Proposed CLAIMS

(Clean and Re-numbered)

1. A liquid formulation composition, comprising

water as a solvent; and

a phospholipid as a surfactant dispersed or dissolved in water,

wherein the liquid formulation composition is an emulsion of liquid droplets and is characterized by

a surface tension of less than 60 mN/m, and

a pH value from 5.0 to 7.4.

2. The liquid formulation composition of claim 1, further comprising one of ethanol, glycerol, medical silicone oil and edible vegetable oil, or a combination thereof, and wherein the surface tension of the liquid formulation composition is less than 40 mN/m and wherein the pH value of the liquid formulation composition is from 6.0 to 7.4.

3. (Previously Presented) The liquid formulation composition of claim 1 or 2, wherein the surfactant is a natural surfactant or a synthetic surfactant, or a combination thereof.

4. The liquid formulation composition of claim 3, wherein the surfactant comprises a natural phospholipid.

5. The liquid formulation composition of claim 3, wherein the surfactant comprises a pulmonary surfactant.

6. The liquid formulation composition of any one of the preceding claims, further comprising one of bacteriostatic agent, flavoring agent, stabilizer, antioxidant, or a combination thereof.

7. The liquid formulation composition of claim 6, wherein

the bacteriostatic agent comprises one of parabens or its salts, benzoic acid or

its salts, benzyl alcohol, phenylethanol, phenylacetic acid, phenoxyethanol, lauric acid monoglyceride, chlorobutanol, sorbic acid or its salts, calcium propionate, sodium propionate, dehydroacetic acid or its salts, sodium diacetate, benzalkonium chloride, benzalkonium bromide, cetrimide, chlorhexidine acetate, propanediol, carbon dioxide, nisin, natamycin, momordicin, thimerosal, mercuric nitrate, or a combination thereof;

the flavoring agent comprises one of menthol, borneol, lemon oil, patchouli oil, cinnamon oil, jujube tincture, vanillin, peppermint oil, rose oil, eucalyptus oil, spearmint oil, eugenol, citral, jasmine extract, chrysanthemum extract, osmanthus extract, benzyl alcohol, phenylethanol, terpineol, methyl cyclopentenolone, α-amyl cinnamic aldehyde, butyric acid, hexanoic acid, isoamyl acetate, benzyl acetate, linalyl acetate, ethyl propionate, ethyl butyrate, isoamyl butyrate, benzyl butyrate, isoamyl isovalerate, ethyl hexanoate, ethyl heptanoate, ethyl lactate, allyl hexanoate, γ-nonalactone, ethyl maltol, allyl cyclohexyl propionate, maltol, γ-undecalactone, raspberry ketone, benzyl propionate, butyl butyrate, ethyl isovalerate, ethyl formate, benzyl benzoate, methyl pyrazine, 2,3-dimethyl pyrazine, trimethyl pyrazine, 2-acetyl pyrazine, 4-methyl-5-(β-hydroxyethyl) thiazole, 2-acetyl thiazole, 2,3,5,6-tetramethyl pyrazine, hexadecanal, ethyl vanillin, hydroxyl citronellal, or a combination thereof;

the stabilizer comprises one of lecithin, poloxamer, saponin, tannin, glycerin fatty acid ester, sucrose fatty acid ester, propanediol fatty acid ester, cholesterol, cholesterol ester, polyethylene glycol, cellulose or its derivatives, dextrin, Arabic gum, tragacanth gum, pectin cellulose cheese, gelatin, alginic acid, or a combination thereof; and

the antioxidant comprises one of tert-butyl hydroxy anisole, butylated hydroxytoluene, tert-butyl hydroquinone, propyl gallate, ascorbyl palmitate, dilauryl thiodipropionate, 4-hexyl resorcinol, tocopherol, L-ascorbic acid, D-sodium erythorbate, tea polyphenols, rosemary extract, ginger extract, sugar alcohols, amino acids, or a combination thereof.

8. The liquid formulation composition of claim 7, wherein

the content of the surfactant is in the range from 0.0001 wt% to 25.0 wt%,

the content of the solvent is in the range from 63.0 wt% to 99.9879 wt%,

the content of the bacteriostatic agent is in the range from 0.001 wt% to 2.0 wt%,

the content of the flavoring agent is in the range from 0.01 wt% to 5.0 wt%, and

the content of the antioxidant is in the range from 0.001 wt% to 5.0 wt%.

9. A liquid formulation composition, comprising

water as a solvent; and

liquid particles dispersed in water, the liquid particles comprising a phospholipid as a surfactant,

wherein

the liquid formulation composition is an emulsion of liquid particles;

the volume average particle size of the liquid particles is less than 100 μm; and

the liquid formulation composition is characterized by a surface tension of less than 60 mN/m and an absolute value of zeta potential of greater than 15 mV for the liquid particles.

10. The liquid formulation composition of claim 9, further comprising one of ethanol, glycerol, medical silicone oil and edible vegetable oil, or a combination thereof.

11. The liquid formulation composition of claim 9 or 10, wherein the absolute value of zeta potential of the liquid particlesis greater than 20 mV and wherein the pH value of the liquid formulation composition is from 5.0 to 7.4.

12. The liquid formulation composition of any one of claims 9-11, wherein the surfactant is a natural surfactant or a synthetic surfactant, or a combination thereof.

13. The liquid formulation composition of any one of claims 9-12, wherein the liquid formulation composition further comprises one of bacteriostatic agent, flavoring agent, stabilizer, antioxidant, or a combination thereof.

14. The liquid formulation composition of claim 13, wherein

the bacteriostatic agent comprises one of parabens or its salts, benzoic acid or its salts, benzyl alcohol, phenylethanol, phenylacetic acid, phenoxyethanol, lauric acid monoglyceride, chlorobutanol, sorbic acid or its salts, calcium propionate, sodium propionate, dehydroacetic acid or its salts, sodium diacetate, benzalkonium chloride, benzalkonium bromide, cetrimide, chlorhexidine acetate, propanediol, carbon dioxide, nisin, natamycin, momordicin, thimerosal, mercuric nitrate, or a combination thereof;

the flavoring agent comprises one of menthol, borneol, lemon oil, patchouli oil, cinnamon oil, jujube tincture, vanillin, peppermint oil, rose oil, eucalyptus oil, spearmint oil, eugenol, citral, jasmine extract, chrysanthemum extract, osmanthus extract, benzyl alcohol, phenylethanol, terpineol, methyl cyclopentenolone, α-amyl cinnamic aldehyde, butyric acid, hexanoic acid, isoamyl acetate, benzyl acetate, linalyl acetate, ethyl propionate, ethyl butyrate, isoamyl butyrate, benzyl butyrate, isoamyl isovalerate, ethyl hexanoate, ethyl heptanoate, ethyl lactate, allyl hexanoate, γ-nonalactone, ethyl maltol, allyl cyclohexyl propionate, maltol, γ-undecalactone, raspberry ketone, benzyl propionate, butyl butyrate, ethyl isovalerate, ethyl formate, benzyl benzoate, methyl pyrazine, 2,3-dimethyl pyrazine, trimethyl pyrazine, 2-acetyl pyrazine, 4-methyl-5-(β-hydroxyethyl) thiazole, 2-acetyl thiazole, 2,3,5,6-tetramethyl pyrazine, hexadecanal, ethyl vanillin, hydroxyl citronellal, or a combination thereof;

the stabilizer comprises one of lecithin, poloxamer, saponin, tannin, glycerin fatty acid ester, sucrose fatty acid ester, propanediol fatty acid ester, cholesterol, cholesterol ester, polyethylene glycol, cellulose or its derivatives, dextrin, Arabic gum, tragacanth gum, pectin cellulose cheese, gelatin, alginic acid, or a combination thereof; and

the antioxidant comprises one of tert-butyl hydroxy anisole, butylated hydroxytoluene, tert-butyl hydroquinone, propyl gallate, ascorbyl palmitate, dilauryl thiodipropionate, 4-hexyl resorcinol, tocopherol, L-ascorbic acid, D-sodium erythorbate, tea polyphenols, rosemary extract, ginger extract, sugar alcohols, amino acids, or a combination thereof.

15. The liquid formulation composition of claim 14, wherein

the content of the surfactant is in the range from 0.1 wt% to 25.0 wt%,

the content of the solvent is in the range from 58.0 wt% to 99.877 wt%,

the content of the bacteriostatic agent is in the range from 0.001 wt% to 2.0 wt%,

the content of the flavoring agent is in the range from 0.01 wt% to 5.0 wt%,

the content of the stabilizer is in the range from 0.01 wt% to 5.0 wt%, and

the content of the antioxidant is in the range from 0.001 wt% to 5.0 wt%.

16. A medicament delivery device, comprising

a containment vessel for holding a liquid comprising an outlet; and

a liquid formulation composition held in the containment vessel,

wherein

the containment vessel is configured to function as a spraying or dropping device, allowing controlled spraying or dropping of the liquid formulation composition out of the outlet;

the liquid formulation composition is an emulsion of liquid droplets or a solution and comprises water as a solvent and, a phospholipid as a surfactant dissolved therein; and

the liquid formulation composition is characterized by a surface tension of less than 60 mN/m and a pH value from 5.0 to 7.4.

17. The medicament delivery device of claim 16, wherein the containment vessel is configured to function as a sprayer, allowing controlled spraying of the liquid formulation composition out of the outlet.

18. The medicament delivery device of claim 16, wherein the containment vessel is configured to function as a dropping device, allowing controlled dropping of the liquid formulation composition out of the outlet.

19. The medicament delivery device of claim 16-18, wherein the pH value of the liquid formulation composition is from 6.0 to 7.4 and the surface tension of the liquid

formulation composition is less than 40 mN/m.

20. A medicament delivery device, comprising

a containment vessel for holding a liquid comprising an outlet; and

a liquid formulation composition held in the containment vessel,

wherein

the containment vessel is configured to function as a spraying or dropping device, allowing controlled spraying or dropping of the liquid formulation composition out of the outlet;

the liquid formulation composition is an emulsion of liquid particles or a solution and comprises water as a solvent and, dispersed therein, liquid particles comprising a phospholipid as a surfactant;

the volume average particle size of the liquid particles is less than 100 μm; and

the liquid formulation composition is characterized by a surface tension of less than 60 mN/m and an absolute value of zeta potential of greater than 15 mV for the liquid particles.

21. A method for preparing a liquid formulation composition, comprising:

(S1) dissolving or dispersing a phospholipid as a surfactant in water as a solvent to form a solution or stable suspension of liquid droplets; and

(S2) adjusting the solution or suspension of liquid droplets to form a liquid formulation composition characterized by

a surface tension of less than 60 mN/m, and

a pH value from 5.0 to 7.4.

22. A method for preparing the medicament delivery device, comprising

(S1) dissolving or dispersing a phospholipid as a surfactant in water as a solvent to form a solution; and

(S2) adjusting the solution to form a liquid formulation composition, wherein the liquid formulation composition is a solution or a stable emulsion of liquid droplets and comprises a solvent and, the phospholipid dissolved therein;

the liquid formulation composition is characterized by a surface tension of less than 60 mN/m and a pH value from 5.0 to 7.4, and

(S3) filling the liquid formulation composition into a containment vessel.

23. A method for preparing the medicament delivery device, comprising:

(S1) dispersing a phospholipid as a surfactant in ultrasound of 40 KHz to 60 KHz for 1 minute to 3 minutes;

(S2) uniformly mixing the phospholipidwith water as a solvent under a stirring condition characterized by a rotational speed of more than 3000 rpm to form a liquid formulation, wherein

the liquid formulation composition is an emulsion and comprises a solvent and, dispersed therein, liquid particles comprising the phospholipid;

the volume average particle size of the liquid particles is less than 100 μm; and

the liquid formulation composition is characterized by a surface tension of less than 60 mN/m and an absolute value of zeta potential of more than 15 mV for the liquid particles; and

(S3) filling the liquid formulation composition into a containment vessel.

24. A composition for use in treating one or more diseases or disorders, comprising

administering to a subject in need thereof the liquid formulation composition of any of claims 1-15, wherein the one or more diseases or disorders are selected from rhinitis, sinusitis, lower respiratory tract inflammation, otitis media, otitis externa, xerostomia, xerophthalmia and xeromycteria.

25. A composition for use in treating one or more diseases or disorders, comprising

administering to a subject in need thereof a liquid formulation composition, using the medicament delivery device of any of claims 16-20, wherein the one or more diseases or disorders are selected from rhinitis, sinusitis, lower respiratory tract inflammation, otitis media, otitis externa, xerostomia, xerophthalmia and xeromycteria.