

[Chemical 2]



(I-1)

wherein R^{51} represents a C3-10 carbocycle or a 3- to 10-membered heterocycle, J^1 represents a bond or -O-, and the other symbols have the same meanings as those described in claim 1, or a pharmaceutically acceptable salt thereof.

4. The compound according to claim 3, wherein R^{51} is a 3- to 8-membered saturated monocyclic heterocycle, or a pharmaceutically acceptable salt thereof.

5. The compound according to claim 1, wherein the compound is

(1) (4-Chloro-3-{4-[2-(oxan-2-yl)ethoxy]-2-(trifluoromethyl)benzamide}phenyl)acetic acid,

(2) {4-Chloro-3-[4-(2-cyclohexylethoxy)-2-(trifluoromethyl)benzamide]phenyl}acetic acid,

(3) {4-Chloro-3-[4-(2-phenylethoxy)-2-(trifluoromethyl)benzamide]phenyl}acetic acid,

(4) {4-Chloro-3-[4-(2-cyclopropylethoxy)-2-(trifluoromethyl)benzamide]phenyl}acetic acid,

(5) (4-Chloro-3-{2,6-dimethyl-4-[2-(oxan-2-yl)ethoxy]benzamide}phenyl)acetic acid,

(6) {4-Chloro-3-[4-(2-cyclohexylethoxy)-2,6-dimethylbenzamide]phenyl}acetic acid,

(7) {4-Chloro-3-[4-(2-cyclopropylethoxy)-2,6-dimethylbenzamide]phenyl}acetic acid,

(8) (3-{4-[(2,3-Dihydro-1H-inden-2-yl)oxy]-2,6-dimethylbenzamide}-4-fluorophenyl)acetic acid,

(9) {4-Chloro-3-[4-(3-cyclohexylprop-1-yn-1-yl)-2,6-dimethylbenzamide]phenyl}acetic acid,

(10) (4-Chloro-3-{4-[(1E)-3-cyclohexylprop-1-en-1-yl]-2,6-dimethylbenzamide}phenyl)acetic acid,

(11) (4-Chloro-3-{[4-(2-cyclohexylethoxy)-2,6-dimethylbenzene-1-carbothioyl]amino}phenyl)acetic acid,

(12) [4-Chloro-3-({4-[2-(oxan-2-yl)ethoxy]-2-(trifluoromethyl)benzene-1-carbothioyl}amino)phenyl]acetic acid,

(13) (4-Chloro-3-{[4-(2-cyclohexylethoxy)-2-(trifluoromethyl)benzene-1-carbothioyl]amino}phenyl)acetic acid,

(14) (4-Chloro-3-{[4-(2-phenylethoxy)-2-(trifluoromethyl)benzene-1-carbothioyl]amino}phenyl)acetic acid,

(15) (4-Chloro-3-{[4-(2-cyclopropylethoxy)-2-(trifluoromethyl)benzene-1-carbothioyl]amino}phenyl)acetic acid,

(16) [4-Chloro-3-({2,6-dimethyl-4-[2-(oxan-2-yl)ethoxy]benzene-1-carbothioyl}amino)phenyl]acetic acid,

(17) {4-Chloro-3-[(2,6-dimethyl-4-{2-[(2R)-oxan-2-yl]ethoxy}benzene-1-carbothioyl)amino]phenyl}acetic acid,

(18) {4-Chloro-3-[(2,6-dimethyl-4-{2-[(2S)-oxan-2-yl]ethoxy}benzene-1-carbothioyl)amino]phenyl}acetic acid,

(19) 2-{3-[({2,6-Dimethyl-4-[2-(tetrahydro-2H-pyran-2-yl)ethoxy]phenyl}carbothioyl)amino]-4-fluorophenyl}propanoic acid,

(20) 1-{3-[({2,6-Dimethyl-4-[2-(tetrahydro-2H-pyran-2-yl)ethoxy]phenyl}carbothioyl)amino]-4-fluorophenyl}cyclopropanecarboxylic acid,

(21) 2-{4-Chloro-3-[({2,6-dimethyl-4-[2-(tetrahydro-2H-pyran-2-yl)ethoxy]phenyl}carbothioyl)amino]phenyl}-2-methylpropanoic acid,

(22) 2-{4-Chloro-3-[(2,6-dimethyl-4-{2-[(2S)-oxan-2-yl]ethoxy}benzene-1-carbothioyl)amino]phenyl}-2-methylpropanoic acid,

(23) 2-{4-Chloro-3-[(2,6-dimethyl-4-{2-[(2R)-oxan-2-yl]ethoxy}benzene-1-carbothioyl)amino]phenyl}-2-methylpropanoic acid,

(24) 2-{3-[({2,6-Dimethyl-4-[2-(tetrahydro-2H-pyran-2-yl)ethoxy]phenyl}carbothioyl)amino]-4-fluorophenyl}-2-methylpropanoic acid, or

(25) 2-(4-Chloro-3-{[(2,6-dimethyl-4-{2-[(2R)-tetrahydro-2H-pyran-2-yl]ethoxy}phenyl)carbothioyl]amino}phenyl)propanoic acid, or

a pharmaceutically acceptable salt thereof.

6. A pharmaceutical composition comprising the compound represented by the general formula (I) or the pharmaceutically acceptable salt thereof according to claim 1.

7. The pharmaceutical composition according to claim 6, which is a DP receptor antagonist.

8. The pharmaceutical composition according to claim 6, which is a preventive and/or therapeutic agent for a DP receptor-mediated disease.

9. The pharmaceutical composition according to claim 8, wherein the DP receptor-mediated disease is allergic disease, systemic mastocytosis, systemic mast cell activation disorder, anaphylactic shock, respiratory tract constriction, urticaria, eczema, acne, allergic bronchopulmonary aspergillosis, sinusitis, migraine, nasal polyps, hypersensitivity vasculitis, eosinophilia, contact dermatitis, a disease accompanied by itching, a disease caused secondarily as a result of behavior accompanied by itching, a disease accompanied by flushing, inflammation, chronic obstructive pulmonary disease, ischemia-reperfusion injury, cerebrovascular accident, autoimmune disease, cerebral trauma, liver disorder, graft rejection, rheumatoid arthritis, pleurisy, osteoarthritis, Crohn's disease, ulcerative colitis, irritable bowel syndrome, interstitial cystitis, muscular dystrophy, polymyositis, cancer, leukemia, viral infection, multiple sclerosis, sleep-wake disorder, or platelet aggregation.

10. The pharmaceutical composition according to claim 9, wherein the DP receptor-mediated disease is sleep-wake disorder, and the sleep-wake disorder is a disease based on hypersomnia, insomnia, residual sleepiness of sleep apnea syndrome, circadian rhythm sleep-wake disorder, hypersomnia associated with neurodegenerative disease, hypersomnia associated with mental illness, or morbid sleep apnea during daytime.

11. The compound represented by the general formula (I) or the pharmaceutically acceptable salt thereof according to claim 1, for use in the prevention and/or treatment of a DP receptor-mediated disease.

12. The use of the compound represented by the general formula (I) or the pharmaceutically acceptable salt thereof according to claim 1, in the manufacture of a medicament for the prevention and/or treatment of a DP receptor-mediated disease, wherein the DP receptor-mediated disease is allergic disease, systemic mastocytosis, systemic mast cell activation disorder, anaphylactic shock, respiratory tract constriction, urticaria, eczema, acne, allergic bronchopulmonary aspergillosis, sinusitis, migraine, nasal polyps, hypersensitivity vasculitis, eosinophilia, contact dermatitis, a disease accompanied by itching, a disease caused secondarily as a result of behavior accompanied by itching, a disease accompanied by flushing, inflammation, chronic obstructive pulmonary disease, ischemia-reperfusion injury, cerebrovascular accident, autoimmune disease, cerebral trauma, liver disorder, graft rejection, rheumatoid arthritis, pleurisy, osteoarthritis, Crohn's disease, ulcerative colitis, irritable bowel syndrome, interstitial cystitis, muscular dystrophy, polymyositis, cancer, leukemia, viral infection, multiple sclerosis, sleep-wake disorder, or platelet aggregation.

13. The use according to claim 12, wherein the DP receptor-mediated disease is sleep-wake disorder, and the sleep-wake disorder is a disease based on hypersomnia, insomnia, residual sleepiness of sleep apnea syndrome, circadian rhythm sleep-wake disorder, hypersomnia associated with neurodegenerative disease, hypersomnia associated with mental illness, or morbid sleep apnea during daytime.