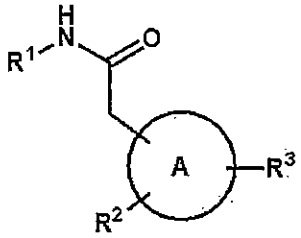
CLAIMS

1. A fused azole derivative represented by Formula (I):

[Formula 1]



(I)

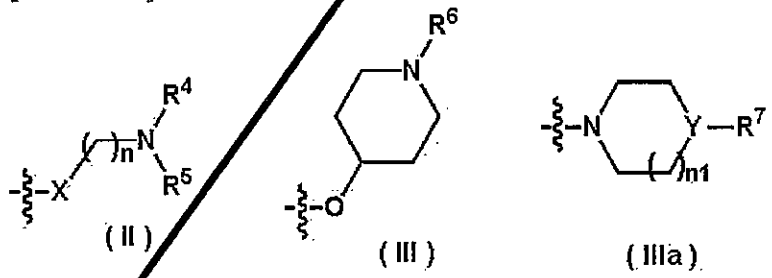
[in Formula (I),

R^1 represents a C_{1-5} alkyl (the C_{1-5} alkyl is optionally substituted by one to three groups selected from the group consisting of hydroxy, halogen atoms, cyano, C_{3-7} cycloalkyl, and C_{1-5} alkoxy), C_{3-7} cycloalkyl, or 4- to 8-membered saturated heterocycle;

R^2 represents aryl or heteroaryl (the aryl and heteroaryl are optionally substituted by one or two groups selected from the group consisting of C_{1-5} alkoxy, C_{1-5} alkyl, halogen atoms, trifluoromethyl, trifluoromethoxy, cyano, hydroxy, difluoromethoxy, and C_{1-5} alkylsulfonyl);

R^3 represents either the following formula (II), (III) or (IIIa):

[Formula 2]



(II) (III) (IIIa)

X represents a single bond, an oxygen atom or phenylene (the phenylene is optionally substituted by a halogen atom);

n represents an integer of 1 to 4;

R^4 and R^5 which may be the same or different each represent a hydrogen atom, C_{1-5}

alkyl (the C_{1-5} alkyl is optionally substituted by one to three groups selected from the group consisting of hydroxy, halogen atoms, cyano, C_{3-7} cycloalkyl, and C_{1-5} alkoxy), C_{3-7} cycloalkyl, or a 4- to 8-membered saturated or unsaturated heterocycle containing one or more nitrogen, oxygen or sulfur atoms in the ring (the 4- to 8-membered saturated or unsaturated heterocycle is optionally substituted by one or two groups selected from the group consisting of hydroxy, C_{1-5} alkyl, C_{1-5} alkoxy, halogen atoms, cyano, C_{2-5} alkanoyl, and trifluoromethyl), or

R^4 and R^5, together with the adjoining nitrogen atom, may form a 4- to 8-membered saturated or unsaturated heterocycle optionally containing one or more nitrogen, oxygen or sulfur atoms in the ring in addition to the adjoining nitrogen atom (the 4- to 8-membered saturated or unsaturated heterocycle is optionally substituted by one or two groups selected from the group consisting of hydroxy, C_{1-5} alkyl (the C_{1-5} alkyl is optionally substituted by one or two hydroxyl groups), C_{1-5} alkoxy, halogen atoms, cyano, C_{2-5} alkanoyl, oxo, aminocarbonyl, mono-C_{1-5} alkylaminocarbonyl, di-C_{1-5} alkylaminocarbonyl, and trifluoromethyl, and the 4- to 8-membered saturated or unsaturated heterocycle optionally has a C_{1-5} alkylene group crosslinking two different carbon atoms in the ring), 2-oxa-6-azaspiro[3.3]hept-6-yl, or

2-oxa-7-azaspiro[3.5]non-7-yl,

R^6 represents C_{1-5} alkyl, C_{3-7} cycloalkyl, or a 4- to 8-membered saturated heterocycle;

Y represents a nitrogen atom or the formula CH;

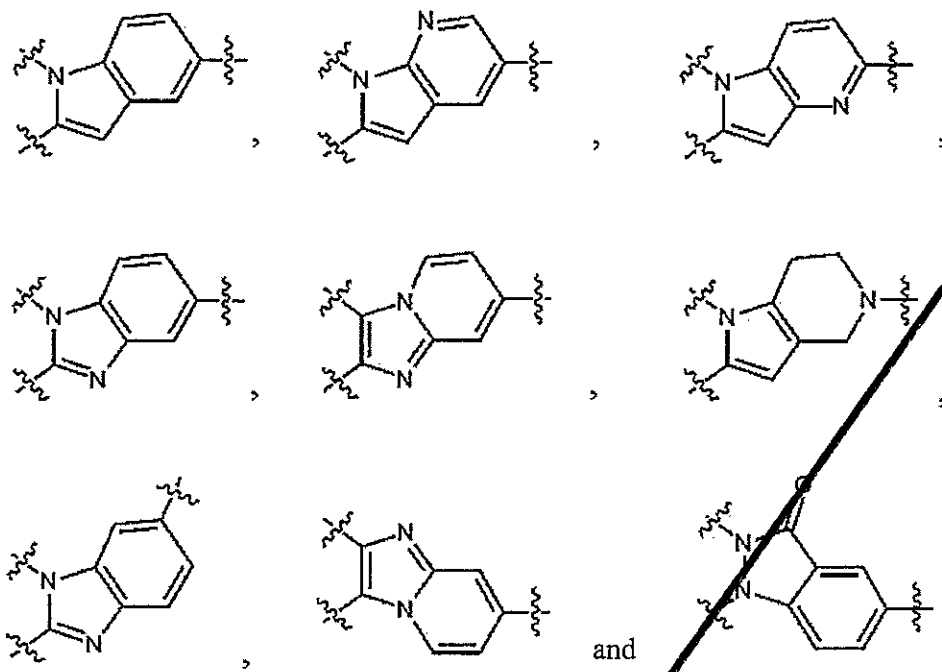
when Y is a nitrogen atom, R^7 represents C_{1-5} alkyl;

when Y is the formula CH, R^7 represents a 4- to 8-membered nitrogen-containing saturated heterocycle;

n1 represents an integer of 1 or 2;

ring A represents any one of the structures in the following formula group (IV)]

[Formula 3]

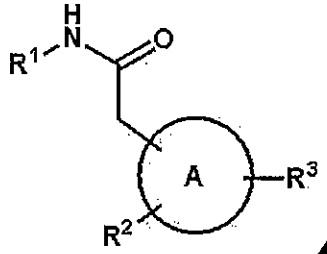


(IV)

or a pharmaceutically acceptable salt thereof.

2. A fused azole derivative represented by Formula (I):

[Formula 4]



(I)

[in Formula (I),

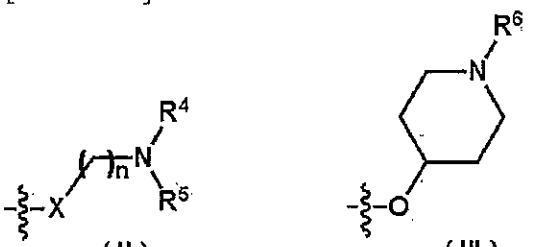
R^1 represents a C_{1-5} alkyl (the C_{1-5} alkyl is optionally substituted by one to three groups selected from the group consisting of hydroxy, halogen atoms, cyano, C_{3-7} cycloalkyl, and C_{1-5} alkoxy), C_{3-7} cycloalkyl, or 4- to 8-membered saturated heterocycle;

R^2 represents aryl or heteroaryl (the aryl and heteroaryl are optionally substituted by one or two groups selected from the group consisting of C_{1-5} alkoxy, C_{1-5} alkyl, halogen atoms, trifluoromethyl, trifluoromethoxy, cyano, hydroxy, difluoromethoxy, and C_{1-5}

alkylsulfonyl);

R^3 represents either the following formula (II) or (III):

[Formula 5]



(II) (III)

X represents a single bond, an oxygen atom or phenylene (the phenylene is optionally substituted by a halogen atom);

n represents an integer of 1 to 4;

R^4 and R^5 which may be the same or different each represent a hydrogen atom, C_{1-5} alkyl (the C_{1-5} alkyl is optionally substituted by one to three groups selected from the group consisting of hydroxy, halogen atoms, cyano, C_{3-7} cycloalkyl, and C_{1-5} alkoxy), C_{3-7} cycloalkyl, or a 4- to 8-membered saturated or unsaturated heterocycle containing one or more nitrogen, oxygen or sulfur atoms in the ring (the 4- to 8-membered saturated or unsaturated heterocycle is optionally substituted by one or two groups selected from the group consisting of hydroxy, C_{1-5} alkyl, C_{1-5} alkoxy, halogen atoms, cyano, C_{2-5} alkanoyl, and trifluoromethyl), or

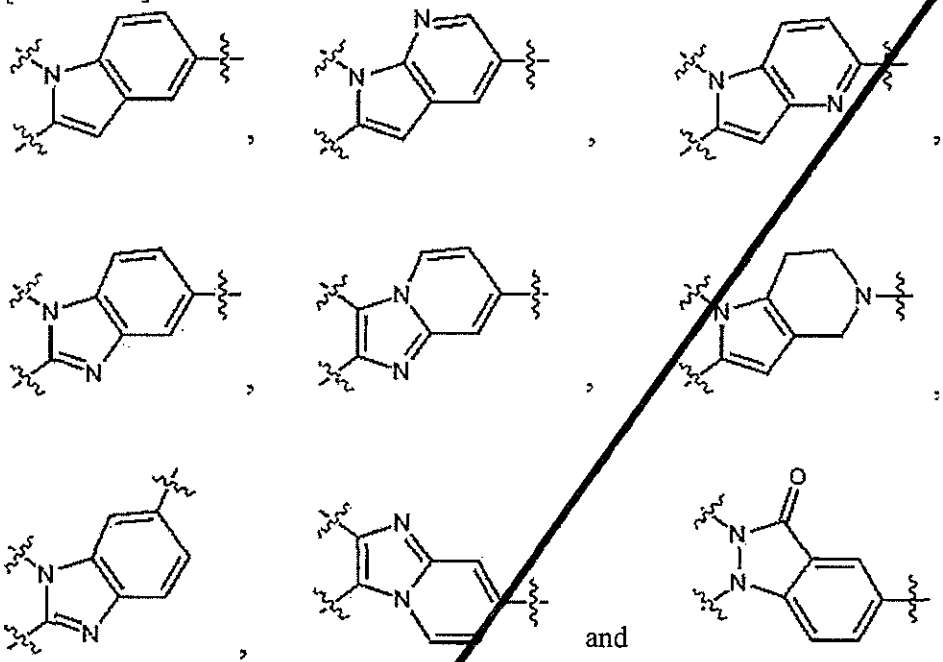
R^4 and R^5, together with the adjoining nitrogen atom, may form a 4- to 8-membered saturated or unsaturated heterocycle optionally containing one or more nitrogen, oxygen or sulfur atoms in the ring in addition to the adjoining nitrogen atom (the 4- to 8-membered saturated or unsaturated heterocycle is optionally substituted by one or two groups selected from the group consisting of hydroxy, C_{1-5} alkyl (the C_{1-5} alkyl is optionally substituted by one or two hydroxyl groups), C_{1-5} alkoxy, halogen atoms, cyano, C_{2-5} alkanoyl, oxo, aminocarbonyl, mono-C_{1-5} alkylaminocarbonyl, di-C_{1-5} alkylaminocarbonyl, and trifluoromethyl, and the 4- to 8-membered saturated or unsaturated heterocycle optionally has a C_{1-5} alkylene group crosslinking two different

carbon atoms in the ring), 2-oxa-6-azaspiro[3.3]hept-6-yl, or
2-oxa-7-azaspiro[3.5]non-7-yl;

R^6 represents C_{1-5} alkyl, C_{3-7} cycloalkyl, or a 4- to 8-membered saturated heterocycle;

ring A represents any one of the structures in the following formula group (IV)]

[Formula 6]



(IV)

or a pharmaceutically acceptable salt thereof.

3. The fused azole derivative or a pharmaceutically acceptable salt thereof according to Claim 1 or 2, wherein in Formula (I),

R^1 is C_{1-5} alkyl;

R^2 represents aryl or heteroaryl (the aryl and heteroaryl are optionally substituted by one or two groups selected from the group consisting of C_{1-5} alkoxy and halogen atoms);

R^4 and R^5 which may be the same or different are each C_{1-5} alkyl; or

R^4 and R^5, together with the adjoining nitrogen atom, may form a 4- to 8-membered saturated heterocycle optionally containing one or more oxygen atoms in the ring in addition to the adjoining nitrogen atom (the 4- to 8-membered saturated heterocycle is

optionally substituted by one or two groups selected from the group consisting of hydroxy and C_{1-5} alkyl, and the 4- to 8-membered saturated heterocycle optionally has a C_{1-5} alkylene group crosslinking two different carbon atoms in the ring), 2-oxa-6-azaspiro[3.3]hept-6-yl, or 2-oxa-7-azaspiro[3.5]non-7-yl;

R^6 is C_{3-7} cycloalkyl.

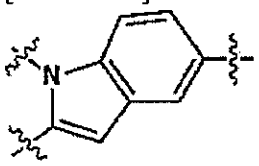
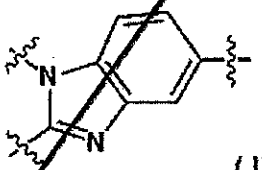
4. The fused azole derivative or a pharmaceutically acceptable salt thereof according to any one of Claims 1 to 3, wherein in Formula (I),

R^2 is phenyl or pyridyl (the phenyl and pyridyl are optionally substituted by one or two groups selected from the group consisting of C_{1-5} alkoxy and halogen atoms).

5. The fused azole derivative or a pharmaceutically acceptable salt thereof according to any one of Claims 1 to 4, wherein in Formula (I),

ring A represents any one of the structures in the following formula group (IX):

[Formula 7]


and

(IX).

6. The fused azole derivative or a pharmaceutically acceptable salt thereof according to Claim 1, wherein the fused azole derivative is selected from the group consisting of:

2-{2-(3-chlorophenyl)-5-[3-(2-oxa-6-azaspiro[3.3]hept-6-yl)propoxy]-1H-benzimidazol-1-yl}-N-isopropyl acetamide,

2-[2-(3-chlorophenyl)-5-{3-[(1R,5S)-3-oxa-8-azabicyclo[3.2.1]oct-8-yl]propoxy}-1H-benzimidazol-1-yl]-N-isopropyl acetamide,

2-{2-(4-fluoro-3-methoxyphenyl)-5-[3-(2-oxa-6-azaspiro[3.3]hept-6-yl)propoxy]-1H-benzimidazol-1-yl}-N-isopropyl acetamide,

2-[2-(4-fluoro-3-methoxyphenyl)-5-{3-[(1R,5S)-3-oxa-8-azabicyclo[3.2.1]oct-8-yl]propoxy}-1H-benzimidazol-1-yl]-N-isopropyl acetamide,

2-{2-(3-chloro-4-fluorophenyl)-5-[3-(2-oxa-6-azaspiro[3.3]hept-6-yl)propoxy]-1H-benz

imidazol-1-yl}-N-isopropyl acetamide,

2-[2-(3-chloro-4-fluorophenyl)-5-{3-[(1R,5S)-3-oxa-8-azabicyclo[3.2.1]oct-8-yl]propoxy}-1H-benzimidazol-1-yl]-N-isopropyl acetamide,

N-tert-butyl-2-[2-(4-fluoro-3-methoxyphenyl)-5-(4-methyl-1,4-diazepan-1-yl)-1H-benzimidazol-1-yl]acetamide,

N-tert-butyl-2-{2-(4-fluoro-3-methoxyphenyl)-5-[4-(pyrrolidin-1-yl)piperidin-1-yl]-1H-benzimidazol-1-yl}acetamide,

N-tert-butyl-2-[2-(3-chloro-4-fluorophenyl)-5-(4-methyl-1,4-diazepan-1-yl)-1H-benzimidazol-1-yl]acetamide,

2-{2-(3-chlorophenyl)-5-[3-(2-oxa-6-azaspiro[3.3]hept-6-yl)propoxy]-1H-indol-1-yl}-N-isopropyl acetamide, and

2-{2-(3-chloro-4-fluorophenyl)-5-[(1-cyclopentylpiperidin-4-yl)oxy]-1H-indol-1-yl}-N-isopropyl acetamide.

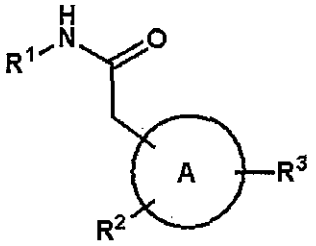
7. The agent comprising the fused azole derivative or pharmaceutically acceptable salt thereof according to any one of Claims 1 to 6 for use in the treatment or prevention of mood disorder, anxiety disorder, schizophrenia, Alzheimer's disease, Parkinson's disease, Huntington's chorea, eating disorder, hypertension, gastrointestinal disease, drug addiction, epilepsy, cerebral infarction, cerebral ischemia, cerebral edema, head injury, inflammation, immune-related disease, or alopecia.

8. The use of the fused azole derivative or pharmaceutically acceptable salt thereof according to any one of Claims 1 to 6 in the manufacture of a medicament for the treatment or prevention of mood disorder, anxiety disorder, schizophrenia, Alzheimer's disease, Parkinson's disease, Huntington's chorea, eating disorder, hypertension, gastrointestinal disease, drug addiction, epilepsy, cerebral infarction, cerebral ischemia, cerebral edema, head injury, inflammation, immune-related disease, or alopecia.

9. A pharmaceutical composition comprising the fused azole derivative or pharmaceutically acceptable salt thereof according to any one of Claims 1 to 6 as an active ingredient.

Claims

1. A fused azole derivative represented by Formula (I):



(I) ,

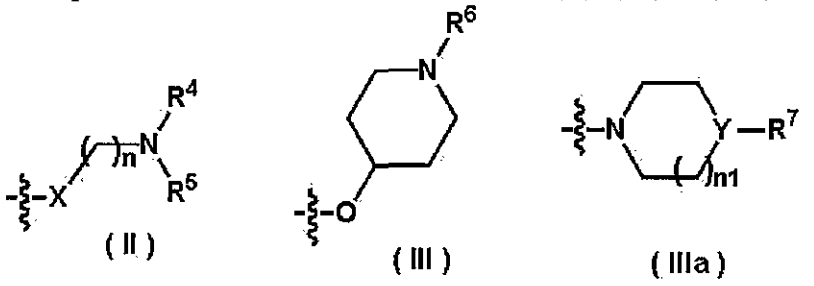
or a pharmaceutically acceptable salt thereof;

wherein in Formula (I),

R^1 represents a C_{1-5} alkyl, C_{3-7} cycloalkyl, or 4- to 8-membered saturated heterocycle, wherein the C_{1-5} alkyl is optionally substituted by one to three groups selected from the group consisting of hydroxy, halogen atoms, cyano, C_{3-7} cycloalkyl, and C_{1-5} alkoxy;

R^2 represents aryl or heteroaryl, wherein the aryl and heteroaryl are optionally substituted by one or two groups selected from the group consisting of C_{1-5} alkoxy, C_{1-5} alkyl, halogen atoms, trifluoromethyl, trifluoromethoxy, cyano, hydroxy, difluoromethoxy, and C_{1-5} alkylsulfonyl;

R^3 represents either the following formula (II), (III) or (IIIa):



(II) (III) (IIIa)

X represents a single bond, an oxygen atom or phenylene, wherein the phenylene is optionally substituted by a halogen atom;

n represents an integer of 1 to 4;

R^4 and R^5 which may be the same or different each represent a hydrogen atom, C_{1-5} alkyl, C_{3-7} cycloalkyl, or a 4- to 8-membered saturated or unsaturated heterocycle

containing one or more nitrogen, oxygen or sulfur atoms in the ring, wherein the C_{1-5} alkyl is optionally substituted by one to three groups selected from the group consisting of hydroxy, halogen atoms, cyano, C_{3-7} cycloalkyl, and C_{1-5} alkoxy, and the 4- to 8-membered saturated or unsaturated heterocycle is optionally substituted by one or two groups selected from the group consisting of hydroxy, C_{1-5} alkyl, C_{1-5} alkoxy, halogen atoms, cyano, C_{2-5} alkanoyl, and trifluoromethyl, or

R^4 and R^5, together with the adjoining nitrogen atom, may form a 4- to 8-membered saturated or unsaturated heterocycle optionally containing one or more nitrogen, oxygen or sulfur atoms in the ring in addition to the adjoining nitrogen atom, 2-oxa-6-azaspiro[3.3]hept-6-yl, or 2-oxa-7-azaspiro[3.5]non-7-yl, wherein the 4- to 8-membered saturated or unsaturated heterocycle is optionally substituted by one or two groups selected from the group consisting of hydroxy; C_{1-5} alkyl optionally substituted by one or two hydroxyl groups; C_{1-5} alkoxy; halogen atoms; cyano; C_{2-5} alkanoyl; oxo; aminocarbonyl; mono-C_{1-5} alkylaminocarbonyl; di-C_{1-5} alkylaminocarbonyl; and trifluoromethyl; and the 4- to 8-membered saturated or unsaturated heterocycle optionally has a C_{1-5} alkylene group crosslinking two different carbon atoms in the ring;

R^6 represents C_{1-5} alkyl, C_{3-7} cycloalkyl, or a 4- to 8-membered saturated heterocycle;

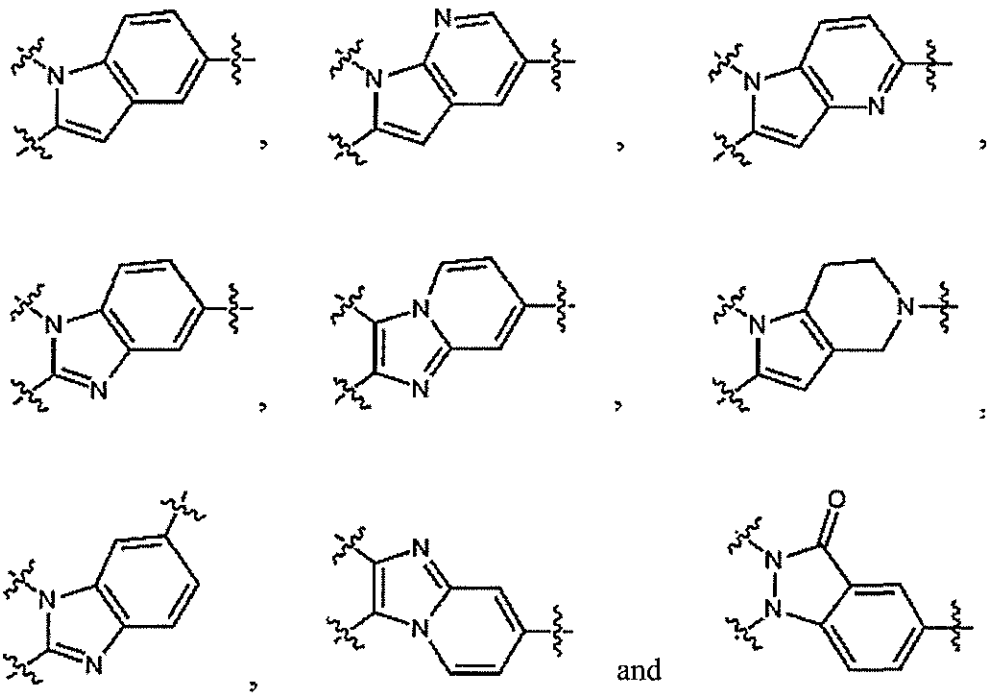
Y represents a nitrogen atom or the formula CH;

when Y is a nitrogen atom, R^7 represents C_{1-5} alkyl;

when Y is the formula CH, R^7 represents a 4- to 8-membered nitrogen-containing saturated heterocycle;

n1 represents an integer of 1 or 2;

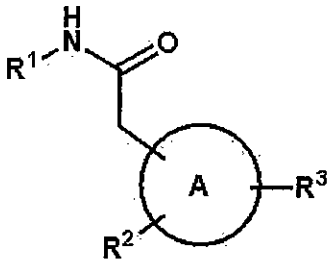
ring A represents any one of the structures in the following formula group (IV)



and

(IV)

2. A fused azole derivative represented by Formula (I):



(I),

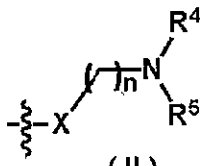
or a pharmaceutically acceptable salt thereof;

wherein in Formula (I),

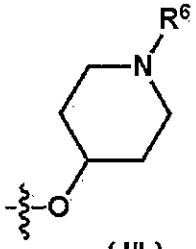
R^1 represents a C_{1-5} alkyl, C_{3-7} cycloalkyl, or 4- to 8-membered saturated heterocycle, wherein the C_{1-5} alkyl is optionally substituted by one to three groups selected from the group consisting of hydroxy, halogen atoms, cyano, C_{3-7} cycloalkyl, and C_{1-5} alkoxy;

R^2 represents aryl or heteroaryl, wherein the aryl and heteroaryl are optionally substituted by one or two groups selected from the group consisting of C_{1-5} alkoxy, C_{1-5} alkyl, halogen atoms, trifluoromethyl, trifluoromethoxy, cyano, hydroxy, difluoromethoxy, and C_{1-5} alkylsulfonyl;

R^3 represents either the following formula (II) or (III):



(II)



(III)

X represents a single bond, an oxygen atom or phenylene, wherein the phenylene is optionally substituted by a halogen atom;

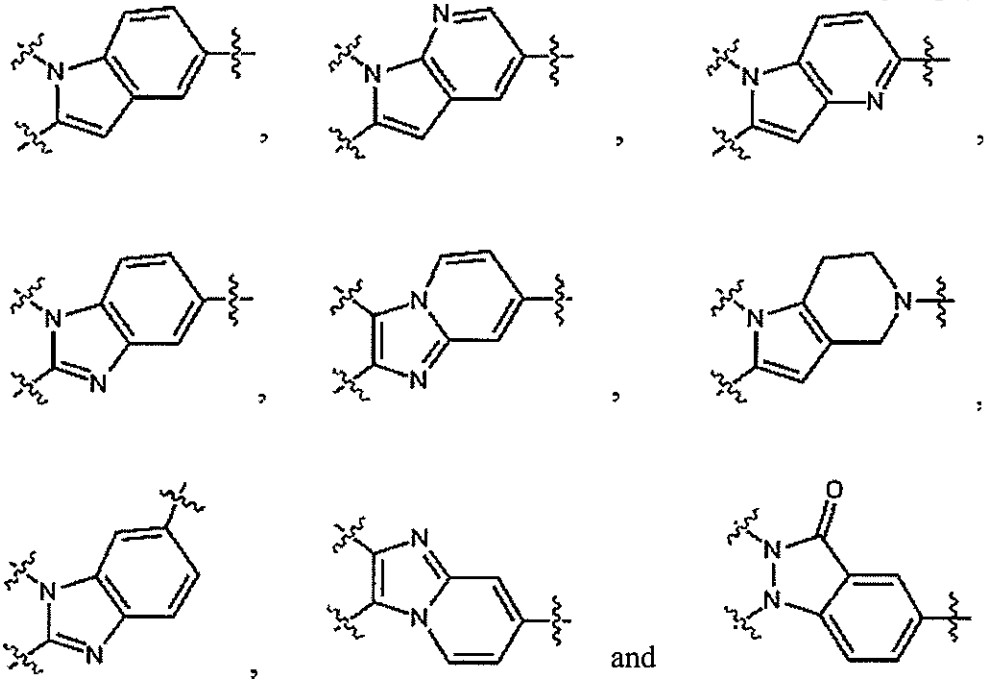
n represents an integer of 1 to 4;

R^4 and R^5 which may be the same or different each represent a hydrogen atom, C_{1-5} alkyl, C_{3-7} cycloalkyl, or a 4- to 8-membered saturated or unsaturated heterocycle containing one or more nitrogen, oxygen or sulfur atoms in the ring, wherein the C_{1-5} alkyl is optionally substituted by one to three groups selected from the group consisting of hydroxy, halogen atoms, cyano, C_{3-7} cycloalkyl, and C_{1-5} alkoxy, and the 4- to 8-membered saturated or unsaturated heterocycle is optionally substituted by one or two groups selected from the group consisting of hydroxy, C_{1-5} alkyl, C_{1-5} alkoxy, halogen atoms, cyano, C_{2-5} alkanoyl, and trifluoromethyl, or

R^4 and R^5, together with the adjoining nitrogen atom, may form a 4- to 8-membered saturated or unsaturated heterocycle optionally containing one or more nitrogen, oxygen or sulfur atoms in the ring in addition to the adjoining nitrogen atom, 2-oxa-6-azaspiro[3.3]hept-6-yl, or 2-oxa-7-azaspiro[3.5]non-7-yl, wherein the 4- to 8-membered saturated or unsaturated heterocycle is optionally substituted by one or two groups selected from the group consisting of hydroxy; C_{1-5} alkyl optionally substituted by one or two hydroxyl groups; C_{1-5} alkoxy; halogen atoms; cyano; C_{2-5} alkanoyl; oxo; aminocarbonyl; mono-C_{1-5} alkylaminocarbonyl; di-C_{1-5} alkylaminocarbonyl; and trifluoromethyl; and the 4- to 8-membered saturated or unsaturated heterocycle optionally has a C_{1-5} alkylene group crosslinking two different carbon atoms in the ring;

R^6 represents C_{1-5} alkyl, C_{3-7} cycloalkyl, or a 4- to 8-membered saturated heterocycle;

ring A represents any one of the structures in the following formula group (IV)



(IV)

3. The fused azole derivative or a pharmaceutically acceptable salt thereof according to Claim 1 or 2, wherein in Formula (I),

R^1 is C_{1-5} alkyl;

R^2 represents aryl or heteroaryl, wherein the aryl and heteroaryl are optionally substituted by one or two groups selected from the group consisting of C_{1-5} alkoxy and halogen atoms;

R^4 and R^5 which may be the same or different are each C_{1-5} alkyl; or

R^4 and R^5, together with the adjoining nitrogen atom, may form a 4- to 8-membered saturated heterocycle optionally containing one or more oxygen atoms in the ring in addition to the adjoining nitrogen atom, 2-oxa-6-azaspiro[3.3]hept-6-yl, or 2-oxa-7-azaspiro[3.5]non-7-yl, wherein the 4- to 8-membered saturated heterocycle is optionally substituted by one or two groups selected from the group consisting of hydroxy and C_{1-5} alkyl, and the 4- to 8-membered saturated heterocycle optionally has a C_{1-5} alkylene group crosslinking two different carbon atoms in the ring;

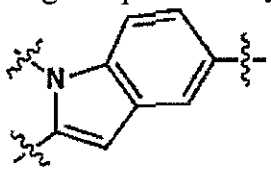
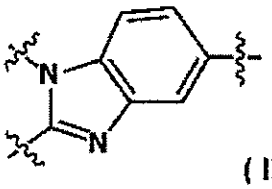
R^6 is C_{3-7} cycloalkyl.

4. The fused azole derivative or a pharmaceutically acceptable salt thereof according to any one of Claims 1 to 3, wherein in Formula (I),

R^2 is phenyl or pyridyl, wherein the phenyl and pyridyl are optionally substituted by one or two groups selected from the group consisting of C_{1-5} alkoxy and halogen atoms.

5. The fused azole derivative or a pharmaceutically acceptable salt thereof according to any one of Claims 1 to 4, wherein in Formula (I),

ring A represents any one of the structures in the following formula group (IX):

 and  (IX).

6. The fused azole derivative or a pharmaceutically acceptable salt thereof according to Claim 1, wherein the fused azole derivative is selected from the group consisting of:

2-{2-(3-chlorophenyl)-5-[3-(2-oxa-6-azaspiro[3.3]hept-6-yl)propoxy]-1H-benzimidazol-1-yl}-N-isopropyl acetamide,

2-[2-(3-chlorophenyl)-5-{3-[(1R,5S)-3-oxa-8-azabicyclo[3.2.1]oct-8-yl]propoxy}-1H-benzimidazol-1-yl]-N-isopropyl acetamide,

2-{2-(4-fluoro-3-methoxyphenyl)-5-[3-(2-oxa-6-azaspiro[3.3]hept-6-yl)propoxy]-1H-benzimidazol-1-yl}-N-isopropyl acetamide,

2-[2-(4-fluoro-3-methoxyphenyl)-5-{3-[(1R,5S)-3-oxa-8-azabicyclo[3.2.1]oct-8-yl]propoxy}-1H-benzimidazol-1-yl]-N-isopropyl acetamide,

2-{2-(3-chloro-4-fluorophenyl)-5-[3-(2-oxa-6-azaspiro[3.3]hept-6-yl)propoxy]-1H-benzimidazol-1-yl}-N-isopropyl acetamide,

2-[2-(3-chloro-4-fluorophenyl)-5-{3-[(1R,5S)-3-oxa-8-azabicyclo[3.2.1]oct-8-yl]propoxy}-1H-benzimidazol-1-yl]-N-isopropyl acetamide,

N-tert-butyl-2-[2-(4-fluoro-3-methoxyphenyl)-5-(4-methyl-1,4-diazepan-1-yl)-1H-benzimidazol-1-yl]acetamide,

N-tert-butyl-2-{2-(4-fluoro-3-methoxyphenyl)-5-[4-(pyrrolidin-1-yl)piperidin-1-yl]-1H-benzimidazol-1-yl}acetamide,

N-tert-butyl-2-[2-(3-chloro-4-fluorophenyl)-5-(4-methyl-1,4-diazepan-1-yl)-1H-benzimidazol-1-yl]acetamide,

2-{2-(3-chlorophenyl)-5-[3-(2-oxa-6-azaspiro[3.3]hept-6-yl)propoxy]-1H-indol-1-yl}-N-isopropyl acetamide, and

2-{2-(3-chloro-4-fluorophenyl)-5-[(1-cyclopentylpiperidin-4-yl)oxy]-1H-indol-1-yl}-N-isopropyl acetamide.

7. The agent comprising the fused azole derivative or pharmaceutically acceptable salt thereof according to any one of Claims 1 to 6 for use in the treatment or prevention of mood disorder, anxiety disorder, schizophrenia, Alzheimer's disease, Parkinson's disease, Huntington's chorea, eating disorder, hypertension, gastrointestinal disease, drug addiction, epilepsy, cerebral infarction, cerebral ischemia, cerebral edema, head injury, inflammation, immune-related disease, or alopecia.

8. The use of the fused azole derivative or pharmaceutically acceptable salt thereof according to any one of Claims 1 to 6 in the manufacture of a medicament for the treatment or prevention of mood disorder, anxiety disorder, schizophrenia, Alzheimer's disease, Parkinson's disease, Huntington's chorea, eating disorder, hypertension, gastrointestinal disease, drug addiction, epilepsy, cerebral infarction, cerebral ischemia, cerebral edema, head injury, inflammation, immune-related disease, or alopecia.

9. A pharmaceutical composition comprising the fused azole derivative or pharmaceutically acceptable salt thereof according to any one of Claims 1 to 6 as an active ingredient.