

What is Claimed is:

1. A solvate form of (*R*)-2-amino-3-phenylpropyl carbamate hydrochloride characterized by a powder x-ray diffraction pattern substantially the same as that shown in Figure 1 Form B and/or a powder x-ray diffraction pattern having peaks at about 7.0, 13.6, 16.2, 17.4, 17.8, 18.5, 21.0, 21.7, 22.7, 23.0, 24.0, and $27.3 \pm 0.2^\circ 2\theta$.
2. The solvate form of claim 1, further characterized by differential scanning calorimetry as having a broad endotherm with onset at 69.1°C and peak at 71.7°C and a sharp endotherm with onset at 182.5°C and peak at 183.6°C.
3. The solvate form of claim 1 or 2, wherein the solvate form is a hemihydrate.
4. The solvate form of any one of claims 1-3, further characterized as being produced by slurring (*R*)-2-amino-3-phenylpropyl carbamate hydrochloride in acetonitrile/water (95%/5% v/v).
5. A process of preparing a solvate form of (*R*)-2-amino-3-phenylpropyl carbamate hydrochloride, comprising slurring (*R*)-2-amino-3-phenylpropyl carbamate hydrochloride in acetonitrile/water (95%/5% v/v) and collecting the solvate by vacuum filtration.
6. The process of claim 5, wherein the slurring is performed at about room temperature.
7. The process of claim 5 or 6, wherein the slurring is performed at for at least about 20 hours.
8. A composition comprising (*R*)-2-amino-3-phenylpropyl carbamate hydrochloride, wherein at least 30% of the (*R*)-2-amino-3-phenylpropyl carbamate hydrochloride is the solvate form of any one of claims 1-4.
9. A composition comprising (*R*)-2-amino-3-phenylpropyl carbamate hydrochloride, wherein less than 10% of the (*R*)-2-amino-3-phenylpropyl carbamate hydrochloride is the solvate form of any one of claims 1-4.

10. The composition of claim 8 or 9, wherein the composition is a dosage form.
11. The composition of claim 10, wherein the composition is an immediate release oral dosage form.
12. The composition of claim 11, wherein the composition is a tablet or a capsule.
13. A method of treating narcolepsy, cataplexy, excessive daytime sleepiness, drug addiction, sexual dysfunction, fatigue, fibromyalgia, attention deficit/hyperactivity disorder, restless legs syndrome, depression, bipolar disorder, or obesity in a subject in need thereof, or promoting smoking cessation in a subject in need thereof, comprising administering to the subject the composition of any one of claims 8-11.
14. The method of claim 13, wherein the tablet is administered once per day.
15. The method of claim 13, wherein the tablet is administered more than once per day.
16. A method of preparing (*R*)-2-amino-3-phenylpropyl carbamate hydrochloride while minimizing contamination with 2-chloropropane, the method comprising crystallizing (*R*)-2-amino-3-phenylpropyl carbamate in the presence of aqueous HCl, thereby producing crystals of (*R*)-2-amino-3-phenylpropyl carbamate hydrochloride.
17. The method of claim 16, wherein the crystallizing is performed at a temperature of about 25°C to about 30°C.
18. The method of claim 16 or 17, further comprising drying the crystals of (*R*)-2-amino-3-phenylpropyl carbamate hydrochloride at a temperature of about 35°C or less.
19. The method of any one of claims 16-18, wherein the amount of 2-chloropropane in the (*R*)-2-amino-3-phenylpropyl carbamate hydrochloride is less than about 5 ppm.
20. A composition comprising (*R*)-2-amino-3-phenylpropyl carbamate hydrochloride, the composition comprising less than about 5 ppm 2-chloropropane.

21. The composition of claim 20, wherein the (*R*)-2-amino-3-phenylpropyl carbamate hydrochloride is prepared by the method of any one of claims 16-19.
22. The composition of claim 20 or 21, wherein the composition is a dosage form.
23. The composition of claim 22, wherein the composition is an immediate release oral dosage form.
24. The composition of claim 23, wherein the composition is a tablet or a capsule.
25. A method of treating narcolepsy, cataplexy, excessive daytime sleepiness, drug addiction, sexual dysfunction, fatigue, fibromyalgia, attention deficit/hyperactivity disorder, restless legs syndrome, depression, bipolar disorder, or obesity in a subject in need thereof, or promoting smoking cessation in a subject in need thereof, comprising administering to the subject the composition of any one of claims 20-24.
26. The method of claim 25, wherein the tablet is administered once per day.
27. The method of claim 25, wherein the tablet is administered more than once per day.