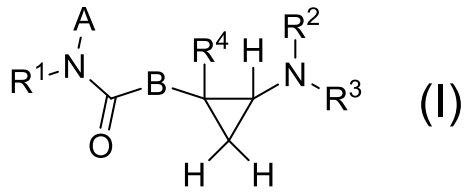
CLAIMS

1. A compound represented by the formula


(I)

wherein

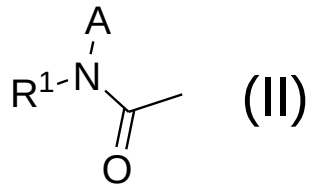
A is

(1) a piperidinyl group, an isoxazolyl group, a pyrazolyl group, a thiadiazolyl group, a thiazolyl group, a tetrahydropyranyl group or an oxazolyl group, each of which is optionally substituted by C_{1-6} alkyl group(s) optionally substituted by halogen atom(s), or

(2) a C_{3-10} cycloalkyl group optionally substituted by halogen atom(s);

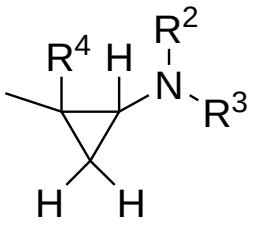
B is a ring selected from

thiophene, thiazole, pyrazole, pyridine, naphthalene and 2,3-dihydrobenzofuran, wherein the ring is optionally substituted by C_{1-6} alkyl group(s), and binds, via two adjacent carbon atoms with one atom in between, to a group represented by the formula


(II)

, and

a group represented by the formula



(III)

;

R^1 is a hydrogen atom;

R^2 is a hydrogen atom;

R^3 is

(1) a hydrogen atom,

(2) a C_{1-6} alkyl group optionally substituted by substituent(s) selected from

(a) a C_{3-10} cycloalkyl group,

(b) a C_{6-14} aryl group optionally substituted by carboxy group(s),

(c) a tetrahydropyranyl group or a piperidinyl group each optionally substituted by C_{1-6} alkyl group(s) optionally substituted by substituent(s) selected from a carboxy group, and a C_{6-14} aryl group optionally substituted by carboxy group(s), and

(d) an oxadiazolyl group optionally substituted by an amino group,

(3) a C_{3-10} cycloalkyl group optionally substituted by substituent(s) selected from an amino group and a halogen atom or

(4) a tetrahydropyranyl group or a piperidinyl group each optionally substituted by substituent(s) selected from

(a) a C_{3-10} cycloalkyl group,

(b) a C_{1-6} alkyl-carbonyl group, and

(c) a C_{3-10} cycloalkyl-carbonyl group; and

R^4 is a hydrogen atom,

or a salt thereof.

2. The compound according to claim 1, wherein A is

(1) a pyrazolyl group, a thiadiazolyl group or a tetrahydropyranyl group, each optionally substituted by C_{1-6} alkyl group(s), or

(2) a cyclohexyl group optionally substituted by halogen atom(s);

B is

a thiophene ring, which ring is optionally substituted by C_{1-6} alkyl group(s);

R^1 is a hydrogen atom;

R^2 is a hydrogen atom;

R^3 is a cyclopropylmethyl group, a tetrahydropyranylmethyl group, a cyclobutylmethyl group, a cyclobutyl group or a tetrahydropyranyl group; and

R^4 is a hydrogen atom,

or a salt thereof.

3. The compound according to claim 1, wherein A is

a pyrazolyl group, a thiadiazolyl group or a tetrahydropyranyl group, each optionally substituted by C_{1-6} alkyl group(s),

B is

a thiophene ring, which ring is optionally substituted by C_{1-6} alkyl group(s);

R^1 is a hydrogen atom;

R^2 is a hydrogen atom;

R^3 is a cyclopropylmethyl group or a cyclobutyl group; and

R^4 is a hydrogen atom,

or a salt thereof.

4. 4-((1S,2R)-2-(Cyclobutylamino)cyclopropyl)-N-(5-methyl-1,3,4-thiadiazol-2-yl)thiophene-2-carboxamide or a salt thereof.

5. 4-((1S,2R)-2-(Cyclobutylamino)cyclopropyl)-5-methyl-N-(1-methyl-1H-pyrazol-4-yl)thiophene-2-carboxamide or a salt thereof.

6. A medicament comprising the compound according to any one of claims 1 to 5 or a salt thereof.

7. The medicament according to claim 6, which is an LSD1 inhibitor.

8. The medicament according to claim 6, which is a prophylactic or therapeutic agent for schizophrenia, developmental disorders, autistic spectrum disorders, Rett syndrome, Down's syndrome, Kabuki syndrome, fragile X syndrome, Kleefstra syndrome, neurofibromatosis type 1, Noonan syndrome, tuberous sclerosis, Alzheimer's disease, Parkinson's disease, spinocerebellar degeneration, Huntington's disease, epilepsy or drug dependence.

9. The compound according to any one of claims 1 to 5 or a salt thereof for use in the prophylaxis or treatment of schizophrenia, developmental disorders, autistic spectrum disorders, Rett syndrome, Down's syndrome, Kabuki syndrome, fragile X syndrome, Kleefstra syndrome, neurofibromatosis type 1, Noonan syndrome, tuberous sclerosis, Alzheimer's disease, Parkinson's disease, spinocerebellar degeneration, Huntington's disease, epilepsy or drug dependence.

10. The compound according to any one of claims 1 to 5 or a salt thereof for use in inhibiting LSD1 in a mammal, wherein an effective amount of the compound according to any one of claims 1 to 5 or a salt thereof is to be administered to the mammal.

11. Use of the compound according to any one of claims 1 to 5 or a salt thereof in the manufacture of a medicament for the prophylaxis or treatment of schizophrenia, developmental disorders, autistic spectrum disorders, Rett syndrome, Down's syndrome, Kabuki syndrome, fragile X syndrome, Kleefstra syndrome, neurofibromatosis type 1, Noonan syndrome, tuberous sclerosis, Alzheimer's disease, Parkinson's disease, spinocerebellar degeneration, Huntington's disease, epilepsy or drug dependence.

12. The compound according to any one of claims 1 to 5 or a salt thereof for use in medicine.