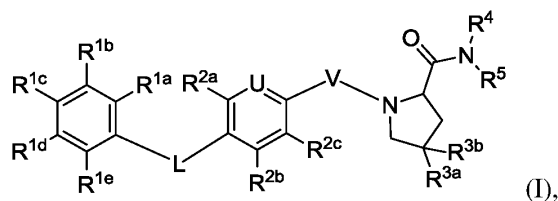


What is claimed is:

1. A compound having Formula (I) or a stereoisomer, a geometric isomer, a tautomer, an *N*-oxide, a hydrate, a solvate, a metabolite, a pharmaceutically acceptable salt or a prodrug thereof,



wherein

L is $-\text{CH}_2\text{O}-$ or $-\text{OCH}_2-$;

U is CR^u or N;

V is $-\text{CH}_2-$, $-\text{CH}_2\text{CH}_2-$ or a single bond;

each R^{1a} , R^{1b} , R^{1c} , R^{1d} and R^{1e} is independently H, D, F, Cl, Br, I, $-\text{CN}$, $-\text{NO}_2$, $-\text{NH}_2$, $-\text{OH}$, $-\text{SH}$, $-\text{COOH}$, $-\text{C}(=\text{O})\text{NH}_2$, $-\text{C}(=\text{O})\text{NHCH}_3$, $-\text{C}(=\text{O})\text{N}(\text{CH}_3)_2$, $-\text{C}(=\text{O})-(\text{C}_1-\text{C}_6 \text{ alkyl})$, $-\text{C}(=\text{O})-(\text{C}_1-\text{C}_6 \text{ alkoxy})$, $\text{C}_1-\text{C}_6 \text{ alkyl}$, $\text{C}_2-\text{C}_6 \text{ alkenyl}$, $\text{C}_2-\text{C}_6 \text{ alkynyl}$, $\text{C}_1-\text{C}_6 \text{ haloalkyl}$, $\text{C}_1-\text{C}_6 \text{ alkoxy}$, $\text{C}_1-\text{C}_6 \text{ haloalkoxy}$, $\text{C}_1-\text{C}_6 \text{ alkylthio}$, $\text{C}_1-\text{C}_6 \text{ alkylamino}$, hydroxy-substituted $\text{C}_1-\text{C}_6 \text{ alkyl}$, $\text{C}_3-\text{C}_8 \text{ cycloalkyl}$, 3-8 membered heterocyclyl, $\text{C}_6-\text{C}_{10}\text{aryl}$ or 5-10 membered heteroaryl;

R^u is H, D, F, Cl, Br, I, $-\text{CN}$, $-\text{NO}_2$, $-\text{NH}_2$, $-\text{OH}$, $-\text{SH}$, $-\text{COOH}$, $-\text{C}(=\text{O})\text{NH}_2$, $-\text{C}(=\text{O})\text{NHCH}_3$, $-\text{C}(=\text{O})\text{N}(\text{CH}_3)_2$, $-\text{C}(=\text{O})-(\text{C}_1-\text{C}_6 \text{ alkyl})$, $-\text{C}(=\text{O})-(\text{C}_1-\text{C}_6 \text{ alkoxy})$, $\text{C}_1-\text{C}_6 \text{ alkyl}$, $\text{C}_2-\text{C}_6 \text{ alkenyl}$, $\text{C}_2-\text{C}_6 \text{ alkynyl}$, $\text{C}_1-\text{C}_6 \text{ haloalkyl}$, $\text{C}_1-\text{C}_6 \text{ alkoxy}$, $\text{C}_1-\text{C}_6 \text{ haloalkoxy}$, $\text{C}_1-\text{C}_6 \text{ alkylthio}$, $\text{C}_1-\text{C}_6 \text{ alkylamino}$, hydroxy-substituted $\text{C}_1-\text{C}_6 \text{ alkyl}$, $\text{C}_3-\text{C}_8 \text{ cycloalkyl}$, 3-8 membered heterocyclyl, $\text{C}_6-\text{C}_{10}\text{aryl}$ or 5-10 membered heteroaryl;

each R^{2a} , R^{2b} and R^{2c} is independently H, D, F, Cl, Br, I, $-\text{CN}$, $-\text{NO}_2$, $-\text{NH}_2$, $-\text{OH}$, $-\text{SH}$, $-\text{COOH}$, $-\text{C}(=\text{O})\text{NH}_2$, $-\text{C}(=\text{O})\text{NHCH}_3$, $-\text{C}(=\text{O})\text{N}(\text{CH}_3)_2$, $-\text{C}(=\text{O})-(\text{C}_1-\text{C}_6 \text{ alkyl})$, $-\text{C}(=\text{O})-(\text{C}_1-\text{C}_6 \text{ alkoxy})$, $\text{C}_1-\text{C}_6 \text{ alkyl}$, $\text{C}_2-\text{C}_6 \text{ alkenyl}$, $\text{C}_2-\text{C}_6 \text{ alkynyl}$, $\text{C}_1-\text{C}_6 \text{ haloalkyl}$, $\text{C}_1-\text{C}_6 \text{ alkoxy}$, $\text{C}_1-\text{C}_6 \text{ haloalkoxy}$, $\text{C}_1-\text{C}_6 \text{ alkylthio}$, $\text{C}_1-\text{C}_6 \text{ alkylamino}$, hydroxy-substituted $\text{C}_1-\text{C}_6 \text{ alkyl}$, $\text{C}_3-\text{C}_8 \text{ cycloalkyl}$, 3-8 membered heterocyclyl, $\text{C}_6-\text{C}_{10}\text{aryl}$ or 5-10 membered heteroaryl;

R^{3a} is D, F, Cl, Br, I, $\text{C}_1-\text{C}_6 \text{ alkyl}$, $\text{C}_1-\text{C}_6 \text{ haloalkyl}$, $\text{C}_2-\text{C}_6 \text{ alkoxy}$, $\text{C}_1-\text{C}_6 \text{ haloalkoxy}$ or hydroxy-substituted $\text{C}_1-\text{C}_6 \text{ alkyl}$;

R^{3b} is H, D, F, Cl, Br, I, $\text{C}_1-\text{C}_6 \text{ alkyl}$, $\text{C}_1-\text{C}_6 \text{ haloalkyl}$, $\text{C}_1-\text{C}_6 \text{ alkoxy}$, $\text{C}_1-\text{C}_6 \text{ haloalkoxy}$ or hydroxy-substituted $\text{C}_1-\text{C}_6 \text{ alkyl}$; and

each R⁴ and R⁵ is independently H, D, C₁-C₆ alkyl, C₂-C₆ alkenyl, C₂-C₆ alkynyl, C₁-C₆ haloalkyl, C₁-C₆ alkoxy, C₁-C₆ haloalkoxy, C₁-C₆ alkylthio, C₁-C₆ alkylamino, hydroxy-substituted C₁-C₆ alkyl, C₃-C₈ cycloalkyl, 3-8 membered heterocyclyl, C₆-C₁₀ aryl or 5-10 membered heteroaryl, wherein each of the C₁-C₆ alkyl, C₂-C₆ alkenyl, C₂-C₆ alkynyl, C₁-C₆ haloalkyl, C₁-C₆ alkoxy, C₁-C₆ haloalkoxy, C₁-C₆ alkylthio, C₁-C₆ alkylamino, hydroxy-substituted C₁-C₆ alkyl, C₃-C₈ cycloalkyl, 3-8 membered heterocyclyl, C₆-C₁₀ aryl and 5-10 membered heteroaryl is independently and optionally substituted with 1, 2, 3, 4 or 5 substituents selected from D, F, Cl, Br, I, -OH, -NH₂, -NO₂, -CN, C₁-C₆ alkyl, C₁-C₆ haloalkyl, C₁-C₆ alkoxy, C₁-C₆ haloalkoxy, C₃-C₈ cycloalkyl or C₆-C₁₀ aryl.

2. The compound of claim 1, wherein each R^{1a}, R^{1b}, R^{1c}, R^{1d} and R^{1e} is independently H, D, F, Cl, Br, I, -CN, -NO₂, -NH₂, -OH, -SH, -COOH, -C(=O)NH₂, -C(=O)NHCH₃, -C(=O)N(CH₃)₂, -C(=O)-(C₁-C₄ alkyl), -C(=O)-(C₁-C₄ alkoxy), C₁-C₄ alkyl, C₂-C₄ alkenyl, C₂-C₄ alkynyl, C₁-C₄ haloalkyl, C₁-C₄ alkoxy, C₁-C₄ haloalkoxy, C₁-C₄ alkylthio, C₁-C₄ alkylamino, hydroxy-substituted C₁-C₄ alkyl, C₃-C₆ cycloalkyl, 3-6 membered heterocyclyl, C₆-C₁₀ aryl or 5-10 membered heteroaryl;

R^u is H, D, F, Cl, Br, I, -CN, -NO₂, -NH₂, -OH, -SH, -COOH, -C(=O)NH₂, -C(=O)NHCH₃, -C(=O)N(CH₃)₂, -C(=O)-(C₁-C₄ alkyl), -C(=O)-(C₁-C₄ alkoxy), C₁-C₄ alkyl, C₂-C₄ alkenyl, C₂-C₄ alkynyl, C₁-C₄ haloalkyl, C₁-C₄ alkoxy, C₁-C₄ haloalkoxy, C₁-C₄ alkylthio, C₁-C₄ alkylamino, hydroxy-substituted C₁-C₄ alkyl, C₃-C₆ cycloalkyl, 3-6 membered heterocyclyl, C₆-C₁₀ aryl or 5-10 membered heteroaryl;

each R^{2a}, R^{2b} and R^{2c} is independently H, D, F, Cl, Br, I, -CN, -NO₂, -NH₂, -OH, -SH, -COOH, -C(=O)NH₂, -C(=O)NHCH₃, -C(=O)N(CH₃)₂, -C(=O)-(C₁-C₄ alkyl), -C(=O)-(C₁-C₄ alkoxy), C₁-C₄ alkyl, C₂-C₄ alkenyl, C₂-C₄ alkynyl, C₁-C₄ haloalkyl, C₁-C₄ alkoxy, C₁-C₄ haloalkoxy, C₁-C₄ alkylthio, C₁-C₄ alkylamino, hydroxy-substituted C₁-C₄ alkyl, C₃-C₆ cycloalkyl, 3-6 membered heterocyclyl, C₆-C₁₀ aryl or 5-10 membered heteroaryl.

3. The compound of claim 1 or 2, wherein each R^{1a}, R^{1b}, R^{1c}, R^{1d} and R^{1e} is independently H, D, F, Cl, Br, I, -CN, -NO₂, -NH₂, -OH, -SH, -COOH, -C(=O)NH₂, -C(=O)NHCH₃, -C(=O)N(CH₃)₂, -C(=O)-CH₃, -C(=O)-OCH₃, methyl, ethyl, *n*-propyl, *i*-propyl, allyl, propenyl, propargyl, propinyl, -CHF₂, -CF₃, -CHFCH₂F, -CF₂CHF₂, -CH₂CF₃, -CH₂CF₂CHF₂, methoxy, ethoxy, *n*-propoxy, isopropoxy, -OCHF₂, -OCF₃, -OCHFCH₂F, -OCF₂CHF₂, -OCH₂CF₃, -OCH₂CF₂CHF₂, methylthio, ethylthio, methylamino, dimethylamino, ethylamino,

hydroxymethyl, 2-hydroxyethyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, azetidiny, pyrrolidinyl, tetrahydrofuranyl, piperidyl, piperazinyl, morpholinyl, phenyl, indenyl, naphthyl, pyrrolyl, pyrazolyl, imidazolyl, triazolyl, tetrazolyl, furanyl, thienyl, thiazolyl, oxazolyl, pyridyl, pyrimidyl, pyrazinyl, pyridazyl, benzimidazolyl, indolyl or quinolyl;

R^u is H, D, F, Cl, Br, I, -CN, -NO₂, -NH₂, -OH, -SH, -COOH, -C(=O)NH₂, -C(=O)NHCH₃, -C(=O)N(CH₃)₂, -C(=O)-CH₃, -C(=O)-OCH₃, methyl, ethyl, *n*-propyl, *i*-propyl, allyl, propenyl, propargyl, propinyl, -CHF₂, -CF₃, -CHFCH₂F, -CF₂CHF₂, -CH₂CF₃, -CH₂CF₂CHF₂, methoxy, ethoxy, *n*-propoxy, isopropoxy, -OCHF₂, -OCF₃, -OCHFCH₂F, -OCF₂CHF₂, -OCH₂CF₃, -OCH₂CF₂CHF₂, methylthio, ethylthio, methylamino, dimethylamino, ethylamino, hydroxymethyl, 2-hydroxyethyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, azetidiny, pyrrolidinyl, tetrahydrofuranyl, piperidyl, piperazinyl, morpholinyl, phenyl, indenyl, naphthyl, pyrrolyl, pyrazolyl, imidazolyl, triazolyl, tetrazolyl, furanyl, thienyl, thiazolyl, oxazolyl, pyridyl, pyrimidyl, pyrazinyl, pyridazyl, benzimidazolyl, indolyl or quinolyl;

each R^{2a} , R^{2b} and R^{2c} is independently H, D, F, Cl, Br, I, -CN, -NO₂, -NH₂, -OH, -SH, -COOH, -C(=O)NH₂, -C(=O)NHCH₃, -C(=O)N(CH₃)₂, -C(=O)-CH₃, -C(=O)-OCH₃, methyl, ethyl, *n*-propyl, *i*-propyl, allyl, propenyl, propargyl, propinyl, -CHF₂, -CF₃, -CHFCH₂F, -CF₂CHF₂, -CH₂CF₃, -CH₂CF₂CHF₂, methoxy, ethoxy, *n*-propoxy, isopropoxy, -OCHF₂, -OCF₃, -OCHFCH₂F, -OCF₂CHF₂, -OCH₂CF₃, -OCH₂CF₂CHF₂, methylthio, ethylthio, methylamino, dimethylamino, ethylamino, hydroxymethyl, 2-hydroxyethyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, azetidiny, pyrrolidinyl, tetrahydrofuranyl, piperidyl, piperazinyl, morpholinyl, phenyl, indenyl, naphthyl, pyrrolyl, pyrazolyl, imidazolyl, triazolyl, tetrazolyl, furanyl, thienyl, thiazolyl, oxazolyl, pyridyl, pyrimidyl, pyrazinyl, pyridazyl, benzimidazolyl, indolyl or quinolyl.

4. The compound of any one of claims 1 to 3, wherein R^{3a} is D, F, Cl, Br, I, C₁-C₄ alkyl, C₁-C₄ haloalkyl, C₂-C₄ alkoxy, C₁-C₄ haloalkoxy or hydroxy-substituted C₁-C₄ alkyl;

R^{3b} is H, D, F, Cl, Br, I, C₁-C₄ alkyl, C₁-C₄ haloalkyl, C₁-C₄ alkoxy, C₁-C₄ haloalkoxy or hydroxy-substituted C₁-C₄ alkyl.

5. The compound of any one of claims 1 to 4, wherein R^{3a} is D, F, Cl, Br, I, methyl, ethyl, *n*-propyl, *i*-propyl, -CHF₂, -CF₃, -CHFCH₂F, -CF₂CHF₂, -CH₂CF₃, -CH₂CF₂CHF₂, ethoxy, *n*-propoxy, isopropoxy, -OCHF₂, -OCF₃, -OCHFCH₂F, -OCF₂CHF₂, -OCH₂CF₃, -OCH₂CF₂CHF₂, hydroxymethyl or 2-hydroxyethyl;

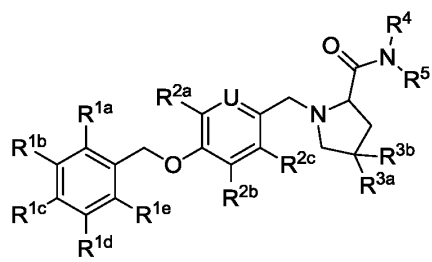
R^{3b} is H, D, F, Cl, Br, I, methyl, ethyl, *n*-propyl, *i*-propyl, -CHF₂, -CF₃, -CHFCH₂F, -CF₂CHF₂, -CH₂CF₃, -CH₂CF₂CHF₂, methoxy, ethoxy, *n*-propoxy, isopropoxy, -OCHF₂, -OCF₃, -OCHFCH₂F, -OCF₂CHF₂, -OCH₂CF₃, -OCH₂CF₂CHF₂, hydroxymethyl or 2-hydroxyethyl.

6. The compound of any one of claims 1 to 5, wherein each R⁴ and R⁵ is independently H, D, C₁-C₄ alkyl, C₂-C₄ alkenyl, C₂-C₄ alkynyl, C₁-C₄ haloalkyl, C₁-C₄ alkoxy, C₁-C₄ haloalkoxy, C₁-C₄ alkylthio, C₁-C₄ alkylamino, hydroxy-substituted C₁-C₄ alkyl, C₃-C₆ cycloalkyl, 3-6 membered heterocyclyl, C₆-C₁₀ aryl or 5-10 membered heteroaryl, wherein each of the C₁-C₄ alkyl, C₂-C₄ alkenyl, C₂-C₄ alkynyl, C₁-C₄ haloalkyl, C₁-C₄ alkoxy, C₁-C₄ haloalkoxy, C₁-C₄ alkylthio, C₁-C₄ alkylamino, hydroxy-substituted C₁-C₄ alkyl, C₃-C₆ cycloalkyl, 3-6 membered heterocyclyl, C₆-C₁₀ aryl and 5-10 membered heteroaryl is independently and optionally substituted with 1, 2, 3, 4 or 5 substituents selected from D, F, Cl, Br, I, -OH, -NH₂, -NO₂, -CN, C₁-C₄ alkyl, C₁-C₄ haloalkyl, C₁-C₄ alkoxy, C₁-C₄ haloalkoxy, C₃-C₆ cycloalkyl or C₆-C₁₀ aryl.

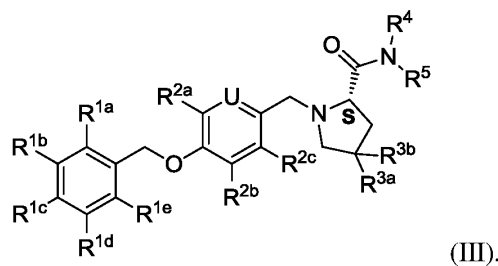
7. The compound of any one of claims 1 to 6, wherein each R⁴ and R⁵ is independently H, D, methyl, ethyl, *n*-propyl, *i*-propyl, allyl, propenyl, propargyl, propinyl, -CHF₂, -CF₃, -CHFCH₂F, -CF₂CHF₂, -CH₂CF₃, -CH₂CF₂CHF₂, methoxy, ethoxy, *n*-propoxy, isopropoxy, -OCHF₂, -OCF₃, -OCHFCH₂F, -OCF₂CHF₂, -OCH₂CF₃, -OCH₂CF₂CHF₂, methylthio, ethylthio, methylamino, dimethylamino, ethylamino, hydroxymethyl, 2-hydroxyethyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, azetidiny, pyrrolidinyl, tetrahydrofuranyl, piperidyl, piperazinyl, morpholinyl, phenyl, indenyl, naphthyl, pyrrolyl, pyrazolyl, imidazolyl, triazolyl, tetrazolyl, furanyl, thienyl, thiazolyl, oxazolyl, pyridyl, pyrimidyl, pyrazinyl, pyridazyl, benzimidazolyl, indolyl or quinolyl, wherein each of the methyl, ethyl, *n*-propyl, *i*-propyl, allyl, propenyl, propargyl, propinyl, -CHF₂, -CHFCH₂F, -CF₂CHF₂, -CH₂CF₃, -CH₂CF₂CHF₂, methoxy, ethoxy, *n*-propoxy, isopropoxy, -OCHF₂, -OCHFCH₂F, -OCF₂CHF₂, -OCH₂CF₃, -OCH₂CF₂CHF₂, methylthio, ethylthio, methylamino, dimethylamino, ethylamino, hydroxymethyl, 2-hydroxyethyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, azetidiny, pyrrolidinyl, tetrahydrofuranyl, piperidyl, piperazinyl, morpholinyl, phenyl, indenyl, naphthyl, pyrrolyl, pyrazolyl, imidazolyl, triazolyl, tetrazolyl, furanyl, thienyl, thiazolyl, oxazolyl, pyridyl, pyrimidyl, pyrazinyl, pyridazyl, benzimidazolyl, indolyl and quinolyl is independently and optionally substituted with 1, 2, 3, 4 or 5 substituents selected from D, F, Cl, Br, I, -OH, -NH₂, -NO₂, -CN, methyl, ethyl, *n*-propyl, *i*-propyl, -CHF₂, -CF₃, -CHFCH₂F, -CF₂CHF₂, -CH₂CF₃, -CH₂CF₂CHF₂, methoxy, ethoxy, *n*-propoxy, isopropoxy, -OCHF₂, -OCF₃, -OCHFCH₂F,

-OCF₂CHF₂, -OCH₂CF₃, -OCH₂CF₂CHF₂, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, phenyl, indenyl or naphthyl.

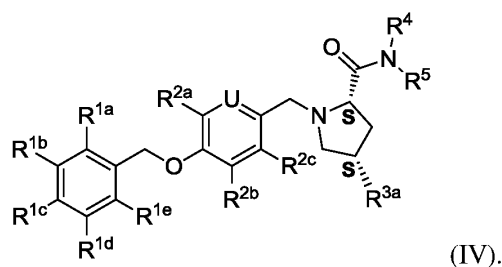
8. The compound of any one of claims 1 to 7 having Formula (II), or a stereoisomer, a geometric isomer, a tautomer, an *N*-oxide, a hydrate, a solvate, a metabolite, a pharmaceutically acceptable salt or a prodrug thereof,



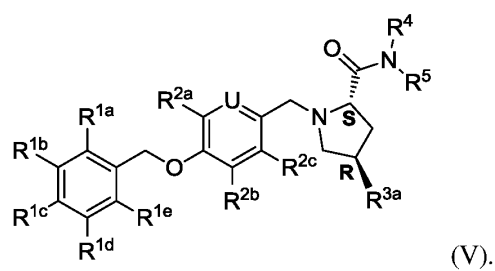
9. The compound of any one of claims 1 to 8 having Formula (III), or a stereoisomer, a geometric isomer, a tautomer, an *N*-oxide, a hydrate, a solvate, a metabolite, a pharmaceutically acceptable salt or a prodrug thereof,



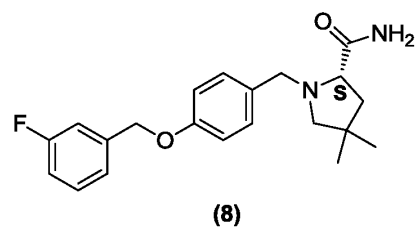
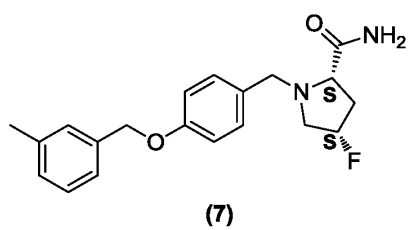
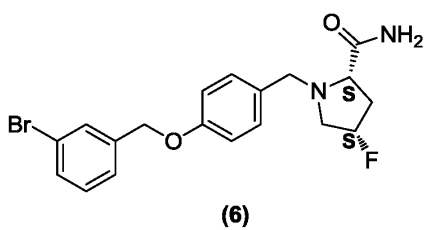
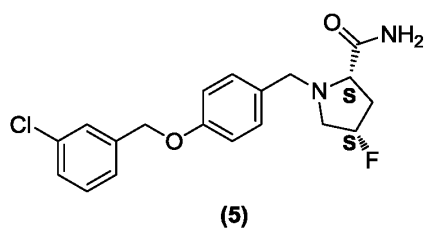
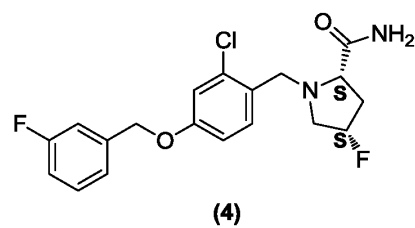
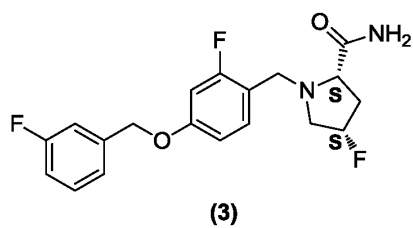
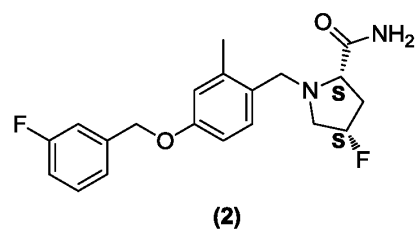
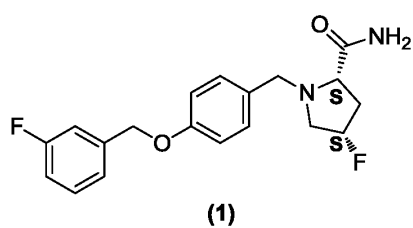
10. The compound of any one of claims 1 to 9 having Formula (IV), or a stereoisomer, a geometric isomer, a tautomer, an *N*-oxide, a hydrate, a solvate, a metabolite, a pharmaceutically acceptable salt or a prodrug thereof,

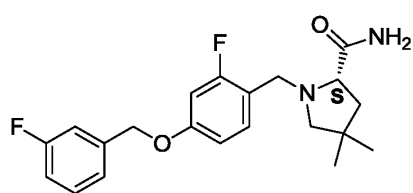


11. The compound of any one of claims 1 to 9 having Formula (V), or a stereoisomer, a geometric isomer, a tautomer, an *N*-oxide, a hydrate, a solvate, a metabolite, a pharmaceutically acceptable salt or a prodrug thereof,

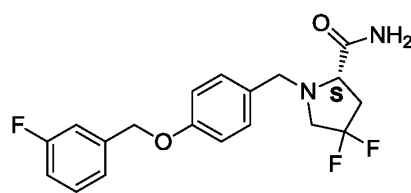


12. The compound of any one of claims 1 to 11 having one of the following structures or a stereoisomer, a geometric isomer, a tautomer, an *N*-oxide, a hydrate, a solvate, a metabolite, a pharmaceutically acceptable salt or a prodrug thereof:

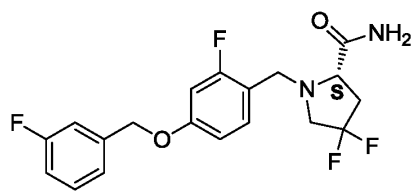




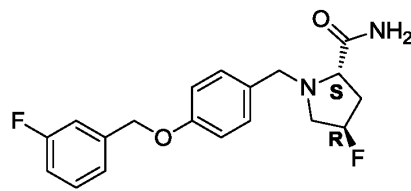
(9)



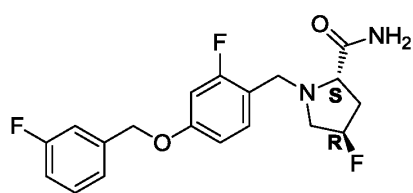
(10)



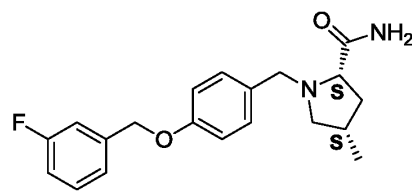
(11)



(12)

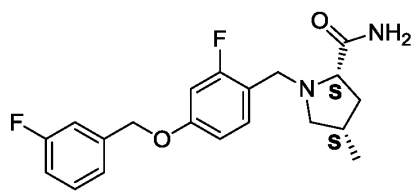


(13)



(14)

or



(15)

13. A pharmaceutical composition comprising the compound of any one of claims 1 to 12.

14. The pharmaceutical composition according to claim 13, wherein the pharmaceutical composition optionally comprises a pharmaceutically acceptable excipient, carrier, adjuvant or a combination thereof.

15. Use of the compound of any one of claims 1 to 12 or the pharmaceutical composition of any one of claims 13 to 14 in the manufacture of a medicament for preventing, treating or lessening a disease regulated by MAO-B in a subject.

16. The use of claim 15, wherein the disease regulated by MAO-B is a neurodegenerative disease, psychosis or cancer.

17. The use of claim 16, wherein the neurodegenerative disease is Parkinson's disease, cerebral ischemia, Alzheimer's disease, amyotrophic lateral sclerosis, bovine spongiform encephalopathy, Huntington's chorea, Creutzfeldt-Jakob disease, ataxia telangiectasia, cerebellar

atrophy, spinal muscular atrophy, primary lateral sclerosis or multiple sclerosis.

18. The compound of any one of claims 1 to 12 or the pharmaceutical composition of any one of claims 13 to 14 for use in preventing, treating or lessening a disease regulated by MAO-B in a subject.

19. The compound or the pharmaceutical composition of claim 18, wherein the disease regulated by MAO-B is a neurodegenerative disease, psychosis or cancer.

20. The compound or the pharmaceutical composition of claim 19, wherein the neurodegenerative disease is Parkinson's disease, cerebral ischemia, Alzheimer's disease, amyotrophic lateral sclerosis, bovine spongiform encephalopathy, Huntington's chorea, Creutzfeldt-Jakob disease, ataxia telangiectasia, cerebellar atrophy, spinal muscular atrophy, primary lateral sclerosis or multiple sclerosis.

21. A method of preventing, treating or lessening a disease regulated by MAO-B comprising administering a therapeutically effective amount of the compound of any one of claims 1 to 12 or the pharmaceutical composition of any one of claims 13 to 14 to the subject.

22. The method of claim 21, wherein the disease regulated by MAO-B is a neurodegenerative disease, psychosis or cancer.

23. The method of claim 22, wherein the neurodegenerative disease is Parkinson's disease, cerebral ischemia, Alzheimer's disease, amyotrophic lateral sclerosis, bovine spongiform encephalopathy, Huntington's chorea, Creutzfeldt-Jakob disease, ataxia telangiectasia, cerebellar atrophy, spinal muscular atrophy, primary lateral sclerosis or multiple sclerosis.