SUMMARY

[0011] The invention and its various embodiments are set out in the claims that form part of this patent application. In one aspect, the present invention refers to the use of an effective dose of L-4-chlorokynurenine in the manufacture of a medicament for treating tinnitus, or obsessive-compulsive disorder, or major depressive disorder, or diabetes. In another aspect, the present invention refers to the use of an effective dose of L-4-chlorokynurenine in the manufacture of a medicament for treating depression, wherein the medicament is to be co-administered with a second antidepressant therapy.

[0012] Without limiting the foregoing, in one example, the disclosure relates to pharmaceutical compositions that per unit dose consist essentially of L-4-chlorokynurenine in an amount of about 360, 1,080 or 1,440 mg, together with pharmaceutically acceptable ingredients such as carriers and excipients. Another example involves the administration of therapeutically effective amounts of these compounds to treat conditions, disorders and diseases described in this specification, preferably certain conditions, disorders and diseases caused by neurological dysfunction.

[0013] Another example relates to dosing protocols for the compositions described herein, such as the administration of a daily dose of from about 1 to about 14 or from about 1 to about 30 days, more preferably from about 7 to about 24 days, and most preferably from about 12 to about 16 days.

[0014] Another example described herein relates to compositions and methods for the treatment of depression and for the treatment of various types of pain, including hyperalgesia, by administering a therapeutically effective amount of L-4-chlorokynurenine. Other examples include the treatment of anxiety, thoughts of hopelessness, self-harm or suicide and/or an absence of positive thoughts or plans, major depressive disorder (MDD), dysthymic disorder (or dysthymia), persistent depressive disorders, atypical depression, bipolar depression or manic depression, seasonal affective disorder (SAD), psychotic depression and postpartum depression, psychotic depression, premenstrual syndrome, premenstrual dysphoric disorder, anxiety, mood disorder, depressions caused by chronic medical conditions such as cancer or chronic pain, chemotherapy, chronic stress, post-traumatic stress disorders, risk of suicide. Such therapies optionally include the co-administration of L-4-chlorokynurenine along with another antidepressant or mood elevating therapy including cognitive and psychotherapy.

[0015] In another example, the disclosure relates to pharmaceutical compositions and associated therapeutic methods of administering L-4-chlorokynurenine in an amount that produces plasma

levels of 7-chlorokynurenic acid as described in this specification. One example relates to the administration of L-4-chlorokynurenine at a dose sufficient to produce plasma levels of 7-chlorokynurenic acid are in the range of about 15 ng/mL to 550 ng/mL.

[0016] Another example relates to a combination pharmaceutical product and associated methods that comprise formulations including L-DOPA and the pharmaceutical composition of L-4-chlorokynurenine described in this application, and to their co-administration, either simultaneously or sequentially at dosages described in the application in order to reduce L-DOPA associated dyskinesias.

[0017] Further examples relate to the treatment of tinnitus and of obsessive-compulsive disorder by administering an effective amount of L-4-chlorokynurenine in a pharmaceutical composition. Preferred administration is a daily dose of from one to about 30 days and in a range of about 50 mg to about 1,800 mg per day, more preferably in a daily amount of about 360, 1,080 or 1,440 mg, together with pharmaceutically acceptable ingredients such as carriers and excipients. Other administration protocols are described in this specification. Pharmaceutical compositions comprising L-4-chlorokynurenine packaged with a label indicating the use of this composition for the treatment of a condition selected from the group comprising tinnitus and obsessive-compulsive disorder are contemplated.

BRIEF DESCRIPTION OF THE DRAWINGS

[0018] The following figures, which are described below and which are incorporated in and constitute a part of the specification, illustrate exemplary embodiments according to the disclosure and are not to be considered limiting of the scope of the invention, for the invention may admit to other equally effective embodiments. The figures are not necessarily to scale, and certain features and certain views of the figures may be shown exaggerated in scale or in schematic in the interest of clarity and conciseness.

[0019] Figure 1 represents the mean (n = 12 or 13) plasma concentrations of L-4-chlorokynurenine on days 1 and 14 after oral administration of once-daily doses of L-4-chlorokynurenine.

CLAIMS

1. Use of an effective dose of L-4-chlorokynurenine in the manufacture of a medicament for treating tinnitus.

2. The use of claim 1, wherein the effective dose of L-4-chlorokynurenine is an amount from about 50 mg to about 1,800 mg per day or is an amount of 360, 1,080 or 1,440 mg per day; and wherein the L-4-chlorokynurenine is optionally to be administered together with a pharmaceutically acceptable carrier or excipient.

3. Use of an effective dose of L-4-chlorokynurenine in the manufacture of a medicament for treating obsessive-compulsive disorder.

4. The use of claim 3, wherein the effective dose of L-4-chlorokynurenine is an amount from about 50 mg to about 1,800 mg per day or is an amount of 360, 1,080 or 1,440 mg per day; and wherein the L-4-chlorokynurenine is optionally to be administered together with a pharmaceutically acceptable carrier or excipient.

5. Use of an effective dose of L-4-chlorokynurenine in the manufacture of a medicament for treating major depressive disorder.

6. The useof claim 5, wherein the effective dose of L-4-chlorokynurenine is an amount from about 50 mg to about 1,800 mg per day or is an amount of 360, 1,080 or 1,440 mg per day; and wherein the L-4-chlorokynurenine is optionally to be administered together with a pharmaceutically acceptable carrier or excipient.

7. Use of an effective dose of L-4-chlorokynurenine in the manufacture of a medicament for treating diabetes.

8. The use of claim 10, wherein the effective dose of L-4-chlorokynurenine is an amount from about 50 mg to about 1,800 mg per day or is an amount of 360, 1,080 or 1,440 mg per day; and wherein the L-4-chlorokynurenine is optionally to be administered together with a pharmaceutically acceptable carrier or excipient.

9. Use of an effective dose of L-4-chlorokynurenine in the manufacture of a medicament for treating depression, wherein the medicament is to be co-administeredwith a second antidepressant therapy.

10. The use of claim 9, wherein the effective dose of L-4-chlorokynurenine is an amount from about 50 mg to about 1,800 mg per day or is an amount of 360, 1,080 or 1,440 mg per day; and wherein the L-4-chlorokynurenine is optionally to be administered together with a pharmaceutically acceptable carrier or excipient.