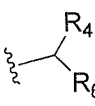


R₅ is X or -C₁-C₆ alkylene-X, wherein X is selected from the group consisting of:

(i) phenyl;

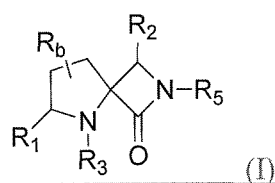
(ii) heteroaryl including from 5 to 6 ring atoms wherein 1, 2, or 3 of the ring atoms are independently selected from the group consisting of N, NH, N(C₁-C₃ alkyl), O, and S; and

5 (iii) heterocyclyl including from 3 to 6 ring atoms wherein 1, 2, or 3 of the ring atoms are independently selected from the group consisting of N, NH, N(C₁-C₃ alkyl), O, and S;

wherein R₅ is optionally substituted with ; and

R₆ is selected from the group consisting of H, halogen, hydroxyl, cyano, -O-C(O)-C₁-C₆ alkyl, C₁-C₆ alkyl, or C₁-C₆ alkoxy.

10 [0008a] In one aspect of the present disclosure, there is provided a compound represented by formula I:



or a pharmaceutically acceptable salt thereof, wherein

R_b is selected from the group consisting of H, halogen, hydroxyl, cyano or C₁-C₆ alkyl;

15 R₁ is H or C₁-C₆ alkyl;

R₂ is H or C₁-C₆ alkyl;

R₃ is selected from the group consisting of H, C₁-C₆ alkyl and a nitrogen protecting group;

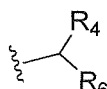
R₄ is H or C₁-C₆ alkyl;

20 R₅ is X or -C₁-C₆ alkylene-X, wherein X is selected from the group consisting of:

(i) phenyl;

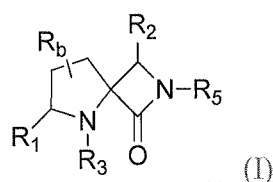
(ii) heteroaryl including from 5 to 6 ring atoms wherein 1, 2, or 3 of the ring atoms are independently selected from the group consisting of N, NH, N(C₁-C₃ alkyl), O, and S; and

(iii) heterocyclyl including from 3 to 6 ring atoms wherein 1, 2, or 3 of the ring atoms are independently selected from the group consisting of N, NH, N(C1-C3 alkyl), O,

and S; wherein R_5 is optionally substituted with ; and

R_6 is selected from the group consisting of H, halogen, hydroxyl, cyano, -O-C(O)-C₁-C₆ alkyl, C₁-C₆ alkyl, or C₁-C₆ alkoxy.

[0008b] In another aspect of the present disclosure, there is provided a compound represented by formula I:



and pharmaceutically acceptable salts, stereoisomers, and N-oxides thereof, wherein

R_b is selected from the group consisting of H, halogen, hydroxyl, cyano or C₁-C₆ alkyl;

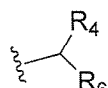
R_1 is H or C₁-C₆ alkyl;

R_2 is H or C₁-C₆ alkyl;

R_3 is selected from the group consisting of H, C₁-C₆ alkyl and a nitrogen protecting group;

R_4 is H or C₁-C₆ alkyl;

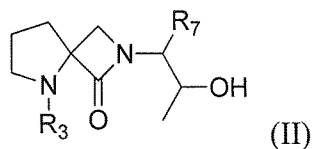
R_5 is X or -C₁-C₆ alkylene-X, wherein X is selected from the group consisting of phenyl, a 4- to 6-membered heteroaryl ring having 1, 2, or 3 heteroatoms selected from O, S, or N, or a 4- to 6-membered heterocyclyl ring having 1, 2, or 3 heteroatoms

selected from O, S, or N, and wherein R_5 is optionally substituted with ; and

R_6 is selected from the group consisting of H, halogen, hydroxyl, cyano, -O-C(O)-C₁-C₆ alkyl, C₁-C₆ alkyl, or C₁-C₆ alkoxy.

[0009] In another aspect, there is provided a compound represented by formula II Also disclosed herein are compounds represented by the formula:

4b



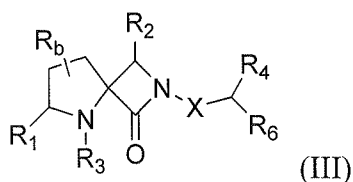
and pharmaceutically acceptable salts, stereoisomers, and N-oxides thereof, wherein

R₃ is selected from the group consisting of H, C₁-C₆alkyl and a nitrogen protecting group; and

R₇ is a 4- to 6-membered heteroaryl ring having 1, 2, or 3 heteroatoms selected from O, S, or N,

5 optionally substituted on a free carbon by a substituent selected from the group consisting of: halogen, C₁-C₆alkyl, hydroxyl, cyano, and phenyl.

[0010] In another aspect, there is provided a compound represented by formula IIIAlso provided herein are compounds represented by the formula:



10 and pharmaceutically acceptable salts, stereoisomers, and N-oxides thereof, wherein

R_b is selected from the group consisting of H, halogen, hydroxyl, cyano or C₁-C₆ alkyl;

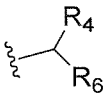
R₁ is H or C₁-C₆ alkyl;

R₂ is H or C₁-C₆ alkyl;

R₃ is selected from the group consisting of H, C₁-C₆ alkyl and a nitrogen protecting group;

R₄ is H or C₁-C₆ alkyl;

X is selected from the group consisting of phenyl, a 4- to 6-membered heteroaryl ring having 1, 2, or 3 heteroatoms selected from O, S, or N, or a 4- to 6-membered heterocyclyl ring having 1,

2, or 3 heteroatoms selected from O, S, or N, wherein  is present on a free carbon of X;

5 and

R₆ is selected from the group consisting of H, halogen, hydroxyl, cyano, -O-C(O)-C₁-C₆ alkyl, C₁-C₆ alkyl, or C₁-C₆ alkoxy.

10 [0010a] In another aspect of the present disclosure, there is provided a pharmaceutical composition comprising a compound disclosed herein, and a pharmaceutically acceptable excipient.

[0010b] In an additional aspect of the present disclosure, there is provided a use of a compound disclosed herein in the manufacture of a medicament for treating depression, Alzheimer's disease, attention deficit disorder, schizophrenia, or anxiety, in a patient in need thereof.

15 **[0011]** Also provided herein are pharmaceutically acceptable compositions comprising a disclosed compound, and a pharmaceutically acceptable excipient. For example, such compositions may be suitable for oral or intravenous administration to a patient.

[0012] ~~There is also provided~~In another aspect, a method of treating a condition selected from the group consisting of autism, anxiety, depression, bipolar disorder, attention deficit disorder, attention deficit hyperactivity disorder (ADHD), schizophrenia, a psychotic disorder, a psychotic symptom, social withdrawal, obsessive-compulsive disorder, phobia, post-traumatic stress syndrome, a behavior disorder, an impulse control disorder, a substance abuse disorder, a sleep disorder, a memory disorder, a learning disorder, urinary incontinence, multiple system atrophy, progressive supra-nuclear palsy, Friedrich's ataxia, Down's syndrome, fragile X syndrome, tuberous sclerosis, olivio-ponto-cerebellar atrophy, cerebral palsy, drug-induced optic neuritis, ischemic retinopathy, diabetic retinopathy, glaucoma, dementia, AIDS dementia, Alzheimer's disease, Huntington's chorea, spasticity, myoclonus, muscle spasm, Tourette's syndrome, epilepsy, cerebral ischemia, stroke, a brain tumor, traumatic brain injury, cardiac arrest, myelopathy, spinal cord injury, peripheral neuropathy, acute neuropathic pain, and chronic neuropathic, in a patient in need thereof is provided. Such methods may comprise

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administering to the patient a pharmaceutically effective amount of a disclosed compound or pharmaceutically acceptable salts, stereoisomers, N-oxides, and hydrates thereof.

[0013] In some embodiments, a contemplated method includes treating depression. For example, depression may include one or more of major depressive disorder, dysthymic disorder, psychotic depression, postpartum depression, seasonal affective disorder, bipolar disorder, mood disorder, or depression caused by a chronic medical condition. In other 5 embodiments, a contemplated method may treat schizophrenia. Such schizophrenia may be,

20. The compound of any one of claims 1-11, wherein R_5 is $-C_1-C_6$ alkylene-X.
21. The compound of any one of claims 1-11, wherein R_5 is $-C_1-C_2$ alkylene-X.
22. The compound of claim 21 or 22, wherein R_5 is substituted with $-\text{CH}(R_4)(R_6)$.
23. The compound of claim 22, wherein R_5 is substituted on the alkylene portion with $-\text{CH}(R_4)(R_6)$.
24. The compound of claim 23, wherein R_5 has the formula $-\text{CH}(\text{CHR}_4\text{R}_6)\text{-X}$.
25. The compound of any one of claims 22-24, wherein R_4 is C_1-C_6 alkyl.
26. The compound of any one of claims 22-25, wherein R_4 is methyl.
27. The compound of any one of claims 22-26, wherein R_6 is selected from the group consisting of hydroxyl, $-\text{O}-\text{C}(\text{O})-C_1-C_6$ alkyl, and C_1-C_6 alkoxy.
28. The compound of claim 27, wherein R_6 is hydroxyl.
29. The compound of claim 20 or 21, wherein X is heteroaryl including from 5 to 6 ring atoms wherein 1, 2, or 3 of the ring atoms are independently selected from the group consisting of N, NH, $\text{N}(C_1-C_3 \text{ alkyl})$, O, and S.
30. The compound of any one of claims 20-22, wherein X is selected from the group consisting of 1,2,4- oxadiazolyl, 1,3,4- oxadiazolyl, pyridyl, and pyrimidinyl.
31. The compound of any one of claims 1-30, wherein R_b is H.
32. The compound of claim 1, wherein the compound is selected from the compounds delineated in Table 1.
33. A pharmaceutical composition comprising a compound of any one of claims 1-32, and a pharmaceutically acceptable excipient.
34. The pharmaceutical composition of claim 33, suitable for oral administration.
35. The pharmaceutical composition of claim 33, suitable for intravenous administration.
36. Use of a compound of any one of claims 1-32 in the manufacture of a medicament for A
~~method of treating of treating depression, Alzheimer's disease, attention deficit disorder,~~
~~schizophrenia, or anxiety, in a patient in need thereof, comprising administering to said patient:~~
~~a pharmaceutically effective amount of a compound of any one of claims 1-32.~~

61. The pharmaceutical composition of claim 60, suitable for oral administration.
62. The pharmaceutical composition of claim 60, suitable for intravenous administration.
63. Use of a compound of any one of claims 37-59 in the manufacture of a medicament for
~~A method of treating or treating depression, Alzheimer's disease, attention deficit disorder,~~
~~schizophrenia, or anxiety, in a patient in need thereof, comprising administering to said patient:~~
~~a pharmaceutically effective amount of a compound of any one of claims 37-59.~~