Claims

[Claim 1] A method for preparing a natural beef flavor, comprising:
(a) fermenting a vegetable protein source with fungi to obtain a grain fermented broth;
(b) fermenting the grain fermented broth with bacteria to prepare an inosine-5'-monophosphate (IMP) fermented broth; and
(c) mixing the grain fermented broth of step (a) and the IMP fermented broth of step (b).

[Claim 2] The method of claim 1, further comprising fermenting the grain fermented broth with bacteria to prepare a glutamic acid fermented broth in step (b), and mixing with the glutamic acid fermented broth in step (c).

[Claim 3] The method of claim 1 or 2, wherein the natural flavor is prepared using only the fermented broth without adding any additional component.

[Claim 4] The method of claim 1 or 2, wherein the natural flavor is prepared using the fermented broth without subjecting the fermented broth to an additional chemical process.

[Claim 5] The method of claim 1 or 2, wherein the vegetable protein source is selected from the group consisting of soybean, corn, rice, wheat, and wheat gluten.

[Claim 6] The method of claim 1 or 2, wherein the fungi is *Aspergillus* sp. microorganism.

[Claim 7] The method of claim 6, wherein the *Aspergillus* sp. microorganism is *Aspergillus sojae*.

[Claim 8] The method of claim 1, wherein the bacteria is *Corynebacterium* sp. microorganism.

[Claim 9] The method of claim 8, wherein the *Corynebacterium* sp. microorganism is *Corynebacterium ammoniagenes*.

[Claim 10] The method of claim 8, wherein the *Corynebacterium* sp. microorganism is *Corynebacterium glutamicum*.

[Claim 11] The method of claim 1 or 2, wherein the grain fermented broth and the IMP fermented broth are mixed at a ratio of 1:1 to 1:10.

[Claim 12] The method of claim 1 or 2, comprising reacting at a temperature of 80 to 120 ℃ for 0.5 to 24 hours after mixing in step (c).

[Claim 13] The method of claim 1 or 2, wherein a medium composition for bacterial fermentation for preparing the IMP fermented broth or the

glutamic acid fermented broth comprises a food grade material.

[Claim 14] The method of claim 13, wherein the medium composition for the bacterial fermentation comprises calcium panthothenate (CAPA).

[Claim 15] The method of claim 1, wherein a medium for bacterial fermentation for preparing the IMP fermented broth comprises glucose, fructose, magnesium sulfate, phosphoric acid, potassium hydroxide and a grain fermented broth.

[Claim 16] The method of claim 2, wherein a medium for bacterial fermentation for preparing the glutamic acid fermented broth comprises glucose, fructose, raw sugar, betaine, magnesium sulfate, potassium phosphate and phosphoric acid.

[Claim 17] The method of claim 2, wherein a carbon source in a medium for bacterial fermentation for preparing the glutamic acid fermented broth is raw sugar.

[Claim 18] The method of claim 1, wherein the concentration of IMP in the prepared IMP fermented broth of step (b) is 50 g/L to 150 g/L.

[Claim 19] The method of claim 1, wherein the content of IMP in solids in the prepared IMP fermented broth of step (b) is 30 wt% or more.

[Claim 20] The method of claim 2, wherein the concentration of glutamic acid in the prepared glutamic acid fermented broth of step (b) is 75 g/L to 150 g/L.

[Claim 21] The method of claim 2, wherein the content of glutamic acid in solids in the prepared glutamic acid fermented broth of step (b) is 50 wt% or more.

[Claim 22] The method of claim 1 or 2, further comprising treating the IMP fermented broth and the glutamic acid fermented broth with activated carbon before step (c).

[Claim 23] The method of claim 22, further comprising, after treating the fermented broth with activated carbon, centrifuging or filtering the treated fermented broth.

[Claim 24] The method of claim 22, further comprising, before treating the fermented broth with activated carbon, heating the fermented broth at a temperature of 70 to 90 °C for 15 to 60 minutes to induce cell lysis.

[Claim 25] The method of claim 1 or 2, further comprising concentrating the fermented broth and drying the concentrate to prepare powder in step (C).

[Claim 26] A natural beef flavor prepared by the method of claim 1 or 2.

[Claim 27] A food composition comprising the natural beef flavor of claim 26.

Claims

1. A method for preparing a natural beef flavor, comprising:

(a) fermenting a vegetable protein source with *Aspergillus* sp. fungi to obtain a grain fermented broth;

(b) fermenting the grain fermented broth with *Corynebacterium* sp. or *Brevibacterium* sp. bacteria to prepare an inosine-5'-monophosphate (IMP) fermented broth; and

(c) mixing the grain fermented broth of step (a) and the IMP fermented broth of step (b).

2. The method of claim 1, further comprising fermenting the grain fermented broth with *Corynebacterium* sp. or *Brevibacterium* sp. bacteria to prepare a glutamic acid fermented broth in step (b), and mixing with the glutamic acid fermented broth in step (c).

3. The method of claim 1 or 2, wherein the natural flavor is prepared using only the fermented broth without adding any additional component.

4. The method of claim 1 or 2, wherein the natural flavor is prepared using the fermented broth without subjecting the fermented broth to an additional chemical process.

5. The method of claim 1 or 2, wherein the vegetable protein source is selected from the group consisting of soybean, corn, rice, wheat, and wheat gluten.

6. The method of claim 2, wherein a medium composition for bacterial fermentation for preparing the glutamic acid fermented broth comprises a food grade material.

7. The method of claim 1 or 2, wherein the *Aspergillus* sp. fungi is *Aspergillus sojae*.

8. The method of claim 6, wherein the medium composition for the bacterial fermentation comprises calcium panthothenate (CAPA).

9. The method of claim 1 or 2, wherein the *Corynebacterium* sp. bacteria is *Corynebacterium ammoniagenes*.

10. The method of claim 1 or 2, wherein the *Corynebacterium* sp. bacteria is *Corynebacterium glutamicum*.

11. The method of claim 1 or 2, wherein the grain fermented broth and the IMP fermented broth are mixed at a ratio of 1:1 to 1:10.

12. The method of claim 1 or 2, comprising reacting at a temperature of 80 to 120°C for 0.5 to 24 hours after mixing in step (c).

13. The method of claim 1 or 2, wherein a medium composition for bacterial fermentation for preparing the IMP fermented broth comprises a food grade material.

14. The method of claim 13, wherein the medium composition for the bacterial fermentation comprises calcium panthothenate (CAPA).

15. The method of claim 1, wherein a medium for bacterial fermentation for preparing the IMP fermented broth comprises glucose, fructose, magnesium sulfate, phosphoric acid, potassium hydroxide and a grain fermented broth.

16. The method of claim 2, wherein a medium for bacterial fermentation for preparing the glutamic acid fermented broth comprises glucose, fructose, raw sugar, betaine, magnesium sulfate, potassium phosphate and phosphoric acid.

17. The method of claim 2, wherein a carbon source in a medium for bacterial fermentation for preparing the glutamic acid fermented broth is raw sugar.

18. The method of claim 1, wherein the concentration of IMP in the prepared IMP fermented broth of step (b) is 50 g/L to 150 g/L.

19. The method of claim 1, wherein the content of IMP in solids in the prepared IMP fermented broth of step (b) is 30 wt% or more.

20. The method of claim 2, wherein the concentration of glutamic acid in the prepared glutamic acid fermented broth of step (b) is 75 g/L to 150 g/L.

21. The method of claim 2, wherein the content of glutamic acid in solids in the prepared glutamic acid fermented broth of step (b) is 50 wt% or more.

22. The method of claim 1 or 2, further comprising treating the IMP fermented broth and the glutamic acid fermented broth with activated carbon before step (c).

23. The method of claim 22, further comprising, after treating the fermented broth with activated carbon, centrifuging or filtering the treated fermented broth.

24. The method of claim 22, further comprising, before treating the fermented broth with activated carbon, heating the fermented broth at a temperature of 70 to 90 °C for 15 to 60 minutes to induce cell lysis.

25. The method of claim 1 or 2, further comprising concentrating the fermented broth and drying the concentrate to prepare powder in step (C).

26. A natural beef flavor prepared by the method of claim 1 or 2.

27. A food composition comprising the natural beef flavor of claim 26.