CLAIMS

What is claimed is:

1. A composition for treating substance use disorders comprising an effective amount of 18-Methoxycoronaridine salt (18-MC) in a pharmaceutical carrier.

2. The composition of claim 1, wherein said composition is formulated in an oral dose.

3. The composition of claim 1, wherein said composition is a hydrochloride salt.

4. A method of treating substance use disorders, including the steps of:

administering an effective amount of 18-Methoxycoronaridine salt (18-MC) in a pharmaceutical carrier to an individual; and

preventing substance abuse in the individual.

5. The method of claim 4, wherein the substance is chosen from the group consisting of cocaine, nicotine, opiates, alcohol, morphine, and methamphetamine.

6. The method of claim 4, wherein the individual is a human.

7. The method of claim 4, wherein said preventing step is further defined as reducing reinforcing and rewarding effects of the substance.

8. The method of claim 4, wherein said administering step is performed orally.

9. The method of claim 4, wherein the salt is a hydrochloride salt.

10. The method of claim 4, wherein said administering step is further defined as administering 0.01-10 mg/kg of 18-MC.

11. The method of claim 10, wherein said administering step is further defined as administering 20 mg or less per day of 18-MC.

12. The method of claim 4, wherein 18-MC administered follows a multiple-compartment model and a half-life is about 48 hours.

13. The method of claim 4, further including the step of blocking α3β4 nicotinic receptors in the habenulo-interpeduncular pathway and the basolateral amygdala.

14. The method of claim 4, further including the step of inhibiting enzymes CYP2C9, CYP2C19,

CYP2C8, CYP2E1, and CYP3A4.

15. A method of preventing addictive behavior in an individual, including the steps of:

administering an effective amount of 18-Methoxycoronaridine salt (18-MC) in a pharmaceutical carrier to an individual; and

preventing addictive behavior in the individual.

16. The method of claim 15, wherein the salt is a hydrochloride salt.

17. The method of claim 15, wherein the substance is chosen from the group consisting of cocaine, nicotine, opiates, alcohol, morphine, and methamphetamine.

18. The method of claim 15, wherein the individual is a human.

19. The method of claim 15, wherein said preventing step is further defined as reducing reinforcing and rewarding effects of the substance.

20. The method of claim 15, wherein said administering step is performed orally.

21. The method of claim 15, wherein said administering step is further defined as administering 0.01-10 mg/kg of 18-MC.

22. The method of claim 21, wherein said administering step is further defined as administering 20 mg or less per day of 18-MC.

23. The method of claim 15, wherein 18-MC administered follows a multiple-compartment model and a half-life is about 48 hours.

24. The method of claim 15, further including the step of blocking α3β4 nicotinic receptors in the habenulo-interpeduncular pathway and the basolateral amygdala.

25. The method of claim 15, further including the step of inhibiting enzymes CYP2C9, CYP2C19, CYP2C8, CYP2E1, and CYP3A4.

26. A method of preventing craving in an individual, including the steps of:

administering an effective amount of 18-Methoxycoronaridine salt (18-MC) in a pharmaceutical carrier to an individual; and

preventing craving in the individual.

27. The method of claim 26, wherein the salt is a hydrochloride salt.

28. The method of claim 26, wherein the substance is chosen from the group consisting of cocaine, nicotine, opiates, alcohol, morphine, and methamphetamine.

29. The method of claim 26, wherein the individual is a human.

30. The method of claim 26, wherein said preventing step is further defined as reducing reinforcing and rewarding effects of the substance.

31. The method of claim 26, wherein said administering step is performed orally.

32. The method of claim 26, wherein said administering step is further defined as administering 0.01-10 mg/kg of 18-MC.

33. The method of claim 32, wherein said administering step is further defined as administering 20 mg or less per day of 18-MC.

34. The method of claim 26, wherein 18-MC administered follows a multiple-compartment model and a half-life is about 48 hours.

35. The method of claim 26, further including the step of blocking α3β4 nicotinic receptors in the habenulo-interpeduncular pathway and the basolateral amygdala.

36. The method of claim 26, further including the step of inhibiting enzymes CYP2C9, CYP2C19, CYP2C8, CYP2E1, and CYP3A4.

37. A composition comprising a metabolite of 18-MC salt.

38. The composition of claim 37, wherein said metabolite is chosen from the group consisting of M1, M2, M3, M4, M5, M6, M7, M8, M9, P1, P2, P3, and P10 and wherein the salt is a hydrochloride salt.

39. The composition of claim 37, wherein said metabolite is M4 or M5.

40. A method of treating substance use disorders including the steps of:

administering an effective amount of a metabolite of 18-MC salt in a pharmaceutical carrier to an individual; and

preventing substance abuse in the individual.

41. The method of claim 40, wherein the metabolite is chosen from the group consisting of M1, M2, M3, M4, M5, M6, M7, M8, M9, P1, P2, P3, and P10 and wherein the salt is a hydrochloride salt.

42. The method of claim 40, wherein the metabolite is M4 or M5.

43. The method of claim 40, wherein the substance is chosen from the group consisting of cocaine, nicotine, opiates, alcohol, morphine, and methamphetamine.

44. The method of claim 40, wherein the individual is a human.

45. The method of claim 40, wherein said preventing step is further defined as reducing reinforcing and rewarding effects of the substance.

46. The method of claim 40, wherein said administering step is performed orally.

47. The method of claim 40, wherein said administering step is further defined as administering 0.01-10 mg/kg of a metabolite of 18-MC.

48. The method of claim 47, wherein said administering step is further defined as administering 20 mg or less per day of a metabolite of 18-MC.

49. The method of claim 40, wherein a metabolite of 18-MC administered has a half-life of about 48 hours.

50. The method of claim 40, further including the step of blocking α3β4 nicotinic receptors in the habenulo-interpeduncular pathway and the basolateral amygdala.

51. The method of claim 40, further including the step of inhibiting enzymes CYP2C9, CYP2C19, CYP2C8, CYP2E1, and CYP3A4.

52. A composition having the binding profile shown in Figure 2.

53. A composition having an action potential duration in rabbit cardiac Purkinje fibers shown in Figure 13.

54. A composition having a pharmacokinetic profiles of parent and a metabolite in human plasma shown in Figure 17.

55. A composition having an IC_{50} profiles of parent and one or more metabolites as shown in Figure 18E.

56. A composition having an alpha3-beta4 nicotinic cholinergic receptor patch clamp assay profile as shown in Figures 19A and 19B.

57. A composition having a human metabolite alpha3-beta4 nicotinic cholinergic receptor patch clamp assay profile as shown in any of Figures 20A, 20B, 20C and 20D.

58. A composition having an ICSS study profile in rats as shown in any of Figures 22, 23, or 24.