physical function.

[0005]

Therefore, it is difficult to say that a component having an effective preventive or improving effect on the decline in cognitive function, which is highly safe and can be ingested continuously, has been found.

[0006]

It is known that the proportion of anxiety-like symptoms such as spiritless, apathy, anxiety, depression and the like increases in elderly people, and such anxiety-like symptoms are seen as a risk factor for dementia before the onset of dementia.

Furthermore, it is also known that the above-mentioned anxiety-like symptoms are seen as behavioral and psychological symptoms of dementia.

[Document List]

[patent document]

[0007]

patent document 1: EP2367547(A1)

[non-patent documents]

[0008]

non-patent document 1: Angro Food Industry Hi-Tech 22 (4) 23-24 (2011)

non-patent document 2: The American Journal of Medicine 108 (5) 439 (2000 Apr 1)

non-patent document 3: Neuropsychiatric Disease and Treatment 6 707-710 (2010)

non-patent document 4: Biomedical Research 28 (2) 85-90 (2007)

non-patent document 5: The Journal of Nutrition 132 (12) 3744-3746 (2002)

non-patent document 6: Amino Acids 45 (5) 1035-1045 (2013)

[Summary]

[Problems to be Solved by the Invention]

[0009]

Accordingly, the present disclosure aims to provide a composition for improving cognitive function, which has an

effective preventive or improving effect on a decline in cognitive function, is highly safe, and enables continuous ingestion or administration.

The present disclosure aims to provide a composition for improving anxiety-like symptoms mentioned above.

[Means of Solving the Problems]

[0010]

The present inventors have conducted intensive studies in an attempt to solve the above-mentioned problems and found that a composition containing one or more kinds selected from the group consisting of 25 mol% - 45 mol% of leucine, and 20 mol% - 40 mol% of phenylalanine relative to the total content of leucine, lysine, valine, isoleucine, phenylalanine, histidine and tryptophan has an improving effect of cognitive function and an improving effect of anxiety-like symptoms, and that the aforementioned composition has an effect of suppressing cerebral atrophy characteristically observed in neurodegenerative diseases such as Alzheimer-type dementia and the like, which resulted in the completion of the present disclosure.

[0011]

In one aspact, the present disclosure refers to a composition for use in therapy, wherein the composition comprises 25 mol% - 45 mol% of leucine, and 20 mol% - 40 mol% of phenylalanine relative to the total content of leucine, lysine, valine, isoleucine, phenylalanine, histidine and tryptophan.

[0011a]

In another aspact, the present disclosure refers to the use of a composition as disclosed herein in the manufacture of a medicament for improving cognitive function.

[0011b]

In another aspact, the present disclosure refers to the use of a composition as disclosed herein in the manufacture of a medicament for improving an anxiety-like symptom.

[0011c]
In yet another aspact, the present disclosure refers to the use of a composition as disclosed herein in the manufacture of a medicament for suppressing cerebral atrophy.
[0011d]
That is, the present disclosure relates to the following.
[1] A composition for improving cognitive function comprising one or more kinds selected from the group consisting of 25 mol% - 45 mol% of leucine, and 20 mol% - 40 mol% of phenylalanine relative to the total content of leucine, lysine, valine, isoleucine, phenylalanine, histidine and tryptophan.
[2] The composition of [1], further comprising 10 mol% - 30 mol% of lysine relative to the total content of leucine, lysine, valine, isoleucine, phenylalanine, histidine and tryptophan.
[3] The composition of [1] or [2], further comprising one or more kinds selected from the group consisting of valine, isoleucine, histidine and tryptophan.
[4] The composition of [3], comprising one or more kinds selected from the group consisting of 2 mol% - 7 mol% of valine,

5 mol% - 15 mol% of isoleucine, 2 mol% - 10 mol% of histidine and 0.1 mol% - 2 mol% of tryptophan relative to the total content of leucine, lysine, valine, isoleucine, phenylalanine, histidine and tryptophan.

[5] The composition of [3] or [4], comprising the following amino acids at the following contents relative to the total content of leucine, lysine, valine, isoleucine, phenylalanine, histidine and tryptophan:

leucine 25 mol% - 45 mol%,
phenylalanine 20 mol% - 40 mol%,
lysine 10 mol% - 30 mol%,
valine 2 mol% - 7 mol%,
isoleucine 5 mol% - 15 mol%,
histidine 2 mol% - 10 mol%, and
tryptophan 0.1 mol% - 2 mol%.

[6] The composition of any of [1] to [5], wherein the composition is a pharmaceutical product.

[7] The composition of any of [1] to [5], wherein the composition is a food.

[8] A method for improving cognitive function of a subject animal in need of improving cognitive function, comprising allowing the animal to ingest a composition comprising one or more kinds selected from the group consisting of 25 mol% - 45 mol% of leucine, and 20 mol% - 40 mol% of phenylalanine relative to the total content of leucine, lysine, valine, isoleucine, phenylalanine, histidine and tryptophan, in an amount effective for improving cognitive function of the subject animal, or administering said amount of the composition to the subject animal.

[9] The method of [8], wherein the composition further comprising 10 mol% - 30 mol% of lysine relative to the total content of leucine, lysine, valine, isoleucine, phenylalanine, histidine and tryptophan.

[10] The method of [8] or [9], wherein the composition further

CLAIMS

1. A composition for use in therapy, wherein the composition comprises 25 mol% - 45 mol% of leucine, and 20 mol% - 40 mol% of phenylalanine relative to the total content of leucine, lysine, valine, isoleucine, phenylalanine, histidine and tryptophan.

2. The composition according to claim 1, further comprising 10 mol% - 30 mol% of lysine relative to the total content of leucine, lysine, valine, isoleucine, phenylalanine, histidine and tryptophan.

3. The composition according to claim 1 or 2, further comprising one or more kinds selected from the group consisting of valine, isoleucine, histidine and tryptophan.

4. The composition according to claim 3, comprising one or more kinds selected from the group consisting of 2 mol% - 7 mol% of valine, 5 mol% - 15 mol% of isoleucine, 2 mol% - 10 mol% of histidine and 0.1 mol% - 2 mol% of tryptophan relative to the total content of leucine, lysine, valine, isoleucine, phenylalanine, histidine and tryptophan.

5. The composition according to claim 3 or 4, comprising the following amino acids at the following contents relative to the total content of leucine, lysine, valine, isoleucine, phenylalanine, histidine and tryptophan:

leucine 25 mol% - 45 mol%,
phenylalanine 20 mol% - 40 mol%,
lysine 10 mol% - 30 mol%,
valine 2 mol% - 7 mol%,
isoleucine 5 mol% - 15 mol%,
histidine 2 mol% - 10 mol%, and

tryptophan 0.1 mol% - 2 mol%.

6. The composition according to any one of claims 1 to 5, wherein the composition is a pharmaceutical product.

7. The composition according to any one of claims 1 to 5, wherein the composition is a food.

8. Use of a composition comprising one or more kinds selected from the group consisting of 25 mol% - 45 mol% of leucine, and 20 mol% - 40 mol% of phenylalanine relative to the total content of leucine, lysine, valine, isoleucine, phenylalanine, histidine and tryptophan in the manufacture of a medicament for improving cognitive function.

9. The use according to claim 8, wherein the composition further comprises 10 mol% - 30 mol% of lysine relative to the total content of leucine, lysine, valine, isoleucine, phenylalanine, histidine and tryptophan.

10. The use according to claim 8 or 9, wherein the composition further comprises one or more kinds selected from the group consisting of valine, isoleucine, histidine and tryptophan.

11. The use according to claim 10, wherein the composition comprises one or more kinds selected from the group consisting of 2 mol% - 7 mol% of valine, 5 mol% - 15 mol% of isoleucine, 2 mol% - 10 mol% of histidine and 0.1 mol% - 2 mol% of tryptophan relative to the total content of leucine, lysine, valine, isoleucine, phenylalanine, histidine and tryptophan.

12. The use according to claim 10 or 11, wherein the composition comprises the following amino acids at the following contents relative to the total content of leucine,

lysine, valine, isoleucine, phenylalanine, histidine and tryptophan:

leucine 25 mol% - 45 mol%,
phenylalanine 20 mol% - 40 mol%,
lysine 10 mol% - 30 mol%,
valine 2 mol% - 7 mol%,
isoleucine 5 mol% - 15 mol%,
histidine 2 mol% - 10 mol%, and
tryptophan 0.1 mol% - 2 mol%.

13. Use of a composition comprising one or more kinds selected from the group consisting of 25 mol% - 45 mol% of leucine, and 20 mol% - 40 mol% of phenylalanine relative to the total content of leucine, lysine, valine, isoleucine, phenylalanine, histidine and tryptophan in the manufacture of a medicament for improving an anxiety-like symptom.

14. The use according to claim 13, wherein the composition further comprises 10 mol% - 30 mol% of lysine relative to the total content of leucine, lysine, valine, isoleucine, phenylalanine, histidine and tryptophan.

15. The use according to claim 13 or 14, wherein the composition further comprises one or more kinds selected from the group consisting of valine, isoleucine, histidine and tryptophan.

16. The use according to claim 15, wherein the composition comprises one or more kinds selected from the group consisting of 2 mol% - 7 mol% of valine, 5 mol% - 15 mol% of isoleucine, 2 mol% - 10 mol% of histidine and 0.1 mol% - 2 mol% of tryptophan relative to the total content of leucine, lysine, valine, isoleucine, phenylalanine, histidine and tryptophan.

17. The use according to claim 15 or 16, wherein the composition comprises the following amino acids at the following contents relative to the total content of leucine, lysine, valine, isoleucine, phenylalanine, histidine and tryptophan:

leucine 25 mol% - 45 mol%,
phenylalanine 20 mol% - 40 mol%,
lysine 10 mol% - 30 mol%,
valine 2 mol% - 7 mol%,
isoleucine 5 mol% - 15 mol%,
histidine 2 mol% - 10 mol%, and
tryptophan 0.1 mol% - 2 mol%.

18. Use of composition comprising one or more kinds selected from the group consisting of 25 mol% - 45 mol% of leucine, and 20 mol% - 40 mol% of phenylalanine relative to the total content of leucine, lysine, valine, isoleucine, phenylalanine, histidine and tryptophan in the manufacture of a medicament for suppressing cerebral atrophy.

19. The use according to claim 18, further comprises 10 mol% - 30 mol% of lysine relative to the total content of leucine, lysine, valine, isoleucine, phenylalanine, histidine and tryptophan.

20. The use according to claim 18 or 19, wherein the composition further comprises one or more kinds selected from the group consisting of valine, isoleucine, histidine and tryptophan.

21. The use according to claim 20, wherein the compostion comprises one or more kinds selected from the group consisting of 2 mol% - 7 mol% of valine, 5 mol% - 15 mol% of isoleucine, 2

mol% - 10 mol% of histidine and 0.1 mol% - 2 mol% of tryptophan relative to the total content of leucine, lysine, valine, isoleucine, phenylalanine, histidine and tryptophan.

22. The use according to claim 20 or 21, wherein the composition comprises the following amino acids at the following contents relative to the total content of leucine, lysine, valine, isoleucine, phenylalanine, histidine and tryptophan:

leucine 25 mol% - 45 mol%,
phenylalanine 20 mol% - 40 mol%,
lysine 10 mol% - 30 mol%,
valine 2 mol% - 7 mol%,
isoleucine 5 mol% - 15 mol%,
histidine 2 mol% - 10 mol%, and
tryptophan 0.1 mol% - 2 mol%.