

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Paul E. STAMETS

Confirmation No: 6884

Serial No.: 18/498,563

Group No.:

Filing or 371(c) Date: 10/31/2023

Examiner:

Entitled: FUNGAL COMPOUND COMPOSITIONS AND METHODS FOR MODULATING INFLAMMATION

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. U.S. Pat. App. Pub. No. US/2018/0021326 “Compositions and methods for enhancing neuroregeneration and cognition by combining mushroom extracts containing active ingredients psilocin or psilocybin with erinacines or hericenones enhanced with niacin” (Published 25 January 2018)
2. SAMOYLENKO ET AL. (2010) “Banisteriopsis caapi, a unique combination of MAO inhibitory and antioxidative constituents for the activities relevant to neurodegenerative disorders and Parkinson’s disease” *J. Ethnopharmacol.*, 127(2), 357-367.
3. KEMPURAJ ET AL. (2020) “COVID-19, Mast Cells, Cytokine Storm, Psychological Stress, and Neuroinflammation” *The Neuroscientist*, 26(5-6), 402-414.
4. LIU ET AL. (2019) “Group A Streptococcus Subcutaneous Infection-Induced Central Nervous System Inflammation Is Attenuated by Blocking Peripheral TNF” *Sec. Infectious Agents and Disease*, 10:265.
5. DUNST ET AL. (2017) “Cytokines and Chemokines in Cerebral Malaria Pathogenesis” *Front Cell Infect Microbiol.*, 7:324.
6. PRENCIPE ET AL (2014) “Nerve growth factor downregulates inflammatory response in human monocytes through TrkA” *J. Immunol.* 192(7), 3345-54.

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. 18/498,563 Pending Claims	References
<p>1. A composition comprising: one or more tryptamines, salts thereof, or combinations thereof; and extracts or isolates from <i>Herichium erinaceus</i> mushroom species, erinacines, hericenones, or combinations thereof.</p>	<p>1. U.S. Pat. App. Pub. No. US/2018/0021326 “Compositions and methods for enhancing neuroregeneration and cognition by combining mushroom extracts containing active ingredients psilocin or psilocybin with erinacines or hericenones enhanced with niacin” (Published 25 January 2018)</p> <p>From Claim 1: A method for improving neurological health of an animal comprising: administering a therapeutically effective amount of a composition to an animal, wherein the composition comprises one or more of psilocybin, psilocin, baeocystin, norbaeocystin, salts thereof, or combinations thereof, one or more of erinacines, hericenones or combinations thereof, and niacin.</p>
<p>2. The composition of claim 1, wherein the one or more tryptamines are psilocybin, psilocin, norpsilocin, baeocystin, norbaeocystin, N,N-dimethyltryptamine (DMT), or combinations thereof.</p>	<p>1. U.S. Pat. App. Pub. No. US/2018/0021326 “Compositions and methods for enhancing neuroregeneration and cognition by combining mushroom extracts containing active ingredients psilocin or psilocybin with erinacines or hericenones enhanced with niacin” (Published 25 January 2018)</p> <p>From Claim 1: A method for improving neurological health of an animal comprising: administering a therapeutically effective amount of a composition to an animal, wherein the composition comprises one or more of psilocybin, psilocin, baeocystin, norbaeocystin, salts thereof, or combinations thereof, one or more of erinacines, hericenones or combinations thereof, and niacin.</p>
<p>3. The composition of claim 1, wherein the composition comprises about 1 ng to about 10 mg, about 10 mg to about 100 mg, about 10 mg to about 20 mg, about 20 mg to about 50 mg, about 20 mg to about 100 mg, about 1 ng to about 20 mg, about 1 ng to about 50 mg, or about 1 ng to about 100 mg of the one or more tryptamines, salts thereof, or combinations thereof.</p>	<p>1. U.S. Pat. App. Pub. No. US/2018/0021326 “Compositions and methods for enhancing neuroregeneration and cognition by combining mushroom extracts containing active ingredients psilocin or psilocybin with erinacines or hericenones enhanced with niacin” (Published 25 January 2018)</p> <p>From Claim 1: A method for improving neurological health of an animal comprising: administering a therapeutically effective amount of a composition to an animal, wherein the composition comprises one or more of psilocybin, psilocin, baeocystin, norbaeocystin, salts thereof, or combinations thereof, one or more of erinacines, hericenones or combinations thereof, and niacin.</p> <p>From Neurogenesis Formula 1: Psilocin or psilocybin, 1 mg Erinacines or hericenones, 50 mg Niacin per day, 200 mg Extract of <i>Herichium erinaceus</i>, <i>H. corralloides</i>, <i>H. abietis</i>, 199 mg Extracts of plants with neurogenic properties*, 100, mg</p>
<p>4. The composition of claim 2, wherein the composition comprises about 1 ng to about 2000 mg of the extracts or isolates from <i>Herichium erinaceus</i></p>	<p>1. U.S. Pat. App. Pub. No. US/2018/0021326 “Compositions and methods for enhancing neuroregeneration and cognition by combining mushroom extracts containing active ingredients psilocin or psilocybin with erinacines or hericenones enhanced with niacin” (Published 25 January 2018)</p> <p>From Claim 1: A method for improving neurological health of an animal comprising: administering a therapeutically effective amount of a</p>

<p>mushroom species, erinacines, hericenones, or combinations thereof.</p>	<p>composition to an animal, wherein the composition comprises one or more of psilocybin, psilocin, baeocystin, norbaeocystin, salts thereof, or combinations thereof, one or more of erinacines, hericenones or combinations thereof, and niacin.</p> <p>From Neurogenesis Formula 1: Psilocin or psilocybin, 1 mg Erinacines or hericenones, 50 mg Niacin per day, 200 mg Extract of Hericium erinaceus, H. corralloides, H. abietis, 199 mg Extracts of plants with neurogenic properties*, 100, mg</p>
<p>5. The composition of claim 1, further comprising a monoamine oxidase inhibitor.</p>	<p>1. U.S. Pat. App. Pub. No. US/2018/0021326 “Compositions and methods for enhancing neuroregeneration and cognition by combining mushroom extracts containing active ingredients psilocin or psilocybin with erinacines or hericenones enhanced with niacin” (Published 25 January 2018)</p> <p>From Claim 1: A method for improving neurological health of an animal comprising: administering a therapeutically effective amount of a composition to an animal, wherein the composition comprises one or more of psilocybin, psilocin, baeocystin, norbaeocystin, salts thereof, or combinations thereof, one or more of erinacines, hericenones or combinations thereof, and niacin.</p> <p>From Claim 11: The method of claim 1, wherein the composition additionally comprises one or more of... ayahuasca (<i>Banisteriopsis caapi</i> and <i>Psychotria</i> species)...”</p> <p>2. SAMOYLENKO ET AL. (2010) “Banisteriopsis caapi, a unique combination of MAO inhibitory and antioxidative constituents for the activities relevant to neurodegenerative disorders and Parkinson’s disease” <i>J. Ethnopharmacol.</i>, 127(2), 357-367.</p> <p>From p. 2: “Earlier chemical investigation have reported the presence of β-carboline alkaloids (β-CA) harmine, harmaline and tetrahydroharmine (THH) as the principal MAO inhibitors, together with other β-CA’s, from B. caapi...”</p> <p>From p. 8: “The hot aqueous extracts of fresh and dried large branches of B. caapi demonstrated significant MAO-A inhibitory and antioxidant activity.”</p>
<p>6. The composition of claim 5, wherein the composition comprises about 70 mg to about 200 mg of the monoamine oxidase inhibitor.</p>	<p>1. U.S. Pat. App. Pub. No. US/2018/0021326 “Compositions and methods for enhancing neuroregeneration and cognition by combining mushroom extracts containing active ingredients psilocin or psilocybin with erinacines or hericenones enhanced with niacin” (Published 25 January 2018)</p> <p>From Claim 1: A method for improving neurological health of an animal comprising: administering a therapeutically effective amount of a composition to an animal, wherein the composition comprises one or more of psilocybin, psilocin, baeocystin, norbaeocystin, salts thereof, or</p>

	<p>combinations thereof, one or more of erinacines, hericenones or combinations thereof, and niacin.</p> <p>From Claim 11: The method of claim 1, wherein the composition additionally comprises one or more of... ayahuasca (<i>Banisteriopsis caapi</i> and <i>Psychotria</i> species)...”</p> <p>From Neurogenesis Formula 1: Psilocin or psilocybin, 1 mg Erinacines or hericenones, 50 mg Niacin per day, 200 mg Extract of <i>Hericium erinaceus</i>, <i>H. corralloides</i>, <i>H. abietis</i>, 199 mg Extracts of plants with neurogenic properties*, 100, mg Plant extracts with known neuroregenerative properties include, but are not limited to: ... ayahuasca, a concoction made from <i>Banisteriopsis caapi</i>...”</p> <p>2. SAMOYLENKO ET AL. (2010) “Banisteriopsis caapi, a unique combination of MAO inhibitory and antioxidative constituents for the activities relevant to neurodegenerative disorders and Parkinson’s disease” <i>J. Ethnopharmacol.</i>, 127(2), 357-367.</p> <p>From p. 2: “Earlier chemical investigation have reported the presence of β-carboline alkaloids (β-CA) harmine, harmaline and tetrahydroharmine (THH) as the principal MAO inhibitors, together with other β-CA’s, from <i>B. caapi</i>...”</p> <p>From p. 8: “The hot aqueous extracts of fresh and dried large branches of <i>B. caapi</i> demonstrated significant MAO-A inhibitory and antioxidant activity.”</p>
<p>7. The composition of claim 5, wherein the monoamine oxidase inhibitor is Norharman, Harmine, 1,2,3,4-tetrahydro-β-carboline-3-carboxylic acid, 1-methyl-1,2,3,4-tetrahydro-β-carboline-3-carboxylic acid, 1-methyl-2,3,4,9-tetrahydro-1H-β-carboline-1,3-dicarboxylic acid, Harmaline, N-methoxy-1-vinyl-β-carboline, ethyl 9H-β-arboline-3-carboxylate, 1-furyl-β-carboline-3-carboxylic acid, 1-[5-(methoxymethyl)-2-</p>	<p>1. U.S. Pat. App. Pub. No. US/2018/0021326 “Compositions and methods for enhancing neuroregeneration and cognition by combining mushroom extracts containing active ingredients psilocin or psilocybin with erinacines or hericenones enhanced with niacin” (Published 25 January 2018)</p> <p>From Claim 1: A method for improving neurological health of an animal comprising: administering a therapeutically effective amount of a composition to an animal, wherein the composition comprises one or more of psilocybin, psilocin, baeocystin, norbaeocystin, salts thereof, or combinations thereof, one or more of erinacines, hericenones or combinations thereof, and niacin.</p> <p>From Claim 11: The method of claim 1, wherein the composition additionally comprises one or more of... ayahuasca (<i>Banisteriopsis caapi</i> and <i>Psychotria</i> species)...”</p> <p>2. SAMOYLENKO ET AL. (2010) “Banisteriopsis caapi, a unique combination of MAO inhibitory and antioxidative constituents for the activities relevant to neurodegenerative disorders and Parkinson’s disease” <i>J. Ethnopharmacol.</i>, 127(2), 357-367.</p>

<p>furyl]-9H-β-carboline-3-carboxylic acid, 6-hydroxy-3-(6-hydroxy-1H-indol-3-yl)-9H-β-carboline-4-carboxylic acid, Strictosidine, (1S)-1-[(2S,3R,4S)-2-(β-L-glucopyranosyloxy)-5-(methoxycarbonyl)-3-vinyl-3,4-dihydro-2H-pyran-4-yl]methyl}-2,3,4,9-tetrahydro-1H-β-carboline-1,3-dicarboxylic acid, or combinations thereof.</p>	<p>From p. 2: “Earlier chemical investigation have reported the presence of β-carboline alkaloids (β-CA) harmine, harmaline and tetrahydroharmine (THH) as the principal MAO inhibitors, together with other β-CA’s, from B. caapi...”</p> <p>From p. 8: “The hot aqueous extracts of fresh and dried large branches of B. caapi demonstrated significant MAO-A inhibitory and antioxidant activity.””</p>
<p>8. A composition comprising: psilocybin, psilocin, norpsilocin, baeocystin, norbaeocystin, N,N-dimethyltryptamine (DMT), salts thereof, or combinations thereof; and an erinacine or hericenone in pure form, extracts or isolates from <i>Hericum erinaceus</i> mushroom species, or combinations thereof.</p>	<p>1. U.S. Pat. App. Pub. No. US/2018/0021326 “Compositions and methods for enhancing neuroregeneration and cognition by combining mushroom extracts containing active ingredients psilocin or psilocybin with erinacines or hericenones enhanced with niacin” (Published 25 January 2018)</p> <p>From Claim 1: A method for improving neurological health of an animal comprising: administering a therapeutically effective amount of a composition to an animal, wherein the composition comprises one or more of psilocybin, psilocin, baeocystin, norbaeocystin, salts thereof, or combinations thereof, one or more of erinacines, hericenones or combinations thereof, and niacin.</p>
<p>9. The composition of claim 8, wherein the composition comprises about 1 ng to about 10 mg, about 10 mg to about 100 mg, about 10 mg to about 20 mg, about 20 mg to about 50 mg, about 20 mg to about 100 mg, about 1 ng to about 20 mg, about 1 ng to about 50 mg, or about 1 ng to about 100 mg of the psilocybin, psilocin, norpsilocin, baeocystin, norbaeocystin, N,N-dimethyltryptamine</p>	<p>1. U.S. Pat. App. Pub. No. US/2018/0021326 “Compositions and methods for enhancing neuroregeneration and cognition by combining mushroom extracts containing active ingredients psilocin or psilocybin with erinacines or hericenones enhanced with niacin” (Published 25 January 2018)</p> <p>From Claim 1: A method for improving neurological health of an animal comprising: administering a therapeutically effective amount of a composition to an animal, wherein the composition comprises one or more of psilocybin, psilocin, baeocystin, norbaeocystin, salts thereof, or combinations thereof, one or more of erinacines, hericenones or combinations thereof, and niacin.</p> <p>From Neurogenesis Formula 1: Psilocin or psilocybin, 1 mg Erinacines or hericenones, 50 mg Niacin per day, 200 mg Extract of <i>Hericum erinaceus</i>, <i>H. corralloides</i>, <i>H. abietis</i>, 199 mg Extracts of plants with neurogenic properties*, 100, mg</p>

(DMT), salts thereof, or combinations thereof.	
<p>10. The composition of claim 8, wherein the composition comprises about 1 ng to about 2000 mg of the erinacine or hericenone in pure form, extracts or isolates from <i>Hericum erinaceus</i> mushroom species, or combinations thereof.</p>	<p>1. U.S. Pat. App. Pub. No. US/2018/0021326 “Compositions and methods for enhancing neuroregeneration and cognition by combining mushroom extracts containing active ingredients psilocin or psilocybin with erinacines or hericenones enhanced with niacin” (Published 25 January 2018)</p> <p>From Claim 1: A method for improving neurological health of an animal comprising: administering a therapeutically effective amount of a composition to an animal, wherein the composition comprises one or more of psilocybin, psilocin, baeocystin, norbaeocystin, salts thereof, or combinations thereof, one or more of erinacines, hericenones or combinations thereof, and niacin.</p> <p>From Neurogenesis Formula 1: Psilocin or psilocybin, 1 mg Erinacines or hericenones, 50 mg Niacin per day, 200 mg Extract of <i>Hericum erinaceus</i>, <i>H. corralloides</i>, <i>H. abietis</i>, 199 mg Extracts of plants with neurogenic properties*, 100, mg</p>
<p>11. The composition of claim 8, further comprising a monoamine oxidase inhibitor.</p>	<p>1. U.S. Pat. App. Pub. No. US/2018/0021326 “Compositions and methods for enhancing neuroregeneration and cognition by combining mushroom extracts containing active ingredients psilocin or psilocybin with erinacines or hericenones enhanced with niacin” (Published 25 January 2018)</p> <p>From Claim 1: A method for improving neurological health of an animal comprising: administering a therapeutically effective amount of a composition to an animal, wherein the composition comprises one or more of psilocybin, psilocin, baeocystin, norbaeocystin, salts thereof, or combinations thereof, one or more of erinacines, hericenones or combinations thereof, and niacin.</p> <p>From Claim 11: The method of claim 1, wherein the composition additionally comprises one or more of... ayahuasca (<i>Banisteriopsis caapi</i> and <i>Psychotria</i> species)...</p> <p>2. SAMOYLENKO ET AL. (2010) “Banisteriopsis caapi, a unique combination of MAO inhibitory and antioxidative constituents for the activities relevant to neurodegenerative disorders and Parkinson’s disease” <i>J. Ethnopharmacol.</i>, 127(2), 357-367.</p> <p>From p. 2: “Earlier chemical investigation have reported the presence of β-carboline alkaloids (β-CA) harmine, harmaline and tetrahydroharmine (THH) as the principal MAO inhibitors, together with other β-CA’s, from <i>B. caapi</i>...”</p> <p>From p. 8: “The hot aqueous extracts of fresh and dried large branches of <i>B. caapi</i> demonstrated significant MAO-A inhibitory and antioxidant activity.””</p>

<p>12. The composition of claim 11, wherein the composition comprises about 70 mg to about 200 mg of the monoamine oxidase inhibitor.</p>	<p>1. U.S. Pat. App. Pub. No. US/2018/0021326 “Compositions and methods for enhancing neuroregeneration and cognition by combining mushroom extracts containing active ingredients psilocin or psilocybin with erinacines or hericenones enhanced with niacin” (Published 25 January 2018)</p> <p>From Claim 1: A method for improving neurological health of an animal comprising: administering a therapeutically effective amount of a composition to an animal, wherein the composition comprises one or more of psilocybin, psilocin, baeocystin, norbaeocystin, salts thereof, or combinations thereof, one or more of erinacines, hericenones or combinations thereof, and niacin.</p> <p>From Claim 11: The method of claim 1, wherein the composition additionally comprises one or more of... ayahuasca (<i>Banisteriopsis caapi</i> and <i>Psychotria</i> species)...”</p> <p>From Neurogenesis Formula 1: Psilocin or psilocybin, 1 mg Erinacines or hericenones, 50 mg Niacin per day, 200 mg Extract of <i>Hericium erinaceus</i>, <i>H. corralloides</i>, <i>H. abietis</i>, 199 mg Extracts of plants with neurogenic properties*, 100, mg Plant extracts with known neuroregenerative properties include, but are not limited to: ... ayahuasca, a concoction made from <i>Banisteriopsis caapi</i>...”</p> <p>2. SAMOYLENKO ET AL. (2010) “<i>Banisteriopsis caapi</i>, a unique combination of MAO inhibitory and antioxidative constituents for the activities relevant to neurodegenerative disorders and Parkinson’s disease” <i>J. Ethnopharmacol.</i>, 127(2), 357-367.</p> <p>From p. 2: “Earlier chemical investigation have reported the presence of β-carboline alkaloids (β-CA) harmine, harmaline and tetrahydroharmine (THH) as the principal MAO inhibitors, together with other β-CA’s, from <i>B. caapi</i>...”</p> <p>From p. 8: “The hot aqueous extracts of fresh and dried large branches of <i>B. caapi</i> demonstrated significant MAO-A inhibitory and antioxidant activity.”</p>
<p>13. The composition of claim 11, wherein the monoamine oxidase inhibitor is Norharman, Harmine, 1,2,3,4-tetrahydro-β-carboline-3-carboxylic acid, 1-methyl-1,2,3,4-tetrahydro-β-carboline-3-carboxylic acid, 1-methyl-2,3,4,9-tetrahydro-1H-β-</p>	<p>1. U.S. Pat. App. Pub. No. US/2018/0021326 “Compositions and methods for enhancing neuroregeneration and cognition by combining mushroom extracts containing active ingredients psilocin or psilocybin with erinacines or hericenones enhanced with niacin” (Published 25 January 2018)</p> <p>From Claim 1: A method for improving neurological health of an animal comprising: administering a therapeutically effective amount of a composition to an animal, wherein the composition comprises one or more of psilocybin, psilocin, baeocystin, norbaeocystin, salts thereof, or combinations thereof, one or more of erinacines, hericenones or combinations thereof, and niacin.</p>

<p>carboline-1,3-dicarboxylic acid, Harmaline, N-methoxy-1-vinyl-β-carboline, ethyl 9H-β-carboline-3-carboxylate, 1-furyl-β-carboline-3-carboxylic acid, 1-[5-(methoxymethyl)-2-furyl]-9H-β-carboline-3-carboxylic acid, 6-hydroxy-3-(6-hydroxy-1H-indol-3-yl)-9H-β-carboline-4-carboxylic acid, Strictosidine, (1S)-1-{[(2S,3R,4S)-2-(β-L-glucopyranosyloxy)-5-(methoxycarbonyl)-3-vinyl-3,4-dihydro-2H-pyran-4-yl]methyl}-2,3,4,9-tetrahydro-1H-β-carboline-1,3-dicarboxylic acid, or combinations thereof.</p>	<p>From Claim 11: The method of claim 1, wherein the composition additionally comprises one or more of... ayahuasca (<i>Banisteriopsis caapi</i> and <i>Psychotria</i> species)...</p> <p>2. SAMOYLENKO ET AL. (2010) “Banisteriopsis caapi, a unique combination of MAO inhibitory and antioxidative constituents for the activities relevant to neurodegenerative disorders and Parkinson’s disease” <i>J. Ethnopharmacol.</i>, 127(2), 357-367.</p> <p>From p. 2: “Earlier chemical investigation have reported the presence of β-carboline alkaloids (β-CA) harmine, harmaline and tetrahydroharmine (THH) as the principal MAO inhibitors, together with other β-CA’s, from B. caapi...”</p> <p>From p. 8: “The hot aqueous extracts of fresh and dried large branches of B. caapi demonstrated significant MAO-A inhibitory and antioxidant activity.””</p>
<p>14. A method for treating or modulating an inflammatory response triggered by an infectious disease or condition, the method comprising: administering a composition to a subject in need thereof, the composition comprising: one or more tryptamines, salts thereof, or combinations thereof.</p>	<p>1. U.S. Pat. App. Pub. No. US/2018/0021326 “Compositions and methods for enhancing neuroregeneration and cognition by combining mushroom extracts containing active ingredients psilocin or psilocybin with erinacines or hericenones enhanced with niacin” (Published 25 January 2018)</p> <p>From Claim 1: A method for improving neurological health of an animal comprising: administering a therapeutically effective amount of a composition to an animal, wherein the composition comprises one or more of psilocybin, psilocin, baeocystin, norbaeocystin, salts thereof, or combinations thereof, one or more of erinacines, hericenones or combinations thereof, and niacin.</p> <p>From [0007]: The present nootropic invention can benefit those suffering from age or trauma related neuropathologies including but not limited to ... amyloid plaque formation, demyelination, nerve signaling, neurotoxic viruses, stress and numerous other agents causing neuropathies.</p> <p>3. KEMPURAJ ET AL. (2020) “COVID-19, Mast Cells, Cytokine Storm, Psychological Stress, and Neuroinflammation” <i>The Neuroscientist</i>, 26(5-6), 402-414.</p> <p>From p. 402: “SARS-CoV-2 infection can cause psychological stress and neuroinflammation. In conclusion, COVID-19 can induce mast cell activation, psychological stress, cytokine storm, and neuroinflammation.”</p>

<p>15. A method for treating or modulating an inflammatory response triggered by an infectious disease or condition, the method comprising: administering a composition to a subject in need thereof, the composition comprising: one or more tryptamines, salts thereof, or combinations thereof; and extracts or isolates from <i>Hericum erinaceus</i> mushroom species, erinacines, hericenones, or combinations thereof.</p>	<p>1. U.S. Pat. App. Pub. No. US/2018/0021326 “Compositions and methods for enhancing neuroregeneration and cognition by combining mushroom extracts containing active ingredients psilocin or psilocybin with erinacines or hericenones enhanced with niacin” (Published 25 January 2018)</p> <p>From Claim 1: A method for improving neurological health of an animal comprising: administering a therapeutically effective amount of a composition to an animal, wherein the composition comprises one or more of psilocybin, psilocin, baeocystin, norbaeocystin, salts thereof, or combinations thereof, one or more of erinacines, hericenones or combinations thereof, and niacin.</p> <p>From [0007]: The present nootropic invention can benefit those suffering from age or trauma related neuropathologies including but not limited to ... amyloid plaque formation, demyelination, nerve signaling, neurotoxic viruses, stress and numerous other agents causing neuropathies.</p>
<p>16. The method of claim 14, wherein the composition comprises about 1 ng to about 10 mg, about 10 mg to about 100 mg, about 10 mg to about 20 mg, about 20 mg to about 50 mg, about 20 mg to about 100 mg, about 1 ng to about 20 mg, about 1 ng to about 50 mg, or about 1 ng to about 100 mg of the one or more tryptamines, salts thereof, or combinations thereof.</p>	<p>1. U.S. Pat. App. Pub. No. US/2018/0021326 “Compositions and methods for enhancing neuroregeneration and cognition by combining mushroom extracts containing active ingredients psilocin or psilocybin with erinacines or hericenones enhanced with niacin” (Published 25 January 2018)</p> <p>From Claim 1: A method for improving neurological health of an animal comprising: administering a therapeutically effective amount of a composition to an animal, wherein the composition comprises one or more of psilocybin, psilocin, baeocystin, norbaeocystin, salts thereof, or combinations thereof, one or more of erinacines, hericenones or combinations thereof, and niacin.</p> <p>From [0007]: The present nootropic invention can benefit those suffering from age or trauma related neuropathologies including but not limited to ... amyloid plaque formation, demyelination, nerve signaling, neurotoxic viruses, stress and numerous other agents causing neuropathies.</p> <p>From Neurogenesis Formula 1: Psilocin or psilocybin, 1 mg Erinacines or hericenones, 50 mg Niacin per day, 200 mg Extract of <i>Hericum erinaceus</i>, <i>H. corralloides</i>, <i>H. abietis</i>, 199 mg Extracts of plants with neurogenic properties*, 100, mg</p>
<p>17. The method of claim 14, wherein the one or more</p>	<p>1. U.S. Pat. App. Pub. No. US/2018/0021326 “Compositions and methods for enhancing neuroregeneration and cognition by combining mushroom</p>

<p>tryptamines are psilocybin, psilocin, norpsilocin, baeocystin, norbaeocystin, N,N-dimethyltryptamine (DMT), or combinations thereof.</p>	<p>extracts containing active ingredients psilocin or psilocybin with erinacines or hericenones enhanced with niacin” (Published 25 January 2018)</p> <p>From Claim 1: A method for improving neurological health of an animal comprising: administering a therapeutically effective amount of a composition to an animal, wherein the composition comprises one or more of psilocybin, psilocin, baeocystin, norbaeocystin, salts thereof, or combinations thereof, one or more of erinacines, hericenones or combinations thereof, and niacin.</p> <p>From [0007]: The present nootropic invention can benefit those suffering from age or trauma related neuropathologies including but not limited to ... amyloid plaque formation, demyelination, nerve signaling, neurotoxic viruses, stress and numerous other agents causing neuropathies.</p>
<p>18. The method of claim 15, wherein the composition comprises about 1 ng to about 2000 mg of the extracts or isolates from <i>Hericium erinaceus</i> mushroom species, erinacines, hericenones, or combinations thereof.</p>	<p>1. U.S. Pat. App. Pub. No. US/2018/0021326 “Compositions and methods for enhancing neuroregeneration and cognition by combining mushroom extracts containing active ingredients psilocin or psilocybin with erinacines or hericenones enhanced with niacin” (Published 25 January 2018)</p> <p>From Claim 1: A method for improving neurological health of an animal comprising: administering a therapeutically effective amount of a composition to an animal, wherein the composition comprises one or more of psilocybin, psilocin, baeocystin, norbaeocystin, salts thereof, or combinations thereof, one or more of erinacines, hericenones or combinations thereof, and niacin.</p> <p>From [0007]: The present nootropic invention can benefit those suffering from age or trauma related neuropathologies including but not limited to ... amyloid plaque formation, demyelination, nerve signaling, neurotoxic viruses, stress and numerous other agents causing neuropathies.</p> <p>From Neurogenesis Formula 1: Psilocin or psilocybin, 1 mg Erinacines or hericenones, 50 mg Niacin per day, 200 mg Extract of <i>Hericium erinaceus</i>, <i>H. corralloides</i>, <i>H. abietis</i>, 199 mg Extracts of plants with neurogenic properties*, 100, mg</p>
<p>19. The method of claim 14, wherein the composition further comprises a monoamine oxidase inhibitor.</p>	<p>1. U.S. Pat. App. Pub. No. US/2018/0021326 “Compositions and methods for enhancing neuroregeneration and cognition by combining mushroom extracts containing active ingredients psilocin or psilocybin with erinacines or hericenones enhanced with niacin” (Published 25 January 2018)</p> <p>From Claim 1: A method for improving neurological health of an animal comprising: administering a therapeutically effective amount of a composition to an animal, wherein the composition comprises one or more of psilocybin, psilocin, baeocystin, norbaeocystin, salts thereof, or combinations thereof, one or more of erinacines, hericenones or combinations thereof, and niacin.</p>

	<p>From Claim 11: The method of claim 1, wherein the composition additionally comprises one or more of... ayahuasca (<i>Banisteriopsis caapi</i> and <i>Psychotria</i> species)...”</p> <p>From [0007]: The present nootropic invention can benefit those suffering from age or trauma related neuropathologies including but not limited to ... amyloid plaque formation, demyelination, nerve signaling, neurotoxic viruses, stress and numerous other agents causing neuropathies.</p> <p>2. SAMOYLENKO ET AL. (2010) “Banisteriopsis caapi, a unique combination of MAO inhibitory and antioxidative constituents for the activities relevant to neurodegenerative disorders and Parkinson’s disease” <i>J. Ethnopharmacol.</i>, 127(2), 357-367.</p> <p>From p. 2: “Earlier chemical investigation have reported the presence of β-carboline alkaloids (β-CA) harmine, harmaline and tetrahydroharmine (THH) as the principal MAO inhibitors, together with other β-CA’s, from <i>B. caapi</i>...”</p> <p>From p. 8: “The hot aqueous extracts of fresh and dried large branches of <i>B. caapi</i> demonstrated significant MAO-A inhibitory and antioxidant activity.”</p>
<p>20. The method of claim 19, wherein the composition comprises about 70 mg to about 200 mg of the monoamine oxidase inhibitor.</p>	<p>1. U.S. Pat. App. Pub. No. US/2018/0021326 “Compositions and methods for enhancing neuroregeneration and cognition by combining mushroom extracts containing active ingredients psilocin or psilocybin with erinacines or hericenones enhanced with niacin” (Published 25 January 2018)</p> <p>From Claim 1: A method for improving neurological health of an animal comprising: administering a therapeutically effective amount of a composition to an animal, wherein the composition comprises one or more of psilocybin, psilocin, baeocystin, norbaeocystin, salts thereof, or combinations thereof, one or more of erinacines, hericenones or combinations thereof, and niacin.</p> <p>From Claim 11: The method of claim 1, wherein the composition additionally comprises one or more of... ayahuasca (<i>Banisteriopsis caapi</i> and <i>Psychotria</i> species)...”</p> <p>From [0007]: The present nootropic invention can benefit those suffering from age or trauma related neuropathologies including but not limited to ... amyloid plaque formation, demyelination, nerve signaling, neurotoxic viruses, stress and numerous other agents causing neuropathies.</p> <p>From Neurogenesis Formula 1: Psilocin or psilocybin, 1 mg Erinacines or hericenones, 50 mg Niacin per day, 200 mg Extract of <i>Hericium erinaceus</i>, <i>H. corralloides</i>, <i>H. abietis</i>, 199 mg Extracts of plants with neurogenic properties*, 100, mg</p>

	<p>Plant extracts with known neuroregenerative properties include, but are not limited to: ... ayahuasca, a concoction made from <i>Banisteriopsis caapi</i>...”</p> <p>2. SAMOYLENKO ET AL. (2010) “Banisteriopsis caapi, a unique combination of MAO inhibitory and antioxidative constituents for the activities relevant to neurodegenerative disorders and Parkinson’s disease” <i>J. Ethnopharmacol.</i>, 127(2), 357-367.</p> <p>From p. 2: “Earlier chemical investigation have reported the presence of β-carboline alkaloids (β-CA) harmine, harmaline and tetrahydroharmine (THH) as the principal MAO inhibitors, together with other β-CA’s, from B. caapi...”</p> <p>From p. 8: “The hot aqueous extracts of fresh and dried large branches of B. caapi demonstrated significant MAO-A inhibitory and antioxidant activity.”</p>
<p>21. The method of claim 19, wherein the monoamine oxidase inhibitor is Norharman, Harmine, 1,2,3,4-tetrahydro-β-carboline-3-carboxylic acid, 1-methyl-1,2,3,4-tetrahydro-β-carboline-3-carboxylic acid, 1-methyl-2,3,4,9-tetrahydro-1H-β-carboline-1,3-dicarboxylic acid, Harmaline, N-methoxy-1-vinyl-β-carboline, ethyl 9H-β-arboline-3-carboxylate, 1-furyl-β-carboline-3-carboxylic acid, 1-[5-(methoxymethyl)-2-furyl]-9H-β-carboline-3-carboxylic acid, 6-hydroxy-3-(6-hydroxy-1H-indol-3-yl)-9H-β-carboline-4-carboxylic acid, Strictosidine, (1S)-1-[(2S,3R,4S)-2-(β-L-glucopyranosyloxy)-5-(methoxycarbonyl)-3-vinyl-3,4-dihydro-2H-pyran-4-yl]methyl}-</p>	<p>1. U.S. Pat. App. Pub. No. US/2018/0021326 “Compositions and methods for enhancing neuroregeneration and cognition by combining mushroom extracts containing active ingredients psilocin or psilocybin with erinacines or hericenones enhanced with niacin” (Published 25 January 2018)</p> <p>From Claim 1: A method for improving neurological health of an animal comprising: administering a therapeutically effective amount of a composition to an animal, wherein the composition comprises one or more of psilocybin, psilocin, baeocystin, norbaeocystin, salts thereof, or combinations thereof, one or more of erinacines, hericenones or combinations thereof, and niacin.</p> <p>From Claim 11: The method of claim 1, wherein the composition additionally comprises one or more of... ayahuasca (<i>Banisteriopsis caapi</i> and <i>Psychotria</i> species)...”</p> <p>From [0007]: The present nootropic invention can benefit those suffering from age or trauma related neuropathologies including but not limited to ... amyloid plaque formation, demyelination, nerve signaling, neurotoxic viruses, stress and numerous other agents causing neuropathies.</p> <p>From Neurogenesis Formula 1: Psilocin or psilocybin, 1 mg Erinacines or hericenones, 50 mg Niacin per day, 200 mg Extract of <i>Hericium erinaceus</i>, <i>H. corralloides</i>, <i>H. abietis</i>, 199 mg Extracts of plants with neurogenic properties*, 100, mg Plant extracts with known neuroregenerative properties include, but are not limited to: ... ayahuasca, a concoction made from <i>Banisteriopsis caapi</i>...”</p>

<p>2,3,4,9-tetrahydro-1H-β-carboline-1,3-dicarboxylic acid, or combinations thereof.</p>	<p>2. SAMOYLENKO ET AL. (2010) “Banisteriopsis caapi, a unique combination of MAO inhibitory and antioxidative constituents for the activities relevant to neurodegenerative disorders and Parkinson’s disease” <i>J. Ethnopharmacol.</i>, 127(2), 357-367.</p> <p>From p. 2: “Earlier chemical investigation have reported the presence of β-carboline alkaloids (β-CA) harmine, harmaline and tetrahydroharmine (THH) as the principal MAO inhibitors, together with other β-CA’s, from B. caapi...”</p> <p>From p. 8: “The hot aqueous extracts of fresh and dried large branches of B. caapi demonstrated significant MAO-A inhibitory and antioxidant activity.”</p>
<p>22. The method of claim 14, wherein the inflammatory response is cytokine storm.</p>	<p>1. U.S. Pat. App. Pub. No. US/2018/0021326 “Compositions and methods for enhancing neuroregeneration and cognition by combining mushroom extracts containing active ingredients psilocin or psilocybin with erinacines or hericenones enhanced with niacin” (Published 25 January 2018)</p> <p>From Claim 1: A method for improving neurological health of an animal comprising: administering a therapeutically effective amount of a composition to an animal, wherein the composition comprises one or more of psilocybin, psilocin, baeocystin, norbaeocystin, salts thereof, or combinations thereof, one or more of erinacines, hericenones or combinations thereof, and niacin.</p> <p>From [0007]: The present nootropic invention can benefit those suffering from age or trauma related neuropathologies including but not limited to ... amyloid plaque formation, demyelination, nerve signaling, neurotoxic viruses, stress and numerous other agents causing neuropathies...The use of fungal extracts also potentially enables neurogenesis by removing agents harmful to neurological health, including but not limited to parasites such as nematodes, protozoa, pathogenic bacteria, including <i>Borrelia</i> species and other spirochetes, and other infectious organisms or viruses.</p> <p>3. KEMPURAJ ET AL. (2020) “COVID-19, Mast Cells, Cytokine Storm, Psychological Stress, and Neuroinflammation” <i>The Neuroscientist</i>, 26(5-6), 402-414.</p> <p>From p. 402: “SARS-CoV-2 infection can cause psychological stress and neuroinflammation. In conclusion, COVID-19 can induce mast cell activation, psychological stress, cytokine storm, and neuroinflammation.”</p>

From p. 406:

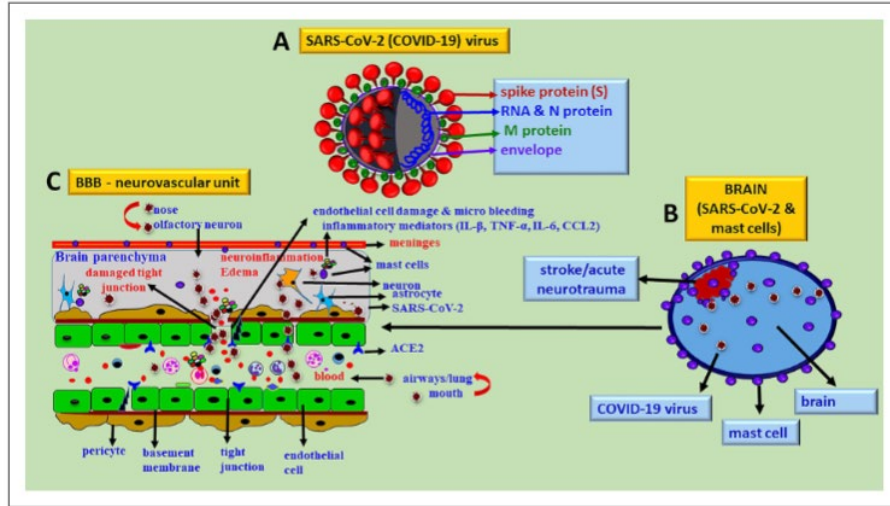


Figure 1. Schematic diagram showing how COVID-19 can cause and exacerbate neuroinflammatory response in the brain. (A) SARS-CoV-2, (b) brain infected with SARS-CoV-2, and (C) neurovascular unit, damaged BBB/loss of tight junction, and neuroinflammation in brain parenchyma. Mast cells, glial cells, endothelial cells, and neurons can be activated by SARS-CoV-2 in the brain. SARS-CoV-2 can enter the brain through the nose, olfactory nerve, defective BBB, and lymphatic drainage. SARS-CoV-2 can activate mast cells and glial cells in the brain to release inflammatory mediators. Endothelial cells in the brain express SARS-CoV-2 receptor ACE2 through which SARS-CoV-2 can infect and activate. Inflammatory mediators released from brain cells and periphery could cause BBB breach, tight junction damage, edema, micro bleeding, cognitive decline, stroke, and neuroinflammation. ACE2 = angiotensin-converting enzyme 2; BBB = blood-brain barrier; COVID-19 = coronavirus disease 2019; SARS-CoV-2 = severe acute respiratory syndrome coronavirus 2.

23. The method of claim 14, wherein the infectious disease or condition is a viral infection, a bacterial infection, or a parasitic infection.

1. U.S. Pat. App. Pub. No. US/2018/0021326 “Compositions and methods for enhancing neuroregeneration and cognition by combining mushroom extracts containing active ingredients psilocin or psilocybin with erinacines or hericenones enhanced with niacin” (Published 25 January 2018)

From Claim 1: A method for improving neurological health of an animal comprising: administering a therapeutically effective amount of a composition to an animal, wherein the composition comprises one or more of psilocybin, psilocin, baeocystin, norbaeocystin, salts thereof, or combinations thereof, one or more of erinacines, hericenones or combinations thereof, and niacin.

From Claim 11: The method of claim 1, wherein the composition additionally comprises one or more of... ayahuasca (*Banisteriopsis caapi* and *Psychotria* species)...

From [0007]: The present nootropic invention can benefit those suffering from age or trauma related neuropathologies including but not

	<p>limited to ... amyloid plaque formation, demyelination, nerve signaling, neurotoxic viruses, stress and numerous other agents causing neuropathies.</p>
<p>24. The method of claim 23, wherein the viral infection is <i>Paramyxoviridae</i> (respiratory syncytial virus (RSV), parainfluenza virus (PIV), metapneumovirus (MPV), enteroviruses), <i>Picornaviridae</i> (Rhinovirus, RV), <i>Coronaviridae</i> (CoV), <i>Adenoviridae</i> (Adenovirus), <i>Parvoviridae</i> (HBov), <i>Orthomyxoviridae</i> (influenza A, B, C, D, <i>Isavirus</i>, <i>Thogotovirus</i>, <i>Quarantavirus</i>), <i>Herpesviridae</i> (human herpes viruses, <i>Varicella zoster</i> virus, Epstein-Barr virus, cytomegalovirus), avian influenza, smallpox, pandemic influenza, or adult respiratory distress syndrome (ARDS).</p>	<p>1. U.S. Pat. App. Pub. No. US/2018/0021326 “Compositions and methods for enhancing neuroregeneration and cognition by combining mushroom extracts containing active ingredients psilocin or psilocybin with erinacines or hericenones enhanced with niacin” (Published 25 January 2018)</p> <p>From Claim 1: A method for improving neurological health of an animal comprising: administering a therapeutically effective amount of a composition to an animal, wherein the composition comprises one or more of psilocybin, psilocin, baeocystin, norbaeocystin, salts thereof, or combinations thereof, one or more of erinacines, hericenones or combinations thereof, and niacin.</p> <p>From [0007]: The present nootropic invention can benefit those suffering from age or trauma related neuropathologies including but not limited to ... amyloid plaque formation, demyelination, nerve signaling, neurotoxic viruses, stress and numerous other agents causing neuropathies...The use of fungal extracts also potentially enables neurogenesis by removing agents harmful to neurological health, including but not limited to parasites such as nematodes, protozoa, pathogenic bacteria, including <i>Borrelia</i> species and other spirochetes, and other infectious organisms or viruses.</p> <p>3. KEMPURAJ ET AL. (2020) “COVID-19, Mast Cells, Cytokine Storm, Psychological Stress, and Neuroinflammation” <i>The Neuroscientist</i>, 26(5-6), 402-414.</p> <p>From p. 402: “SARS-CoV-2 infection can cause psychological stress and neuroinflammation. In conclusion, COVID-19 can induce mast cell activation, psychological stress, cytokine storm, and neuroinflammation.”</p>

From p. 406:

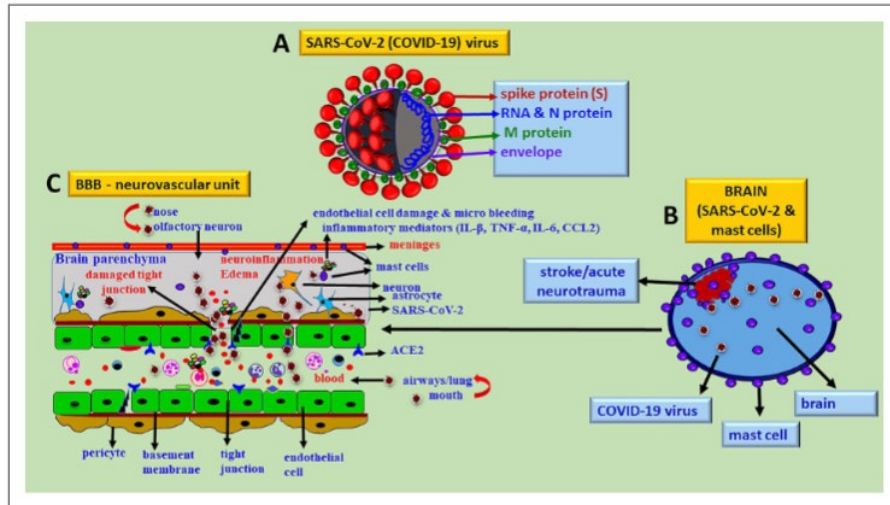


Figure 1. Schematic diagram showing how COVID-19 can cause and exacerbate neuroinflammatory response in the brain. (A) SARS-CoV-2, (b) brain infected with SARS-CoV-2, and (C) neurovascular unit, damaged BBB/loss of tight junction, and neuroinflammation in brain parenchyma. Mast cells, glial cells, endothelial cells, and neurons can be activated by SARS-CoV-2 in the brain. SARS-CoV-2 can enter the brain through the nose, olfactory nerve, defective BBB, and lymphatic drainage. SARS-Cov-2 can activate mast cells and glial cells in the brain to release inflammatory mediators. Endothelial cells in the brain express SARS-CoV-2 receptor ACE2 through which SARS-CoV-2 can infect and activate. Inflammatory mediators released from brain cells and periphery could cause BBB breach, tight junction damage, edema, micro bleeding, cognitive decline, stroke, and neuroinflammation. ACE2 = angiotensin-converting enzyme 2; BBB = blood-brain barrier; COVID-19 = coronavirus disease 2019; SARS-CoV-2 = severe acute respiratory syndrome coronavirus 2.

25. The method of claim 23, wherein the bacterial infection is *Streptococcus pneumoniae*, *Mycobacterium tuberculosis*, *Bordetella pertussis*, *Haemophilus influenzae*, *Moraxella catarrhalis*, *Pseudomonas aeruginosa*, *Stenotrophomonas maltophilia*, *Staphylococcus aureus*, *Streptococcus pyogenes*, *Neisseria meningitidis*, *Klebsiella*

1. U.S. Pat. App. Pub. No. US/2018/0021326 “Compositions and methods for enhancing neuroregeneration and cognition by combining mushroom extracts containing active ingredients psilocin or psilocybin with erinacines or hericenones enhanced with niacin” (Published 25 January 2018)

From Claim 1: A method for improving neurological health of an animal comprising: administering a therapeutically effective amount of a composition to an animal, wherein the composition comprises one or more of psilocybin, psilocin, baeocystin, norbaeocystin, salts thereof, or combinations thereof, one or more of erinacines, hericenones or combinations thereof, and niacin.

From [0007]: The present nootropic invention can benefit those suffering from age or trauma related neuropathologies including but not limited to ... amyloid plaque formation, demyelination, nerve signaling, neurotoxic viruses, stress and numerous other agents causing neuropathies... The use of fungal extracts also potentially enables neurogenesis by removing agents harmful to neurological health,

<p><i>pneumoniae</i>, or Non-tuberculosis <i>Mycobacterium</i>.</p>	<p>including but not limited to parasites such as nematodes, protozoa, pathogenic bacteria, including <i>Borrelia</i> species and other spirochetes, and other infectious organisms or viruses.</p> <p>4. LIU ET AL. (2019) “Group A Streptococcus Subcutaneous Infection-Induced Central Nervous System Inflammation Is Attenuated by Blocking Peripheral TNF” <i>Sec. Infectious Agents and Disease</i>, 10:265.</p> <p>From p. 1: “Group A streptococcus (GAS) infection causes a strong inflammatory response associated with cytokine storms, leading to multiorgan failure...”</p> <p>From p. 8: “Brain inflammation-induced injury is a life-threatening outcome of <i>S. pneumoniae</i> meningitis (Xu et al., 2017). Traditional treatment of <i>S. pneumoniae</i> infection by antibiotic only reduced bacterial load but not be able to rescue neuronal injury (Kadurugamuwa et al., 2005).”</p> <p>From p. 9: “... we found that subcutaneous GAS-induced systemic inflammation caused brain inflammation and neuron degeneration.”</p>
<p>26. The method of claim 23, wherein the parasitic infection is malaria.</p>	<p>1. U.S. Pat. App. Pub. No. US/2018/0021326 “Compositions and methods for enhancing neuroregeneration and cognition by combining mushroom extracts containing active ingredients psilocin or psilocybin with erinacines or hericenones enhanced with niacin” (Published 25 January 2018)</p> <p>From Claim 1: A method for improving neurological health of an animal comprising: administering a therapeutically effective amount of a composition to an animal, wherein the composition comprises one or more of psilocybin, psilocin, baeocystin, norbaeocystin, salts thereof, or combinations thereof, one or more of erinacines, hericenones or combinations thereof, and niacin.</p> <p>From Claim 11: The method of claim 1, wherein the composition additionally comprises one or more of... ayahuasca (<i>Banisteriopsis caapi</i> and <i>Psychotria</i> species)...”</p> <p>From [0007]: The present nootropic invention can benefit those suffering from age or trauma related neuropathologies including but not limited to ... amyloid plaque formation, demyelination, nerve signaling, neurotoxic viruses, stress and numerous other agents causing neuropathies.</p> <p>5. DUNST ET AL. (2017) “Cytokines and Chemokines in Cerebral Malaria Pathogenesis” <i>Front Cell Infect Microbiol</i>, 7:324.</p> <p>From p. 1: “Cerebral malaria is among the major causes of malaria-associated mortality and effective adjunctive therapeutic strategies are currently lacking. Central pathophysiological processes involved in the development of cerebral malaria include an imbalance of pro- and anti-inflammatory responses to <i>Plasmodium</i> infection, endothelial cell</p>

	<p>activation, and loss of blood-brain barrier integrity... Several cytokines and chemokines have repeatedly been associated with cerebral malaria severity.</p> <p>From p. 2: “Strikingly, systemic cytokine levels have been described to correlate with disease severity in malaria as well as sepsis (Prakash et al., 2006; Bozza et al., 2007).”</p> <p>From p. 10: “Upon disruption of the blood-brain barrier, cytokines, chemokines, and soluble parasite products might enter the brain parenchyma and, thereby, activate astrocytes and microglia, and result in symptoms of neuroinflammation in the absence of extravasation of infected erythrocytes or leukocytes into the brain parenchyma (Combes et al., 2010).”</p>
<p>27. The method of claim 14, wherein inflammation is reduced and neuroregeneration is induced in the subject.</p>	<p>1. U.S. Pat. App. Pub. No. US/2018/0021326 “Compositions and methods for enhancing neuroregeneration and cognition by combining mushroom extracts containing active ingredients psilocin or psilocybin with erinacines or hericenones enhanced with niacin” (Published 25 January 2018)</p> <p>From Claim 1: A method for improving neurological health of an animal comprising: administering a therapeutically effective amount of a composition to an animal, wherein the composition comprises one or more of psilocybin, psilocin, baeocystin, norbaeocystin, salts thereof, or combinations thereof, one or more of erinacines, hericenones or combinations thereof, and niacin.</p> <p>Claim 10: The method of claim 1, wherein the composition additionally promotes neurogenesis.</p>
<p>28. The method of claim 27, wherein neuroregeneration comprises neurite outgrowth.</p>	<p>1. U.S. Pat. App. Pub. No. US/2018/0021326 “Compositions and methods for enhancing neuroregeneration and cognition by combining mushroom extracts containing active ingredients psilocin or psilocybin with erinacines or hericenones enhanced with niacin” (Published 25 January 2018)</p> <p>From Claim 1: A method for improving neurological health of an animal comprising: administering a therapeutically effective amount of a composition to an animal, wherein the composition comprises one or more of psilocybin, psilocin, baeocystin, norbaeocystin, salts thereof, or combinations thereof, one or more of erinacines, hericenones or combinations thereof, and niacin.</p> <p>Claim 10: The method of claim 1, wherein the composition additionally promotes neurogenesis.</p>
<p>29. A method for inducing expression of an anti-inflammatory cytokine, the method comprising administering a composition to a subject</p>	<p>1. U.S. Pat. App. Pub. No. US/2018/0021326 “Compositions and methods for enhancing neuroregeneration and cognition by combining mushroom extracts containing active ingredients psilocin or psilocybin with erinacines or hericenones enhanced with niacin” (Published 25 January 2018)</p> <p>From Claim 1: A method for improving neurological health of an animal comprising: administering a therapeutically effective amount of a</p>

<p>in need thereof, the composition comprising: one or more tryptamines, salts thereof, or combinations thereof.</p>	<p>composition to an animal, wherein the composition comprises one or more of psilocybin, psilocin, baeocystin, norbaeocystin, salts thereof, or combinations thereof, one or more of erinacines, hericenones or combinations thereof, and niacin.</p> <p>From [0005]: A composition including psilocybin (4-phosphoryloxy-N,N-dimethyltryptamine) or psilocin (4-hydroxy-N,N-dimethyltryptamine) in pure form or extracts from <i>Psilocybe</i> and psilocybin containing mushrooms combined with erinacines or hericenones, or extracts from <i>Hericium</i> mushroom species... . Erinacines, including known erinacines A-K, P and Q, are cyanthane terpenes isolated from the mycelia of <i>Hericium erinaceus</i> that promote NGF (nerve growth factor) synthesis. Hericenones, including known hericenones C-H, are cyanthane terpenes located in both the mycelia and fruiting body of <i>Hericium erinaceus</i> that promote NGF synthesis.</p> <p>6. PRENCIPE ET AL (2014) “Nerve growth factor downregulates inflammatory response in human monocytes through TrkA” <i>J. Immunol.</i> 192(7), 3345-54.</p> <p>From p. 3345: “The neurotrophin nerve growth factor (NGF) is a well-known regulator of differentiation, plasticity, and phenotype of sensory and sympathetic neurons during the entire lifespan.”</p> <p>From p. 3352: “In this study, we show that, by binding to TrkA, NGF dampens the inflammatory response in monocytes activated with TLR ligands, and we identify TrkA-activated pathways that interact with TLR signaling.”</p> <p>From p. 3352: “We show that the addition of NGF to TLR-activated monocytes inhibits the production of proinflammatory cytokines, including IL-1b, IL-6, and TNF-a and increases the production of the anti-inflammatory cytokines IL-10 and IL-1ra.”</p>
<p>30. A method for inducing expression of an anti-inflammatory cytokine, the method comprising administering a composition to a subject in need thereof, the composition comprising: one or more tryptamines, salts thereof, or combinations thereof; and extracts or isolates from <i>Hericium</i></p>	<p>1. U.S. Pat. App. Pub. No. US/2018/0021326 “Compositions and methods for enhancing neuroregeneration and cognition by combining mushroom extracts containing active ingredients psilocin or psilocybin with erinacines or hericenones enhanced with niacin” (Published 25 January 2018)</p> <p>From Claim 1: A method for improving neurological health of an animal comprising: administering a therapeutically effective amount of a composition to an animal, wherein the composition comprises one or more of psilocybin, psilocin, baeocystin, norbaeocystin, salts thereof, or combinations thereof, one or more of erinacines, hericenones or combinations thereof, and niacin.</p> <p>From [0005]: A composition including psilocybin (4-phosphoryloxy-N,N-dimethyltryptamine) or psilocin (4-hydroxy-N,N-dimethyltryptamine) in pure form or extracts from <i>Psilocybe</i> and psilocybin containing mushrooms combined with erinacines or hericenones, or extracts from Hericium mushroom species... . Erinacines, including known</p>

<p><i>erinaceus</i> mushroom species, erinacines, hericenones, or combinations thereof.</p>	<p>erinacines A-K, P and Q, are cyanthane terpenes isolated from the mycelia of <i>Hericium erinaceus</i> that promote NGF (nerve growth factor) synthesis. Hericenones, including known hericenones C-H, are cyanthane terpenes located in both the mycelia and fruiting body of <i>Hericium erinaceus</i> that promote NGF synthesis.</p> <p>6. PRENCIPE ET AL (2014) “Nerve growth factor downregulates inflammatory response in human monocytes through TrkA” <i>J. Immunol.</i> 192(7), 3345-54.</p> <p>From p. 3345: “The neurotrophin nerve growth factor (NGF) is a well-known regulator of differentiation, plasticity, and phenotype of sensory and sympathetic neurons during the entire lifespan.”</p> <p>From p. 3352: “In this study, we show that, by binding to TrkA, NGF dampens the inflammatory response in monocytes activated with TLR ligands, and we identify TrkA-activated pathways that interact with TLR signaling.”</p> <p>From p. 3352: “We show that the addition of NGF to TLR-activated monocytes inhibits the production of proinflammatory cytokines, including IL-1b, IL-6, and TNF-a and increases the production of the anti-inflammatory cytokines IL-10 and IL-1ra.”</p>
<p>31. The method of claim 29, wherein the composition comprises about 1 ng to about 10 mg, about 10 mg to about 100 mg, about 10 mg to about 20 mg, about 20 mg to about 50 mg, about 20 mg to about 100 mg, about 1 ng to about 20 mg, about 1 ng to about 50 mg, or about 1 ng to about 100 mg of the one or more tryptamines, salts thereof, or combinations thereof.</p>	<p>1. U.S. Pat. App. Pub. No. US/2018/0021326 “Compositions and methods for enhancing neuroregeneration and cognition by combining mushroom extracts containing active ingredients psilocin or psilocybin with erinacines or hericenones enhanced with niacin” (Published 25 January 2018)</p> <p>From Claim 1: A method for improving neurological health of an animal comprising: administering a therapeutically effective amount of a composition to an animal, wherein the composition comprises one or more of psilocybin, psilocin, baeocystin, norbaeocystin, salts thereof, or combinations thereof, one or more of erinacines, hericenones or combinations thereof, and niacin.</p> <p>From [0005]: A composition including psilocybin (4-phosphoryloxy-N,N-dimethyltryptamine) or psilocin (4-hydroxy-N,N-dimethyltryptamine) in pure form or extracts from <i>Psilocybe</i> and psilocybin containing mushrooms combined with erinacines or hericenones, or extracts from <i>Hericium</i> mushroom species... Erinacines, including known erinacines A-K, P and Q, are cyanthane terpenes isolated from the mycelia of <i>Hericium erinaceus</i> that promote NGF (nerve growth factor) synthesis. Hericenones, including known hericenones C-H, are cyanthane terpenes located in both the mycelia and fruiting body of <i>Hericium erinaceus</i> that promote NGF synthesis.</p> <p>From Neurogenesis Formula 1: Psilocin or psilocybin, 1 mg Erinacines or hericenones, 50 mg Niacin per day, 200 mg Extract of <i>Hericium erinaceus</i>, <i>H. corralloides</i>, <i>H. abietis</i>, 199 mg</p>

	<p>Extracts of plants with neurogenic properties*, 100, mg</p> <p>6. PRENCIPE ET AL (2014) “Nerve growth factor downregulates inflammatory response in human monocytes through TrkA” <i>J. Immunol.</i> 192(7), 3345-54.</p> <p>From p. 3345: “The neurotrophin nerve growth factor (NGF) is a well-known regulator of differentiation, plasticity, and phenotype of sensory and sympathetic neurons during the entire lifespan.”</p> <p>From p. 3352: “In this study, we show that, by binding to TrkA, NGF dampens the inflammatory response in monocytes activated with TLR ligands, and we identify TrkA-activated pathways that interact with TLR signaling.”</p> <p>From p. 3352: “We show that the addition of NGF to TLR-activated monocytes inhibits the production of proinflammatory cytokines, including IL-1b, IL-6, and TNF-a and increases the production of the anti-inflammatory cytokines IL-10 and IL-1ra.”</p>
<p>32. The method of claim 29, wherein the one or more tryptamines are psilocybin, psilocin, norpsilocin, baeocystin, norbaeocystin, N,N-dimethyltryptamine (DMT), or combinations thereof.</p>	<p>1. U.S. Pat. App. Pub. No. US/2018/0021326 “Compositions and methods for enhancing neuroregeneration and cognition by combining mushroom extracts containing active ingredients psilocin or psilocybin with erinacines or hericenones enhanced with niacin” (Published 25 January 2018)</p> <p>From Claim 1: A method for improving neurological health of an animal comprising: administering a therapeutically effective amount of a composition to an animal, wherein the composition comprises one or more of psilocybin, psilocin, baeocystin, norbaeocystin, salts thereof, or combinations thereof, one or more of erinacines, hericenones or combinations thereof, and niacin.</p> <p>From [0005]: A composition including psilocybin (4-phosphoryloxy-N,N-dimethyltryptamine) or psilocin (4-hydroxy-N,N-dimethyltryptamine) in pure form or extracts from <i>Psilocybe</i> and psilocybin containing mushrooms combined with erinacines or hericenones, or extracts from <i>Hericium</i> mushroom species... . Erinacines, including known erinacines A-K, P and Q, are cyanthane terpenes isolated from the mycelia of <i>Hericium erinaceus</i> that promote NGF (nerve growth factor) synthesis. Hericenones, including known hericenones C-H, are cyanthane terpenes located in both the mycelia and fruiting body of <i>Hericium erinaceus</i> that promote NGF synthesis.</p> <p>6. PRENCIPE ET AL (2014) “Nerve growth factor downregulates inflammatory response in human monocytes through TrkA” <i>J. Immunol.</i> 192(7), 3345-54.</p>

	<p>From p. 3345: “The neurotrophin nerve growth factor (NGF) is a well-known regulator of differentiation, plasticity, and phenotype of sensory and sympathetic neurons during the entire lifespan.”</p> <p>From p. 3352: “In this study, we show that, by binding to TrkA, NGF dampens the inflammatory response in monocytes activated with TLR ligands, and we identify TrkA-activated pathways that interact with TLR signaling.”</p> <p>From p. 3352: “We show that the addition of NGF to TLR-activated monocytes inhibits the production of proinflammatory cytokines, including IL-1b, IL-6, and TNF-a and increases the production of the anti-inflammatory cytokines IL-10 and IL-1ra.”</p>
<p>33. The method of claim 30, wherein the composition comprises about 1 ng to about 2000 mg of the extracts or isolates from <i>Hericium erinaceus</i> mushroom species, erinacines, hericenones, or combinations thereof.</p>	<p>1. U.S. Pat. App. Pub. No. US/2018/0021326 “Compositions and methods for enhancing neuroregeneration and cognition by combining mushroom extracts containing active ingredients psilocin or psilocybin with erinacines or hericenones enhanced with niacin” (Published 25 January 2018)</p> <p>From Claim 1: A method for improving neurological health of an animal comprising: administering a therapeutically effective amount of a composition to an animal, wherein the composition comprises one or more of psilocybin, psilocin, baeocystin, norbaeocystin, salts thereof, or combinations thereof, one or more of erinacines, hericenones or combinations thereof, and niacin.</p> <p>From [0005]: A composition including psilocybin (4-phosphoryloxy-N,N-dimethyltryptamine) or psilocin (4-hydroxy-N,N-dimethyltryptamine) in pure form or extracts from <i>Psilocybe</i> and psilocybin containing mushrooms combined with erinacines or hericenones, or extracts from <i>Hericium</i> mushroom species. . . . Erinacines, including known erinacines A-K, P and Q, are cyanthane terpenes isolated from the mycelia of <i>Hericium erinaceus</i> that promote NGF (nerve growth factor) synthesis. Hericenones, including known hericenones C-H, are cyanthane terpenes located in both the mycelia and fruiting body of <i>Hericium erinaceus</i> that promote NGF synthesis.</p> <p>From Neurogenesis Formula 1: Psilocin or psilocybin, 1 mg Erinacines or hericenones, 50 mg Niacin per day, 200 mg Extract of <i>Hericium erinaceus</i>, <i>H. corralloides</i>, <i>H. abietis</i>, 199 mg Extracts of plants with neurogenic properties*, 100, mg</p> <p>6. PRENCIPE ET AL (2014) “Nerve growth factor downregulates inflammatory response in human monocytes through TrkA” <i>J. Immunol.</i> 192(7), 3345-54.</p> <p>From p. 3345: “The neurotrophin nerve growth factor (NGF) is a well-known regulator of differentiation, plasticity, and phenotype of sensory and sympathetic neurons during the entire lifespan.”</p>

	<p>From p. 3352: “In this study, we show that, by binding to TrkA, NGF dampens the inflammatory response in monocytes activated with TLR ligands, and we identify TrkA-activated pathways that interact with TLR signaling.”</p> <p>From p. 3352: “We show that the addition of NGF to TLR-activated monocytes inhibits the production of proinflammatory cytokines, including IL-1b, IL-6, and TNF-a and increases the production of the anti-inflammatory cytokines IL-10 and IL-1ra.”</p>
<p>34. The method of claim 29, wherein the composition further comprises a monoamine oxidase inhibitor.</p>	<p>1. U.S. Pat. App. Pub. No. US/2018/0021326 “Compositions and methods for enhancing neuroregeneration and cognition by combining mushroom extracts containing active ingredients psilocin or psilocybin with erinacines or hericenones enhanced with niacin” (Published 25 January 2018)</p> <p>From Claim 1: A method for improving neurological health of an animal comprising: administering a therapeutically effective amount of a composition to an animal, wherein the composition comprises one or more of psilocybin, psilocin, baeocystin, norbaeocystin, salts thereof, or combinations thereof, one or more of erinacines, hericenones or combinations thereof, and niacin.</p> <p>From Claim 11: The method of claim 1, wherein the composition additionally comprises one or more of... ayahuasca (<i>Banisteriopsis caapi</i> and <i>Psychotria</i> species)...”</p> <p>From [0005]: A composition including psilocybin (4-phosphoryloxy-N,N-dimethyltryptamine) or psilocin (4-hydroxy-N,N-dimethyltryptamine) in pure form or extracts from <i>Psilocybe</i> and psilocybin containing mushrooms combined with erinacines or hericenones, or extracts from <i>Hericum</i> mushroom species... . Erinacines, including known erinacines A-K, P and Q, are cyanthane terpenes isolated from the mycelia of <i>Hericum erinaceus</i> that promote NGF (nerve growth factor) synthesis. Hericenones, including known hericenones C-H, are cyanthane terpenes located in both the mycelia and fruiting body of <i>Hericum erinaceus</i> that promote NGF synthesis.</p> <p>6. PRENCIPE ET AL (2014) “Nerve growth factor downregulates inflammatory response in human monocytes through TrkA” <i>J. Immunol.</i> 192(7), 3345-54.</p> <p>From p. 3345: “The neurotrophin nerve growth factor (NGF) is a well-known regulator of differentiation, plasticity, and phenotype of sensory and sympathetic neurons during the entire lifespan.”</p> <p>From p. 3352: “In this study, we show that, by binding to TrkA, NGF dampens the inflammatory response in monocytes activated with TLR ligands, and we identify TrkA-activated pathways that interact with TLR signaling.”</p>

	<p>From p. 3352: “We show that the addition of NGF to TLR-activated monocytes inhibits the production of proinflammatory cytokines, including IL-1b, IL-6, and TNF-a and increases the production of the anti-inflammatory cytokines IL-10 and IL-1ra.”</p>
<p>35. The method of claim 34, wherein the composition comprises about 70 mg to about 200 mg of the monoamine oxidase inhibitor.</p>	<p>1. U.S. Pat. App. Pub. No. US/2018/0021326 “Compositions and methods for enhancing neuroregeneration and cognition by combining mushroom extracts containing active ingredients psilocin or psilocybin with erinacines or hericenones enhanced with niacin” (Published 25 January 2018)</p> <p>From Claim 1: A method for improving neurological health of an animal comprising: administering a therapeutically effective amount of a composition to an animal, wherein the composition comprises one or more of psilocybin, psilocin, baeocystin, norbaeocystin, salts thereof, or combinations thereof, one or more of erinacines, hericenones or combinations thereof, and niacin.</p> <p>From Claim 11: The method of claim 1, wherein the composition additionally comprises one or more of... ayahuasca (<i>Banisteriopsis caapi</i> and <i>Psychotria</i> species)...”</p> <p>From Neurogenesis Formula 1: Psilocin or psilocybin, 1 mg Erinacines or hericenones, 50 mg Niacin per day, 200 mg Extract of <i>Hericium erinaceus</i>, <i>H. corralloides</i>, <i>H. abietis</i>, 199 mg Extracts of plants with neurogenic properties*, 100, mg Plant extracts with known neuroregenerative properties include, but are not limited to: ... ayahuasca, a concoction made from <i>Banisteriopsis caapi</i>...”</p> <p>From [0005]: A composition including psilocybin (4-phosphoryloxy-N,N-dimethyltryptamine) or psilocin (4-hydroxy-N,N-dimethyltryptamine) in pure form or extracts from <i>Psilocybe</i> and psilocybin containing mushrooms combined with erinacines or hericenones, or extracts from <i>Hericium</i> mushroom species... . Erinacines, including known erinacines A-K, P and Q, are cyanthane terpenes isolated from the mycelia of <i>Hericium erinaceus</i> that promote NGF (nerve growth factor) synthesis. Hericenones, including known hericenones C-H, are cyanthane terpenes located in both the mycelia and fruiting body of <i>Hericium erinaceus</i> that promote NGF synthesis.</p> <p>6. PRENCIPE ET AL (2014) “Nerve growth factor downregulates inflammatory response in human monocytes through TrkA” <i>J. Immunol.</i> 192(7), 3345-54.</p> <p>From p. 3345: “The neurotrophin nerve growth factor (NGF) is a well-known regulator of differentiation, plasticity, and phenotype of sensory and sympathetic neurons during the entire lifespan.”</p> <p>From p. 3352: “In this study, we show that, by binding to TrkA, NGF dampens the inflammatory response in monocytes activated with TLR</p>

	<p>ligands, and we identify TrkA-activated pathways that interact with TLR signaling.”</p> <p>From p. 3352: “We show that the addition of NGF to TLR-activated monocytes inhibits the production of proinflammatory cytokines, including IL-1b, IL-6, and TNF-a and increases the production of the anti-inflammatory cytokines IL-10 and IL-1ra.”</p>
<p>36. The method of claim 34, wherein the monoamine oxidase inhibitor is Norharman, Harmine, 1,2,3,4-tetrahydro-β-carboline-3-carboxylic acid, 1-methyl-1,2,3,4-tetrahydro-β-carboline-3-carboxylic acid, 1-methyl-2,3,4,9-tetrahydro-1H-β-carboline-1,3-dicarboxylic acid, Harmaline, N-methoxy-1-vinyl-β-carboline, ethyl 9H-β-arboline-3-carboxylate, 1-fury)-β-carboline-3-carboxylic acid, 1-[5-(methoxymethyl)-2-furyl]-9H-β-carboline-3-carboxylic acid, 6-hydroxy-3-(6-hydroxy-1H-indol-3-yl)-9H-β-carboline-4-carboxylic acid, Strictosidine, (1S)-1-[[[(2S,3R,4S)-2-(β-L-glucopyranosyloxy)-5-(methoxycarbonyl)-3-vinyl-3,4-dihydro-2H-pyran-4-yl]methyl]-2,3,4,9-tetrahydro-1H-β-carboline-1,3-dicarboxylic acid, or combinations thereof.</p>	<p>1. U.S. Pat. App. Pub. No. US/2018/0021326 “Compositions and methods for enhancing neuroregeneration and cognition by combining mushroom extracts containing active ingredients psilocin or psilocybin with erinacines or hericenones enhanced with niacin” (Published 25 January 2018)</p> <p>From Claim 1: A method for improving neurological health of an animal comprising: administering a therapeutically effective amount of a composition to an animal, wherein the composition comprises one or more of psilocybin, psilocin, baeocystin, norbaeocystin, salts thereof, or combinations thereof, one or more of erinacines, hericenones or combinations thereof, and niacin.</p> <p>From Claim 11: The method of claim 1, wherein the composition additionally comprises one or more of... ayahuasca (<i>Banisteriopsis caapi</i> and <i>Psychotria</i> species)...”</p> <p>From Neurogenesis Formula 1: Psilocin or psilocybin, 1 mg Erinacines or hericenones, 50 mg Niacin per day, 200 mg Extract of <i>Hericium erinaceus</i>, <i>H. corralloides</i>, <i>H. abietis</i>, 199 mg Extracts of plants with neurogenic properties*, 100, mg Plant extracts with known neuroregenerative properties include, but are not limited to: ... ayahuasca, a concoction made from <i>Banisteriopsis caapi</i>...”</p> <p>From [0005]: A composition including psilocybin (4-phosphoryloxy-N,N-dimethyltryptamine) or psilocin (4-hydroxy-N,N-dimethyltryptamine) in pure form or extracts from <i>Psilocybe</i> and psilocybin containing mushrooms combined with erinacines or hericenones, or extracts from <i>Hericium</i> mushroom species... . Erinacines, including known erinacines A-K, P and Q, are cyanthane terpenes isolated from the mycelia of <i>Hericium erinaceus</i> that promote NGF (nerve growth factor) synthesis. Hericenones, including known hericenones C-H, are cyanthane terpenes located in both the mycelia and fruiting body of <i>Hericium erinaceus</i> that promote NGF synthesis.</p> <p>2. SAMOYLENKO ET AL. (2010) “Banisteriopsis caapi, a unique combination of MAO inhibitory and antioxidative constituents for the activities relevant to neurodegenerative disorders and Parkinson’s disease” <i>J. Ethnopharmacol.</i>, 127(2), 357-367.</p> <p>From p. 2: “Earlier chemical investigation have reported the presence of β-carboline alkaloids (β-CA) harmine, harmaline and tetrahydroharmine</p>

	<p>(THH) as the principal MAO inhibitors, together with other β-CA's, from B. caapi..."</p> <p>From p. 8: "The hot aqueous extracts of fresh and dried large branches of B. caapi demonstrated significant MAO-A inhibitory and antioxidant activity."</p> <p>6. PRENCIPE ET AL (2014) "Nerve growth factor downregulates inflammatory response in human monocytes through TrkA" <i>J. Immunol.</i> 192(7), 3345-54.</p> <p>From p. 3345: "The neurotrophin nerve growth factor (NGF) is a well-known regulator of differentiation, plasticity, and phenotype of sensory and sympathetic neurons during the entire lifespan."</p> <p>From p. 3352: "In this study, we show that, by binding to TrkA, NGF dampens the inflammatory response in monocytes activated with TLR ligands, and we identify TrkA-activated pathways that interact with TLR signaling."</p> <p>From p. 3352: "We show that the addition of NGF to TLR-activated monocytes inhibits the production of proinflammatory cytokines, including IL-1b, IL-6, and TNF-a and increases the production of the anti-inflammatory cytokines IL-10 and IL-1ra."</p>
<p>37. The method of claim 29, wherein the anti-inflammatory cytokine is IL-4, IL-10, IL-1RA, or a combination thereof.</p>	<p>1. U.S. Pat. App. Pub. No. US/2018/0021326 "Compositions and methods for enhancing neuroregeneration and cognition by combining mushroom extracts containing active ingredients psilocin or psilocybin with erinacines or hericenones enhanced with niacin" (Published 25 January 2018)</p> <p>From Claim 1: A method for improving neurological health of an animal comprising: administering a therapeutically effective amount of a composition to an animal, wherein the composition comprises one or more of psilocybin, psilocin, baeocystin, norbaeocystin, salts thereof, or combinations thereof, one or more of erinacines, hericenones or combinations thereof, and niacin.</p> <p>From [0005]: A composition including psilocybin (4-phosphoryloxy-N,N-dimethyltryptamine) or psilocin (4-hydroxy-N,N-dimethyltryptamine) in pure form or extracts from <i>Psilocybe</i> and psilocybin containing mushrooms combined with erinacines or hericenones, or extracts from <i>Hericium</i> mushroom species... . Erinacines, including known erinacines A-K, P and Q, are cyanthane terpenes isolated from the mycelia of <i>Hericium erinaceus</i> that promote NGF (nerve growth factor) synthesis. Hericenones, including known hericenones C-H, are cyanthane terpenes located in both the mycelia and fruiting body of <i>Hericium erinaceus</i> that promote NGF synthesis.</p> <p>6. PRENCIPE ET AL (2014) "Nerve growth factor downregulates inflammatory response in human monocytes through TrkA" <i>J. Immunol.</i></p>

	<p>192(7), 3345-54.</p> <p>From p. 3345: “The neurotrophin nerve growth factor (NGF) is a well-known regulator of differentiation, plasticity, and phenotype of sensory and sympathetic neurons during the entire lifespan.”</p> <p>From p. 3352: “In this study, we show that, by binding to TrkA, NGF dampens the inflammatory response in monocytes activated with TLR ligands, and we identify TrkA-activated pathways that interact with TLR signaling.”</p> <p>From p. 3352: “We show that the addition of NGF to TLR-activated monocytes inhibits the production of proinflammatory cytokines, including IL-1b, IL-6, and TNF-a and increases the production of the anti-inflammatory cytokines IL-10 and IL-1ra.”</p>
<p>38. The method of claim 29, wherein inflammation is reduced and neuroregeneration is induced in the subject.</p>	<p>1. U.S. Pat. App. Pub. No. US/2018/0021326 “Compositions and methods for enhancing neuroregeneration and cognition by combining mushroom extracts containing active ingredients psilocin or psilocybin with erinacines or hericenones enhanced with niacin” (Published 25 January 2018)</p> <p>From Claim 1: A method for improving neurological health of an animal comprising: administering a therapeutically effective amount of a composition to an animal, wherein the composition comprises one or more of psilocybin, psilocin, baeocystin, norbaeocystin, salts thereof, or combinations thereof, one or more of erinacines, hericenones or combinations thereof, and niacin.</p> <p>Claim 10: The method of claim 1, wherein the composition additionally promotes neurogenesis.</p> <p>From [0005]: A composition including psilocybin (4-phosphoryloxy-N,N-dimethyltryptamine) or psilocin (4-hydroxy-N,N-dimethyltryptamine) in pure form or extracts from <i>Psilocybe</i> and psilocybin containing mushrooms combined with erinacines or hericenones, or extracts from <i>Hericum</i> mushroom species. . . . Erinacines, including known erinacines A-K, P and Q, are cyanthane terpenes isolated from the mycelia of <i>Hericum erinaceus</i> that promote NGF (nerve growth factor) synthesis. Hericenones, including known hericenones C-H, are cyanthane terpenes located in both the mycelia and fruiting body of <i>Hericum erinaceus</i> that promote NGF synthesis.</p> <p>From Neurogenesis Formula 1: Psilocin or psilocybin, 1 mg Erinacines or hericenones, 50 mg Niacin per day, 200 mg Extract of <i>Hericum erinaceus</i>, <i>H. corralloides</i>, <i>H. abietis</i>, 199 mg Extracts of plants with neurogenic properties*, 100, mg</p> <p>6. PRENCIPE ET AL (2014) “Nerve growth factor downregulates inflammatory response in human monocytes through TrkA” <i>J. Immunol.</i></p>

	<p>192(7), 3345-54.</p> <p>From p. 3345: “The neurotrophin nerve growth factor (NGF) is a well-known regulator of differentiation, plasticity, and phenotype of sensory and sympathetic neurons during the entire lifespan.”</p> <p>From p. 3352: “In this study, we show that, by binding to TrkA, NGF dampens the inflammatory response in monocytes activated with TLR ligands, and we identify TrkA-activated pathways that interact with TLR signaling.”</p> <p>From p. 3352: “We show that the addition of NGF to TLR-activated monocytes inhibits the production of proinflammatory cytokines, including IL-1b, IL-6, and TNF-a and increases the production of the anti-inflammatory cytokines IL-10 and IL-1ra.”</p>
<p>39. The method of claim 38, wherein neuroregeneration comprises neurite outgrowth.</p>	<p>1. U.S. Pat. App. Pub. No. US/2018/0021326 “Compositions and methods for enhancing neuroregeneration and cognition by combining mushroom extracts containing active ingredients psilocin or psilocybin with erinacines or hericenones enhanced with niacin” (Published 25 January 2018)</p> <p>From Claim 1: A method for improving neurological health of an animal comprising: administering a therapeutically effective amount of a composition to an animal, wherein the composition comprises one or more of psilocybin, psilocin, baeocystin, norbaeocystin, salts thereof, or combinations thereof, one or more of erinacines, hericenones or combinations thereof, and niacin.</p> <p>Claim 10: The method of claim 1, wherein the composition additionally promotes neurogenesis.</p> <p>From [0005]: A composition including psilocybin (4-phosphoryloxy-N,N-dimethyltryptamine) or psilocin (4-hydroxy-N,N-dimethyltryptamine) in pure form or extracts from <i>Psilocybe</i> and psilocybin containing mushrooms combined with erinacines or hericenones, or extracts from <i>Hericum</i> mushroom species. . . . Erinacines, including known erinacines A-K, P and Q, are cyanthane terpenes isolated from the mycelia of <i>Hericum erinaceus</i> that promote NGF (nerve growth factor) synthesis. Hericenones, including known hericenones C-H, are cyanthane terpenes located in both the mycelia and fruiting body of <i>Hericum erinaceus</i> that promote NGF synthesis.</p> <p>From Neurogenesis Formula 1: Psilocin or psilocybin, 1 mg Erinacines or hericenones, 50 mg Niacin per day, 200 mg Extract of <i>Hericum erinaceus</i>, <i>H. corralloides</i>, <i>H. abietis</i>, 199 mg Extracts of plants with neurogenic properties*, 100, mg</p> <p>6. PRENCIPE ET AL (2014) “Nerve growth factor downregulates inflammatory response in human monocytes through TrkA” <i>J. Immunol.</i></p>

	<p>192(7), 3345-54.</p> <p>From p. 3345: “The neurotrophin nerve growth factor (NGF) is a well-known regulator of differentiation, plasticity, and phenotype of sensory and sympathetic neurons during the entire lifespan.”</p> <p>From p. 3352: “In this study, we show that, by binding to TrkA, NGF dampens the inflammatory response in monocytes activated with TLR ligands, and we identify TrkA-activated pathways that interact with TLR signaling.”</p> <p>From p. 3352: “We show that the addition of NGF to TLR-activated monocytes inhibits the production of proinflammatory cytokines, including IL-1b, IL-6, and TNF-a and increases the production of the anti-inflammatory cytokines IL-10 and IL-1ra.”</p>
<p>40. A method for treating or modulating an inflammatory response triggered by an infectious disease or condition by inducing expression of one or more anti-inflammatory cytokines selected from the group of IL-4, IL-10, and IL-1RA, the method comprising: administering a composition to a subject in need thereof, the composition comprising: about 1 ng to about 10 mg, about 10 mg to about 100 mg, about 10 mg to about 20 mg, about 20 mg to about 50 mg, about 20 mg to about 100 mg, about 1 ng to about 20 mg, about 1 ng to about 50 mg, or about 1 ng to about 100 mg of one or more tryptamines, salts thereof, or combinations thereof; and about 10 ng to about 2000 mg of extracts or isolates from <i>Hericium erinaceus</i> mushroom</p>	<p>1. U.S. Pat. App. Pub. No. US/2018/0021326 “Compositions and methods for enhancing neuroregeneration and cognition by combining mushroom extracts containing active ingredients psilocin or psilocybin with erinacines or hericenones enhanced with niacin” (Published 25 January 2018)</p> <p>From Claim 1: A method for improving neurological health of an animal comprising: administering a therapeutically effective amount of a composition to an animal, wherein the composition comprises one or more of psilocybin, psilocin, baeocystin, norbaeocystin, salts thereof, or combinations thereof, one or more of erinacines, hericenones or combinations thereof, and niacin.</p> <p>From [0007]: The present nootropic invention can benefit those suffering from age or trauma related neuropathologies including but not limited to ... amyloid plaque formation, demyelination, nerve signaling, neurotoxic viruses, stress and numerous other agents causing neuropathies.</p> <p>Claim 10: The method of claim 1, wherein the composition additionally promotes neurogenesis.</p> <p>From [0005]: A composition including psilocybin (4-phosphoryloxy-N,N-dimethyltryptamine) or psilocin (4-hydroxy-N,N-dimethyltryptamine) in pure form or extracts from <i>Psilocybe</i> and psilocybin containing mushrooms combined with erinacines or hericenones, or extracts from <i>Hericum</i> mushroom species... . Erinacines, including known erinacines A-K, P and Q, are cyanthane terpenes isolated from the mycelia of <i>Hericum erinaceus</i> that promote NGF (nerve growth factor) synthesis. Hericenones, including known hericenones C-H, are cyanthane terpenes located in both the mycelia and fruiting body of <i>Hericum erinaceus</i> that promote NGF synthesis.</p> <p>From Neurogenesis Formula 1: Psilocin or psilocybin, 1 mg Erinacines or hericenones, 50 mg Niacin per day, 200 mg Extract of <i>Hericum erinaceus</i>, <i>H. corralloides</i>, <i>H. abietis</i>, 199 mg</p>

<p>species, erinacines, hericenones, or combinations thereof.</p>	<p>Extracts of plants with neurogenic properties*, 100, mg</p> <p>6. PRENCIPE ET AL (2014) “Nerve growth factor downregulates inflammatory response in human monocytes through TrkA” <i>J. Immunol.</i> 192(7), 3345-54.</p> <p>From p. 3345: “The neurotrophin nerve growth factor (NGF) is a well-known regulator of differentiation, plasticity, and phenotype of sensory and sympathetic neurons during the entire lifespan.”</p> <p>From p. 3352: “In this study, we show that, by binding to TrkA, NGF dampens the inflammatory response in monocytes activated with TLR ligands, and we identify TrkA-activated pathways that interact with TLR signaling.”</p> <p>From p. 3352: “We show that the addition of NGF to TLR-activated monocytes inhibits the production of proinflammatory cytokines, including IL-1b, IL-6, and TNF-a and increases the production of the anti-inflammatory cytokines IL-10 and IL-1ra.”</p>
<p>41. A method for treating or modulating an inflammatory response triggered by an infectious disease or condition by inducing expression of one or more anti-inflammatory cytokines selected from the group of IL-4, IL-10, and IL-1RA, the method comprising: administering a composition to a subject in need thereof, the composition comprising: about 1 ng to about 10 mg, about 10 mg to about 100 mg, about 10 mg to about 20 mg, about 20 mg to about 50 mg, about 20 mg to about 100 mg, about 1 ng to about 20 mg, about 1 ng to about 50 mg, or about 1 ng to about 100 mg of one or more tryptamines, salts</p>	<p>1. U.S. Pat. App. Pub. No. US/2018/0021326 “Compositions and methods for enhancing neuroregeneration and cognition by combining mushroom extracts containing active ingredients psilocin or psilocybin with erinacines or hericenones enhanced with niacin” (Published 25 January 2018)</p> <p>From Claim 1: A method for improving neurological health of an animal comprising: administering a therapeutically effective amount of a composition to an animal, wherein the composition comprises one or more of psilocybin, psilocin, baeocystin, norbaeocystin, salts thereof, or combinations thereof, one or more of erinacines, hericenones or combinations thereof, and niacin.</p> <p>Claim 10: The method of claim 1, wherein the composition additionally promotes neurogenesis.</p> <p>From Claim 11: The method of claim 1, wherein the composition additionally comprises one or more of... ayahuasca (<i>Banisteriopsis caapi</i> and <i>Psychotria</i> species)...”</p> <p>From [0007]: The present nootropic invention can benefit those suffering from age or trauma related neuropathologies including but not limited to ... amyloid plaque formation, demyelination, nerve signaling, neurotoxic viruses, stress and numerous other agents causing neuropathies.</p> <p>From [0005]: A composition including psilocybin (4-phosphoryloxy-N,N-dimethyltryptamine) or psilocin (4-hydroxy-N,N-dimethyltryptamine) in pure form or extracts from <i>Psilocybe</i> and psilocybin containing mushrooms combined with erinacines or hericenones, or extracts from <i>Herichium</i> mushroom species... . Erinacines, including known</p>

<p>thereof, or combinations thereof; about 1 ng to about 2000 mg of extracts or isolates from <i>Hericium erinaceus</i> mushroom species, erinacines, hericenones, or combinations thereof; and about 70 mg to about 200 mg of a monoamine oxidase inhibitor.</p>	<p>erinacines A-K, P and Q, are cyanthane terpenes isolated from the mycelia of <i>Hericium erinaceus</i> that promote NGF (nerve growth factor) synthesis. Hericenones, including known hericenones C-H, are cyanthane terpenes located in both the mycelia and fruiting body of <i>Hericium erinaceus</i> that promote NGF synthesis.</p> <p>From Neurogenesis Formula 1: Psilocin or psilocybin, 1 mg Erinacines or hericenones, 50 mg Niacin per day, 200 mg Extract of <i>Hericium erinaceus</i>, <i>H. corralloides</i>, <i>H. abietis</i>, 199 mg Extracts of plants with neurogenic properties*, 100, mg Plant extracts with known neuroregenerative properties include, but are not limited to: ... ayahuasca, a concoction made from <i>Banisteriopsis caapi</i>...</p> <p>6. PRENCIPE ET AL (2014) “Nerve growth factor downregulates inflammatory response in human monocytes through TrkA” <i>J. Immunol.</i> 192(7), 3345-54.</p> <p>From p. 3345: “The neurotrophin nerve growth factor (NGF) is a well-known regulator of differentiation, plasticity, and phenotype of sensory and sympathetic neurons during the entire lifespan.”</p> <p>From p. 3352: “In this study, we show that, by binding to TrkA, NGF dampens the inflammatory response in monocytes activated with TLR ligands, and we identify TrkA-activated pathways that interact with TLR signaling.”</p> <p>From p. 3352: “We show that the addition of NGF to TLR-activated monocytes inhibits the production of proinflammatory cytokines, including IL-1b, IL-6, and TNF-a and increases the production of the anti-inflammatory cytokines IL-10 and IL-1ra.”</p>
<p>42. The method of claim 40, wherein the inflammatory response is cytokine storm.</p>	<p>1. U.S. Pat. App. Pub. No. US/2018/0021326 “Compositions and methods for enhancing neuroregeneration and cognition by combining mushroom extracts containing active ingredients psilocin or psilocybin with erinacines or hericenones enhanced with niacin” (Published 25 January 2018)</p> <p>From Claim 1: A method for improving neurological health of an animal comprising: administering a therapeutically effective amount of a composition to an animal, wherein the composition comprises one or more of psilocybin, psilocin, baeocystin, norbaeocystin, salts thereof, or combinations thereof, one or more of erinacines, hericenones or combinations thereof, and niacin.</p> <p>From [0007]: The present nootropic invention can benefit those suffering from age or trauma related neuropathologies including but not limited to ... amyloid plaque formation, demyelination, nerve signaling, neurotoxic viruses, stress and numerous other agents causing neuropathies... The use of fungal extracts also potentially enables</p>

neurogenesis by removing agents harmful to neurological health, including but not limited to parasites such as nematodes, protozoa, pathogenic bacteria, including *Borrelia* species and other spirochetes, and other infectious organisms or viruses.

3. KEMPURAJ ET AL. (2020) “COVID-19, Mast Cells, Cytokine Storm, Psychological Stress, and Neuroinflammation” *The Neuroscientist*, 26(5-6), 402-414.

From p. 402: “SARS-CoV-2 infection can cause psychological stress and neuroinflammation. In conclusion, COVID-19 can induce mast cell activation, psychological stress, cytokine storm, and neuroinflammation.”

From p. 406:

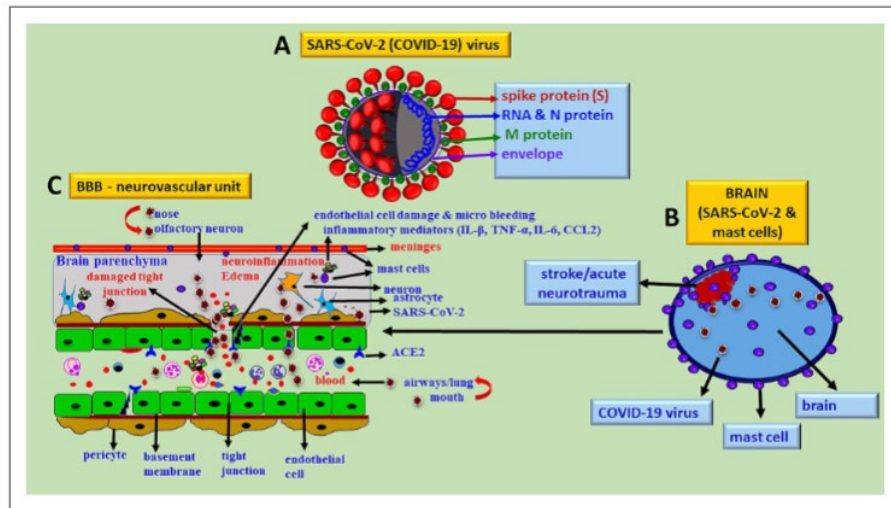


Figure 1. Schematic diagram showing how COVID-19 can cause and exacerbate neuroinflammatory response in the brain. (A) SARS-CoV-2, (b) brain infected with SARS-CoV-2, and (C) neurovascular unit, damaged BBB/loss of tight junction, and neuroinflammation in brain parenchyma. Mast cells, glial cells, endothelial cells, and neurons can be activated by SARS-CoV-2 in the brain. SARS-CoV-2 can enter the brain through the nose, olfactory nerve, defective BBB, and lymphatic drainage. SARS-CoV-2 can activate mast cells and glial cells in the brain to release inflammatory mediators. Endothelial cells in the brain express SARS-CoV-2 receptor ACE2 through which SARS-CoV-2 can infect and activate. Inflammatory mediators released from brain cells and periphery could cause BBB breach, tight junction damage, edema, micro bleeding, cognitive decline, stroke, and neuroinflammation. ACE2 = angiotensin-converting enzyme 2; BBB = blood-brain barrier; COVID-19 = coronavirus disease 2019; SARS-CoV-2 = severe acute respiratory syndrome coronavirus 2.

43. The method of claim 40, wherein the infectious disease or condition is a viral

1. U.S. Pat. App. Pub. No. US/2018/0021326 “Compositions and methods for enhancing neuroregeneration and cognition by combining mushroom extracts containing active ingredients psilocin or psilocybin with erinacines or hericenones enhanced with niacin” (Published 25 January 2018)

infection, a bacterial infection, or a parasitic infection.

From **Claim 1: A method for improving neurological health** of an animal comprising: **administering a therapeutically effective amount of a composition** to an animal, wherein the composition comprises **one or more of psilocybin, psilocin, baeocystin, norbaeocystin, salts thereof, or combinations thereof, one or more of erinacines, hericenones or combinations thereof, and niacin.**

From [0007]: **The present nootropic invention can benefit those suffering from age or trauma related neuropathologies including but not limited to ... amyloid plaque formation, demyelination, nerve signaling, neurotoxic viruses, stress and numerous other agents causing neuropathies...The use of fungal extracts also potentially enables neurogenesis by removing agents harmful to neurological health, including but not limited to parasites such as nematodes, protozoa, pathogenic bacteria, including *Borrelia* species and other spirochetes, and other infectious organisms or viruses.**

Claim 10: The method of claim 1, wherein **the composition additionally promotes neurogenesis.**

From [0005]: **A composition including psilocybin (4-phosphoryloxy-N,N-dimethyltryptamine) or psilocin (4-hydroxy-N,N-dimethyltryptamine) in pure form or extracts from *Psilocybe* and psilocybin containing mushrooms combined with erinacines or hericenones, or extracts from *Hericium* mushroom species... . Erinacines, including known erinacines A-K, P and Q, are cyanthane terpenes isolated from the mycelia of *Hericium erinaceus* that promote NGF (nerve growth factor) synthesis. Hericenones, including known hericenones C-H, are cyanthane terpenes located in both the mycelia and fruiting body of *Hericium erinaceus* that promote NGF synthesis.**

From **Neurogenesis Formula 1: Psilocin or psilocybin, 1 mg
Erinacines or hericenones, 50 mg**

Niacin per day, 200 mg

Extract of *Hericium erinaceus*, *H. corralloides*, *H. abietis*, 199 mg

Extracts of plants with neurogenic properties*, 100, mg

6. PRENCIPE ET AL (2014) "Nerve growth factor downregulates inflammatory response in human monocytes through TrkA" *J. Immunol.* 192(7), 3345-54.

From p. 3345: "The neurotrophin nerve growth factor (NGF) is a well-known regulator of differentiation, plasticity, and phenotype of sensory and sympathetic neurons during the entire lifespan."

From p. 3352: "In this study, we show that, by binding to TrkA, NGF dampens the inflammatory response in monocytes activated with TLR ligands, and we identify TrkA-activated pathways that interact with TLR signaling."

	<p>From p. 3352: “We show that the addition of NGF to TLR-activated monocytes inhibits the production of proinflammatory cytokines, including IL-1b, IL-6, and TNF-a and increases the production of the anti-inflammatory cytokines IL-10 and IL-1ra.”</p>
<p>44. The method of claim 43, wherein the viral infection is <i>Paramyxoviridae</i> (respiratory syncytial virus (RSV), parainfluenza virus (PIV), metapneumovirus (MPV), enteroviruses), <i>Picornaviridae</i> (Rhinovirus, RV), <i>Coronaviridae</i> (CoV), <i>Adenoviridae</i> (Adenovirus), <i>Parvoviridae</i> (HBoV), <i>Orthomyxoviridae</i> (influenza A, B, C, D, <i>Isavirus</i>, <i>Thogotovirus</i>, <i>Quarantavirus</i>), <i>Herpesviridae</i> (human herpes viruses, <i>Varicella zoster</i> virus, Epstein-Barr virus, cytomegalovirus), avian influenza, smallpox, pandemic influenza, or adult respiratory distress syndrome (ARDS).</p>	<p>1. U.S. Pat. App. Pub. No. US/2018/0021326 “Compositions and methods for enhancing neuroregeneration and cognition by combining mushroom extracts containing active ingredients psilocin or psilocybin with erinacines or hericenones enhanced with niacin” (Published 25 January 2018)</p> <p>From Claim 1: A method for improving neurological health of an animal comprising: administering a therapeutically effective amount of a composition to an animal, wherein the composition comprises one or more of psilocybin, psilocin, baeocystin, norbaeocystin, salts thereof, or combinations thereof, one or more of erinacines, hericenones or combinations thereof, and niacin.</p> <p>From [0007]: The present nootropic invention can benefit those suffering from age or trauma related neuropathologies including but not limited to ... amyloid plaque formation, demyelination, nerve signaling, neurotoxic viruses, stress and numerous other agents causing neuropathies... The use of fungal extracts also potentially enables neurogenesis by removing agents harmful to neurological health, including but not limited to parasites such as nematodes, protozoa, pathogenic bacteria, including <i>Borrelia</i> species and other spirochetes, and other infectious organisms or viruses.</p> <p>Claim 10: The method of claim 1, wherein the composition additionally promotes neurogenesis.</p> <p>From [0005]: A composition including psilocybin (4-phosphoryloxy-N,N-dimethyltryptamine) or psilocin (4-hydroxy-N,N-dimethyltryptamine) in pure form or extracts from <i>Psilocybe</i> and psilocybin containing mushrooms combined with erinacines or hericenones, or extracts from <i>Hericium</i> mushroom species... . Erinacines, including known erinacines A-K, P and Q, are cyanthane terpenes isolated from the mycelia of <i>Hericium erinaceus</i> that promote NGF (nerve growth factor) synthesis. Hericenones, including known hericenones C-H, are cyanthane terpenes located in both the mycelia and fruiting body of <i>Hericium erinaceus</i> that promote NGF synthesis.</p> <p>From Neurogenesis Formula 1: Psilocin or psilocybin, 1 mg Erinacines or hericenones, 50 mg Niacin per day, 200 mg Extract of <i>Hericium erinaceus</i>, <i>H. corralloides</i>, <i>H. abietis</i>, 199 mg Extracts of plants with neurogenic properties*, 100, mg</p> <p>6. PRENCIPE ET AL (2014) “Nerve growth factor downregulates inflammatory response in human monocytes through TrkA” <i>J. Immunol.</i></p>

	<p>192(7), 3345-54.</p> <p>From p. 3345: “The neurotrophin nerve growth factor (NGF) is a well-known regulator of differentiation, plasticity, and phenotype of sensory and sympathetic neurons during the entire lifespan.”</p> <p>From p. 3352: “In this study, we show that, by binding to TrkA, NGF dampens the inflammatory response in monocytes activated with TLR ligands, and we identify TrkA-activated pathways that interact with TLR signaling.”</p> <p>From p. 3352: “We show that the addition of NGF to TLR-activated monocytes inhibits the production of proinflammatory cytokines, including IL-1b, IL-6, and TNF-a and increases the production of the anti-inflammatory cytokines IL-10 and IL-1ra.”</p>
<p>45. The method of claim 43, wherein the bacterial infection is <i>Streptococcus pneumoniae</i>, <i>Mycobacterium tuberculosis</i>, <i>Bordetella pertussis</i>, <i>Haemophilus influenzae</i>, <i>Moraxella catarrhalis</i>, <i>Pseudomonas aeruginosa</i>, <i>Stenotrophomonas maltophilia</i>, <i>Staphylococcus aureus</i>, <i>Streptococcus pyogenes</i>, <i>Neisseria meningitidis</i>, <i>Klebsiella pneumoniae</i>, or Non-tuberculosis <i>Mycobacterium</i>.</p>	<p>1. U.S. Pat. App. Pub. No. US/2018/0021326 “Compositions and methods for enhancing neuroregeneration and cognition by combining mushroom extracts containing active ingredients psilocin or psilocybin with erinacines or hericenones enhanced with niacin” (Published 25 January 2018)</p> <p>From Claim 1: A method for improving neurological health of an animal comprising: administering a therapeutically effective amount of a composition to an animal, wherein the composition comprises one or more of psilocybin, psilocin, baeocystin, norbaeocystin, salts thereof, or combinations thereof, one or more of erinacines, hericenones or combinations thereof, and niacin.</p> <p>From [0007]: The present nootropic invention can benefit those suffering from age or trauma related neuropathologies including but not limited to ... amyloid plaque formation, demyelination, nerve signaling, neurotoxic viruses, stress and numerous other agents causing neuropathies... The use of fungal extracts also potentially enables neurogenesis by removing agents harmful to neurological health, including but not limited to parasites such as nematodes, protozoa, pathogenic bacteria, including <i>Borrelia</i> species and other spirochetes, and other infectious organisms or viruses.</p> <p>Claim 10: The method of claim 1, wherein the composition additionally promotes neurogenesis.</p> <p>From [0005]: A composition including psilocybin (4-phosphoryloxy-N,N-dimethyltryptamine) or psilocin (4-hydroxy-N,N-dimethyltryptamine) in pure form or extracts from <i>Psilocybe</i> and psilocybin containing mushrooms combined with erinacines or hericenones, or extracts from <i>Hericium</i> mushroom species... Erinacines, including known erinacines A-K, P and Q, are cyanthane terpenes isolated from the mycelia of <i>Hericium erinaceus</i> that promote NGF (nerve growth factor) synthesis. Hericenones, including known hericenones C-H, are cyanthane terpenes located in both the mycelia and fruiting body of <i>Hericium erinaceus</i> that promote NGF synthesis.</p>

	<p>From Neurogenesis Formula 1: Psilocin or psilocybin, 1 mg Erinacines or hericenones, 50 mg Niacin per day, 200 mg Extract of <i>Herichium erinaceus</i>, <i>H. corralloides</i>, <i>H. abietis</i>, 199 mg Extracts of plants with neurogenic properties*, 100, mg</p> <p>6. PRENCIPE ET AL (2014) “Nerve growth factor downregulates inflammatory response in human monocytes through TrkA” <i>J. Immunol.</i> 192(7), 3345-54.</p> <p>From p. 3345: “The neurotrophin nerve growth factor (NGF) is a well-known regulator of differentiation, plasticity, and phenotype of sensory and sympathetic neurons during the entire lifespan.”</p> <p>From p. 3352: “In this study, we show that, by binding to TrkA, NGF dampens the inflammatory response in monocytes activated with TLR ligands, and we identify TrkA-activated pathways that interact with TLR signaling.”</p> <p>From p. 3352: “We show that the addition of NGF to TLR-activated monocytes inhibits the production of proinflammatory cytokines, including IL-1b, IL-6, and TNF-a and increases the production of the anti-inflammatory cytokines IL-10 and IL-1ra.”</p>
<p>46. The method of claim 43, wherein the parasitic infection is malaria.</p>	<p>1. U.S. Pat. App. Pub. No. US/2018/0021326 “Compositions and methods for enhancing neuroregeneration and cognition by combining mushroom extracts containing active ingredients psilocin or psilocybin with erinacines or hericenones enhanced with niacin” (Published 25 January 2018)</p> <p>From Claim 1: A method for improving neurological health of an animal comprising: administering a therapeutically effective amount of a composition to an animal, wherein the composition comprises one or more of psilocybin, psilocin, baeocystin, norbaeocystin, salts thereof, or combinations thereof, one or more of erinacines, hericenones or combinations thereof, and niacin.</p> <p>From [0007]: The present nootropic invention can benefit those suffering from age or trauma related neuropathologies including but not limited to ... amyloid plaque formation, demyelination, nerve signaling, neurotoxic viruses, stress and numerous other agents causing neuropathies... The use of fungal extracts also potentially enables neurogenesis by removing agents harmful to neurological health, including but not limited to parasites such as nematodes, protozoa, pathogenic bacteria, including <i>Borrelia</i> species and other spirochetes, and other infectious organisms or viruses.</p> <p>Claim 10: The method of claim 1, wherein the composition additionally promotes neurogenesis.</p> <p>From [0005]: A composition including psilocybin (4-phosphoryloxy-N,N-dimethyltryptamine) or psilocin (4-hydroxy-N,N-dimethyltryptamine) in</p>

	<p>pure form or extracts from <i>Psilocybe</i> and psilocybin containing mushrooms combined with erinacines or hericenones, or extracts from <i>Hericum</i> mushroom species... Erinacines, including known erinacines A-K, P and Q, are cyanthane terpenes isolated from the mycelia of <i>Hericum erinaceus</i> that promote NGF (nerve growth factor) synthesis. Hericenones, including known hericenones C-H, are cyanthane terpenes located in both the mycelia and fruiting body of <i>Hericum erinaceus</i> that promote NGF synthesis.</p> <p>From Neurogenesis Formula 1: Psilocin or psilocybin, 1 mg Erinacines or hericenones, 50 mg Niacin per day, 200 mg Extract of <i>Hericum erinaceus</i>, <i>H. corralloides</i>, <i>H. abietis</i>, 199 mg Extracts of plants with neurogenic properties*, 100, mg</p> <p>6. PRENCIPE ET AL (2014) “Nerve growth factor downregulates inflammatory response in human monocytes through TrkA” <i>J. Immunol.</i> 192(7), 3345-54.</p> <p>From p. 3345: “The neurotrophin nerve growth factor (NGF) is a well-known regulator of differentiation, plasticity, and phenotype of sensory and sympathetic neurons during the entire lifespan.”</p> <p>From p. 3352: “In this study, we show that, by binding to TrkA, NGF dampens the inflammatory response in monocytes activated with TLR ligands, and we identify TrkA-activated pathways that interact with TLR signaling.”</p> <p>From p. 3352: “We show that the addition of NGF to TLR-activated monocytes inhibits the production of proinflammatory cytokines, including IL-1b, IL-6, and TNF-a and increases the production of the anti-inflammatory cytokines IL-10 and IL-1ra.”</p>
<p>47. The method of claim 40, wherein the one or more tryptamines are psilocybin, psilocin, norpsilocin, baeocystin, norbaeocystin, N,N-dimethyltryptamine (DMT), or combinations thereof.</p>	<p>1. U.S. Pat. App. Pub. No. US/2018/0021326 “Compositions and methods for enhancing neuroregeneration and cognition by combining mushroom extracts containing active ingredients psilocin or psilocybin with erinacines or hericenones enhanced with niacin” (Published 25 January 2018)</p> <p>From Claim 1: A method for improving neurological health of an animal comprising: administering a therapeutically effective amount of a composition to an animal, wherein the composition comprises one or more of psilocybin, psilocin, baeocystin, norbaeocystin, salts thereof, or combinations thereof, one or more of erinacines, hericenones or combinations thereof, and niacin.</p> <p>From [0007]: The present nootropic invention can benefit those suffering from age or trauma related neuropathologies including but not limited to ... amyloid plaque formation, demyelination, nerve signaling, neurotoxic viruses, stress and numerous other agents causing neuropathies... The use of fungal extracts also potentially enables neurogenesis by removing agents harmful to neurological health,</p>

	<p>including but not limited to parasites such as nematodes, protozoa, pathogenic bacteria, including <i>Borrelia</i> species and other spirochetes, and other infectious organisms or viruses.</p> <p>Claim 10: The method of claim 1, wherein the composition additionally promotes neurogenesis.</p> <p>From [0005]: A composition including psilocybin (4-phosphoryloxy-N,N-dimethyltryptamine) or psilocin (4-hydroxy-N,N-dimethyltryptamine) in pure form or extracts from <i>Psilocybe</i> and psilocybin containing mushrooms combined with erinacines or hericenones, or extracts from <i>Hericium</i> mushroom species... . Erinacines, including known erinacines A-K, P and Q, are cyanthane terpenes isolated from the mycelia of <i>Hericium erinaceus</i> that promote NGF (nerve growth factor) synthesis. Hericenones, including known hericenones C-H, are cyanthane terpenes located in both the mycelia and fruiting body of <i>Hericium erinaceus</i> that promote NGF synthesis.</p> <p>From Neurogenesis Formula 1: Psilocin or psilocybin, 1 mg Erinacines or hericenones, 50 mg Niacin per day, 200 mg Extract of <i>Hericium erinaceus</i>, <i>H. corralloides</i>, <i>H. abietis</i>, 199 mg Extracts of plants with neurogenic properties*, 100, mg</p> <p>6. PRENCIPE ET AL (2014) “Nerve growth factor downregulates inflammatory response in human monocytes through TrkA” <i>J. Immunol.</i> 192(7), 3345-54.</p> <p>From p. 3345: “The neurotrophin nerve growth factor (NGF) is a well-known regulator of differentiation, plasticity, and phenotype of sensory and sympathetic neurons during the entire lifespan.”</p> <p>From p. 3352: “In this study, we show that, by binding to TrkA, NGF dampens the inflammatory response in monocytes activated with TLR ligands, and we identify TrkA-activated pathways that interact with TLR signaling.”</p> <p>From p. 3352: “We show that the addition of NGF to TLR-activated monocytes inhibits the production of proinflammatory cytokines, including IL-1b, IL-6, and TNF-a and increases the production of the anti-inflammatory cytokines IL-10 and IL-1ra.”</p>
<p>48. The method of claim 40, wherein the monoamine oxidase inhibitor is Norharman, Harmine, 1,2,3,4-tetrahydro-β-carboline-3-carboxylic acid, 1-methyl-1,2,3,4-</p>	<p>1. U.S. Pat. App. Pub. No. US/2018/0021326 “Compositions and methods for enhancing neuroregeneration and cognition by combining mushroom extracts containing active ingredients psilocin or psilocybin with erinacines or hericenones enhanced with niacin” (Published 25 January 2018)</p> <p>From Claim 1: A method for improving neurological health of an animal comprising: administering a therapeutically effective amount of a composition to an animal, wherein the composition comprises one or</p>

tetrahydro-β-carboline-3-carboxylic acid, 1-methyl-2,3,4,9-tetrahydro-1H-β-carboline-1,3-dicarboxylic acid, Harmaline, N-methoxy-1-vinyl-β-carboline, ethyl 9H-β-carboline-3-carboxylate, 1-furyl-β-carboline-3-carboxylic acid, 1-[5-(methoxymethyl)-2-furyl]-9H-β-carboline-3-carboxylic acid, 6-hydroxy-3-(6-hydroxy-1H-indol-3-yl)-9H-β-carboline-4-carboxylic acid, Strictosidine, (1S)-1-[[2S,3R,4S)-2-(β-L-glucopyranosyloxy)-5-(methoxycarbonyl)-3-vinyl-3,4-dihydro-2H-pyran-4-yl]methyl}-2,3,4,9-tetrahydro-1H-β-carboline-1,3-dicarboxylic acid, or combinations thereof.

more of psilocybin, psilocin, baeocystin, norbaeocystin, salts thereof, or combinations thereof, one or more of erinacines, hericenones or combinations thereof, and niacin.

From Claim 11: The method of claim 1, wherein the composition additionally comprises one or more of... ayahuasca (*Banisteriopsis caapi* and *Psychotria* species)...”

From [0007]: The present nootropic invention can benefit those suffering from age or trauma related neuropathologies including but not limited to ... amyloid plaque formation, demyelination, nerve signaling, neurotoxic viruses, stress and numerous other agents causing neuropathies.

Claim 10: The method of claim 1, wherein the composition additionally promotes neurogenesis.

From [0005]: A composition including psilocybin (4-phosphoryloxy-N,N-dimethyltryptamine) or psilocin (4-hydroxy-N,N-dimethyltryptamine) in pure form or extracts from *Psilocybe* and psilocybin containing mushrooms combined with erinacines or hericenones, or extracts from *Hericium* mushroom species... . Erinacines, including known erinacines A-K, P and Q, are cyanthane terpenes isolated from the mycelia of *Hericium erinaceus* that promote NGF (nerve growth factor) synthesis. Hericenones, including known hericenones C-H, are cyanthane terpenes located in both the mycelia and fruiting body of *Hericium erinaceus* that promote NGF synthesis.

**From Neurogenesis Formula 1: Psilocin or psilocybin, 1 mg
Erinacines or hericenones, 50 mg**

Niacin per day, 200 mg

Extract of *Hericium erinaceus*, *H. corralloides*, *H. abietis*, 199 mg

Extracts of plants with neurogenic properties*, 100, mg

Plant extracts with known neuroregenerative properties include, but are not limited to: ... ayahuasca, a concoction made from *Banisteriopsis caapi*...

2. SAMOYLENKO ET AL. (2010) “*Banisteriopsis caapi*, a unique combination of MAO inhibitory and antioxidative constituents for the activities relevant to neurodegenerative disorders and Parkinson’s disease” *J. Ethnopharmacol.*, 127(2), 357-367.

From p. 2: “Earlier chemical investigation have reported the presence of β-carboline alkaloids (β-CA) harmine, harmaline and tetrahydroharmine (THH) as the principal MAO inhibitors, together with other β-CA’s, from *B. caapi*...”

From p. 8: “The hot aqueous extracts of fresh and dried large branches of *B. caapi* demonstrated significant MAO-A inhibitory and antioxidant activity.”

	<p>6. PRENCIPE ET AL (2014) “Nerve growth factor downregulates inflammatory response in human monocytes through TrkA” <i>J. Immunol.</i> 192(7), 3345-54.</p> <p>From p. 3345: “The neurotrophin nerve growth factor (NGF) is a well-known regulator of differentiation, plasticity, and phenotype of sensory and sympathetic neurons during the entire lifespan.”</p> <p>From p. 3352: “In this study, we show that, by binding to TrkA, NGF dampens the inflammatory response in monocytes activated with TLR ligands, and we identify TrkA-activated pathways that interact with TLR signaling.”</p> <p>From p. 3352: “We show that the addition of NGF to TLR-activated monocytes inhibits the production of proinflammatory cytokines, including IL-1b, IL-6, and TNF-a and increases the production of the anti-inflammatory cytokines IL-10 and IL-1ra.”</p>
<p>49. The method of claim 40, wherein inflammation is reduced and neuroregeneration is induced in the subject.</p>	<p>1. U.S. Pat. App. Pub. No. US/2018/0021326 “Compositions and methods for enhancing neuroregeneration and cognition by combining mushroom extracts containing active ingredients psilocin or psilocybin with erinacines or hericenones enhanced with niacin” (Published 25 January 2018)</p> <p>From Claim 1: A method for improving neurological health of an animal comprising: administering a therapeutically effective amount of a composition to an animal, wherein the composition comprises one or more of psilocybin, psilocin, baeocystin, norbaeocystin, salts thereof, or combinations thereof, one or more of erinacines, hericenones or combinations thereof, and niacin.</p> <p>From [0007]: The present nootropic invention can benefit those suffering from age or trauma related neuropathologies including but not limited to ... amyloid plaque formation, demyelination, nerve signaling, neurotoxic viruses, stress and numerous other agents causing neuropathies.</p> <p>Claim 10: The method of claim 1, wherein the composition additionally promotes neurogenesis.</p> <p>From [0005]: A composition including psilocybin (4-phosphoryloxy-N,N-dimethyltryptamine) or psilocin (4-hydroxy-N,N-dimethyltryptamine) in pure form or extracts from <i>Psilocybe</i> and psilocybin containing mushrooms combined with erinacines or hericenones, or extracts from <i>Hericium</i> mushroom species... . Erinacines, including known erinacines A-K, P and Q, are cyanthane terpenes isolated from the mycelia of <i>Hericium erinaceus</i> that promote NGF (nerve growth factor) synthesis. Hericenones, including known hericenones C-H, are cyanthane terpenes located in both the mycelia and fruiting body of <i>Hericium erinaceus</i> that promote NGF synthesis.</p> <p>From Neurogenesis Formula 1: Psilocin or psilocybin, 1 mg</p>

	<p>Erinacines or hericenones, 50 mg Niacin per day, 200 mg Extract of <i>Herichium erinaceus</i>, <i>H. corralloides</i>, <i>H. abietis</i>, 199 mg Extracts of plants with neurogenic properties*, 100, mg</p> <p>6. PRENCIPE ET AL (2014) “Nerve growth factor downregulates inflammatory response in human monocytes through TrkA” <i>J. Immunol.</i> 192(7), 3345-54.</p> <p>From p. 3345: “The neurotrophin nerve growth factor (NGF) is a well-known regulator of differentiation, plasticity, and phenotype of sensory and sympathetic neurons during the entire lifespan.”</p> <p>From p. 3352: “In this study, we show that, by binding to TrkA, NGF dampens the inflammatory response in monocytes activated with TLR ligands, and we identify TrkA-activated pathways that interact with TLR signaling.”</p> <p>From p. 3352: “We show that the addition of NGF to TLR-activated monocytes inhibits the production of proinflammatory cytokines, including IL-1b, IL-6, and TNF-a and increases the production of the anti-inflammatory cytokines IL-10 and IL-1ra.”</p>
<p>50. The method of claim 49, wherein neuroregeneration comprises neurite outgrowth.</p>	<p>1. U.S. Pat. App. Pub. No. US/2018/0021326 “Compositions and methods for enhancing neuroregeneration and cognition by combining mushroom extracts containing active ingredients psilocin or psilocybin with erinacines or hericenones enhanced with niacin” (Published 25 January 2018)</p> <p>From Claim 1: A method for improving neurological health of an animal comprising: administering a therapeutically effective amount of a composition to an animal, wherein the composition comprises one or more of psilocybin, psilocin, baeocystin, norbaeocystin, salts thereof, or combinations thereof, one or more of erinacines, hericenones or combinations thereof, and niacin.</p> <p>From [0007]: The present nootropic invention can benefit those suffering from age or trauma related neuropathologies including but not limited to ... amyloid plaque formation, demyelination, nerve signaling, neurotoxic viruses, stress and numerous other agents causing neuropathies.</p> <p>Claim 10: The method of claim 1, wherein the composition additionally promotes neurogenesis.</p> <p>From [0005]: A composition including psilocybin (4-phosphoryloxy-N,N-dimethyltryptamine) or psilocin (4-hydroxy-N,N-dimethyltryptamine) in pure form or extracts from <i>Psilocybe</i> and psilocybin containing mushrooms combined with erinacines or hericenones, or extracts from <i>Herichium</i> mushroom species... . Erinacines, including known erinacines A-K, P and Q, are cyanthane terpenes isolated from the mycelia</p>

	<p>of <i>Herichium erinaceus</i> that promote NGF (nerve growth factor) synthesis. Hericenones, including known hericenones C-H, are cyanthane terpenes located in both the mycelia and fruiting body of <i>Herichium erinaceus</i> that promote NGF synthesis.</p> <p>From Neurogenesis Formula 1: Psilocin or psilocybin, 1 mg Erinacines or hericenones, 50 mg Niacin per day, 200 mg Extract of <i>Herichium erinaceus</i>, <i>H. corralloides</i>, <i>H. abietis</i>, 199 mg Extracts of plants with neurogenic properties*, 100, mg</p> <p>6. PRENCIPE ET AL (2014) “Nerve growth factor downregulates inflammatory response in human monocytes through TrkA” <i>J. Immunol.</i> 192(7), 3345-54.</p> <p>From p. 3345: “The neurotrophin nerve growth factor (NGF) is a well-known regulator of differentiation, plasticity, and phenotype of sensory and sympathetic neurons during the entire lifespan.”</p> <p>From p. 3352: “In this study, we show that, by binding to TrkA, NGF dampens the inflammatory response in monocytes activated with TLR ligands, and we identify TrkA-activated pathways that interact with TLR signaling.”</p> <p>From p. 3352: “We show that the addition of NGF to TLR-activated monocytes inhibits the production of proinflammatory cytokines, including IL-1b, IL-6, and TNF-a and increases the production of the anti-inflammatory cytokines IL-10 and IL-1ra.”</p>
<p>51. The method of claim 14, wherein the infectious disease or condition causes neurological damage in the subject and the method results in treatment of the neurological damage.</p>	<p>1. U.S. Pat. App. Pub. No. US/2018/0021326 “Compositions and methods for enhancing neuroregeneration and cognition by combining mushroom extracts containing active ingredients psilocin or psilocybin with erinacines or hericenones enhanced with niacin” (Published 25 January 2018)</p> <p>From Claim 1: A method for improving neurological health of an animal comprising: administering a therapeutically effective amount of a composition to an animal, wherein the composition comprises one or more of psilocybin, psilocin, baeocystin, norbaeocystin, salts thereof, or combinations thereof, one or more of erinacines, hericenones or combinations thereof, and niacin.</p> <p>From [0007]: The present nootropic invention can benefit those suffering from age or trauma related neuropathologies including but not limited to ... amyloid plaque formation, demyelination, nerve signaling, neurotoxic viruses, stress and numerous other agents causing neuropathies.</p>
<p>52. The method of claim 40, wherein the infectious disease or</p>	<p>1. U.S. Pat. App. Pub. No. US/2018/0021326 “Compositions and methods for enhancing neuroregeneration and cognition by combining mushroom</p>

<p>condition causes neurological damage in the subject and the method results in treatment of the neurological damage.</p>	<p>extracts containing active ingredients psilocin or psilocybin with erinacines or hericenones enhanced with niacin” (Published 25 January 2018)</p> <p>From Claim 1: A method for improving neurological health of an animal comprising: administering a therapeutically effective amount of a composition to an animal, wherein the composition comprises one or more of psilocybin, psilocin, baeocystin, norbaeocystin, salts thereof, or combinations thereof, one or more of erinacines, hericenones or combinations thereof, and niacin.</p> <p>From [0007]: The present nootropic invention can benefit those suffering from age or trauma related neuropathologies including but not limited to ... amyloid plaque formation, demyelination, nerve signaling, neurotoxic viruses, stress and numerous other agents causing neuropathies.</p> <p>Claim 10: The method of claim 1, wherein the composition additionally promotes neurogenesis.</p> <p>From [0005]: A composition including psilocybin (4-phosphoryloxy-N,N-dimethyltryptamine) or psilocin (4-hydroxy-N,N-dimethyltryptamine) in pure form or extracts from <i>Psilocybe</i> and psilocybin containing mushrooms combined with erinacines or hericenones, or extracts from <i>Hericum</i> mushroom species... . Erinacines, including known erinacines A-K, P and Q, are cyanthane terpenes isolated from the mycelia of <i>Hericum erinaceus</i> that promote NGF (nerve growth factor) synthesis. Hericenones, including known hericenones C-H, are cyanthane terpenes located in both the mycelia and fruiting body of <i>Hericum erinaceus</i> that promote NGF synthesis.</p> <p>From Neurogenesis Formula 1: Psilocin or psilocybin, 1 mg Erinacines or hericenones, 50 mg Niacin per day, 200 mg Extract of <i>Hericum erinaceus</i>, <i>H. corralloides</i>, <i>H. abietis</i>, 199 mg Extracts of plants with neurogenic properties*, 100, mg</p> <p>6. PRENCIPE ET AL (2014) “Nerve growth factor downregulates inflammatory response in human monocytes through TrkA” <i>J. Immunol.</i> 192(7), 3345-54.</p> <p>From p. 3345: “The neurotrophin nerve growth factor (NGF) is a well-known regulator of differentiation, plasticity, and phenotype of sensory and sympathetic neurons during the entire lifespan.”</p> <p>From p. 3352: “In this study, we show that, by binding to TrkA, NGF dampens the inflammatory response in monocytes activated with TLR ligands, and we identify TrkA-activated pathways that interact with TLR signaling.”</p>
--	--

	<p>From p. 3352: “We show that the addition of NGF to TLR-activated monocytes inhibits the production of proinflammatory cytokines, including IL-1b, IL-6, and TNF-a and increases the production of the anti-inflammatory cytokines IL-10 and IL-1ra.”</p>
--	--



UNITED STATES
PATENT AND TRADEMARK OFFICE

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

ELECTRONIC ACKNOWLEDGEMENT RECEIPT

APPLICATION #
18/498,563

RECEIPT DATE / TIME
09/06/2024 10:21:56 AM Z ET

ATTORNEY DOCKET #

Title of Invention

Application Information

APPLICATION TYPE		PATENT #	
CONFIRMATION #		FILED BY	Juliet Meccia
PATENT CENTER #	67070027	FILING DATE	10/31/2023
CUSTOMER #	-	FIRST NAMED INVENTOR	
CORRESPONDENCE ADDRESS	-	AUTHORIZED BY	-

Documents

TOTAL DOCUMENTS: 14

DOCUMENT	PAGES	DESCRIPTION	SIZE (KB)
Third-party-notification-request.pdf	1	Request for Notification of Non-compliant Third-Party Submission	13 KB
third-party-preissuance-submission.pdf	3	Third-Party Submission Under 37 CFR 1.290	59 KB
Concise-description-generated.pdf	2	Concise Description of Relevance	31 KB
US20240082274 Claims Chart.pdf	44	-	628 KB
US20240082274 Claims Chart-3P.RELEVANCE.pdf (1-44)	44	Concise Description of Relevance	608 KB
US20240082274 Claims Chart-3P.RELEVANCE.pdf (1-44)	44	Concise Description of Relevance	608 KB
US20240082274 Claims (1-44)	44	Concise Description of	608 KB

Chart-3P.RELEVANCE.pdf			Relevance	
US20240082274 Claims Chart-3P.RELEVANCE.pdf	(1-44)	44	Concise Description of Relevance	608 KB
US20240082274 Claims Chart-3P.RELEVANCE.pdf	(1-44)	44	Concise Description of Relevance	608 KB
US20240082274 Claims Chart-3P.RELEVANCE.pdf	(1-44)	44	Concise Description of Relevance	608 KB
2_SAMOYLENKO 2010 Embedded.pdf		21	-	670 KB
2_SAMOYLENKO 2010 Embedded-NPL.pdf	(1-21)	21	Non Patent Literature	672 KB
3_KEMPURAJ 2020.pdf		13	-	661 KB
3_KEMPURAJ 2020- NPL.pdf	(1-13)	13	Non Patent Literature	669 KB
4_LIU 2019.pdf		11	-	4973 KB
4_LIU 2019-NPL.pdf	(1-11)	11	Non Patent Literature	4927 KB
5_DUNST 2017.pdf		16	-	1608 KB
5_DUNST 2017-NPL.pdf	(1-16)	16	Non Patent Literature	1313 KB
6_PRENCIPE 2014.pdf		11	-	1772 KB
6_PRENCIPE 2014- NPL.pdf	(1-11)	11	Non Patent Literature	1768 KB

Digest

DOCUMENT

MESSAGE DIGEST(SHA-512)

Third-party-notification-
request.pdf

66660057C65A6D1375A59DE855EF2C5D8F26141734ED9F3D7
E91DD1F08871FA6BB275391A8D832AEC6FD5A7BB5C4446EF
B4DCE23E7CCCFAE94A8031ABEDA9A96

third-party-preissuance-
submission.pdf

0E2C16465B9D0EA51389704A203867D6691A9D89F3E680CFB
A6CF05E78F724D1FB45D6839A7080D7560BB11A3B3D4238D5
12B634AE7679EAC92EF6D7021D96B3

Concise-description-
generated.pdf

DFDA280B36B69E4F837C450F593F92CFEB3E1163CA33B96E8
C629C30E0F1C21A298D4A1AC1AE0637B05134FFD76ED711B
63A218354D086DFD765CD025B4C79ED

US20240082274 Claims
Chart.pdf

FEF8F2647981FA774620E54992E748CE733D8688529A3B9E0F
7D0DEE9CAB4FAA7CD7CAFC958D6D6D9358850243A1FFAF9

	D4AC5B22668D812888E0BD14326D849
US20240082274 Claims Chart-3P.RELEVANCE.pdf	3E50F4870B1C0C22A69C1389E1DD04AF384D7097B750EF46B4A5D81D82C90789D3B74AA3E0B491F1B4FA64F2DC172790E4CE13F477FE4B6F7CDDCAC08113812E
US20240082274 Claims Chart-3P.RELEVANCE.pdf	7929D15899104E1D21DEF0C0F836240627628A2B4E08CCC6712458B15B446AACA969CE0DACDF2798AE2DA5F37EEC5570DA497C1AFC3FEEF15467762E490D26348
US20240082274 Claims Chart-3P.RELEVANCE.pdf	08AC334EC9D9181EE15844704085849260C7D1D63592CCF3AAF7C6CE0E7B623E08506A6087AEFE366D36091CDDE00D8501373D49382FAD7A5C02BD2C7B609E17
US20240082274 Claims Chart-3P.RELEVANCE.pdf	6096451A4563B4637E2C48E7B7CDF6795AA736E4A3001E6DD B1BE6A23CD0813A7E2F6EE07ABF6AF29451485AE71392EB780EB34D75044ACB36A1F62B4ADE60C5
US20240082274 Claims Chart-3P.RELEVANCE.pdf	04BF7953E55D04AD04D92C16055968E7166E1C317D0CF7F9F EC8B24C35EF89F5ECFA7FBF27F332202A18D845383EB978F07542A1D1E1AE988826B91F9DC66FB9
US20240082274 Claims Chart-3P.RELEVANCE.pdf	F54F95F105309C16558A85FE279E11838CE4E77B6458BE98E64AAC2E6E6D90F3E7D6B254F5B3E82C040C288A59FBA9E08E3D4006BEEC8A0EC8FF71914233866
2_SAMOYLENKO 2010 Embedded.pdf	A62A7EA47D6BF0F771F4D8970C61CE7DC117E0BDB186BF8B45B78BEA500C56A330B6BFDA95DBC2455E37AFE675F32D52D3A8CCAE8614004D9489874C605526BB
2_SAMOYLENKO 2010 Embedded-NPL.pdf	A50B14D40D39667CFE34D1769F11E20BDF9A929F3CE663CA27CAC60A5CF562B8CEE6A8A76F90A0AA616AC1383600C7BFC15DD27F150BEA06A2FB30531A13B7C12
3_KEMPURAJ 2020.pdf	74F0306F17F51C8D366F35E46B894305930FC72869FD571A003E89C4B4FA78159887F0ED60016ABBEDB5254FB784A86E48A1A98D3E3036EA61A6B55D74A71666
3_KEMPURAJ 2020-NPL.pdf	AE2BEB62F8103E57A51E40D471BE52A830BC78CF060AF4461F0BC9EC1088BFA9D849D4C7F1C657B0930A54207AB4B10C30A2D768E9C9EFB3C28C95A4A23214ED
4_LIU 2019.pdf	186EC9FE1E741303EEF1BE247F4FACE177CD0BD2D4F0EC9E8EFDDB9AA27650952574B45E521A80F8A7657154DF5937D04EB04BE8247D7B19139B0EB119132F4E2
4_LIU 2019-NPL.pdf	67D5057E23ED9C57C5D6C0A3401B8CE116256580160230B9EAE8A069F58292F8DCDFCB949E515A92B7049F813B498AC134187A0205FB1AC864FF97A6103C5D2F
5_DUNST 2017.pdf	209E525A0BD3151932BA474C26043825FC68864C4BE077D9FF5F2DE49D21AB7A419A23C5AA7DEB71C3AC78A196856364411859709651725B12F6371DEF9D3F47

5_DUNST 2017-NPL.pdf	B38345BD142ADFB09521DCF61E7D1C262C991DC4330E6F23 7763A5CF461A9172DD7CD79CABCCED69668A4E7F3D8F4EC 219EDCECD455FF72F2095A2AD74DDFC9D
6_PRENCIPE 2014.pdf	A2F8194AAAC3377FEF5A056C17F87524AD53ED5B94AAF2D4 AAEAB126ED85C1527A37B856D9E544F1A63E2DF7517824BB D74B070142080D0E0B0CF6C899A514B2
6_PRENCIPE 2014-NPL.pdf	C857056141449B54862F5BAB78CCE800724E2BCFC3E30821B 7659DD4472108AD50CFAD41813F599945BECF69B5B4C07919 75393CE63A1C6ADDC2B251917155CC

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.



UNITED STATES
PATENT AND TRADEMARK OFFICE

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

ELECTRONIC PAYMENT RECEIPT

APPLICATION #	RECEIPT DATE / TIME	ATTORNEY DOCKET #
18/498,563	09/06/2024 10:21:56 AM Z ET	

Title of Invention

Application Information

APPLICATION TYPE	PATENT #
CONFIRMATION #	FILED BY Juliet Meccia
PATENT CENTER # 67070027	AUTHORIZED BY -
CUSTOMER # -	FILING DATE 10/31/2023
CORRESPONDENCE ADDRESS -	FIRST NAMED INVENTOR

Payment Information

PAYMENT METHOD	PAYMENT TRANSACTION ID	PAYMENT AUTHORIZED BY
CARD / 0837	E202496A22396907	Juliet Meccia

FEE CODE	DESCRIPTION	ITEM PRICE(\$)	QUANTITY	ITEM TOTAL(\$)
2818	DOCUMENT FEE FOR THIRD-PARTY SUBMISSIONS (SEE 37 CFR 1.290(F))	72.00	1	72.00
			TOTAL AMOUNT:	\$72.00

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.