Therefore, a need exists for the treatment, prevention, or management of various neurological disorders, wherein the desensitization of 5-HT receptors may be minimized and the increase in 5-HT neuronal firing may be maintained.

3. SUMMARY

In one aspect, the present invention refers to a pharmaceutical composition comprising a hydrochloride salt of transnorsertraline or a hydrate thereof, mannitol, magnesium stearate, talc and sodium starch glycolate, wherein said mannitol contains less than 0.1% by weight of mannose. In another aspect, the present invention refers to use of a composition of the present invention in the manufacture a medicament for treating, or preventing or managing a neurological disorder.

Provided herein are pharmaceutical compositions comprising transnorsertraline, salts and polymorphic forms of transnorsertraline, methods of making compositions with the salts and polymorphic forms, and methods for their use for the treatment of CNS diseases, including depression.

In one example, provided herein are stable pharmaceutical compositions and/or formulations of transnorsertraline, or a pharmaceutically acceptable salt or solvate thereof.

In another example, provided herein is a salt of transnorsertraline selected from the group consisting of hydrochloride, acetate, L-malate, besylate, benzoate, tosylate, fumarate, hydrobromide, maleate, citrate, phosphate, succinate, L-tartrate, D-tartrate, S-mandelate and pyroglutamate.

In one example, the salt is the hydrochloride salt. In one example, the hydrochloride salt of transnorsertraline is an anhydrous solid. In another example, the hydrochloride salt of transnorsertraline exists as a monohydrate.

In one example, the transnorsertraline hydrochloride is (1R,4S)-transnorsertraline hydrochloride, *i.e.*, (1R,4S)-trans-4-(3,4-dichlorophenyl)-1,2,3,4-tetrahydro-1-naphthalenamine hydrochloride. In another example, the transnorsertraline hydrochloride is (1S,4R)-transnorsertraline hydrochloride, *i.e.*, (1S,4R)-trans-4-(3,4-dichlorophenyl)-1,2,3,4-tetrahydro-1-naphthalenamine hydrochloride.

Also provided herein are methods of treating, preventing or managing neurological disorders comprising administering to a subject (*e.g.*, patient) a formulation, salt or polymorph of transnorsertraline as disclosed herein. Neurological disorders that may be treated, prevented, or managed by the methods provided herein are described in detail herein elsewhere.

In some examples, the formulation, salt or polymorph of transnorsertraline is administered in combination with one or more additional therapeutic agents, or pharmaceutically acceptable salts, solvates, or stereoisomers thereof.

4. BRIEF DESCRIPTION OF FIGURES

Fig. 1A illustrates the crystal habit of anhydrous transnorsertraline hydrochloride.

What is claimed is:

1. A pharmaceutical composition comprising a hydrochloride salt of transnorsertraline or a hydrate thereof, mannitol, magnesium stearate, talc and sodium starch glycolate, wherein said mannitol contains less than 0.1% by weight of mannose.

2. The pharmaceutical composition of claim 1 which is in tablet or capsule form.

3. The pharmaceutical composition of claim 1, wherein the composition comprises at least 10% by weight of mannitol.

4. Use of a composition of any one of claims 1 to 3 in the manufacture of a medicament for treating, or preventing or managing a neurological disorder.

5. The use of claim 4, wherein the neurological disorder is selected from the group consisting of depression, cognitive deficits, fibromyalgia, pain, a sleep related disorder, chronic fatigue syndrome, attention deficit disorder (ADD), attention deficit hyperactivity disorder (ADHD), restless leg syndrome, schizophrenia, anxiety, obsessive compulsive disorder, posttraumatic stress disorder, seasonal affective disorder (SAD), premenstrual dysphoria, post-menopausal vasomotor symptoms, a neurodegenerative disease, manic conditions, dysthymic disorder, cyclothymic disorder, obesity, and substance abuse or dependency.