[0015] In additional aspects of the disclosure, methods of accelerating emergence from anesthesia, or countering the effects of anesthesia, including reversing the effects of anesthesia, are provided comprising administering to a patient undergoing a medical procedure with an anesthesia agent a pharmaceutically effective amount of a composition of the disclosure.

[0016] In still further aspects of the disclosure, use of a pharmaceutically effective amount of a composition comprising caffeine, sodium benzoate, and one or more of lactic acid, acetic acid, aspartic acid and glutamic acid for treating a host mammal undergoing a medical procedure with an anesthesia agent is provided.

[0016a] In one aspect, there is provided a use of the composition as described herein in the manufacture of a medicament for accelerating emergence from anesthesia or countering the effects of anesthesia wherein the composition is to be administered to a patient undergoing a medical procedure with an anesthesia agent.

[0017] In yet additional aspects of the disclosure, use of a pharmaceutically effective amount of a composition comprising caffeine, sodium benzoate, and one or more of lactic acid, acetic acid, aspartic acid and glutamic acid for accelerating emergence from anesthesia or countering the effects of anesthesia, including reversing the effects of anesthesia, in a host mammal is provided.

[0017a] In another aspect, there is provided a use of the composition described herein in the manufacture of a medicament for treating a patient suffering from opioid intoxication or overdose wherein the composition is to be administered to the patient.

[0018] In still further aspects of the disclosure, kits comprising caffeine, sodium benzoate, one or more of lactic acid, acetic acid, aspartic acid and glutamic acid, and optionally water are provided.

[0019] In additional aspects of the disclosure, stable compositions are provided.

[0020] In further aspects of the disclosure, methods of treating patients who suffer from opioid toxicity or overdose comprising treating a patient in need thereof with a pharmaceutically effective amount of a composition of the disclosure are provided.

[0021] In still further aspects of the disclosure, use of a pharmaceutical composition comprising caffeine, sodium benzoate, and one or more of lactic acid, acetic acid, aspartic acid and glutamic acid for treating a host mammal undergoing treatment for opioid toxicity or overdose is provided.

[0022] More embodiments are included in the detailed description that follows.

DETAILED DESCRIPTION

[0023] Various additional embodiments of the disclosure will now be explained in further detail. Both the foregoing general description and the following detailed description are exemplary and explanatory only, and are not restrictive of this disclosure or of the claims. Any discussion of certain embodiments or features, including those depicted in the

CLAIMS:

1. A composition comprising caffeine, sodium benzoate, and one or more of lactic acid, acetic acid, aspartic acid and glutamic acid.

2. The composition of claim 1, further comprising water.

3. The composition of claim 2, wherein the composition is in the form of a solution.

~~4. A composition comprising:~~

~~an aqueous solution of caffeine and sodium benzoate, and~~

~~means for increasing the solubility of caffeine in the aqueous solution.~~

~~5. A composition in the form of an aqueous solution and comprising caffeine at a solubility of greater than about 235 mg/mL in the solution.~~

~~6. The composition of claim 5, which comprises sodium benzoate.~~

~~7~~4. The composition of any one of claims 1-~~6~~3, which comprises lactic acid.

~~8. The composition of any one of claims 1-7, which comprises acetic acid.~~

~~9. The composition of any one of claims 1-8, which comprises glutamic acid.~~

~~10. The composition of any one of claims 1-9, which comprises aspartic acid.~~

~~11. The composition of any one of claims 1-6, which comprises two or more of lactic acid, acetic acid, aspartic acid and glutamic acid.~~

~~12~~5. The composition of any one of claims 1-~~11~~4, ~~which comprises sodium benzoate, and~~ wherein the molar ratio of caffeine to sodium benzoate is from about 1:1.0 to about 1:1.5.

~~13. The composition of claim 12, wherein the molar ratio of caffeine to sodium benzoate is from about 1:1.0 to about 1:1.45.~~

~~14. The composition of claim 12, wherein the molar ratio of caffeine to sodium benzoate is from about 1:1.3 to about 1:1.50.~~

~~15. The composition of claim 12, wherein the molar ratio of caffeine to sodium benzoate is from about 1:1.3 to about 1:1.45.~~

~~16. The composition of claim 12, wherein the molar ratio of caffeine to sodium benzoate is about 1:1.4.~~

~~17. The composition of claim 12, wherein the molar ratio of caffeine to sodium benzoate is about 1:1.45.~~

~~18~~6. The composition of any one of claims 1-~~17~~5, ~~which comprises one or more of lactic acid, acetic acid, aspartic acid and glutamic acid, and~~ wherein the molar ratio of caffeine to the total moles of lactic acid, acetic acid, aspartic acid and glutamic acid is from about 1:0.1 to about 1:0.3.

~~19. The composition of claim 18, wherein the molar ratio of caffeine to the total moles of lactic acid, acetic acid, aspartic acid and glutamic acid is about 1:0.2.~~

~~20. The composition of claim 18, wherein the molar ratio of caffeine to the total moles of lactic acid, acetic acid, aspartic acid and glutamic acid is about 1:0.21.~~

~~21. The composition of claim 18, wherein the molar ratio of caffeine to the total moles of lactic acid, acetic acid, aspartic acid and glutamic acid is about 1:0.22.~~

~~22. The composition of claim 18, wherein the molar ratio of caffeine to the total moles of lactic acid, acetic acid, aspartic acid and glutamic acid is about 1:0.26.~~

~~23~~7. The composition of any one of claims 1-~~22~~6, ~~which comprises sodium benzoate and one or more of lactic acid, acetic acid, aspartic acid and glutamic acid, and~~ wherein the molar ratio of sodium benzoate to the total moles of lactic acid, acetic acid, aspartic acid and glutamic acid is from about 1:0.15 to about 1:0.18.

~~24~~8. The composition of ~~any one of~~ claim~~s~~ 3~~-23~~, wherein the pH of the composition is from about 5 to about 6.

~~25. The composition of claim 24, wherein the pH is from about 5.80 to about 5.92.~~

~~26. The composition of claim 24, wherein the pH is from about 5.70 to about 5.90.~~

~~27. The composition of any one of claims 2-4 and 6-26, wherein the solubility of the caffeine is greater than about 235 mg/mL.~~

~~28. The composition of any one of claims 2-27, wherein the solubility of the caffeine is 236 mg/ml or greater.~~

~~29. The composition of any one of claims 2-28, wherein the solubility of the caffeine is 238 mg/ml or greater.~~

~~30~~9. The composition of claim 2~~9~~, wherein the solubility of the caffeine is 240 mg/ml or greater.

~~31. The composition of claim 29, wherein the solubility of the caffeine is 250 mg/mL or greater.~~

~~32. The composition of claim 29, wherein the solubility of the caffeine is from about 240 mg/mL to about 500 mg/mL.~~

~~33. The composition of claim 29, wherein the solubility of the caffeine is from about 300 mg/mL to about 400 mg/mL.~~

~~34. The composition of claim 29, wherein the solubility of the caffeine is from about 300 mg/mL to about 450 mg/mL.~~

~~35. The composition of claim 29, wherein the solubility of the caffeine is from about 340 mg/mL to about 420 mg/mL.~~

~~36. The composition of claim 29, wherein the solubility of the caffeine is from about 360 mg/mL to about 400 mg/mL.~~

~~37~~10. The composition of ~~any one of~~ claim~~s~~ 2~~-3~~, wherein the weight percent of caffeine is from about 15% to about 25%, the weight percent of sodium benzoate is from about 15% to about 25%, the weight percent of lactic acid is from about 1% to about 3%, and the weight percent of water is from about 50% to about 70%.

~~38. The composition of claim 37, wherein the weight percent of caffeine is from about 15% to about 22%, the weight percent of sodium benzoate is from about 16% to about 24%, the weight percent of lactic acid is from about 1.4% to about 1.8%, and the weight percent of water is from about 50% to about 66%.~~

~~39. The composition of any one of claims 1-36, which comprises less than 14 wt% lactic acid.~~

~~40. The composition of claim 39, which comprises from about 1% to about 3% lactic acid by weight.~~

~~41. The composition of any one of claims 1-36 and 39-40, which comprises more than 30 wt% water.~~

~~42. The composition of claim 41, which comprises 50 wt% or more water.~~

~~43. The composition of any one of claims 1-36 and 39-42, which comprises a higher wt% of caffeine than lactic acid.~~

~~44. The composition of any one of claims 1-43, which comprises sodium benzoate, and wherein the difference between the weight percent of sodium benzoate and caffeine is from 1% to 2% by weight.~~

~~45~~11. ~~A composition comprising caffeine, sodium benzoate, lactic acid and water~~The composition of claim 4~~:~~,

wherein the composition is in the form of an aqueous solution;

wherein the molar ratio of caffeine to sodium benzoate is from about 1:1.3 to about 1:1.45;

wherein the molar ratio of sodium benzoate to lactic acid is from about 1:0.15 to about 1:0.18; and

wherein the solubility of the caffeine in the aqueous solution is 250 mg/mL or greater.

~~46. The composition of any one of claims 2-45, wherein the composition is stable against formation of precipitates.~~

~~47. The composition of claim 46, which is in the form an of an aqueous solution and exhibits no precipitation after a duration of at least one week.~~

~~48. The composition of claim 47, which exhibits no precipitation after a duration of at least eight weeks.~~

~~49. The composition of claim 48, which exhibits no precipitation after a duration of at least three months.~~

~~50~~12. The composition of any one of claims 2-~~49~~11, wherein the composition is heat stable when subjected to a temperature of 135 ºC for 45 minutes.

~~51. The composition of any one of claims 1, 6-23, 39-40 and 43-44, wherein the composition is in a solid dry state.~~

~~52. A composition comprising caffeine, sodium benzoate, and lactic acid.~~

~~53. The composition of claim 52, further comprising water.~~

~~54. The composition of claim 53, wherein the composition is in the form of an aqueous solution.~~

~~55. The composition of any one of claims 53-54, wherein the composition is stable against formation of precipitates, is heat stable when subjected to a temperature of 135 ºC for 45 minutes, or both.~~

~~56~~13. A pharmaceutical composition comprising a composition of any one of claims 1-~~55~~ 12 and ~~optionally~~ one or more pharmaceutically acceptable excipients.

~~57. The pharmaceutical composition of claim 56, wherein the amount of caffeine is from about 250 mg to about 1200 mg.~~

~~58. The pharmaceutical composition of claim 57, wherein the amount of caffeine is about 750 mg.~~

~~59. The pharmaceutical composition of any one of claims 56-58, wherein the one or more pharmaceutically acceptable excipients comprise one or more preservatives, one or more antioxidants, one or more buffers, or any combination of two or more of these.~~

~~60. A kit comprising caffeine, sodium benzoate, and one or more of lactic acid, acetic acid, aspartic acid and glutamic acid.~~

~~61. The kit of claim 60, which comprises lactic acid.~~

~~62. The kit of any one of claims 60-61, further comprising water.~~

~~63~~14. ~~A method of~~ Use of the composition of any one of claims 1 to 13 in the manufacture of a medicament for accelerating emergence from anesthesia or countering the effects of anesthesia ~~comprising~~ wherein the composition is to be administered ~~administering~~ to a patient undergoing a medical procedure with an anesthesia agent ~~a pharmaceutically effective amount of a composition of any one of claims 1-59~~.

~~64. The method of claim 63, wherein the administration is parenteral.~~

~~65. The method of claim 63, wherein the administration is intravenous, intramuscular, subcutaneous, buccal, or oromucosal.~~

~~66. The method of any one of claims 63-65, wherein the administration is through a bolus dose.~~

~~67. The method of any one of claims 63-65, wherein the administration is through infusion or a drip line.~~

~~68. The method of any one of claims 63-67, wherein the administration occurs concurrently with the administration of an anesthesia agent to the patient.~~

~~69. The method of any one of claims 63-67, wherein the administration occurs after the delivery of an anesthesia agent to the patient.~~

~~70. The method of any one of claims 63-67, wherein the administration occurs before the delivery of an anesthesia agent to the patient.~~

~~71. The method of any one of claims 63-70, wherein the anesthesia agent is one or more of halothane, isoflurane, enflurane, desflurane, sevoflurane, etomidate, lidocaine, magnesium, forskolin, theophylline, methylphenidate, preladenant, fentanyl, remifentanil, morphine, hydromorphone, and propofol.~~

~~72. The method of any one of claims 63-70, wherein the anesthesia agent is propofol.~~

~~73. The method of any one of claims 63-72, which comprises accelerating emergence from anesthesia, wherein the emergence from anesthesia is at least 15 minutes faster than without administering a composition of any one of claims 1-59.~~

~~74. The method of any one of claims 63-72, which comprises accelerating emergence from anesthesia, wherein the emergence from anesthesia is at least 30 minutes faster than without administering a composition of any one of claims 1-59.~~

~~75. The method of any one of claims 63-74, which comprises countering the effects of anesthesia, wherein the method of countering the effects of anesthesia is reversing the effects of anesthesia.~~

~~76~~15. A parenteral pharmaceutical composition comprising a composition of any one of claims 1-~~59~~13.

~~77. The parenteral pharmaceutical composition of claim 76, wherein the dose volume is from about 2 to about 8 mL.~~

~~78. The parenteral pharmaceutical composition of any one of claims 76-77, which is configured for intravenous administration.~~

~~79~~16. The parental pharmaceutical composition of ~~any one of claims 76-77~~claim 15, which is configured for intramuscular or subcutaneous routes.

~~80. Use of a pharmaceutical composition comprising an aqueous solution of caffeine, sodium benzoate, and one or more of lactic acid, acetic acid, aspartic acid and glutamic acid for treating a host mammal undergoing a medical procedure with an anesthesia agent.~~

~~81. The use of claim 80, wherein the pharmaceutical composition further comprises one or more pharmaceutically acceptable excipients.~~

~~82. The use of any one of claims 80-81, wherein the pharmaceutical composition is not an oral dosage form.~~

~~83. The use of any one of claims 80-82, wherein the pharmaceutical composition is an intravenous dosage form and the host mammal is human.~~

~~84. Use of a pharmaceutical composition comprising an aqueous solution of caffeine, sodium benzoate, and one or more of lactic acid, acetic acid, aspartic acid and glutamic acid for accelerating emergence from anesthesia or countering the effects of anesthesia in a host mammal.~~

~~85. The use of claim 84, wherein the mammal is human.~~

~~86. The use of any one of claims 84-85, wherein the pharmaceutical composition is not an oral dosage form.~~

~~87. The use of any one of claims 84-86, wherein the pharmaceutical composition is an intravenous dosage form and the host mammal is human.~~

~~88. The use of any one of claims 84-87, wherein the method of countering the effects of anesthesia is reversing the effects of anesthesia.~~

~~89. The use of any one of claims 80-82, 84, 86 and 88, wherein the host mammal is a non-human mammal.~~

~~90. A process for preparing a caffeine pharmaceutical composition comprising combining water with sodium benzoate to form a solution; treating the sodium benzoate solution with caffeine, and then adding one or more of lactic acid, acetic acid, aspartic acid and glutamic acid to form a caffeine pharmaceutical composition.~~

~~91. The process of claim 90, wherein the one or more of lactic acid, acetic acid, aspartic acid and glutamic acid is in an aqueous solution.~~

~~92. A caffeine pharmaceutical composition prepared by the process of any one of claims 90-91.~~

~~93. The caffeine pharmaceutical composition of claim 92, further comprising one or more pharmaceutically acceptable excipients.~~

~~94. The caffeine pharmaceutical composition of any one of claims 92-93, wherein the pharmaceutical composition is an intravenous dosage form.~~

~~95. The caffeine pharmaceutical composition of any one of claims 92-93, which is configured for intravenous, intramuscular, subcutaneous, buccal, or oromucosal delivery.~~

~~96~~17. ~~A method of~~Use of the composition of any one of claims 1 to 13 in the manufacture of a medicament for treating a patient suffering from opioid intoxication or overdose ~~comprising administering to the patient~~ wherein ~~a pharmaceutically effective amount of a~~ the composition ~~of any one of claims 1-59~~is to be administered to the patient.

~~97. The method of claim 96, wherein the administration is parenteral.~~

~~98. The method of claim 96, wherein the administration is intravenous, intramuscular or subcutaneous.~~

~~99. The method of any one of claims 96-98, wherein the administration is through a bolus dose.~~

~~100. The method of any one of claims 96-98, wherein the administration is via infusion or a drip line.~~

~~101. The method of any one of claims 96-100, wherein the patient is co-administered naloxone.~~

~~102. The method of claim 101, wherein naloxone is co-administered before administering the composition of any one of claims 1-59.~~

~~103. The method of claim 101, wherein naloxone is co-administered during administering the composition of any one of claims 1-59.~~

~~104. The method of claim 101, wherein naloxone is co-administered after administering the composition of any one of claims 1-59.~~

~~105. The method of any one of claims 96-104, wherein the opioid is oxycodone, hydrocodone, morphine, methadone, fentanyl or heroin.~~

~~106. Use of a pharmaceutical composition comprising caffeine, sodium benzoate, and one or more of lactic acid, acetic acid, aspartic acid and glutamic acid for treating a host mammal suffering from opioid intoxication or overdose.~~

~~107. The use of claim 106, wherein the pharmaceutical composition further comprises water.~~

~~108. The use of any one of claims 106-107, wherein the pharmaceutical composition further comprises one or more pharmaceutically acceptable excipients.~~

~~109. The use of any one of claims 106-108, wherein the pharmaceutical composition is not an oral dosage form.~~

~~110. The use of any one of claims 106-109, wherein the pharmaceutical composition is an intravenous dosage form and the host mammal is human.~~

~~111. A beverage, food or candy, which comprises a composition of any one of claims 1-55.~~

~~112. The beverage, food or candy of claim 111, which is a baked food made from flour.~~

~~113. The beverage, food or candy of claim 112, which is a cake, pastry, doughnut or cookie.~~

~~114. The beverage, food or candy claim 111, which is chocolate.~~

~~115. The beverage, food or candy of claim 111, which is gum or a breath freshener.~~

~~116. The beverage, food or candy of claim 111, which is a beverage, wherein the beverage is a carbonated beverage, tea, coffee or energy drink.~~

~~117. A composition comprising caffeine, sodium benzoate, and one or more C_2 to C_5 carboxylic acids.~~

~~118. A composition comprising caffeine, sodium benzoate, and one or more C_4 to C_5 amino acids.~~

~~119. A composition comprising caffeine, sodium benzoate, and one or more C_2 to C_5 carboxylic acid alcohols.~~

~~120. A composition comprising caffeine, sodium benzoate, and one or more C_2 to C_5 dicarboxylic acids.~~

~~121. The composition of any one of claims 117-120, further comprising water.~~

~~122. The composition of claim 121, wherein the composition is in the form of a solution.~~