(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
24 November 2016 (24.11.2016)

WIPO | PCT

(10) International Publication Number
WO 2016/186735 A1

(51) **International Patent Classification**:
*A61K 31/05* (2006.01) *A61K 47/10* (2006.01)
*A61K 31/352* (2006.01) *A61K 47/44* (2006.01)

(21) **International Application Number**:
PCT/US2016/025044

(22) **International Filing Date**:
30 March 2016 (30.03.2016)

(25) **Filing Language**: English

(26) **Publication Language**: English

(30) **Priority Data**:
63/163,316 18 May 2015 (18.05.2015) US
15/084,954 30 March 2016 (30.03.2016) US

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(81) **Designated States** *(unless otherwise indicated, for every kind of national protection available)*: AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IR, IS, JP, KE, KG, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) **Designated States** *(unless otherwise indicated, for every kind of regional protection available)*: ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, ST, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, KM, ML, MR, NE, SN, TD, TG).

**Declarations under Rule 4.17**:

— *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))*

— *as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))*

**Published**:

— *with international search report (Art. 21(3))*

WO 2016/186735 A1

(54) **Title**: HOMOGENOUS CANNABIS COMPOSITIONS AND METHODS OF MAKING THE SAME

(57) **Abstract**: Disclosed herein are new cannabis compositions. In one embodiment, these new cannabis compositions are beverages, such as tea. In one embodiment, these new cannabis compositions are dehydrated beverages, such as powders or crystalline forms, which can be mixed with other components, like tea, and added to water.

# Homogenous Cannabis Compositions and Methods of Making the Same

## Cross-Reference to Related Applications

[0001] This application claims the benefit of United States Provisional Application No. 62/163,316, filed May 18, 2015, and United States Non-Provisional Application No. 15/084,854, filed March 30, 2016, the disclosures of which are incorporated herein by reference.

## Technical Field

[0002] This disclosure relates to the cannabis industry. In particular, the disclosure relates to cannabis compositions for use in the making beverages, methods of making beverages, and beverages.

## Background

[0003] Cannabis has a long history of being consumed for many purposes and in many forms. The psychoactive effects of cannabis are well known, however the medical benefits are just as useful. Treating glaucoma, pain management, appetite stimulation and easing anxiety are just a few of the potential benefits. The source of these effects are in the cannabinoids, a class of compounds found exclusively in the cannabis plant. Currently there are 483 identified compounds found in cannabis. The most well known, and in some ways the most important, is tetrahydrocannabniol (THC). THC is responsible for many of the psychoactive effects as well as the medicinal effects. Cannabidiol (CBD) is also another major cannabinoid comprising up to 40% of cannabis extract and could have as many health benefits as THC.

[0004] Many methods exist for extracting the cannabinoids from the cannabis plant. A common method is alcohol extraction. Using a solvent to extract the cannabinoids and then evaporating the alcohol leaving a resin. Further extraction and evaporation can yield a product that is closer to a solid. Another common method for the purposes of making edibles is placing the cannabis leaves in butter, heavy cream, oil, etc. and then heating to extract the cannabinoids. The end product is then used as an ingredient in baking or cooking which usually results in a high caloric food due to the fat needed to extract the

cannabinoids. Cannabinoids are soluble in fats and alcohols. Which is why when making cannabis tea the cannabinoids have to be already extracted. Just placing cannabis leaves in hot water will not effectively extract any of the vital cannabinoids.

[0005] However, the state of the art has many shortcomings. The cannabis arts do not have homogenous cannabis beverages. Existing cannabis beverages include large amounts of caloric material. Existing cannabis beverages are not capable of providing consistent cannabinoid concentrations, especially at low cannabinoid concentrations.

[0006] There exists a need for homogenous cannabis beverages. In particular there exists a need for beverages providing a consistent amount of the cannabinoid, especially at low doses.

**Detailed Description**

[0007] Disclosed herein are new cannabis compositions. In one embodiment, these new cannabis compositions are beverages, such as tea. In one embodiment, these new cannabis compositions are dehydrated beverages, such as powders or crystalline forms, which can be mixed with other components, like tea, and added to water.

[0008] In one embodiment, the disclosed cannabis compositions are homogenous. In one embodiment, the disclosed cannabis compositions include a surfactant and a carrier oil. In one embodiment, the disclosed cannabis compositions are consistent with respect to cannabinoid amount. In one embodiment, the disclosed cannabis compositions are low-calorie cannabis beverages, such as low calorie cannabis teas.

[0009] Disclosed herein are new compositions comprising:

a cannabinoid,

a surfactant, and

a carrier oil.

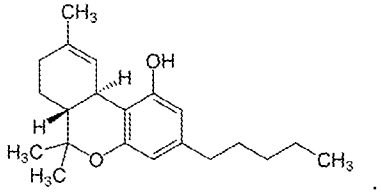
[0010] As used herein the term “cannabinoid” refers to a compound that acts on the cannabinoid receptor. In one embodiment of this disclosure, the

compositions are low does compositions having 0.1 to 10 mg of cannabinoid. In some embodiments, the composition comprises between 0.5 to 5 mg.

[0011] In other embodiments of this disclosure, higher amounts of cannabinoid can be used, such as more than 10 mg, for example 20 - 500 mg or 50 - 200 mg.

Examples of cannabinoids are tetrahydrocannabinol, cannabidiol, cannabigerol, cannabichromene, cannabicyclol, cannabivarin, cannabielsoin, cannabicitran, cannabigerolic acid, cannabigerolic acid monomethylether, cannabigerol monomethylether, cannabigerovarinic acid, cannabigerovarin, cannabichromenic acid, cannabichromevarinic acid, cannabichromevarin, cannabidolic acid, cannabidiol monomethylether, cannabidiol-$C_4$, cannabidivarinic acid, cannabidiorcol, delta-9-tetrahydrocannabinolic acid A, delta-9-tetrahydrocannabinolic acid B, delta-9-tetrahydrocannabinolic acid-$C_4$, delta-9-tetrahydrocannabivarinic acid,delta-9-tetrahydrocannabivarin, delta-9-tetrahydrocannabiorcolic acid, delta-9-tetrahydrocannabiorcol,delta-7-cis-iso-tetrahydrocannabivarin, delta-8-tetrahydrocannabiniolic acid, delta-8-tetrahydrocannabinol,cannabicyclolic acid, cannabicylovarin, cannabielsoic acid A, cannabielsoic acid B, cannabinolic acid, cannabinol methylether, cannabinol-$C_4$, cannabinol-$C_2$, cannabiorcol,10-ethoxy-9-hydroxy-delta-6a-tetrahydrocannabinol, 8,9-dihydroxy-delta-6a-tetrahydrocannabinol, cannabitriolvarin, ethoxy-cannabitriolvarin, dehydrocannabifuran, cannabifuran, cannabichromanon, cannabicitran, 10-oxo-delta-6a-tetrahydrocannabinol, delta-9-cis-tetrahydrocannabinol, 3, 4, 5, 6-tetrahydro-7-hydroxy-alpha-alpha-2-trimethyl-9-n-propyl-2, 6-methano-2H-1-benzoxocin-5-methanol-cannabiripsol, trihydroxy-delta-9-tetrahydrocannabinol, and cannabinol. Examples of cannabinoids within the context of this disclosure include tetrahydrocannabinol and cannabidiol.

[0012] As used herein, the term “tetrahydrocannabinol” (THC) refers to a compound having the following structural formula:

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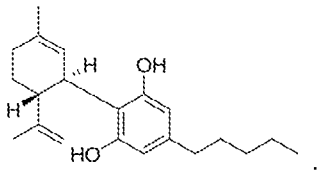
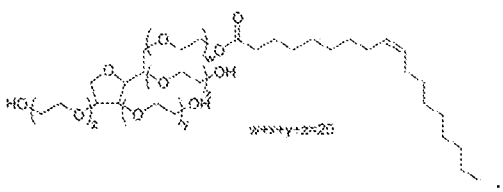
[0013] As used herein, the term “cannabidiol” (CBD) refers to a compound having the following structural formula:

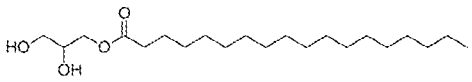



[0014] As used herein the term “surfactant” refers to a compound that lowers the surface tension between two liquids or between a liquid and solid. Surfactants can be anionic, cationic, non-ionic and amphoteric. Examples of surfactants are ammonium lauryl sulfate, dioctyl sodium sulfosuccinate, perflurooctanoic acid, potassium lauryl sulfate, soap, sodium dodecyl sulfate, sodium dodecylbenzenesulfonate, sodium laureth sulfate, sodium lauroyl sarcosinate, sodium myreth sulfate, sodium pareth sulfate, sodium stearate, perflurobutanesulfonic acid, perfluorononanoic acid, perlurooactanesulfonic acid, benzalkonium chloride, benzethonium chloride, bronidox, dimethyldioctadecylammonium chloride, lauryl methyl gluceth-10 hydroxypropyl dimonium chloride, cetrimonium bromide, cetrimonium chloride, tetramethylammonium hydroxide, cetomacrogol 1000, cetostearyl alcohol, cetyl alcohol, cocamide DEA, cocamide MEA, NP-40, octaethylene glycol monododecyl ether, N-octyl beta-D-thoglucopyranoside, octyl glucoside, oleyl alcohol, decyl glucoside, pentaethylene glycol monododecyl ether, poloxamer 407, polyglycerol polyricinolate, polysorbate, polysorabte 20, IGEPAL CA-630, isoceteth-20, lauryl glucoside, lecithin, sodium lauroampoacetate,cocamidopropyl betaine, hydroxysultaine, stearyl alcohol, decyl glucoside, octaethylene glycol monododecyl ether, nonoxynol-9, monolaurin, oleyl alcohol, poloxamer, sorbitan monostearate, polysorbate 80 and glycerol monostearate. Examples of surfactants within the context of this disclosure include polysorbate 80 and/or glycerol monostearate.

[0015] As used herein, the term “polysorbate 80” refers to a compound having the following structure:



[0016] As used herein the term “glycerol monostearate” refers to a compound having the following structure:



[0017] As used herein the term “carrier oil” refers to an oil that can be used to form a homogenized mixture with cannabis oil. Examples include coconut oil, palm oil, palm kernel oil, hemp oil, caproic acid and caprylic acid. One example of carrier oils within the context of this disclosure is medium chain triglycerides. Another example of a carrier oil within the context of this disclosure is coconut oil. Another example of a carrier oil within the context of this disclosure is hemp oil.

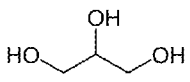
[0018] As used herein the term coconut oil means oil extracted from the kernel or meat of coconuts. Coconut is the fruit of the coconut palm. Coconut oil is noted for it’s high saturated content. Examples include lauric acid, myristic acid, palmitic acid, and decanoic acid.

[0019] As used herein the term hemp oil refers to oil obtained from hemp seeds. Hemp seeds come from a variety of the *Cannabis sativa* plant that does not contain a high amount of tetrahydrocannabinol. The oil is about 80% essential fatty acids. Examples include linolenic acid, omega-6, alpha-linolenic acid, and omega-3.

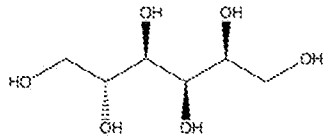
In one embodiment, the composition comprises a cannabinoid, a surfactant, a carrier oil, and a sugar alcohol.

[0020] As used herein the term “sugar alcohol” refers to alcohols prepared from sugars with the general chemical formula $HOCH_2(CHOH)_nCH_2OH$. Examples include glycerol, erythritol, threitol, arabitol, xylitol, mannitol, ribitol, mannitol, galacitol, fucitol, inositol, volemitol, maltitol, lacitol, malootetraitol, polyglycitol, sorbitol, iditol, isomalt, and maltotnitol. Examples of sugar alcohols within the context of this disclosure include glycerol/glycerin or sorbitol.

[0021] As used herein, the term “glycerol” refers to a compound having the following structure:



[0022] As used herein, the term “sorbitol” refers to a compound having the following structure:



In one embodiment, the composition disclosed herein comprises a cannabinoid, a surfactant, a carrier oil, and a gelling agent.

[0023] As used herein, the term "gelling agent" means a substance that dissolves in the liquid phase and forms a weak cohesive internal structure. Examples include natural gums, starches, pectins, agar-agar, and gelatin.

[0024] As used herein, the term "gelatin" refers to a gelling agent derived from the collagen of various all byproducts.

[0025] In one embodiment, the composition comprises a cannabinoid, a surfactant, a carrier oil, and has less than 10 mass% water. In one embodiment, the composition is a solid. In one embodiment, the composition is a granual.

[0026] As used herein, the term "less than 10 mass% water" means less than 10% of water, by mass, of the composition.

In one embodiment, the composition comprises a cannabinoid, a surfactant, a carrier oil, and has more than 95 mass% water.

[0027] As used herein, the term "more than 95 mass% water" means less than 95% of water, by mass, of the composition.

In one embodiment, the composition comprises a cannabinoid, a surfactant, a carrier oil, and a flavoring agent.

[0028] As used herein, the term "flavoring agent" means a compound that adds a flavor to a composition. A few examples of flavoring agents include amyl acetate, benzaldehyde, ethyl butyrate, methyl anthranilate, methyl salicylate, fumaric acid, diacetyl, cinnamaldehyde, ethyl propionate, limonene, ethyl decadienoate, allyl hexanoate, ethyl maltol, ethylvanillin, and methyl salicylate.

[0029] In one embodiment, the composition comprises a coloring agent. As used herein, the term "coloring agent" means any substance that adds or changes the color of the substance to which the coloring agent is added. Within the context of this application, examples of the term coloring agent include any dye, pigment or substance that imparts color when it is added to food or drink. The coloring agent can be natural or non-natural. Such agents come in many forms,

including liquids, powders, gels, dyes, lakes, and pastes. In one exemplary embodiment, one or more coloring agents can be added to the compositions of this disclosure to match the coloring between two ingredients. In one example, brownish color is added to a compositions comprising a cannabinoid, a surfactant, and a carrier oil in order to make the said compositions take on the color of natural tea.

[0030] In one embodiment, the composition comprises a cannabinoid, a surfactant, a carrier oil, and tea. In one embodiment the tea are tea leaves. As used herein, the term "tea" is meant to include any composition that is similar or labeled as tea, either natural or synthetic. Tea refers to both artificially flavored and/or artificially colored compositions in addition to all forms of natural tea leaves. In one embodiment, the cannabis compositions are brown granules.

[0031] As used herein the term "tea leaves" refers to forms of the plant *Camellia sinensis*.

[0032] In one embodiment, the composition comprises less than 4 grams of caloric mass. In one embodiment the caloric mass is less than 2 grams. As the herein the term "caloric mass" means mass metabolized by humans to generate energy. Examples include carbohydrates and proteins which give 4 cal/gram and fats which give 9 cal/gram.

[0033] In one embodiment, the composition comprises 0.5 to 5 mg of the cannabinoid is present in a consistent amount, having less than 0.2 mg of deviation across sample portions of the composition.

[0034] As used herein the term"consistent amount" means a collection of samples would all have relatively similar amounts of the cannabinoid. Similar means limited amount of deviation in the mass of the cannabinoid. For example, if a collection of compositions were analyzed to determine the mass of cannabinoid present, each sample in that collection would have a similar mass of cannabinoid present in relation to the total amount of each composition.

In one embodiment, the composition comprises:

cannabis oil having 1.5 to 3.5 mg of THC;

glycerine,

sorbitol,

gelatin,

glycerol monostearate,

polysorbate 80, and
coconut oil.

In one embodiment, the composition comprises:
cannabis oil having 1.5 to 3.5 mg of THC;
glycerine,
sorbitol,
gelatin,
glycerol monostearate,
polysorbate 80,
coconut oil, and
tea.

In one embodiment, the composition comprises:
cannabis oil having 1.5 to 3.5 mg of THC;
glycerine,
sorbitol,
gelatin,
glycerol monostearate,
polysorbate 80,
coconut oil,
and greater than 95 mass% of water.

In one embodiment, the composition comprises:
cannabis oil having 1.5 to 3.5 mg of THC;
glycerine,
sorbitol,
gelatin,
glycerol monostearate,
polysorbate 80,
coconut oil,
and less than 5 mass% of water.

**Examples**

[0035] Although the present invention herein has been described with reference to various exemplary embodiments, it is to be understood that these embodiments are merely illustrative of the principles and applications of the

present invention. Those having skill in the art would recognize that various modifications to the exemplary embodiments may be made, without departing from the scope of the invention.

[0036] Moreover, it should be understood that various features and/or characteristics of differing embodiments herein may be combined with one another. It is therefore to be understood that numerous modifications may be made to the illustrative embodiments and that other arrangements may be devised without departing from the scope of the invention.

[0037] Furthermore, other embodiments of the invention will be apparent to those skilled in the art from consideration of the specification and practice of the invention disclosed herein. It is intended that the specification and examples be considered as exemplary only, with a scope and spirit being indicated by the claims.

[0038] Finally, it is noted that, as used in this specification and the appended claims, the singular forms "a," "an," and "the," include plural referents unless expressly and unequivocally limited to one referent, and vice versa. As used herein, the term “include” or “comprising” and its grammatical variants are intended to be non-limiting, such that recitation of an item or items is not to the exclusion of other like items that can be substituted or added to the recited item(s).

[0039] The gram amounts of ingredients depend on the batch size. Gram amounts for batches can be determined by following the mixing guidelines below.

| **Ingredient** | **Parts** |
|---|---|
| Water | 8 - 12 |
| Surfactant | 1 - 1.5 |
| Carrier Oil | 4 |
| Cannabinoid | 1 |
| Sugar alcohol | 30 - 70 |

| | |
|---|---|
| Gelling agent | 0.3-0.5 |

Example 1

1) Surfactants were added to a beaker and heated to 80 C with a hot plate for 10 minutes to provide a homogeneous surfactant blend.
2) Carrier oil and cannabis oil were added to the surfactant blend and stirred for 10 minutes at 60 C, to provide a homogenous mixture.
3) A first sugar alcohol and gelling agent were added to water at 40 C. The mixture was heated to 80 C.
4) A second sugar alcohol was added to the mixture of sugar alcohol and gelling agent over the course of 5 minutes and mixed until well blended.
5) The sugar blend was added to the mixture of cannabis oil, carrier oil and surfactant blend over 10 minutes and the combined mixture was heated to 80 C to provide a homogenize mixture with no phase separation.
6) The homogenized mixture was poured into trays, to create thin films, which were refrigerated for 60 minutes.
7) After cooling for 60 minutes, the films were place in a dehydrator at 40 C.
8) The films were dried for 24 hours, to provide brittle, dry films.
9) The dry films were broken into smaller pieces.
10) 10 gram portions of the broken dried films were separated by size with a sieve to remove particles less than 15 mesh size.
11) The collected particles were placed into a vacuum oven set to 40 C for 24 hrs, to provide finished dry granules.

Example 2

1) Glycerol monostearate and polysorbate 80 were added to a beaker and heated to 80 C with a hot plate for 10 minutes to provide a homogeneous surfactant blend.
2) Carrier and cannabis oil were added to the surfactant blend and stirred for 10 minutes at 60 C, to provide a homogenous mixture.
3) Glycerin and gelatin were added to water at 40 C. The mixture was heated to 80 C.

4) Sorbitol was added to the mixture of glycerin and gelatin over the course of 5 minutes and mixed until well blended.
5) The blend of sorbitol, glycerine, and gelatin was added to the mixture of cannabis oil, coconut oil, glycerol monostearate, and polysorbate 80 over 10 minutes and the combined mixture was heated to 80 C to provide a homogenize mixture with no phase separation.
6) The homogenized mixture was poured into trays, to create thin films, which were refrigerated for 60 minutes.
7) After cooling for 60 minutes, the films were place in a dehydrator at 40 C.
8) The films were dried for 24 hours, to provide brittle, dry films.
9) The dry films were broken into smaller pieces.
10) 10 gram portions of the broken dried films were separated by size with a sieve to remove particles less than 15 mesh size.
11) The collected particles were placed into a vacuum oven set to 40 C for 24 hrs, to provide finished dry granules.

Example 3

1) Surfactants were added to a beaker and heated to 80 C with a hot plate for 10 minutes to provide a homogeneous surfactant blend.
2) Carrier oil and CBD oil were added to the surfactant blend and stirred for 10 minutes at 60 C, to provide a homogenous mixture.
3) A first sugar alcohol and gelling agent were added to water at 40 C. The mixture was heated to 80 C.
4) A second sugar alcohol was added to the mixture of sugar alcohol and gelling agent over the course of 5 minutes and mixed until well blended.
5) The sugar blend was added to the mixture of CBD oil, carrier oil and surfactant blend over 10 minutes and the combined mixture was heated to 80 C to provide a homogenize mixture with no phase separation.
6) The homogenized mixture was poured into trays, to create thin films, which were refrigerated for 60 minutes.
7) After cooling for 60 minutes, the films were place in a dehydrator at 40 C.
8) The films were dried for 24 hours, to provide brittle, dry films.
9) The dry films were broken into smaller pieces.

10) 10 gram portions of the broken dried films were separated by size with a sieve to remove particles less than 15 mesh size.
11) The collected particles were placed into a vacuum oven set to 40 C for 24 hrs, to provide finished dry granules.

Example 4

1) Surfactants were added to a beaker and heated to 80 C with a hot plate for 10 minutes to provide a homogeneous surfactant blend.
2) Coconut oil and cannabis oil were added to the surfactant blend and stirred for 10 minutes at 60 C, to provide a homogenous mixture.
3) A first sugar alcohol and gelling agent were added to water at 40 C. The mixture was heated to 80 C.
4) A second sugar alcohol was added to the mixture of sugar alcohol and gelling agent over the course of 5 minutes and mixed until well blended.
5) The sugar blend was added to the mixture of cannabis oil, coconut oil and surfactant blend over 10 minutes and the combined mixture was heated to 80 C to provide a homogenize mixture with no phase separation.
6) The homogenized mixture was poured into trays, to create thin films, which were refrigerated for 60 minutes.
7) After cooling for 60 minutes, the films were place in a dehydrator at 40 C.
8) The films were dried for 24 hours, to provide brittle, dry films.
9) The dry films were broken into smaller pieces.
10) 10 gram portions of the broken dried films were separated by size with a sieve to remove particles less than 15 mesh size.
11) The collected particles were placed into a vacuum oven set to 40 C for 24 hrs, to provide finished dry granules.

Example 5

1) Surfactants were added to a beaker and heated to 80 C with a hot plate for 10 minutes to provide a homogeneous surfactant blend.
2) Hemp oil and cannabis oil were added to the surfactant blend and stirred for 10 minutes at 60 C, to provide a homogenous mixture.
3) A first sugar alcohol and gelling agent were added to water at 40 C. The mixture was heated to 80 C.

4) A second sugar alcohol was added to the mixture of sugar alcohol and gelling agent over the course of 5 minutes and mixed until well blended.
5) The sugar blend was added to the mixture of cannabis oil, hemp oil and surfactant blend over 10 minutes and the combined mixture was heated to 80 C to provide a homogenize mixture with no phase separation.
6) The homogenized mixture was poured into trays, to create thin films, which were refrigerated for 60 minutes.
7) After cooling for 60 minutes, the films were place in a dehydrator at 40 C.
8) The films were dried for 24 hours, to provide brittle, dry films.
9) The dry films were broken into smaller pieces.
10) 10 gram portions of the broken dried films were separated by size with a sieve to remove particles less than 15 mesh size.
11) The collected particles were placed into a vacuum oven set to 40 C for 24 hrs, to provide finished dry granules.

Example 6

1) Surfactants were added to a beaker and heated to 80 C with a hot plate for 10 minutes to provide a homogeneous surfactant blend.
2) Carrier oil and cannabis oil were added to the surfactant blend and stirred for 10 minutes at 60 C, to provide a homogenous mixture.
3) A first sugar alcohol and gelatin were added to water at 40 C. The mixture was heated to 80 C.
4) A second sugar alcohol was added to the mixture of sugar alcohol and gelatin over the course of 5 minutes and mixed until well blended.
5) The sugar blend was added to the mixture of cannabis oil, carrier oil and surfactant blend over 10 minutes and the combined mixture was heated to 80 C to provide a homogenize mixture with no phase separation.
6) The homogenized mixture was poured into trays, to create thin films, which were refrigerated for 60 minutes.
7) After cooling for 60 minutes, the films were place in a dehydrator at 40 C.
8) The films were dried for 24 hours, to provide brittle, dry films.
9) The dry films were broken into smaller pieces.
10) 10 gram portions of the broken dried films were separated by size with a sieve to remove particles less than 15 mesh size.

11) The collected particles were placed into a vacuum oven set to 40 C for 24 hrs, to provide finished dry granules.

Example 7

To make 2300 tea sticks

1) 67 grams of glycerol monostearate and 40 grams of polysorbate 80 were added to a beaker and heated to 80 C with a hot plate for 10 minutes to provide a homogeneous surfactant blend.
2) 341 grams of coconut oil and 85 grams of THC oil were added to the surfactant blend and stirred for 10 minutes at 60 C, to provide a homogenous mixture.
3) 213 grams of glycerin and 32 grams of gelatin were added to 852 grams of water at 40 C. The mixture was heated to 80 C.
4) 4259 grams of sorbitol was added to the mixture of glycerin and gelatin over the course of 5 minutes and mixed until well blended.
5) The sugar blend was added to the mixture of THC oil, coconut oil and surfactant blend over 10 minutes and the combined mixture was heated to 80 C to provide a homogenize mixture with no phase separation.
6) The homogenized mixture was poured into trays, to create thin films, which were refrigerated for 60 minutes.
7) After cooling for 60 minutes, the films were place in a dehydrator at 40 C.
8) The films were dried for 24 hours, to provide brittle, dry films.
9) The dry films were broken into smaller pieces.
10) 10 gram portions of the broken dried films were separated by size with a sieve to remove particles less than 15 mesh size.
11) The collected particles were placed into a vacuum oven set to 40 C for 24 hrs, to provide finished dry granules.

## Claims

We claim:

1. A composition comprising:
    a cannabinoid,
    a surfactant, and
    a carrier oil.

2. The composition of claim 1, comprising a sugar alcohol.

3. The composition of claim 1, comprising a gelling agent.

4. The composition of claim 1, comprising less than 10 mass% water.

5. The composition of claim 1, comprising more than 95 mass% water.

6. The composition of claim 1, comprising about 0.1 mg to about 10 mg of the cannabinoid.

7. The composition of claim 6, comprising about 0.5 mg to about 5 mg of the cannabinoid.

8. The composition of claim 1, wherein the composition is homogeneous.

9. The composition of claim 1, comprising a flavoring agent.

10. The composition of claim 1, comprising a coloring agent.

11. The composition of claim 1, comprising tea.

12. The composition of claim 11, wherein the tea is loose leaf tea.

13. The composition of claim 1, wherein the cannabinoid is chosen from THC and CBD.

14. The composition of claim 1, wherein the cannabinoid is THC.

15. The composition of claim 1, comprising cannabis oil.

16. The composition of claim 1, comprising at least two surfactants.

17. The composition of claim 16, comprising glycerol monostearate and polysorbate 80.

18. The composition of claim 1, comprising coconut oil.

19. The composition of claim 1, comprising less than 4 grams of caloric material.

20. The composition of claim 19, comprising less than about 2 grams of caloric material.

21. The composition of claim 7, wherein the 0.5 to 5 mg of the cannabinoid is present in a consistent amount, having less than 0.2 mg of deviation across sample portions of the composition.

22. The composition of claim 1, comprising:
cannabis oil having 1.5 to 3.5 mg of THC;
glycerine,
sorbitol,
gelatin,
glycerol monostearate,
polysorbate 80, and
coconut oil.

23. The composition of claim 22, comprising tea.

24. The composition of claim 22, comprising greater than 95 mass% water.

25. The composition of claim 22, comprising less than 5 mass% water.

# INTERNATIONAL SEARCH REPORT

International application No.
PCT/US16/25044

A. CLASSIFICATION OF SUBJECT MATTER
IPC(8) - A61K 31/05, 31/352, 47/10, 47/44 (2016.01)
CPC - A61K 9/0095, 31/05, 31/352, 47/10, 47/44
According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC(8) Classifications: A61K 31/05, 31/352, 47/10, 47/44 (2016.01)
CPC Classifications: A61K 9/0095, 31/05, 31/352, 47/10, 47/44

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
PatSeer (US, EP, WO, JP, DE, GB, CN, FR, KR, ES, AU, IN, CA, INPADOC Data); Google Scholar; Google; EBSCO
cannabinoids, tetrahydrocannabinol, cannabidiol, surfactant, glycerol monostearate, polysorbate 80, oil, glycerol, gelatin

C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category* | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|---|---|---|
| X<br>----<br>Y | US 2002/0136752 A1 (WHITTLE, BA et al.) 26 September 2002; paragraphs [0020], [0039]-[0040], [0042], [0045], [0047], [0050]-[0052], [0054], [0107] | 1-7, 9-10, 13-17, 21<br>----<br>11-12, 19-20, 22-25 |
| X<br>----<br>Y | US 2011/0092583 A1 (MURTY, RB et al) 21 April 2011; paragraphs [0080], [0085]-[0086], [0131]; table 15; claim 1 | 1, 8, 18<br>----<br>22-25 |
| Y | US 2009/0095164 A1 (CELESTE, SA) 16 April 2009; paragraphs [0004], [0029], [0042] | 11-12, 23 |
| Y | US 2008/0064679 A1 (MARTIN, BR et al.) 13 March 2008; paragraphs [0052], [0056] | 19-20 |
| A | US 2014/0357708 A1 (MURTY PHARMACEUTICALS, INC) 4 December 2014; entire document | 1-25 |

☐ Further documents are listed in the continuation of Box C. ☐ See patent family annex.

* Special categories of cited documents:
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"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"&" document member of the same patent family

| Date of the actual completion of the international search | Date of mailing of the international search report |
|---|---|
| 26 May 2016 (26.05.2016) | 27 JUN 2016 |

| Name and mailing address of the ISA/ | Authorized officer |
|---|---|
| Mail Stop PCT, Attn: ISA/US, Commissioner for Patents<br>P.O. Box 1450, Alexandria, Virginia 22313-1450<br>Facsimile No. 571-273-8300 | Shane Thomas<br>PCT Helpdesk: 571-272-4300<br>PCT OSP: 571-272-7774 |

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