IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:	Mind Medicine Inc	Confirmation No.: 8211
Serial No.:	18/493,385	Group No.:
Filing or 371(c) Date:	October 24, 2023	Examiner:

Entitled: 4-ALKENYL AND 4-ALKYNYL PHENETHYLAMINE DERIVATIVES AND RELATED COMPOUNDS WITH MODIFIED DOM-LIKE ACTION

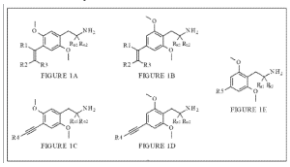
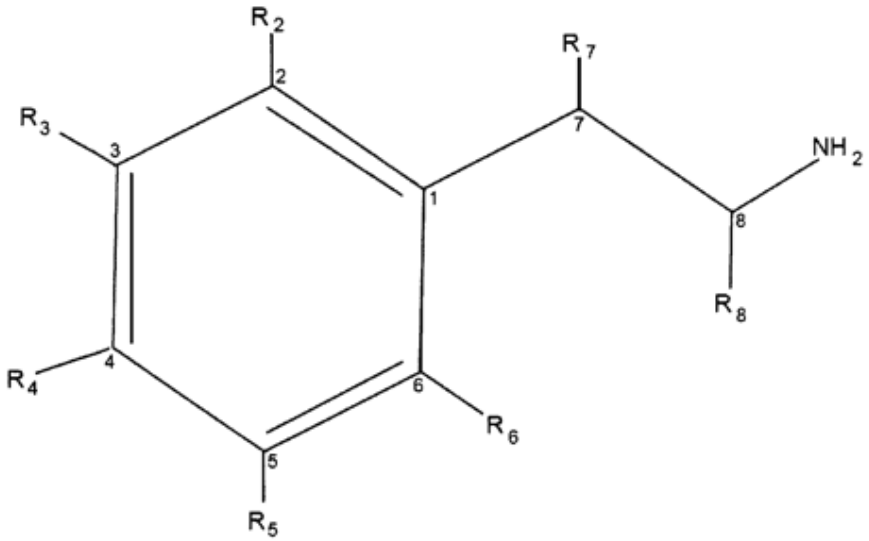
THIRD-PARTY PRE-ISSUANCE SUBMISSION

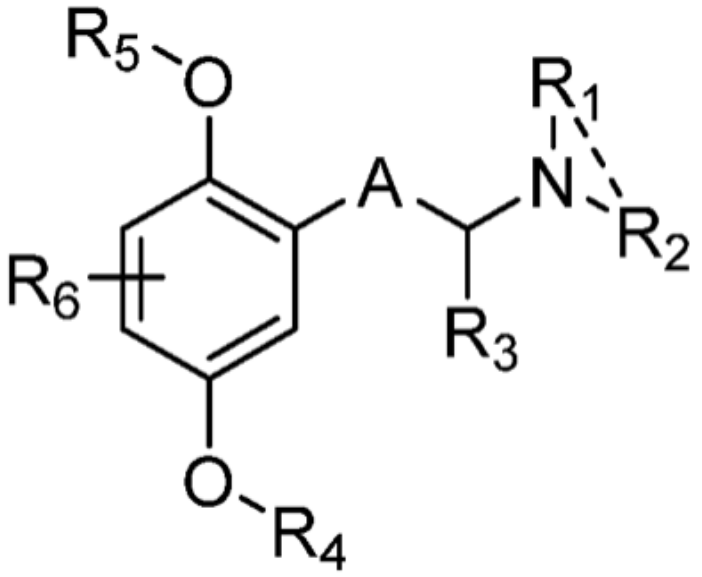
Examiner:

The following documents, which are also identified in the Form PTO/SB/429 filed herewith, are submitted for your consideration as being of potential relevance to the examination of the present application.

1. Int'l Pat. App. Pub. No. WO/2010/151,258 "Methods of treating psychological conditions" (Published December 29, 2010)
2. Int'l Pat. App. Pub. No. WO/2020/181,194 "Compositions and methods of use comprising substances with neural plasticity actions administered at non-psychedelic/psychotomimetic dosages and formulations" (Published September 10, 2020)

Attached hereto is a claim chart providing a concise description of the relevance of each reference in the document list to the elements of the presently pending claims.

U.S.S.N. 18/493,385 Pending Claims	References
1. A composition comprising a compound represented by FIG. 1A-1E,  characterized in that Ra1 and Ra2 is, independently and in any combination, chosen from the group consisting of hydrogen, deuteron, methyl, ethyl, deuterated methyl (D1-D3), or deuterated ethyl (D1-D5), and further characterized in that R1, R2 and R3 are, independently and in any combination, chosen from the group consisting of hydrogen, deuteron, and/or fluorine; or C1-C3 branched or unbranched alkyl with the alkyl optionally and independently substituted with F1-F7 fluorine and/or D1-D7 deuteron substituents; or C3-C6 cycloalkyl optionally and independently substituted with one or more substituents such as F1-F15 fluorine	1. Int'l Pat. App. Pub. No. WO/2010/151,258 "Methods of treating psychological conditions" (Published December 29, 2010) From **Claim 2**: **The method of claim 1 wherein the 5-HT2B receptor agonist comprises a substance having a chemical structure as shown in Formula I,** (I)  wherein: **R2 is H,** CH3, or **OCH3** **R3 is H,** CH3**, or OCH3** **R4 is one of H; F; Cl; Br; I;** or NO2 **R5 is H,** CH3 or **OCH3** **R6 is H,** CH3 **or OCH3** **R7 is H,** CH3, or OCH3 **R8 is H, or CH3** 2. Int'l Pat. App. Pub. No. WO/2020/181,194 "Compositions and methods of use comprising substances with neural plasticity actions administered at non-psychedelic/psychotomimetic dosages and formulations" (Published September 10, 2020) From **Claim 2**: **A compound comprising a structural analogue to 2,5-Dimethoxy-4- iodoamphetamine, according to formula II:**

and/or D1-D15 deuteron and/or C1-C2 alkyl; or (C3-C6 cycloalkyl)-C1-C2 branched or unbranched alkyl optionally and independently substituted with one or more substituents such as F1-F15 fluorine and/or D1-D15 deuteron and/or C1-C2 alkyl; or C2-C5 branched or unbranched alkenyl with E or Z or cis or trans double bond configuration, where any of the carbons of the branched or unbranched alkenyl substituent is optionally substituted independently and in any combination with one or more C1-C2 alkyl, with F1-F13 fluorine, with D1-D13 deuteron, with C2 alkenyl or with aryl or heteroaryl bearing no up to any number of ether, thioether, halogen, alkyl, fluorinated alkyl, alkenyl, alkynyl or nitrogen-containing substituents; or C2-C5 branched or unbranched alkynyl where any of the carbons of the branched or unbranched alkynyl substituent is optionally substituted independently and in	 (II) wherein: **A is C1**-C6 **alkylene**, C2-C6 alkenylene, or C2-C6 alkynylene **R1 and R2 are, independently, hydrogen...** **R3 is hydrogen, deuterium**, C1-C8 alkyl, C2-C8 alkenyl, C2-C8 alkynyl, C3-C8 cycloalkyl, C3-C8 cycloalkenyl, aryl or heterocyclyl, optionally substituted at one or more positions by deuterium, **halogen...** **R4 and R5 are, independently,** hydrogen, **C1**-C8 **alkyl...** **R6 represents 1**-3 **substituents selected from the group consisting of** hydrogen, deuterium, halogen, Ci-Cs alkyl, **C2-C8 alkenyl, C2-C8 alkynyl,** C3-C8 cycloalkyl, C3-C8 cycloalkenyl, aryl or heterocyclyl, **optionally substituted at one or more positions by deuterium, halogen**

any combination with one or more C1-C2 alkyl, with F1-F11 fluorine, with D1-D11 deuteron, with C2 alkenyl or with aryl or heteroaryl bearing no up to any number of ether, thioether, halogen, alkyl, fluorinated alkyl, alkenyl, alkynyl or nitrogen-containing substituents; or any halogen or a nitrogen-containing substituent such as CN or NO2; and further characterized in that R4 is chosen from the group consisting of hydrogen, deuteron, or fluorine; or C1-C3 branched or unbranched alkyl with the alkyl optionally and independently substituted with F1-F7 fluorine and/or D1-D7 deuteron substituents; or C3-C6 cycloalkyl optionally and independently substituted with one or more substituents such as F1-F15 fluorine and/or D1-D15 deuteron and/or C1-C2 alkyl; or (C3-C6 cycloalkyl)-C1-C2 branched or unbranched alkyl optionally and independently substituted with one or more substituents such	

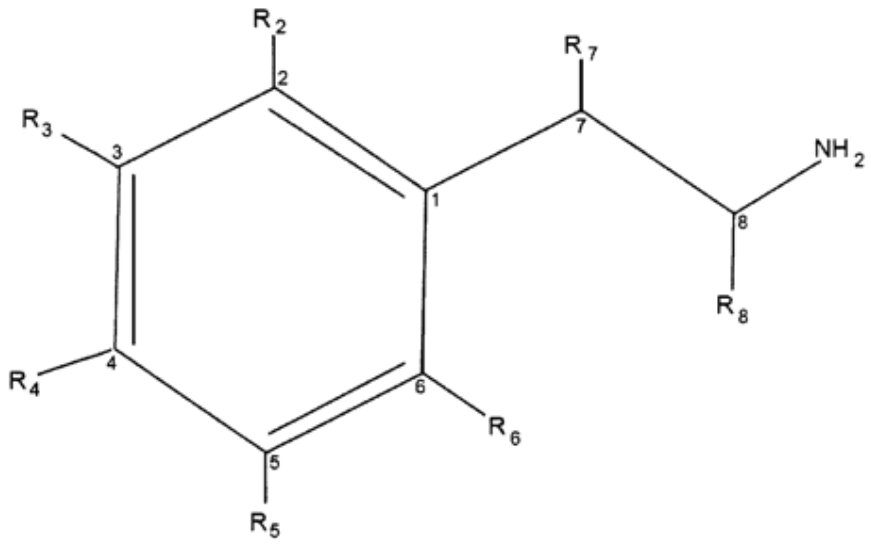
as F1-F15 fluorine and/or D1-D15 deuteron and/or C1-C2 alkyl; or C2-C5 branched or unbranched alkenyl with E or Z or cis or trans double bond configuration, where any of the carbons of the branched or unbranched alkenyl substituent is optionally substituted independently and in any combination with one or more C1-C2 alkyl, with F1-F13 fluorine, with D1-D13 deuteron, with C2 alkenyl or with aryl or heteroaryl bearing no up to any number of ether, thioether, halogen, alkyl, fluorinated alkyl, alkenyl, alkynyl or nitrogen-containing substituents; or C2-C5 branched or unbranched alkynyl where any of the carbons of the branched or unbranched alkynyl substituent is optionally substituted independently and in any combination with one or more C1-C2 alkyl, with F1-F11 fluorine, with D1-D11 deuteron, with C2 alkenyl or with aryl or heteroaryl bearing no up to any number of ether, thioether, halogen, alkyl,	

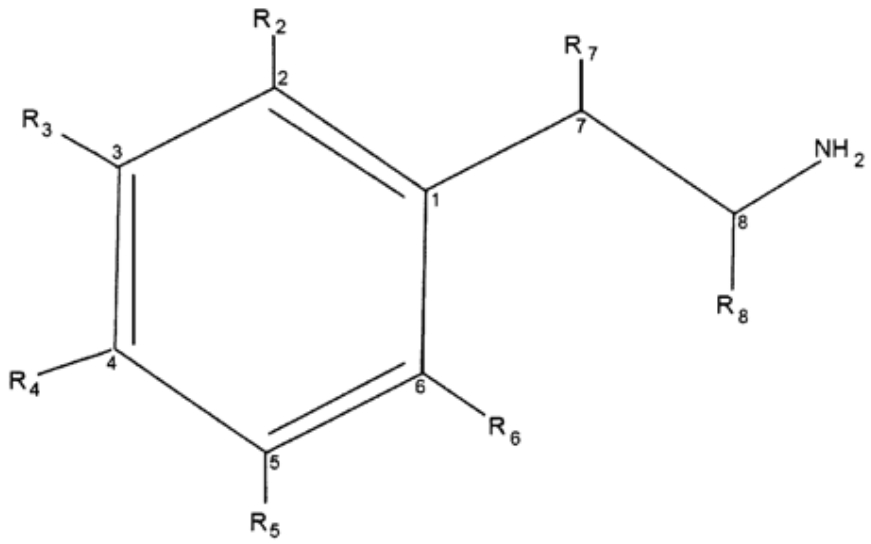
fluorinated alkyl, alkenyl, alkynyl or nitrogen-containing substituents, any halogen or a nitrogen-containing substituent such as CN; and further characterized in that R5 is chosen from the group consisting of fluorine, chlorine, bromine, or iodine; or SF5; or C2-C5 branched or unbranched alkyl with the alkyl optionally and independently substituted with F1-F11 fluorine and/or D1-D11 deuteron substituents or C1 alkyl substituted with F1-F3 and/or D1-D3 deuteron substituents; or C3-C6 cycloalkyl optionally and independently substituted with one or more substituents such as F1-F15 fluorine and/or D1-D15 deuteron and/or C1-C5 alkyl; or (C3-C6 cycloalkyl)-C1-C2 branched or unbranched alkyl optionally and independently substituted with one or more substituents such as F1-F15 fluorine and/or D1-D15 deuteron and/or C1-C5 alkyl, a nitrogen-containing substituent such as CN or NO2; or	

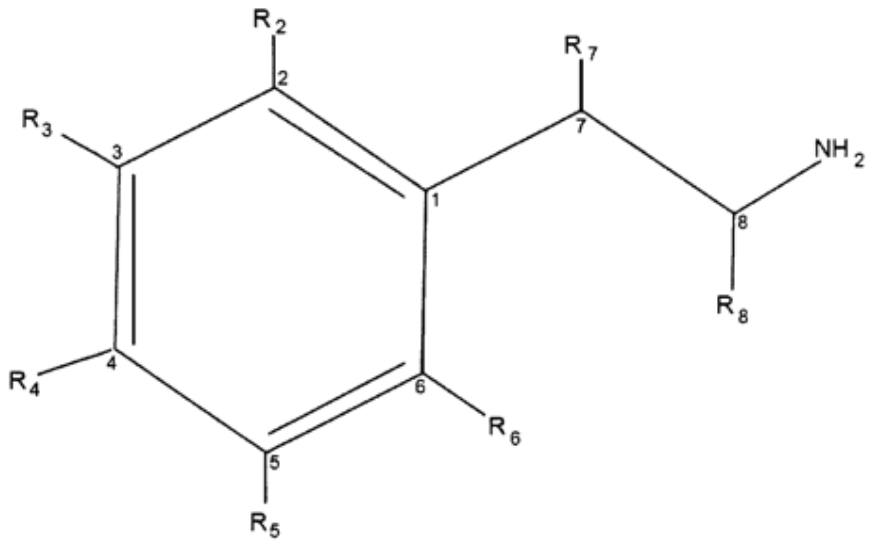
C2-C5 branched or unbranched alkoxy with the alkoxy optionally and independently substituted with F1-F11 fluorine and/or D1-D11 substituents, or C1 alkoxy substituted with F1-F3 and/or D1-D3 deuteron substituents; or C3-C6 cycloalkyloxy optionally and independently substituted with one or more substituents such as F1-F11 fluorine and/or D1-D11 substituents and/or C1-C5 alkyl; or (C3-C6 cycloalkyl)-C1-C2 branched or unbranched alkoxy optionally and independently substituted with one or more substituents such as F1-F15 fluorine and/or D1-D15 and/or C1-C5 alkyl; or C2-C5 branched or unbranched alkenyloxy with E or Z vinylic, cis or trans allylic, E or Z allylic or other double bond position in relation to the attached ether function, where any of the carbons of the branched or unbranched alkenyloxy substituent is optionally substituted independently with one or more C1-C5 alkyl, and/or with F1-F9 fluorine and/or with	

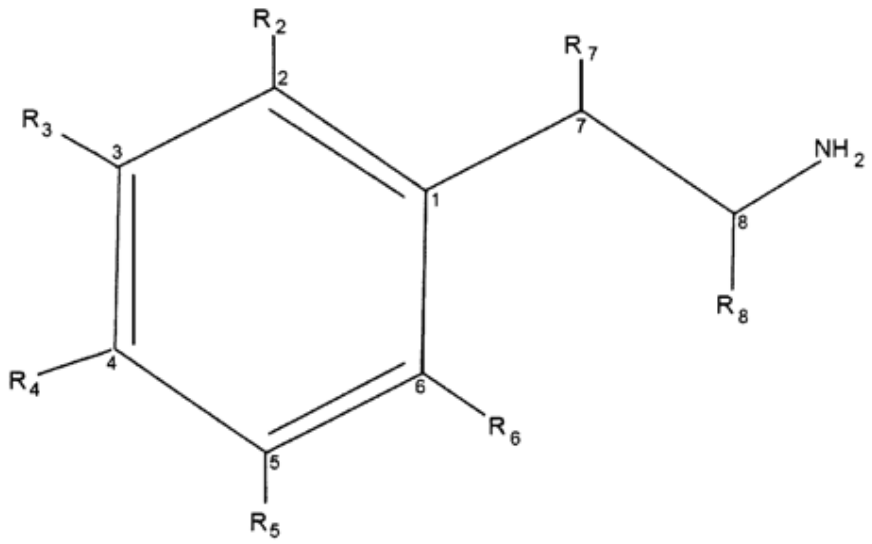
D1-D9 deuteron substituents; or C3-C5 branched or unbranched alkynyloxy, where any of the carbons of the alkynyloxy substituent is optionally substituted independently with one or more C1-C5 alkyl, and/or with F1-F9 fluorine and/or with D1-D9 deuteron substituents; or C3-C5 branched or unbranched alkylthio with the alkylthio group optionally and independently substituted with F1-F11 fluorine and/or D1-D11 substituents, or C1-C2 alkylthio substituted with F1-F5 and/or D1-D5 deuteron substituents; or C3-C6 cycloalkylthio optionally and independently substituted with one or more substituents such as F1-F11 fluorine and/or D1-D11 substituents and/or C1-C5 alkyl; or (C3-C6 cycloalkyl)-C1-C2 branched or unbranched alkylthio optionally and independently substituted with one or more substituents such as F1-F15 fluorine and/or D1-D15 and/or C1-C5 alkyl; or C2-C5 branched or unbranched alkenylthio	

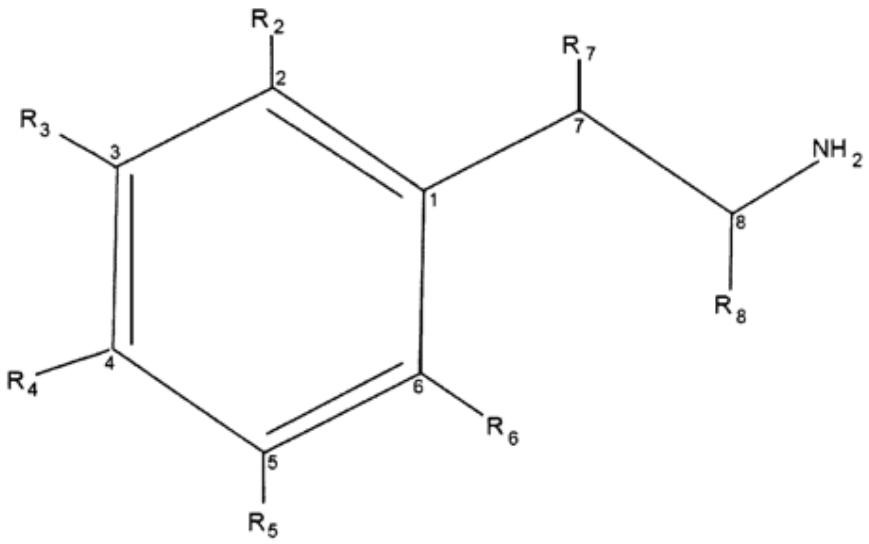
with E or Z vinylic, cis or trans allylic, E or Z allylic or other double bond position in relation to the attached thioether function, where any of the carbons of the branched or unbranched alkenylthio substituent is optionally substituted independently with one or more C1-C5 alkyl, and/or with F1-F9 fluorine and/or with D1-D9 deuteron substituents; or C3-C5 branched or unbranched alkynylthio, where any of the carbons of the alkynylthio substituent is optionally substituted independently with one or more C1-C5 alkyl, and/or with F1-F9 fluorine and/or with D1-D9 deuteron substituents, and further characterized in that any non-protic hydrogen can be replaced by a deuteron or a fluorine in any combination.	
2. The composition of claim 1, wherein said compound is a free base.	1. Int'l Pat. App. Pub. No. WO/2010/151,258 "Methods of treating psychological conditions" (Published December 29, 2010) From **Claim 2**: **The method of claim 1 wherein the 5-HT2B receptor agonist comprises a substance having a chemical structure as shown in Formula I,**

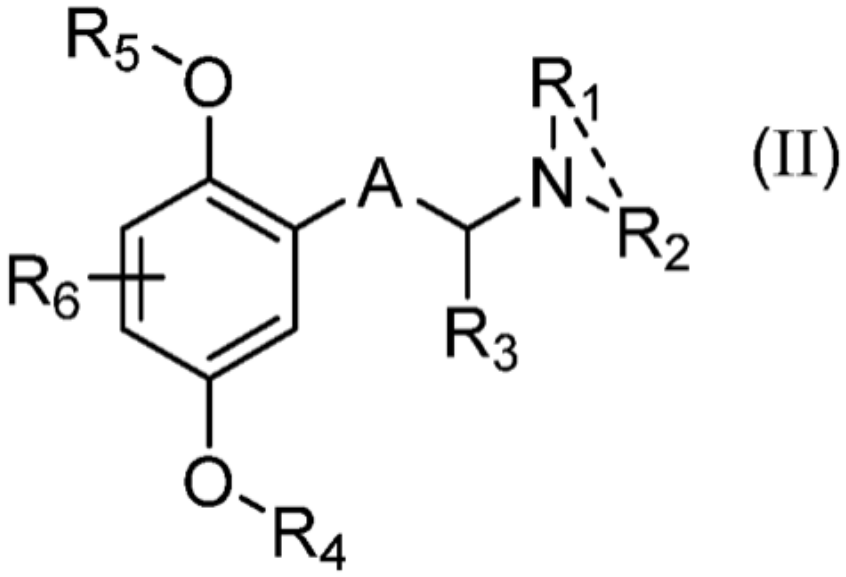
	(I)  wherein: **R2 is H,** CH3, or **OCH3** **R3 is H,** CH3**, or OCH3** **R4 is one of H; F; Cl; Br; I;** or NO2 **R5 is H,** CH3 or **OCH3** **R6 is H,** CH3 **or OCH3** **R7 is H,** CH3, or OCH3 **R8 is H, or CH3** From **[0103]: The compounds can also be administered as a pharmaceutically acceptable acid- or base-addition salt, formed by reaction with inorganic acids...**
3. The composition of claim 1, wherein said compound is a salt thereof.	1. Int'l Pat. App. Pub. No. WO/2010/151,258 "Methods of treating psychological conditions" (Published December 29, 2010) From **Claim 2**: **The method of claim 1 wherein the 5-HT2B receptor agonist comprises a substance having a chemical structure as shown in Formula I,**

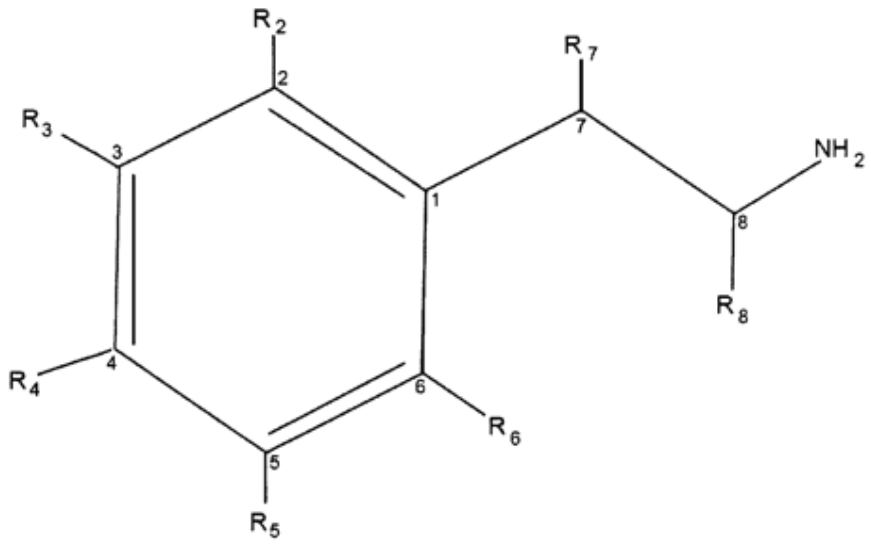
	(I)  wherein: **R2 is H,** CH3, or **OCH3** **R3 is H,** CH3**, or OCH3** **R4 is one of H; F; Cl; Br; I;** or NO2 **R5 is H,** CH3 or **OCH3** **R6 is H,** CH3 **or OCH3** **R7 is H,** CH3, or OCH3 **R8 is H, or CH3** From **[0103]: The compounds can also be administered as a pharmaceutically acceptable acid- or base-addition salt, formed by reaction with inorganic acids...**
4. The composition of claim 3, wherein said compound is a hydrochloride salt or a fumarate salt thereof.	1. Int'l Pat. App. Pub. No. WO/2010/151,258 "Methods of treating psychological conditions" (Published December 29, 2010) From **Claim 2**: **The method of claim 1 wherein the 5-HT2B receptor agonist comprises a substance having a chemical structure as shown in Formula I,**

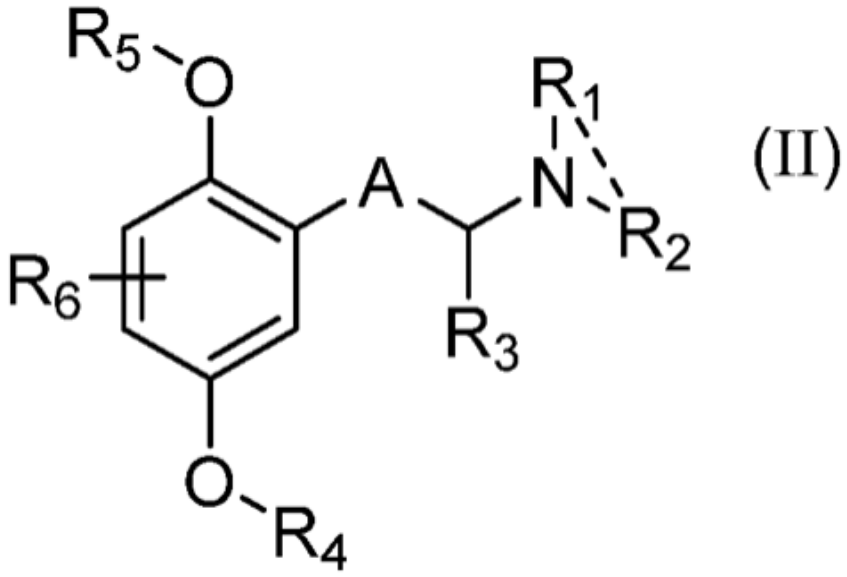
	(I)  wherein: **R2 is H,** CH3, or **OCH3** **R3 is H,** CH3**, or OCH3** **R4 is one of H; F; Cl; Br; I;** or NO2 **R5 is H,** CH3 or **OCH3** **R6 is H,** CH3 **or OCH3** **R7 is H,** CH3, or OCH3 **R8 is H, or CH3** From **[0103]: The compounds can also be administered as a pharmaceutically acceptable acid- or base-addition salt, formed by reaction with inorganic acids such as hydrochloric acid,** hydrobromic acid, perchloric acid, nitric acid, thiocyanic acid, sulfuric acid, and phosphoric acid, and organic acids such as formic acid, acetic acid, propionic acid, glycolic acid, lactic acid, pyruvic acid, oxalic acid, malonic acid, succinic acid, maleic acid, and **fumaric acid...**
5. The composition of claim 4, wherein said compound is a pharmacologically acceptable acid addition salt thereof.	1. Int'l Pat. App. Pub. No. WO/2010/151,258 "Methods of treating psychological conditions" (Published December 29, 2010) From **Claim 2**: **The method of claim 1 wherein the 5-HT2B receptor agonist comprises a substance having a chemical structure as shown in Formula I,**

	(I)  wherein: **R2 is H,** CH3, or **OCH3** **R3 is H,** CH3**, or OCH3** **R4 is one of H; F; Cl; Br; I;** or NO2 **R5 is H,** CH3 or **OCH3** **R6 is H,** CH3 **or OCH3** **R7 is H,** CH3, or OCH3 **R8 is H, or CH3** From **[0103]: The compounds can also be administered as a pharmaceutically acceptable acid- or base-addition salt, formed by reaction with inorganic acids such as hydrochloric acid,** hydrobromic acid, perchloric acid, nitric acid, thiocyanic acid, sulfuric acid, and phosphoric acid, and organic acids such as formic acid, acetic acid, propionic acid, glycolic acid, lactic acid, pyruvic acid, oxalic acid, malonic acid, succinic acid, maleic acid, and **fumaric acid...**
6. The composition of claim 1, wherein said compound is chosen from the group consisting of a racemate, a single enantiomer, a diastereomer, and a mixture of enantiomers or diastereomers in any ratio, a single and a mixture of E or Z configurational isomer	1. Int'l Pat. App. Pub. No. WO/2010/151,258 "Methods of treating psychological conditions" (Published December 29, 2010) From **Claim 2**: **The method of claim 1 wherein the 5-HT2B receptor agonist comprises a substance having a chemical structure as shown in Formula I,**

in any ratio, a single and a mixture of cis or trans configurational isomer in any ratio, or combinations thereof.	(I)  wherein: **R2 is H,** CH3, or **OCH3** **R3 is H,** CH3**, or OCH3** **R4 is one of H; F; Cl; Br; I;** or NO2 **R5 is H,** CH3 or **OCH3** **R6 is H,** CH3 **or OCH3** **R7 is H,** CH3, or OCH3 **R8 is H, or CH3** 2. Int'l Pat. App. Pub. No. WO/2020/181,194 "Compositions and methods of use comprising substances with neural plasticity actions administered at non-psychedelic/psychotomimetic dosages and formulations" (Published September 10, 2020) From **Claim 2**: **A compound comprising a structural analogue to 2,5-Dimethoxy-4- iodoamphetamine, according to formula II:**

	 (II) wherein: **A is C1**-C6 **alkylene**, C2-C6 alkenylene, or C2-C6 alkynylene **R1 and R2 are, independently, hydrogen...** **R3 is hydrogen, deuterium**, C1-C8 alkyl, C2-C8 alkenyl, C2-C8 alkynyl, C3-C8 cycloalkyl, C3-C8 cycloalkenyl, aryl or heterocyclyl, optionally substituted at one or more positions by deuterium, **halogen...** **R4 and R5 are, independently,** hydrogen, **C1**-C8 **alkyl...** **R6 represents 1**-3 **substituents selected from the group consisting of** hydrogen, deuterium, halogen, Ci-Cs alkyl, **C2-C8 alkenyl, C2-C8 alkynyl,** C3-C8 cycloalkyl, C3-C8 cycloalkenyl, aryl or heterocyclyl, **optionally substituted at one or more positions by deuterium, halogen**
9. A method of changing neurotransmission, including the steps of: administering a pharmaceutically effective amount of composition to a mammal of a compound represented by FIG. 1A-1E, characterized in that Ra1 and Ra2 are, independently and in any combination, chosen from the group consisting of hydrogen, deuteron, methyl, ethyl,	1. Int'l Pat. App. Pub. No. WO/2010/151,258 "Methods of treating psychological conditions" (Published December 29, 2010) From **Claim 2**: **The method of claim 1 wherein the 5-HT2B receptor agonist comprises a substance having a chemical structure as shown in Formula I,**

deuterated methyl (D1-D3), or deuterated ethyl (D1-D5), and further characterized in that R1, R2 and R3 are, independently and in any combination, chosen from the group consisting of hydrogen, deuteron, and/or fluorine; or C1-C3 branched or unbranched alkyl with the alkyl optionally and independently substituted with F1-F7 fluorine and/or D1-D7 deuteron substituents; or C3-C6 cycloalkyl optionally and independently substituted with one or more substituents such as F1-F15 fluorine and/or D1-D15 deuteron and/or C1-C2 alkyl; or (C3-C6 cycloalkyl)-C1-C2 branched or unbranched alkyl optionally and independently substituted with one or more substituents such as F1-F15 fluorine and/or D1-D15 deuteron and/or C1-C2 alkyl; or C2-C5 branched or unbranched alkenyl with E or Z or cis or trans double bond configuration, where any of the carbons of the branched or unbranched alkenyl	(I)  wherein: **R2 is H,** CH3, or **OCH3** **R3 is H,** CH3**, or OCH3** **R4 is one of H; F; Cl; Br; I;** or NO2 **R5 is H,** CH3 or **OCH3** **R6 is H,** CH3 **or OCH3** **R7 is H,** CH3, or OCH3 **R8 is H, or CH3** From **[0011]**: **While most of the psychoactive drugs contemplated in the present work strengthen the cognitive self, a few weaken it, either absolutely or relatively. When the cognitive self is weakened, the effect is powerful, in the sense of being overwhelming**. 2. Int'l Pat. App. Pub. No. WO/2020/181,194 "Compositions and methods of use comprising substances with neural plasticity actions administered at non-psychedelic/psychotomimetic dosages and formulations" (Published September 10, 2020) From **Claim 2**: **A compound comprising a structural analogue to 2,5-Dimethoxy-4- iodoamphetamine, according to formula II:**

substituent is optionally substituted independently and in any combination with one or more C1-C2 alkyl, with F1-F13 fluorine, with D1-D13 deuteron, with C2 alkenyl or with aryl or heteroaryl bearing no up to any number of ether, thioether, halogen, alkyl, fluorinated alkyl, alkenyl, alkynyl or nitrogen-containing substituents; or C2-C5 branched or unbranched alkynyl where any of the carbons of the branched or unbranched alkynyl substituent is optionally substituted independently and in any combination with one or more C1-C2 alkyl, with F1-F11 fluorine, with D1-D11 deuteron, with C2 alkenyl or with aryl or heteroaryl bearing no up to any number of ether, thioether, halogen, alkyl, fluorinated alkyl, alkenyl, alkynyl or nitrogen-containing substituents, any halogen or a nitrogen-containing substituent such as CN or NO2; and further characterized in that R4 is chosen from the group consisting of	 (II) wherein: **A is C1**-C6 **alkylene**, C2-C6 alkenylene, or C2-C6 alkynylene **R1 and R2 are, independently, hydrogen...** **R3 is hydrogen, deuterium**, C1-C8 alkyl, C2-C8 alkenyl, C2-C8 alkynyl, C3-C8 cycloalkyl, C3-C8 cycloalkenyl, aryl or heterocyclyl, optionally substituted at one or more positions by deuterium, **halogen...** **R4 and R5 are, independently,** hydrogen, **C1**-C8 **alkyl...** **R6 represents 1**-3 **substituents selected from the group consisting of** hydrogen, deuterium, halogen, Ci-Cs alkyl, **C2-C8 alkenyl, C2-C8 alkynyl,** C3-C8 cycloalkyl, C3-C8 cycloalkenyl, aryl or heterocyclyl, **optionally substituted at one or more positions by deuterium, halogen** From **Claim 5**: **A method for preventing or treating diseases and conditions or improving functions in patients or subjects, the method comprising: administration of a compound of any of claims 1 -4 at doses, dosages, posology**, or formulations devoid of clinically meaningful psychedelic or psychotomimetic actions or effects, **and having clinical effects comparable to those exerted by human plasma psilocin Cmax of 4 ng/ml or less, or human 5-HT2A CNS receptor occupancy of 50% or less, or PD effects comparable to those exerted by human plasma psilocin Tmax in excess of 60 minutes.**

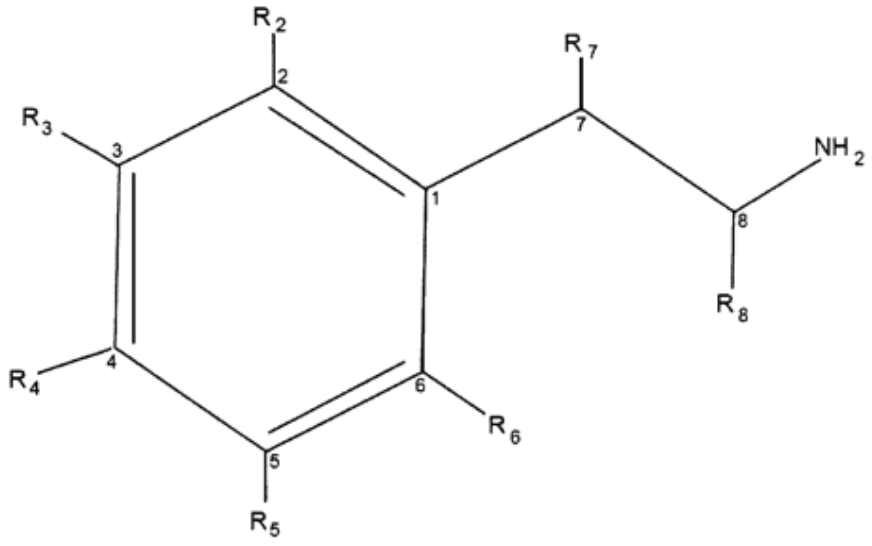
hydrogen, deuteron, or fluorine; or C1-C3 branched or unbranched alkyl with the alkyl optionally and independently substituted with F1-F7 fluorine and/or D1-D7 deuteron substituents; or C3-C6 cycloalkyl optionally and independently substituted with one or more substituents such as F1-F15 fluorine and/or D1-D15 deuteron and/or C1-C2 alkyl; or (C3-C6 cycloalkyl)-C1-C2 branched or unbranched alkyl optionally and independently substituted with one or more substituents such as F1-F15 fluorine and/or D1-D15 deuteron and/or C1-C2 alkyl; or C2-C5 branched or unbranched alkenyl with E or Z or cis or trans double bond configuration, where any of the carbons of the branched or unbranched alkenyl substituent is optionally substituted independently and in any combination with one or more C1-C2 alkyl, with F1-F13 fluorine, with D1-D13 deuteron, with C2 alkenyl or with aryl or	

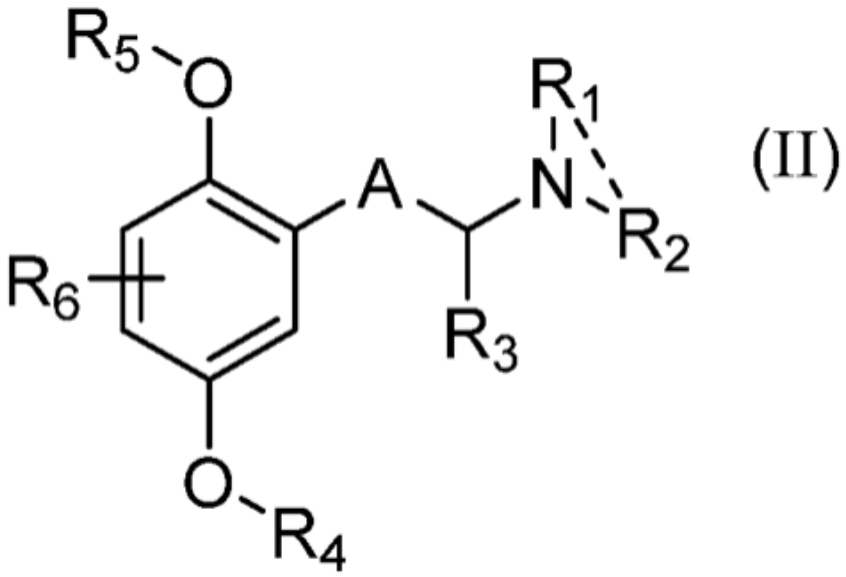
heteroaryl bearing no up to any number of ether, thioether, halogen, alkyl, fluorinated alkyl, alkenyl, alkynyl or nitrogen-containing substituents; or C2-C5 branched or unbranched alkynyl where any of the carbons of the branched or unbranched alkynyl substituent is optionally substituted independently and in any combination with one or more C1-C2 alkyl, with F1-F11 fluorine, with D1-D11 deuteron, with C2 alkenyl or with aryl or heteroaryl bearing no up to any number of ether, thioether, halogen, alkyl, fluorinated alkyl, alkenyl, alkynyl or nitrogen-containing substituents, any halogen or a nitrogen-containing substituent such as CN; and further characterized in that R5 is chosen from the group consisting of fluorine, chlorine, bromine, and iodine; or SF5; or C2-C5 branched or unbranched alkyl with the alkyl optionally and independently substituted with F1-F11 fluorine and/or D1-D11 deuteron substituents or C1 alkyl substituted	

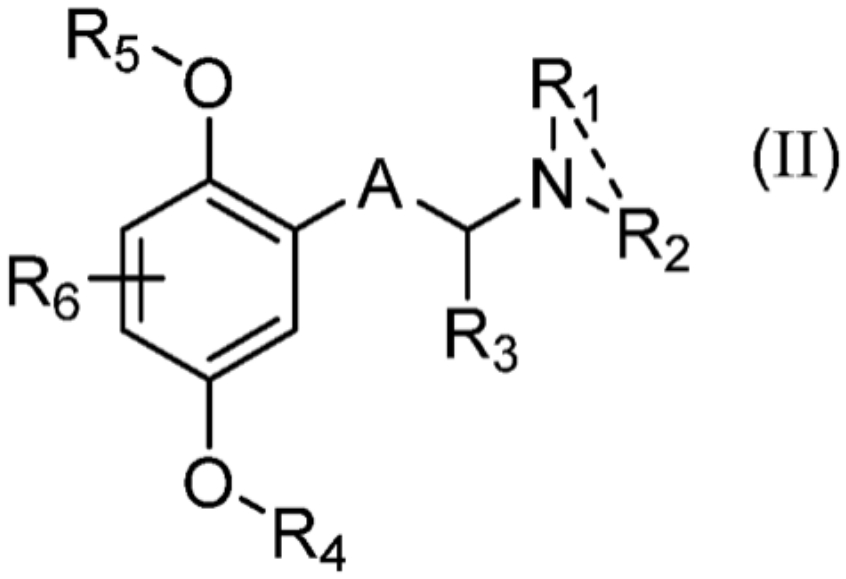
with F1-F3 and/or D1-D3 deuteron substituents; or C3-C6 cycloalkyl optionally and independently substituted with one or more substituents such as F1-F15 fluorine and/or D1-D15 deuteron and/or C1-C5 alkyl; or (C3-C6 cycloalkyl)-C1-C2 branched or unbranched alkyl optionally and independently substituted with one or more substituents such as F1-F15 fluorine and/or D1-D15 deuteron and/or C1-C5 alkyl; or a nitrogen-containing substituent such as CN or NO2; or C2-C5 branched or unbranched alkoxy with the alkoxy optionally and independently substituted with F1-F11 fluorine and/or D1-D11 substituents, or C1 alkoxy substituted with F1-F3 and/or D1-D3 deuteron substituents; or C3-C6 cycloalkyloxy optionally and independently substituted with one or more substituents such as F1-F11 fluorine and/or D1-D11 substituents and/or C1-C5 alkyl; or	

(C3-C6 cycloalkyl)-C1-C2 branched or unbranched alkoxy optionally and independently substituted with one or more substituents such as F1-F15 fluorine and/or D1-D15 and/or C1-C5 alkyl; or C2-C5 branched or unbranched alkenyloxy with E or Z vinylic, cis or trans allylic, E or Z allylic or other double bond position in relation to the attached ether function, where any of the carbons of the branched or unbranched alkenyloxy substituent is optionally substituted independently with one or more C1-C5 alkyl, and/or with F1-F9 fluorine and/or with D1-D9 deuteron substituents; or C3-C5 branched or unbranched alkynyloxy, where any of the carbons of the alkynyloxy substituent is optionally substituted independently with one or more C1-C5 alkyl, and/or with F1-F9 fluorine and/or with D1-D9 deuteron substituents; or C3-C5 branched or unbranched alkylthio with the alkylthio group optionally and independently substituted with F1-F11	

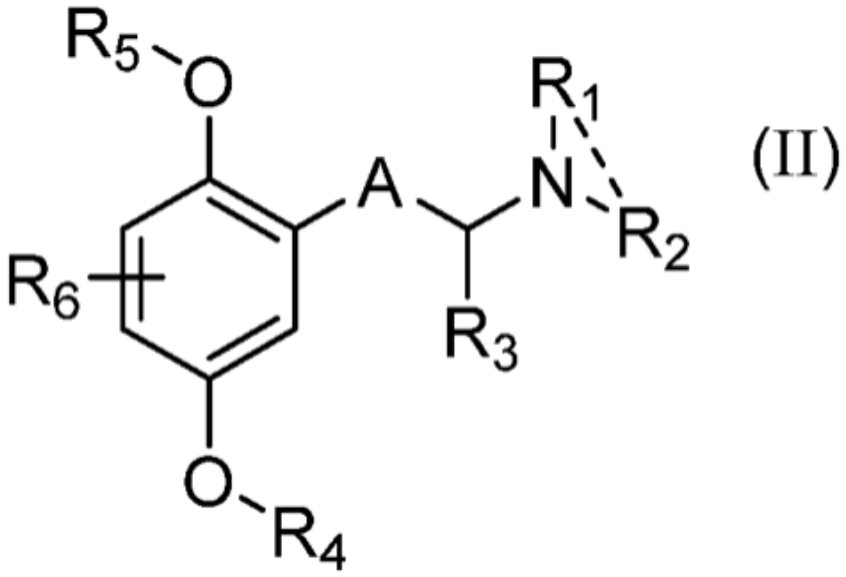
fluorine and/or D1-D11 substituents, or C1-C2 alkylthio substituted with F1-F5 and/or D1-D5 deuteron substituents; or C3-C6 cycloalkylthio optionally and independently substituted with one or more substituents such as F1-F11 fluorine and/or D1-D11 substituents and/or C1-C5 alkyl; or (C3-C6 cycloalkyl)-C1-C2 branched or unbranched alkylthio optionally and independently substituted with one or more substituents such as F1-F15 fluorine and/or D1-D15 and/or C1-C5 alkyl; or C2-C5 branched or unbranched alkenylthio with E or Z vinylic, cis or trans allylic, E or Z allylic or other double bond position in relation to the attached thioether function, where any of the carbons of the branched or unbranched alkenylthio substituent is optionally substituted independently with one or more C1-C5 alkyl, and/or with F1-F9 fluorine and/or with D1-D9 deuteron substituents; or C3-C5 branched or unbranched alkynylthio, where any	

of the carbons of the alkynylthio substituent is optionally substituted independently with one or more C1-C5 alkyl, and/or with F1-F9 fluorine and/or with D1-D9 deuteron substituents, and further characterized in that any non-protic hydrogen can be replaced by a deuteron or a fluorine in any combination; increasing serotonin 5-HT2A and 5-HT2C receptor interaction in the mammal; and inducing psychoactive effects.	
10. The method of claim 9, wherein the compound is chosen from the group consisting of a racemate, a single enantiomer, a diastereomer, and a mixture of enantiomers or diastereomers in any ratio, a single and a mixture of E or Z configurational isomer in any ratio, a single and a mixture of cis or trans configurational isomer in any ratio, or combinations thereof.	1. Int'l Pat. App. Pub. No. WO/2010/151,258 "Methods of treating psychological conditions" (Published December 29, 2010) From **Claim 2**: **The method of claim 1 wherein the 5-HT2B receptor agonist comprises a substance having a chemical structure as shown in Formula I,** (I)  wherein:

	R2 is H, CH3, or **OCH3** **R3 is H,** CH3**, or OCH3** **R4 is one of H; F; Cl; Br; I;** or NO2 **R5 is H,** CH3 or **OCH3** **R6 is H,** CH3 **or OCH3** **R7 is H,** CH3, or OCH3 **R8 is H, or CH3** From **[0011]**: **While most of the psychoactive drugs contemplated in the present work strengthen the cognitive self, a few weaken it, either absolutely or relatively. When the cognitive self is weakened, the effect is powerful, in the sense of being overwhelming**. 2. Int'l Pat. App. Pub. No. WO/2020/181,194 "Compositions and methods of use comprising substances with neural plasticity actions administered at non-psychedelic/psychotomimetic dosages and formulations" (Published September 10, 2020) From **Claim 2**: **A compound comprising a structural analogue to 2,5-Dimethoxy-4- iodoamphetamine, according to formula II:**  (II) wherein: **A is C1**-C6 **alkylene**, C2-C6 alkenylene, or C2-C6 alkynylene **R1 and R2 are, independently, hydrogen...** **R3 is hydrogen, deuterium**, C1-C8 alkyl, C2-C8 alkenyl, C2-C8 alkynyl, C3-C8 cycloalkyl, C3-C8 cycloalkenyl, aryl or heterocyclyl, optionally substituted at one or more positions by deuterium, **halogen...** **R4 and R5 are, independently,** hydrogen, **C1**-C8 **alkyl...** **R6 represents 1**-3 **substituents selected from the group consisting of** hydrogen, deuterium, halogen, Ci-Cs alkyl, **C2-C8 alkenyl, C2-C8 alkynyl,**

	C3-C8 cycloalkyl, C3-C8 cycloalkenyl, aryl or heterocyclyl, **optionally substituted at one or more positions by deuterium, halogen** From **Claim 5**: **A method for preventing or treating diseases and conditions or improving functions in patients or subjects, the method comprising: administration of a compound of any of claims 1 -4 at doses, dosages, posology**, or formulations devoid of clinically meaningful psychedelic or psychotomimetic actions or effects, **and having clinical effects comparable to those exerted by human plasma psilocin Cmax of 4 ng/ml or less, or human 5-HT2A CNS receptor occupancy of 50% or less, or PD effects comparable to those exerted by human plasma psilocin Tmax in excess of 60 minutes.**
12. The method of claim 9, wherein the compound is administered to mammals for substance-assisted psychotherapy.	2. Int'l Pat. App. Pub. No. WO/2020/181,194 "Compositions and methods of use comprising substances with neural plasticity actions administered at non-psychedelic/psychotomimetic dosages and formulations" (Published September 10, 2020) From **Claim 2**: **A compound comprising a structural analogue to 2,5-Dimethoxy-4- iodoamphetamine, according to formula II:**  (II) wherein: **A is C1**-C6 **alkylene**, C2-C6 alkenylene, or C2-C6 alkynylene **R1 and R2 are, independently, hydrogen...** **R3 is hydrogen, deuterium**, C1-C8 alkyl, C2-C8 alkenyl, C2-C8 alkynyl, C3-C8 cycloalkyl, C3-C8 cycloalkenyl, aryl or heterocyclyl, optionally substituted at one or more positions by deuterium, **halogen...** **R4 and R5 are, independently,** hydrogen, **C1**-C8 **alkyl...** **R6 represents 1**-3 **substituents selected from the group consisting of** hydrogen, deuterium, halogen, Ci-Cs alkyl, **C2-C8 alkenyl, C2-C8 alkynyl,**

	C3-C8 cycloalkyl, C3-C8 cycloalkenyl, aryl or heterocyclyl, **optionally substituted at one or more positions by deuterium, halogen** From **Claim 5**: **A method for preventing or treating diseases and conditions or improving functions in patients or subjects, the method comprising: administration of a compound of any of claims...** From **[0005]: According to researchers and therapists, to achieve therapeutic efficacy for certain psychiatric disorders, the administration of the serotonin agonist at a dose that produces psychedelic and or psychotomimetic symptoms should be paired with ancillary therapies, which include a particular physical setting, in addition to pre, during and post drug administration counseling and/or psychotherapy (talk therapy). The psychedelic experience (which includes alterations in consciousness, emotion, and cognition, and positive and negative psychotomimetic symptoms) is thus viewed by researchers and scientists, to this day, as integral part of the potential therapeutic efficacy of psychedelic drugs.** From **[0019]: Another aspect of the present invention is directed to a method for preventing or treating diseases and conditions or improving functions in patients or subjects, the method comprising administration of a 5-HT2A agonist substance...**
15. The method of claim 9, wherein the mammal is a human.	2. Int'l Pat. App. Pub. No. WO/2020/181,194 "Compositions and methods of use comprising substances with neural plasticity actions administered at non-psychedelic/psychotomimetic dosages and formulations" (Published September 10, 2020) From **Claim 2**: **A compound comprising a structural analogue to 2,5-Dimethoxy-4- iodoamphetamine, according to formula II:**



(II)

wherein:
A is C1-C6 **alkylene**, C2-C6 alkenylene, or C2-C6 alkynylene
R1 and R2 are, independently, hydrogen...
R3 is hydrogen, deuterium, C1-C8 alkyl, C2-C8 alkenyl, C2-C8 alkynyl, C3-C8 cycloalkyl, C3-C8 cycloalkenyl, aryl or heterocyclyl, optionally substituted at one or more positions by deuterium, **halogen...**
R4 and R5 are, independently, hydrogen, **C1**-C8 **alkyl...**
R6 represents 1-3 **substituents selected from the group consisting of** hydrogen, deuterium, halogen, Ci-Cs alkyl, **C2-C8 alkenyl, C2-C8 alkynyl,** C3-C8 cycloalkyl, C3-C8 cycloalkenyl, aryl or heterocyclyl, **optionally substituted at one or more positions by deuterium, halogen**

From **Claim 5**: **A method for preventing or treating diseases and conditions or improving functions in patients or subjects, the method comprising: administration of a compound of any of claims 1 -4 at doses, dosages, posology**, or formulations devoid of clinically meaningful psychedelic or psychotomimetic actions or effects, **and having clinical effects comparable to those exerted by human plasma psilocin Cmax of 4 ng/ml or less, or human 5-HT2A CNS receptor occupancy of 50% or less, or PD effects comparable to those exerted by human plasma psilocin Tmax in excess of 60 minutes.**

UNITED STATES
PATENT AND TRADEMARK OFFICE

P.O. Box 1450
Alexandria, VA 22313 - 1450
www.uspto.gov

ELECTRONIC ACKNOWLEDGEMENT RECEIPT

APPLICATION #	RECEIPT DATE / TIME	ATTORNEY DOCKET #
18/493,385	**10/15/2024 03:11:22 PM Z ET**	

Title of Invention

Application Information

APPLICATION TYPE		PATENT #	
CONFIRMATION #		FILED BY	Jeremy Rolquin
PATENT CENTER #	67575678	FILING DATE	10/24/2023
CUSTOMER #	–	FIRST NAMED INVENTOR	
CORRESPONDENCE ADDRESS	-	AUTHORIZED BY	-

Documents

TOTAL DOCUMENTS: 7

DOCUMENT		PAGES	DESCRIPTION	SIZE (KB)
Concise-description-generated.pdf		2	Concise Description of Relevance	25 KB
third-party-preissuance-submission.pdf		2	Third-Party Submission Under 37 CFR 1.290	46 KB
Third-party-notification-request.pdf		1	Request for Notification of Non-compliant Third-Party Submission	13 KB
3PS.pdf		27	-	332 KB
3PS-3P.RELEVANCE.pdf	(1-27)	27	Concise Description of Relevance	281 KB
3PS-3P.RELEVANCE.pdf	(1-27)	27	Concise Description of Relevance	281 KB
1_WO2010151258.pdf		30	-	1540 KB

1_WO2010151258-FOR.pdf	(1-30)	30	Foreign Reference	1533 KB
2_WO2020181194A1.pdf		2	-	62 KB
2_WO2020181194A1-FOR.pdf	(1-2)	2	Foreign Reference	54 KB

Digest

DOCUMENT	MESSAGE DIGEST(SHA-512)
Concise-description-generated.pdf	2CF1FE7EA2C77A5650A71C94607130C7279A47724F51A7EBCC64034E6646DCAC99D604D6F756FC03F9B492AC44D641DF6DE959D26FDC0FDDAAA24FD00B5BE01D
third-party-preissuance-submission.pdf	4D5A1E41CC96CD09CFE27178360A30FAC2412D8C6FBB1775FD1A70FD8939419E06CA2FA3BC08A68A56CFFF0560A90672E26BD43641C047AC14D135643717E918
Third-party-notification-request.pdf	9E3FDAC471FE13C4E67828BDEE227B0A0C296EDB19D2411B2D5BCB9E0FC25FFB3D1D4FB60EB21B7068C0092D2BB50A7F000478E45621E01D4E29DAB5B13FAB6F
3PS.pdf	A4B5834475C65B10CEE86183ADF777A82DF17542126B7FCA20CCA72A2D6EA7AC5AC341C7A348D148E121381130751DB6BAF76FFAD43EC0484EDB6B73D34502FF
3PS-3P.RELEVANCE.pdf	75D0B8C7CD9EB9398497BD5471E4EEFA5C2E8B9B573201C2DC450754C86056F40C159015C2F600D8480C369FF804422AAFF4034638F4E4E9E45200658EE398BB
3PS-3P.RELEVANCE.pdf	3D521FE157A2F71F3D69504037AAC1B5DF82B092587B626320E00FD7D44442596BFE75A07FD32145B6219AF4695AD92574E617BC18C8B3133A3BD24909DFD167
1_WO2010151258.pdf	F22A36C0D06DD09FE867677F8B11CF69CB1244A5AA4FFE481F4496EBA53FF0AD504A38E30BE5BD4CCED68B6F8776676217754324216C299DA40F16B45F65B0016
1_WO2010151258-FOR.pdf	DFE2DEC767CCE1DEA710768224338EE8945D221525B83E32C5544868197488352594 1ACADC7367CB4F0D4147723BE589830C7BA39C641FFC44743B4E33F53888
2_WO2020181194A1.pdf	9AEDB23F6C78C5E61618D4F765EBA8D5118ECC08434F098F135FD86923E2E3933760623AECAD72AD58456EDEE45E237FD482822FBC806C7DDF9E524F7B9A4F77
2_WO2020181194A1-FOR.pdf	B3F1CD767F27483D0D191A90495D711A40C80C2E56666171AE433FECA998042168880F11C2CAC5882E39BEB6AE2ED509AED517FA1F00CEDC8F0553EE9CDBB487

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.