Claims

1. A method of preparing a base with one or more reduced undesired flavors for a plant-based food, comprising the steps of:

(a) mixing and dispersing a plant protein or plant protein liquid with a solvent to obtain a mixed slurry, the solvent being selected from alcohol, a mixed solvent of alcohol and water, alkane, supercritical carbon dioxide, and the combination thereof;

(b) performing solid-liquid separation on the mixed slurry obtained in step (a), preferably by centrifugation separation, precipitation separation, and filtration separation;

(c) removing all or part of the solvent from the solid product obtained in step (b) to obtain a processed plant protein or the concentrate thereof; and

(d) compounding the processed plant protein or the concentrate thereof with fat, carbohydrate, water, and optional adjuvant based on the following composition to obtain a compounded composition:

the processed plant protein or the concentrate thereof, which accounts for 1%-6%, preferably 2%-5%, more preferably 2.5%-4% of the compounded composition based on the protein content of the plant protein;

the fat, which accounts for 1%-10%, preferably 2%-5%, more preferably 3%-4.5% of the compounded composition;

the carbohydrate, which accounts for 0.5-10%, preferably 1%-5%, more preferably 1.5%-3.5% of the compounded composition;

the adjuvant, which accounts for 0-15%, preferably 0.1%-10%, more preferably 0.3%-0.5% of the compounded composition;

and the remainder of the water,

the above percentages are based on the total weight of the compounded composition,

wherein the fat is preferably selected from coconut oil, medium chain triglycerides, soybean oil, rapeseed oil, canola oil, flaxseed oil, palm oil, corn oil, peanut oil, sunflower oil and the combination thereof, more preferably selected from coconut oil, medium chain triglycerides, canola oil, flaxseed oil, and the combination thereof;

the carbohydrate is preferably selected from white granulated sugar, erythritol, glucose, maple syrup, glutinous rice flour, and the combination thereof,

more preferably maple syrup;

the adjuvant is preferably selected from emulsifier, defoamer, nutrition enhancer, antioxidant, and the combination thereof.

2. The method of preparing a base with one or more reduced undesired flavors for a plant-based food according to claim 1,

wherein,

the compounding is carried out by the following: mixing and dispersing the fat with the emulsifier to obtain a pre-emulsified fat material, then compounding the pre-emulsified fat material with the other components of the compounded composition, preferably the emulsifier being a phospholipid,

the mixing and dispersing the fat and the emulsifier is preformed preferably under the shearing treatment of 1500-20000 rad/min, more preferably 3000-10000 rad/min, and preferably at 15-35°C, more preferably 20-30°C;

and/or wherein,

the method comprises a step (e) in which the compounded composition is blended, sheared and volume-controlled, and then the volume-controlled material is sterilized,

preferably, the sterilization is pasteurization, UHT sterilization, and the combination thereof, more preferably the combination of pasteurization and UHT sterilization.

3. The method of preparing a base with one or more reduced undesired flavors for a plant-based food according to claim 1 or 2,

wherein,

the alcohol is selected from C2-11 alkyl alcohols, more preferably from C2-C5 alkyl alcohols, for example, selected from ethanol, n-propanol, isopropanol, n-butanol, isobutanol, tert-butanol, n-pentanol, isoamyl alcohol, tert-amyl alcohol, neopentyl alcohol, n-hexanol, isohexanol, n-heptanol, isoheptanol, n-octanol, isooctyl alcohol, ethylene glycol, glycerol, and the combination thereof, more preferably selected from ethanol, n-propanol, isopropanol, and the combination thereof;

the alcohol in the mixed solvent of alcohol and water is selected from C2-C5 alkyl alcohols, more preferably selected from ethanol, n-propanol, isopropanol, ethylene glycol, glycerol, and the combination thereof, wherein preferably, the

proportion of the alcohol in the mixed solvent is 10 wt%-90 wt%, more preferably 20 wt%-60 wt%, wherein further preferably, the mixed solvent of alcohol and water is an aqueous solution of ethanol with a concentration of 10 wt%-90 wt%, more preferably 20 wt%-60 wt%;

the alkane is selected from C4-15 alkanes, more preferably from C6-C8 alkanes, for example, selected from butane, n-pentane, isopentane, tert-pentane, neopentane, n-hexane, isohexane, n-heptane, isoheptane, n-octane, isooctane, and the combination thereof, further preferably butane or n-hexane;

and/or wherein,

the plant protein is selected from soybean protein isolate, soybean protein, pea protein, mung bean protein, chickpea protein, peanut protein, corn protein, rice protein, nut protein, cereal protein, and the combination thereof, preferably selected from soybean protein isolate, soybean protein, pea protein, and the combination thereof;

the plant protein liquid is selected from soybean slurry, nut butter, nut slurry, cereal paste, cereal slurry, and the combination thereof.

4. The method of preparing a base with one or more reduced undesired flavors for a plant-based food according to claim 1 or 2,

wherein,

step (a) is carried out by the following: mixing and dispersing the plant protein or plant protein liquid with the solvent by stirring, preferably at 15-35°C, more preferably 20-30°C, preferably the weight ratio of the plant protein or plant protein liquid to the solvent is 1:1-1:20, preferably 1:2-1:10, and the time for the mixing and dispersing is preferably 10-100 minutes, more preferably 20-50 minutes;

and/or wherein,

step (c) comprises: dispersing the solid product obtained from step (b) in water, optionally with shearing treatment, and then evaporation to obtain the plant protein or the concentrate thereof,

the shearing treatment is carried out preferably under 3000-12000 rad/min, more preferably 5000-8000 rad/min, preferably for 1-60 minutes, more preferably 5-30 minutes,

the solvent is preferably removed by evaporation, more preferably by evaporation under reduced pressure at 40-75°C;

and/or wherein,

in step (b), the solid-liquid separation is carried out by centrifugation, preferably at 5000-20000 rad/min, more preferably at 9000-12000 rad/min, and preferably the time for centrifugation is 5-30 minutes, more preferably 7-15 minutes;

and/or wherein,

removing all or part of the solvent refers to removing 50 wt%-100 wt%, preferably 98 wt%-100 wt% of the solvent remaining in the solid product.

5. The method of preparing a base for a plant-based food one or more reduced undesired flavors according to claim 1, wherein the composition of the compounded composition is as follows:

the processed plant protein or the concentrate thereof, which accounts for 2%-5% of the compounded composition based on the protein content of the plant protein;

the fat, which accounts for 2%-5% of the compounded composition;

the carbohydrate, which accounts for 1%-5% of the compounded composition;

the adjuvant, which accounts for 0-10% of the compounded composition;

and the remainder of the water,

the above percentages are based on the total weight of the compounded composition,

wherein the plant protein is selected from soybean protein isolate, soybean protein, and pea protein;

the fat is selected from coconut oil, medium chain triglycerides, canola oil, and flaxseed oil;

the carbohydrate is selected from white granulated sugar, erythritol, glucose, maple syrup, and glutinous rice flour;

the adjuvant is selected from emulsifier, defoamer, nutrition enhancer, and antioxidant.

6. The method of preparing a base with one or more reduced undesired flavors for a plant-based food according to claim 1, wherein the one or more reduced undesired flavors is a plant-based characteristic flavor, preferably the one or more reduced undesired flavors comprise of beany, cerealy, oily, nutty and/or powdery.

7. The method of preparing a base for a plant-based food with one or more reduced undesired flavors according to claim 1, wherein the base comprises reduced beany related hexanal, 2-pentylfuran, benzaldehyde, hexanol, 2,5-dimethylpyrazine; earthy flavor related hexanal, 2-pentylfuran, trans-2-heptenal, 1-octen-3-ol; and/or oily related trans-2-octenal, nonanal, trans-2-nonenal, 2,4-decadienal.

8. The method of preparing a base for a plant-based food with one or more reduced undesired flavors according to claim 1, wherein the base comprises hexanal in a content of less than 4.0 mg/L, preferably less than 3.0 mg/L, and 2-pentylfuran in a content of less than 3.0 mg/L, preferably less than 2.0 mg/L, decadienal in a content of less than 3.0 mg/L, preferably less than 2.0 mg/L, trans-2-nonenal in a content of less than 0.5 mg/L, preferably less than 0.3 mg/L, and trans-2-octenal in a content of less than 1.0 mg/L, preferably less than 0.5 mg/L.

9. The method of preparing a base for a plant-based food with one or more reduced undesired flavors according to claim 1, wherein the base has an improved degree of similarity with milk.

10. The method of preparing a base for a plant-based food with one or more reduced undesired flavors according to claim 9, wherein the base has an improved degree of similarity with milk, comprises of improved milky, creamy, fatty, thickness, smoothness, watery and/or sweetness.

11. A base with one or more reduced undesired flavors for a plant-based food, wherein the base is obtained by the method according to any one of claims 1-10, the base comprising:

the processed plant protein or the concentrate thereof, which accounts for 1%-6%, preferably 2%-5%, more preferably 2.5%-4% in the base based on the protein content of the plant protein;

the fat, which accounts for 1%-10%, preferably 2%-5%, more preferably 3%-4.5% in the base;

the carbohydrate, which accounts for 0.5-10%, preferably 1%-5%, more

preferably 1.5%-3.5% in the base;

the adjuvant, which accounts for 0-15%, preferably 0.1%-10%, more preferably 0.3%-0.5% in the base;

and the remainder of the water,

the above percentages are based on the total weight of the compounded composition,

wherein the fat is preferably selected from coconut oil, medium chain triglycerides, canola oil, flaxseed oil, rapeseed oil, palm oil, corn oil, soybean oil, peanut oil, sunflower oil and the combination thereof;

the carbohydrate is preferably selected from white granulated sugar, erythritol, glucose, maple syrup, glutinous rice flour, and the combination thereof;

the adjuvant is preferably selected from emulsifier, defoamer, nutrition enhancer, antioxidant, and the combination thereof.

12. A base with one or more reduced undesired flavors for a plant-based food according to claim 11, wherein the one or more reduced undesired flavors is a plant-based characteristic flavor, preferably the one or more reduced undesired flavors comprise of beany, cerealy, oily, nutty and/or powdery.

13. A base for a plant-based food with one or more reduced undesired flavors according to claim 11, wherein the base has an improved degree of similarity with milk, preferably the base has an improved degree of similarity with milk, comprises of improved milky, creamy, fatty, thickness, smoothness, watery and/or sweetness.

14. A base with one or more reduced undesired flavors for a plant-based food, comprising hexanal in a content of less than 4.0 mg/L, preferably less than 3.0 mg/L, and 2-pentylfuran in a content of less than 3.0 mg/L, preferably less than 2.0 mg/L, decadienal in a content of less than 3.0 mg/L, preferably less than 2.0 mg/L, trans-2-nonenal in a content of less than 0.5 mg/L, preferably less than 0.3 mg/L, and trans-2- octenal in a content of less than 1.0 mg/L, preferably less than 0.5 mg/L,

wherein said base is preferably obtained by the method according to any one of claims 1-10.

15. A plant-based food prepared from the base with one or more reduced undesired flavors for the plant-based food obtained by the method according to any one of claims 1-10 or the base for the plant-based food according to claim 11 or 14, wherein the plant-based food is preferably a plant-based dairy product, more preferably plant-based milk, plant-based yoghurt, plant-based cheese, plant-based milk powder or plant-based ice cream.