

DESCRIPTION

COMPOSITION

Technical Field

[0001]

The present invention relates to a composition containing a capsicum extract.

Background Art

[0002]

Capsaicin, which is a pungent component contained in capsicum, has been used for a long time as a spice in foods and also in medical treatments as a counterirritant. It was found recently that when capsaicin is administered to rats, the secretion of a catecholamine, particularly β -adrenaline from the adrenal gland is enhanced, and lipid turnover in adipose tissues is promoted by the secretion. Further, it has also been reported that capsaicin has physiological actions such as promotion of energy metabolism, a cholesterol-lowering action, a pungent property, enhancement of appetite, promotion of salivation, promotion of gastric acid secretion, promotion of intestinal peristaltic movement, vasodilation, and promotion of release of bioactive peptides. Further, recently, there has been reported a drowsiness prevention composition utilizing the stimulation with a capsicum extract containing capsaicin (PTL 1).

[0003]

However, the current situation is such that the use of a capsicum extract in foods or pharmaceutical preparations is limited because of its strong pungency, stimulation, and insolubility.

[0004]

There have been developed the following methods so far: a method for masking pungency by incorporating polyglycerol ricinoleate in a food or an oral pharmaceutical composition containing a capsicum extract (PTL 2), a method for suppressing pungency by forming capsaicin, cyclodextrin, and a phytosterol into a complex (PTL 3), and a method for producing a food in which the pungency is suppressed by adsorbing a capsicum extract rich in

capsaicin to pore portions of starch and dietary fibers, and coating the surfaces thereof with a coating agent (such as shellac, zein, or gum arabic) (PTL 4).

[0005]

However, the range of use of a masking agent containing polyglycerol ricinoleate is limited to foods containing a large amount of oil, and also the masking agent has a waxy smell, and therefore tends to affect the flavor. Further, in the case where a complex of capsaicin, cyclodextrin, and a phytosterol is blended in water, a stabilizer is necessary for uniformly dispersing the complex, and the stabilizer affects the flavor depending on the type or the blending amount of the stabilizer, and therefore, this method is not preferable. Further, PTL 1 describes that the blending of carbonic acid can suppress the pungency of a capsicum extract, however, the pungency suppression effect was not sufficient only with carbonic acid.

Citation List

Patent Literature

[0006]

PTL 1: JP-A-2010-195761

PTL 2: JP-A-2002-65177

PTL 3: WO 2010/074163

PTL 4: JP-A-2001-78708

Summary of Invention

Technical Problem

[0007]

An object of the present invention is to provide a technology for reducing the pungency of a capsicum extract.

Solution to Problem

[0008]

As a result of intensive studies for achieving the above object, the present inventors found that the pungency of a capsicum extract can be reduced by combining the capsicum extract with a gin flavor, and thus completed the present invention.

[0009]

That is, the present invention is directed to:

(1) a composition characterized by containing a capsicum extract and a gin flavor;

(2) the composition according to (1), wherein the capsicum extract is contained in an amount of 0.001 to 0.1 w/v%;

(3) a food or drink containing the composition according to (1) or (2); and

(4) a drink containing the composition according to (1) or (2).

[0010]

Further, the present invention is directed to a method for reducing the pungency of a composition containing a capsicum extract, characterized by blending a gin flavor in the composition containing a capsicum extract.

Advantageous Effects of Invention

[0011]

The composition of the present invention is configured such that the pungency of a capsicum extract is suppressed by combining the capsicum extract with a gin flavor. Further, the composition of the present invention is not affected by the flavor of the gin flavor itself to be blended therein.

[0012]

Therefore, in the case where the composition of the present invention is blended in foods and drinks, and the like, the ease of ingestion is never deteriorated.

Description of Embodiments

[0013]

The composition of the present invention contains a capsicum extract and a gin flavor.

[0014]

The capsicum extract which is an essential component of the composition of the present invention is obtained by extraction from fruit portions of capsicum (*Capsicum annum*) which is a plant in the Solanaceae family of the genus *Capsicum* as such or after drying, crushing, grinding or the like as needed. The extraction treatment method is not particularly limited, and can be performed according

to a conventional method, and an arbitrary apparatus can be used at room temperature or by heating under reflux. For example, in a vessel filled with an extraction solvent, an extraction raw material is placed, and a soluble component is eluted while stirring at intervals. At this time, the extraction conditions can be appropriately adjusted according to the type, region or the like of the extraction raw material. The amount of the extraction solvent is typically 5 to 50 times (mass ratio) larger than that of the extraction raw material, and the extraction time is typically from about 5 minutes to 2 hours at 70°C to 100°C in the case of hot water, from about 1 to 24 hours in the case of room temperature extraction, and from about 10 minutes to 2 hours at room temperature to 80°C in the case of an organic solvent such as a lower aliphatic alcohol or a hydrous lower aliphatic alcohol. After a pungent spice component is eluted by an extraction treatment, an extract liquid obtained by the extraction treatment is filtered or centrifuged to remove extraction residues, whereby an extract solution can be prepared. The solvent is removed from the obtained extract solution, whereby a capsicum extract can be obtained.

[0015]

The content of the capsicum extract in a carbonated drink of the present invention is not particularly limited, but for example from 0.001 to 1 w/v% (hereinafter simply referred to as "%"), preferably from 0.005 to 0.5%, and particularly preferably from 0.005 to 0.1%. Incidentally, in this capsicum extract, capsaicins such as capsaicin and dihydrocapsaicin (hereinafter, these are collectively referred to as "capsaicin") are generally contained in an amount of about 0.05 to 0.5% by mass. Therefore, the total amount of capsaicin may be used as an index of the content of the capsicum extract. The total amount of capsaicin in the composition of the present invention in this case is not particularly limited, but for example, the amount of capsaicin per single oral intake is 0.0005 mg or more, preferably from 0.0005 mg to 0.5 mg, and particularly preferably from 0.01 to 0.5 mg. Further, the total amount of capsaicin in the capsicum extract can be measured by a known method using HPLC or the like.

[0016]

The gin flavor, which is another essential component of the

composition of the present invention has a flavor specific to gin which is a spirit. As the gin flavor, a generally marketed product may be used, and also a material prepared according to a known formulation ("Saishin Koryo no Jiten", edited by Soichi ARAI, Akio KOBAYASHI, Izumi YAJIMA, and Michiaki KAWASAKI, issued by KABUSHIKI KAISHA ASAKURA SHOTEN, p. 525, Table 7.86, "Formulation Example of Dry Gin Flavor") may be used.

[0017]

The gin flavor to be used in the composition of the present invention is composed of 0.5 to 50% of an oil base and 50 to 99.5% of a solvent component, and the main component of the oil base in the gin flavor is generally juniper berry oil. The content of the gin flavor in the composition of the present invention is not particularly limited, but is from 0.001 to 1%, preferably from 0.005 to 0.5%, and particularly preferably from 0.005 to 0.1%. Further, in the composition of the present invention, the amount of this gin flavor is set to generally 0.01 to 500 parts by mass, preferably 0.3 to 100 parts by mass with respect to one part by mass of the capsicum extract. If the amount of the gin flavor is small, a pungency-reducing effect may sometimes be deteriorated, and if the amount thereof exceeds 500 parts by mass, the overall flavor of the carbonated drink may sometimes be deteriorated.

[0018]

In the composition of the present invention, besides the capsicum extract and the gin flavor, a component such as caffeine, caramel, or a spice extract including a laurel, Sichuan pepper, cardamom, nutmeg, or Japanese pepper extract may be further incorporated within a range that does not impair the effect of the present invention.

[0019]

The composition of the present invention may be configured such that a capsicum extract and a gin flavor are contained as essential components, the above-described components are added as needed, and these components are formed into, for example, a powder, a granule, a liquid, a semi-solid, a solid, or the like according to a conventional method.

[0020]

The composition of the present invention as described above

can be incorporated in a variety of foods and drinks as a common component for foods and drinks. Examples of the foods and drinks include drinks such as soft drinks and carbonated drinks, snacks such as cookies and rice crackers, fluid foods such as jellies, breads, sherbets, ice creams, supplements, and the like. The composition of the present invention may be incorporated in the above-described foods and drinks in an amount of 0.001 to 1%, preferably about 0.005 to 0.1%.

[0021]

Further, the method for producing the above-described foods and drinks is also not particularly limited, and they can be produced in the same manner as common foods and drinks.

[0022]

The composition of the present invention is preferably incorporated in drinks among the above-described foods and drinks, and particularly preferably incorporated in carbonated drinks. Incidentally, the term "drinks" as used herein refers to "foods and drinks including drinkable liquids and suitable for drinking". Further, the term "carbonated drinks" as used herein refers to "drinks containing carbon dioxide (carbon dioxide gas) among drinks". Hereinafter, a drink containing the composition of the present invention (hereinafter referred to as "present inventive drink") will be described.

[0023]

The pH of the present inventive drink is not particularly limited, and is, for example, from 2.5 to 7.0. From the viewpoint of flavor, the present inventive drink preferably has a low pH, and more preferably has a pH of 3.2 to 4.4. In the pH adjustment of the present inventive drink, a commonly used pH adjusting agent can be used. Specific examples of the pH adjusting agent include organic acids such as citric acid, malic acid, tartaric acid, succinic acid, lactic acid, acetic acid, maleic acid, gluconic acid, aspartic acid, adipic acid, glutamic acid, and fumaric acid, and salts thereof, inorganic acids such as hydrochloric acid, and inorganic bases such as sodium hydroxide.

[0024]

Further, in the present inventive drink, as another component, a vitamin, a mineral, an amino acid or a salt thereof, a herbal

medicine, a herbal medicine extract, royal jelly, caffeine, or the like can be blended appropriately within a range that does not impair the effect of the present invention.

[0025]

Among the above-described components, particularly, in the case where caffeine is blended in the present inventive drink, the bitterness of caffeine is also reduced. The content of caffeine in the present inventive drink is not particularly limited, but is such an amount that bitterness is felt, for example, from 0.01 to 1%, preferably 0.02 to 0.4%.

[0026]

Further, in the present inventive drink, an additive such as an antioxidant, a colorant, a flavor, a corrigent, a surfactant, a thickener, a stabilizer, a preservative, a sweetener, or an acidulant can be blended appropriately within a range that does not impair the effect of the present invention.

[0027]

Incidentally, in the present inventive drink, it is not necessary to use a surfactant, an emulsifier, or a gum, which has been conventionally used for reducing the pungency of the capsicum extract, and therefore, the drink preferably does not substantially contain such a component. The phrase "does not substantially contain such a component" as used herein refers to that the content of each of the surfactant, the emulsifier, and the gum in the drink is 0.1% or less.

[0028]

The present inventive drink can be produced according to a conventionally known method. As the method for producing a drink, there are a pre-mixing method and a post-mixing method, and either method may be adopted in the present invention. Specifically, the pre-mixing method is performed as follows. First, to a drinkable liquid such as water or a fruit juice, the capsicum extract and the pungency-reducing substance are added, and as desired, the above-described another component is further added, followed by stirring, whereby a drink stock solution is prepared. Then, according to need, the drink stock solution is subjected to pH adjustment, dilution, or cooling after heat sterilization, and thereafter, if necessary, the solution is charged with carbon

dioxide gas (carbonation) so that the gas pressure is within a predetermined range, for example from 0.2 to 4.0 kg/cm³. Further, a container is filled with the resulting liquid, followed by sterilization, whereby the drink can be produced. On the other hand, the post-mixing method is performed as follows. A solution has been prepared in advance by subjecting a drink stock solution prepared in the same manner as described above to pH adjustment, heat sterilization, or the like according to need. Then, this solution is diluted with water or if necessary, diluted with carbonated water at a gas pressure within the above-described range, whereby the drink can be produced.

Examples

[0029]

Hereinafter, the present invention will be described in further detail with reference to Examples and the like, however, the present invention is by no means limited to these Examples and the like.

[0030]

Example 1

Preparation of Drink:

Drinks were prepared according to the formulations shown in Table 1 and the following method. First, to water in an amount of about 15% of the total amount (100 mL), a commercially available capsicum extract (brix: 17.9, total content of capsaicin: 0.14%) was added, and the resulting mixture was sufficiently stirred. Subsequently, citric acid, sodium citrate, and a gin flavor were added thereto, and then, the pH of the resulting solution was adjusted with hydrochloric acid or sodium hydroxide, whereby a drink stock solution having a concentration corresponding to that for 25% of the total amount was prepared. Finally, to this drink stock solution, purified water or carbonated water was added to make the total amount (100 mL), whereby a drink was obtained (Products 1 to 7). Further, drinks to which the pungency-reducing substance was not added were prepared as controls (Comparative Products 1 to 5).

[0031]

With respect to these drinks, four panels whose age varied

from 25 to 40 years ingested about 20 mL of each test liquid, and evaluated the pungency of capsicum immediately after preparation. Incidentally, after evaluating one sample, the mouth was rinsed with water until the taste of the previous test liquid disappeared, and after a sufficient lapse of time, the subsequent test liquid was evaluated. Absolute evaluation was performed on a seven point scale in which scores range from 0 to 6, with 6 indicating that the pungency was "very strong", 5 indicating "strong", 4 indicating "somewhat strong" , 3 indicating "felt", 2 indicating "somewhat weak", 1 indicating "weak", and 0 indicating "very weak". Each result is shown in Table 1 by expressing the average of the scores given by the four panels as the evaluation point.

[0032]

[Table 1]

Name of component	Unit	Product 1	Product 2	Product 3	Comparative Product 1	Product 4	Comparative Product 2	Product 5	Comparative Product 3	Product 6	Comparative Product 4	Product 7	Comparative Product 5
Capsicum extract	%	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.032	0.032	0.020	0.020
Gin flavor	%	0.100	0.020	0.010	-	0.100	-	0.100	-	0.100	-	0.100	-
Citric acid	%	0.135	0.135	0.135	0.135	0.135	0.135	0.135	0.135	0.135	0.135	0.135	0.135
Trisodium citrate	%	0.081	0.081	0.081	0.081	0.081	0.081	0.081	0.081	0.081	0.081	0.081	0.081
1 N hydrochloric acid	%	q.s.	q.s.	q.s.	q.s.	q.s.	q.s.	q.s.	q.s.	q.s.	q.s.	q.s.	q.s.
1 N sodium hydroxide	%	q.s.	q.s.	q.s.	q.s.	q.s.	q.s.	q.s.	q.s.	q.s.	q.s.	q.s.	q.s.
Purified water (total)	ml	100	100	100	100	100	100	100	100	100	100	100 (carbonated water)	100 (carbonated water)
pH		3.8	3.8	3.8	3.8	3.2	3.2	4.4	4.4	3.8	3.8	3.8	3.8
Evaluation results		2.0	1.0	1.5	3.5	1.8	3.5	1.8	3.5	3.0	4.5	1.5	3.8

[0033]

As apparent from Table 1, the gin flavor reduced the pungency of the capsicum extract in the drink.

[0034]

Comparative Example 1

Preparation of Drink:

Drinks were prepared in the same manner as in Example 1 except that the formulations shown in Table 2 were used (Comparative Products 6 to 9). With respect to these drinks, the pungency of the capsicum extract was evaluated in the same manner as in Example 1, and the results are also shown in Table 2.

[0035]

[Table 2]

Name of component	Unit	Comparative Product 6	Comparative Product 7	Comparative Product 8	Comparative Product 9
Capsicum extract	%	0.020	0.020	0.020	0.020
Whisky flavor	%	0.100	-	-	-
Brandy flavor	%	-	0.100	-	-
Rum flavor	%	-	-	0.100	-
Vodka flavor	%	-	-	-	0.100
Citric acid	%	0.135	0.135	0.135	0.135
Trisodium citrate	%	0.081	0.081	0.081	0.081
1 N hydrochloric acid	%	q.s.	q.s.	q.s.	q.s.
1 N sodium hydroxide	%	q.s.	q.s.	q.s.	q.s.
Purified water (total)	ml	100	100	100	100
pH		3.8	3.8	3.8	3.8
Evaluation results		3.3	2.8	3.3	3.5

[0036]

As apparent from Table 2, a whisky flavor, a brandy flavor, a rum flavor, and a vodka flavor could not reduce the pungency of the capsicum extract in the drink.

[0037]

Example 2

Preparation of Oral Liquid:

In water in an amount of 15% of the total amount (100

mL), the components shown in Table 3 were dissolved, and the resulting mixture was sufficiently stirred. Subsequently, the pH of the resulting solution was adjusted to 3.8 with hydrochloric acid or sodium hydroxide, whereby a drink stock solution having a concentration corresponding to that for 25% of the total amount was prepared. Finally, to this drink stock solution, purified water was added to make the total amount (100mL), and then, a 100 mL brown glass bottle was filled with the resulting solution, whereby an oral liquid was obtained.

[0038]

[Table 3]

Name of component	Unit	
Capsicum extract	%	0.032
Caffeine	%	0.027
Laurel extract	%	0.010
Vitamin B2	%	0.005
Vitamin B6	%	0.005
Nicotinamide	%	0.005
Inositol	%	0.005
Sugar	%	10.811
High-fructose corn syrup	%	5.405
Caramel	%	0.014
Gin flavor	%	0.068
Lemon flavor	%	0.032
Citric acid	%	0.234
Trisodium citrate	%	0.141

[0039]

In this oral liquid, not only the pungency of the capsicum extract was reduced, but also the bitterness of caffeine added in such an amount that bitterness was felt was reduced, and thus, the ingestibility was favorable

[0040]

Example 3

Preparation of Oral Liquid:

In water in an amount of 15% of the total amount (100

mL), the components shown in Table 4 were dissolved, and the resulting mixture was sufficiently stirred. Subsequently, the pH of the resulting solution was adjusted to 3.8 with hydrochloric acid or sodium hydroxide, whereby a drink stock solution having a concentration corresponding to that for 25% of the total amount was prepared. Finally, to this drink stock solution, purified water was added to make the total amount (100mL), and then, a 100 mL brown glass bottle was filled with the resulting solution, whereby an oral liquid was obtained.

[0041]

[Table 4]

Name of component	Unit	
Capsicum extract	%	0.032
Caffeine	%	0.054
Sichuan pepper extract	%	0.010
Vitamin B2	%	0.005
Vitamin B6	%	0.005
Nicotinamide	%	0.005
Inositol	%	0.005
Sugar	%	5.405
High-fructose corn syrup	%	10.811
Caramel	%	0.014
Gin flavor	%	0.068
Lemon flavor	%	0.032
Citric acid	%	0.268
Trisodium citrate	%	0.161

[0042]

In this oral liquid, not only the pungency of the capsicum extract was reduced, but also the bitterness of caffeine added in such an amount that bitterness was felt was reduced, and thus, the ingestibility was favorable.

[0043]

Example 4

Preparation of Carbonated Drink:

In water in an amount of 15% of the total amount (185

mL), the components shown in Table 5 were dissolved, and the resulting mixture was sufficiently stirred. Subsequently, the pH of the resulting solution was adjusted to 3.8 with hydrochloric acid or sodium hydroxide, whereby a drink stock solution having a concentration corresponding to that for 32% of the total amount was prepared. Finally, to this drink stock solution, carbonated water was added to make the total amount (185 mL), and then, a 190 mL aluminum can was filled with the resulting solution, whereby a carbonated drink was obtained.

[0044]

[Table 5]

Name of component	Unit	
Capsicum extract	%	0.016
Caffeine	%	0.054
Vitamin B1	%	0.003
Vitamin B2	%	0.003
Vitamin B6	%	0.003
Nicotinamide	%	0.003
Inositol	%	0.005
Sugar	%	5.405
High-fructose corn syrup	%	5.405
Gin flavor	%	0.068
Lemon flavor	%	0.032
Citric acid	%	0.171
Trisodium citrate	%	0.103

[0045]

In this carbonated drink, not only the pungency of the capsicum extract was reduced, but also the bitterness of caffeine added in such an amount that bitterness was felt was reduced, and thus, the ingestibility was favorable.

[0046]

Example 5

Preparation of Carbonated Drink:

In water in an amount of 15% of the total amount (185 mL), the components shown in Table 6 were dissolved, and the

resulting mixture was sufficiently stirred. Subsequently, the pH of the resulting solution was adjusted to 3.8 with hydrochloric acid or sodium hydroxide, whereby a drink stock solution having a concentration corresponding to that for 28% of the total amount was prepared. Finally, to this drink stock solution, carbonated water was added to make the total amount (185 mL), and then, a 190 mL aluminum can was filled with the resulting solution, whereby a carbonated drink was obtained.

[0047]

[Table 6]

Name of component	Unit	
Capsicum extract	%	0.032
Caffeine	%	0.027
Japanese pepper extract	%	0.005
Sichuan pepper extract	%	0.027
Vitamin B2	%	0.005
Vitamin B6	%	0.005
Nicotinamide	%	0.005
Inositol	%	0.005
Sugar	%	5.405
High-fructose corn syrup	%	5.405
Gin flavor	%	0.068
Lemon flavor	%	0.032
Citric acid	%	0.194
Trisodium citrate	%	0.116

[0048]

In this carbonated drink, not only the pungency of the capsicum extract was reduced, but also the bitterness of caffeine added in such an amount that bitterness was felt was reduced, and thus, the ingestibility was favorable.

Industrial Applicability

[0049]

The composition of the present invention contains a capsicum extract, however, the pungency is reduced. Therefore,

the blending of this composition in a variety of foods and drinks is suitable for obtaining the health benefits of the capsicum extract such as actions of promotion of energy metabolism and fat combustion.

CLAIMS

[Claim 1]

A composition characterized by comprising a capsicum extract and a gin flavor.

[Claim 2]

The composition according to claim 1, wherein the capsicum extract is contained in an amount of 0.001 to 0.1 w/v%.

[Claim 3]

A food or drink comprising the composition according to claim 1 or 2.

[Claim 4]

A drink comprising the composition according to claim 1 or 2.

[Claim 5]

A method for reducing the pungency of a composition containing a capsicum extract, characterized by blending a gin flavor in the composition containing a capsicum extract.