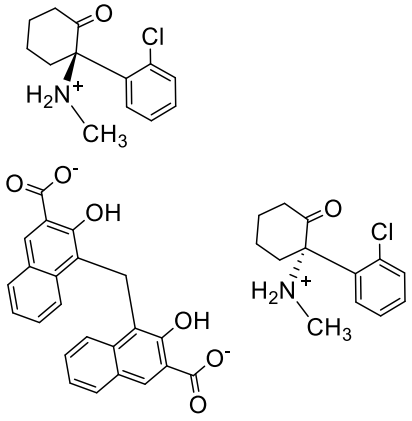
CLAIMS

What is claimed is:

1. A pamoate salt of ketamine having a stoichiometry of 2:1 of ketamine to pamoate.

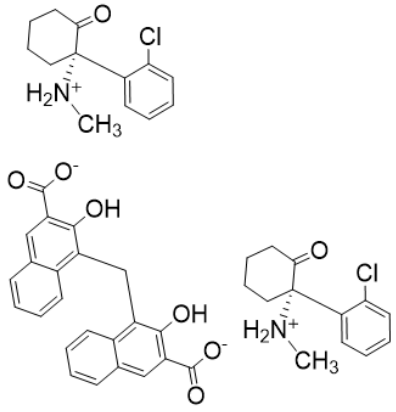
2. The pamoate salt of ketamine according to claim 1, which is:

a pamoate salt of *R*, *S*-ketamine represented by Formula (I) below:



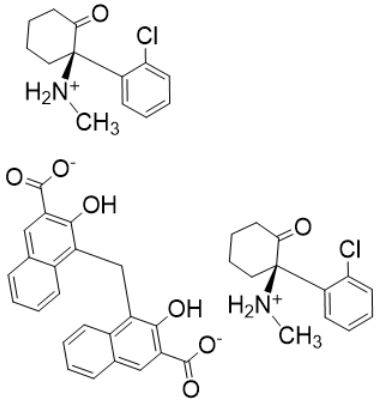
(I);

a pamoate salt of *S*-ketamine represented by Formula (II) below:



(II); or

a pamoate salt of *R*-ketamine represented by Formula (III) below:



(III).

3. The pamoate salt of ketamine according to claim 1, which is amorphous.

4. The pamoate salt of ketamine according to claim 1, which is crystalline having an X-ray powder diffraction (XRPD) pattern comprising one or more 2θ values ± 0.2 2θ selected from 6.0, 10.7, 11.6, 12.0, 13.0, 14.7, 15.0, 19.6, 22.2, 25.2 and 30.3.

5. The pamoate salt of ketamine according to claim 2, wherein the pamoate salt of *R*, *S*-ketamine is crystalline having an XRPD pattern ~~represented by at least one of the following:~~

~~(i) the XRPD pattern~~ comprising one or more 2θ values ± 0.2 2θ selected from 6.0, 8.6, 10.7, 11.6, 12.0, 13.0, 14.7, 15.0, 15.3, 17.9, 18.6, 19.6, 20.0, 21.1, 21.6, 22.2, 23.3, 24.4, 25.2, 25.9, 26.9, 28.6, 29.7, 30.3, 32.4, 34.0 and 36.6~~; and~~

~~(ii) the XRPD pattern shown in FIG. 2A~~.

6. The pamoate salt of ketamine according to claim 2, wherein the pamoate salt of *S*-ketamine is crystalline having an XRPD pattern ~~represented by at least one of the following:~~

~~(i) the XRPD pattern~~ comprising one or more 2θ values ± 0.2 2θ selected from 6.0, 10.8, 11.7, 12.0, 12.6, 13.1, 14.6, 15.1, 18.2, 19.2, 19.7, 20.1, 22.0, 22.8, 23.3, 23.7, 24.1, 24.7, 25.2, 27.3, 30.1, 31.6, 45.4, 56.4 and 75.2~~; and~~

~~(ii) the XRPD pattern shown in FIG. 2B~~.

7. The pamoate salt of ketamine according to claim 2, wherein the pamoate salt of *R*-ketamine is crystalline having an XRPD pattern ~~represented by at least one of the following:~~

~~(i) the XRPD pattern~~ comprising one or more 2θ values ± 0.2 2θ selected from 6.0, 10.8, 11.7, 12.0, 12.6, 13.1, 14.6, 15.0, 18.2, 19.3, 19.7, 20.6, 22.0, 22.9, 23.6, 24.1, 24.7, 25.2, 25.9, 27.3, 30.1, 31.6, 45.4, 56.4 and 75.2~~; and~~

~~(ii) the XRPD pattern shown in FIG. 2C~~.

8. The pamoate salt of ketamine according to any one of claims 1 to 7, which has a purity of greater than 95%.

9. A pharmaceutical composition for use in treating a central nervous system (CNS) disease, ~~comprising administering to a subject in need thereof~~wherein an effective amount of the pharmaceutical composition is to be administered to a subject in need thereof, and wherein the pharmaceutical composition comprises the pamoate salt of ketamine according to any one of claims 1 to 7 and a pharmaceutically acceptable excipient thereof.

10. The pharmaceutical composition for use according to claim 9, wherein the CNS disease is selected from the group consisting of major depressive disorder (MDD), MDD with imminent risk of suicidal ideation, treatment-resistant depression (TRD), bipolar disorder, obsessive-compulsive disorder, posttraumatic stress disorder (PTSD), autism spectrum disorder, tinnitus, refractory chronic migraine, asthma, anxiety, substance use disorders, alcohol use disorder, eating disorders, refractory status epilepticus, brain ischemia, Alzheimer's disease, Parkinson's disease, stroke, traumatic brain injury, multiple sclerosis, and pain.

11. A pharmaceutical composition for use in anesthetizing a subject in need thereof, ~~comprising administering to the subject~~wherein an effective amount of the pharmaceutical composition is to be administered to a subject in need thereof, and wherein the pharmaceutical composition comprises the pamoate salt of ketamine according to any one of claims 1 to 7 and a pharmaceutically acceptable excipient thereof.

12. The pharmaceutical composition for use according to any one of claims 9 to 11, wherein the treatment of the CNS disease or the anesthesia onsets within 24 hours and lasts for at least 10 days after administration of the pharmaceutical composition.