DESCRIPTION

TITLE OF INVENTION: MILK-SUBSTITUTE COMPOSITION CONTAINING YEAST CELL BODY RESIDUE

TECHNICAL FIELD

[0001] The present invention relates to a milk-substitute composition containing a yeast cell body residue or a cell wall lysing enzyme-decomposition product thereof, characterized in that the total amount of free amino acids (in particular, glutamic acid) contained in the residue or the decomposition product is less than a predetermined amount, and to a milk-substitute food and drink containing the composition.

BACKGROUND ART

[0002] In recent years, in order to avoid allergens derived from milk, from an increase in demand for low-fat or non-fat foods due to diet consciousness and health consciousness, or from an increase in demand for vegan foods, etc., more attention has been paid to foods using a milk-like substitute derived from plants such as oats, soybeans, almonds, etc., in place of a milk raw material. However, these milk-like substitutes derived from plants are usually more expensive than cow’s milk and are known to be foods containing allergic substances.

[0003] In addition to such a milk-like substitute derived from a plant, a milk-like substitute derived from a yeast material has also been reported. For example, the present applicant has reported use of a composition containing a yeast cell wall decomposition product, which contains a cell wall lysing enzyme-decomposition product of residues (yeast cell body residue) after production of yeast extract, as a milk-like substitute (for example, see Patent Document 1).

PRIOR ART DOCUMENT

PATENT DOCUMENT

[0004] Patent Document 1: JP 2022-135934A

SUMMARY

PROBLEMS TO BE SOLVED

[0005] However, milk-like substitutes derived from yeast materials have a characteristic flavor (umami, sourness). Therefore, for the purpose of supplementing proteins, when milk-like substitutes derived from yeast materials were used at a

concentration of about 5%, there is a problem that it is not suitable for direct drinking due to the strong flavor.

MEANS TO SOLVE THE PROBLEMS

[0006] The present inventors have earnestly studied to solve the above-mentioned problems, and as a result, they have found that, in a milk-substitute composition comprising a yeast cell body residue or a cell wall lysing enzyme-decomposition product thereof, the characteristic flavor is reduced by making the total amount of free amino acids (in particular, glutamic acid) and acid components (in particular, phosphoric acid), etc., contained in the residue or the decomposition product less than predetermined amounts, and it can be directly applied to drink as a milk-substitute composition, whereby they have completed the present disclosure.

[0007] Accordingly, the gist of the present disclosure is as follows.

[1] A milk-substitute composition comprising a yeast cell body residue, wherein a total amount of free glutamic acid contained in the residue is less than 0.5% by mass based on a dry mass of the residue.

[2] The composition described in [1], wherein a total amount of free amino acids contained in the residue is less than 1% by mass based on a dry mass of the residue.

[3] The composition described in [1] or [2], wherein a total amount of phosphoric acid contained in the residue is less than 0.1% by mass based on a dry mass of the residue.

[4] The composition described in any one of [1] to [3], wherein the residue is a water-insoluble fraction after hot water extraction of yeast.

[5] The composition described in any one of [1] to [4], wherein the soluble solid content contained in the residue is less than 5% by mass based on a dry mass of the residue.

[6] A milk-substitute composition comprising a cell wall lysing enzyme-decomposition product of a yeast cell body residue, wherein a total amount of free glutamic acid contained in the decomposition product is less than 0.4% by mass based on a dry mass of the decomposition product.

[7] The composition described in [6], wherein a total amount of free amino acids contained in the decomposition product is less than 1% by mass based on a dry mass of the decomposition product.

[8] The composition described in [6] or [7], wherein a total amount of phosphoric acid contained in the decomposition product is less than 0.20% by mass based on a dry mass of the decomposition product.

[9] The milk-substitute composition comprising a cell wall lysing enzyme-decomposition product of a yeast cell body residue described in any one of [6] to [8],

wherein a soluble solid content contained in the residue is less than 5% by mass based on a dry mass of the residue.

[10] The composition described in any one of [6] to [9], wherein the decomposition product is a material obtained by a method which comprises the following:

(a) treating the yeast cell body residue with a cell wall lysing enzyme at 40 to 60℃ for 1 to 24 hours, and

(b) collecting the treated product obtained in (a).

[11] The composition described in any one of [6] to [10], wherein the cell wall lysing enzyme is a glucanase.

[12] The composition described in any one of [6] to [11], wherein the cell wall lysing enzyme is a glucanase having β-1,3, β-1,4, and/or β-1,6 activity.

[13] The composition described in any one of [6] to [12], wherein the cell wall lysing enzyme is a glucanase derived from *Streptomyces*.

[14] The composition described in any one of [6] to [13], wherein the cell wall lysing enzyme is a glucanase having no protease activity.

[15] A milk-substitute food and drink comprising the composition described in any of [1] to [14].

[16] The milk-substitute food and drink described in [15], which further comprises 0.1 to 30% by mass of oils and fats.

[17] A method for improving flavor of a milk-substitute composition comprising a yeast cell body residue, which comprises reducing a total amount of free glutamic acid contained in the residue to less than 0.5% by mass based on a dry mass of the residue.

[18] A method for improving flavor of a milk-substitute composition comprising a cell wall lysing enzyme-decomposition product of a yeast cell body residue, which comprises reducing a total amount of free glutamic acid contained in the decomposition product to less than 0.4% by mass based on a dry mass of the decomposition product.

[19] Use of a yeast cell body residue as a milk-substitute composition, wherein a total amount of free glutamic acid contained in the residue is less than 0.5% by mass based on a dry mass of the residue.

[20] Use of a cell wall lysing enzyme-decomposition product of a yeast cell body residue as a milk-substitute composition, wherein a total amount of free glutamic acid contained in the decomposition product is less than 0.4% by mass based on a dry mass of the decomposition product.

[0007a] In an aspect, there is provided a milk-substitute composition comprising a yeast cell body residue, wherein a total amount of free glutamic acid contained in the residue is less than 0.5% by mass based on a dry mass of the residue.

[0007b] In another aspect, there is provided a milk-substitute composition comprising a cell wall lysing enzyme-decomposition product of a yeast cell body residue, wherein a total amount of free glutamic acid contained in the decomposition product is less than 0.4% by mass based on a dry mass of the decomposition product.

[0007c] In another aspect, there is provided a milk-substitute food and drink comprising the composition as defined herein.

[0007d] In another aspect, there is provided a method for improving flavor of a milk substitute composition comprising a yeast cell body residue, which comprises reducing a total amount of free glutamic acid contained in the residue to less than 0.5% by mass based on a dry mass of the residue.

[0007e] In another aspect, there is provided a method for improving flavor of a milk substitute composition comprising a cell wall lysing enzyme-decomposition product of a yeast cell body residue, which comprises reducing a total amount of free glutamic acid contained in the decomposition product to less than 0.4% by mass based on a dry mass of the decomposition product.

[0007f] In another aspect, there is provided use of a yeast cell body residue as a milk-substitute composition, wherein a total amount of free glutamic acid contained in the residue is less than 0.5% by mass based on a dry mass of the residue.

[0007g] In another aspect, there is provided use of a cell wall lysing enzyme-decomposition product of a yeast cell body residue as a milk-substitute composition, wherein a total amount of free glutamic acid contained in the decomposition product is less than 0.4% by mass based on a dry mass of the decomposition product.

EFFECTS OF THE INVENTION

[0008] According to the present invention, it is possible to provide a milk-substitute

CLAIMS

1. A milk-substitute composition comprising a yeast cell body residue, wherein a total amount of free glutamic acid contained in the residue is less than 0.5% by mass based on a dry mass of the residue.

2. The composition according to claim 1, wherein a total amount of free amino acids contained in the residue is less than 1% by mass based on a dry mass of the residue.

3. The composition according to claim 1, wherein a total amount of phosphoric acid contained in the residue is less than 0.1% by mass based on a dry mass of the residue.

4. The composition according to claim 1, wherein the residue is a water-insoluble fraction after hot water extraction of yeast.

5. The composition according to claim 1, wherein a soluble solid content contained in the residue is less than 5% by mass based on a dry mass of the residue.

6. A milk-substitute composition comprising a cell wall lysing enzyme-decomposition product of a yeast cell body residue, wherein a total amount of free glutamic acid contained in the decomposition product is less than 0.4% by mass based on a dry mass of the decomposition product.

7. The composition according to claim 6, wherein a total amount of free amino acids contained in the decomposition product is less than 1% by mass based on a dry mass of the decomposition product.

8. The composition according to claim 6, wherein a total amount of phosphoric acid contained in the decomposition product is less than 0.20% by mass based on a dry mass of the decomposition product.

9. The milk-substitute composition comprising a cell wall lysing enzyme-decomposition product of a yeast cell body residue according to claim 6, wherein a soluble solid content contained in the residue is less than 5% by mass based on a dry mass of the residue.

10. The composition according to claim 6, wherein the cell wall lysing enzyme is a glucanase.

11. The composition according to claim 6, wherein the cell wall lysing enzyme is a glucanase having β-1,3, β-1,4 and/or β-1,6 activity.

12. The composition according to claim 6, wherein the cell wall lysing enzyme is a glucanase derived from *Streptomyces*.

13. The composition according to claim 6, wherein the cell wall lysing enzyme is a glucanase having no protease activity.

14. A milk-substitute food and drink comprising the composition according to any of claims 1 to 13.

15. The milk-substitute food and drink according to claim 14, which further comprises from 0.1 to 30% by mass of oils and fats.

16. A method for improving flavor of a milk substitute composition comprising a yeast cell body residue, which comprises reducing a total amount of free glutamic acid contained in the residue to less than 0.5% by mass based on a dry mass of the residue.

17. A method for improving flavor of a milk substitute composition comprising a cell wall lysing enzyme-decomposition product of a yeast cell body residue, which comprises reducing a total amount of free glutamic acid contained in the decomposition product to less than 0.4% by mass based on a dry mass of the decomposition product.

18. Use of a yeast cell body residue as a milk-substitute composition, wherein a total amount of free glutamic acid contained in the residue is less than 0.5% by mass based on a dry mass of the residue.

19. Use of a cell wall lysing enzyme-decomposition product of a yeast cell body residue as a milk-substitute composition, wherein a total amount of free glutamic acid contained in the decomposition product is less than 0.4% by mass based on a dry mass of the decomposition product.