

## Trial Decision

Invalidation No. 2012-800145

Tokyo, Japan

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The case of the patent invalidation trial between the above parties on Japanese Patent No. 3530247, entitled "Taste Improver for Alcoholic Beverage and Method Thereof," has resulted in the following trial decision

#### Conclusion

The trial of the case was groundless.

The costs in connection with the trial shall be borne by the demandant.

#### Reason

##### No. 1 History of the procedures

The application concerning the inventions according to claims 1 to 3 of this patent 3530247 is a patent application filed on February 20, 1995, and the main history of the procedures thereafter is as follows:

Note that, hereinafter, each item of Evidence A and each item of Evidence B shall be represented as A and B with the corresponding item numbers, in the manner of A1 and B1, respectively.

March 5, 2004    Registration of establishment

September 6, 2012        Demand for the invalidation trial (the demandant) (A1 to A5)

December 3, 2012        Written correction request/Written reply (the demandee) (B1 to B6)

February 12, 2013        Written refutation (the demandant) (A6)

Dated March 4, 2013       Notice of reasons for refusal of correction (the body)

April 5, 2013        Written opinion (the demandee) (B7)

Dated May 24, 2013      Notification of trial examination (the body)

June 20, 2013      Oral proceedings statement brief (the demandant) (A7 to A9)

June 20, 2013      Oral proceedings statement brief (the demandee) (B8 to B17)

Sent on July 4, 2013      Written statement (the demandant) (A10 to A11)

July 4, 2013      Oral proceeding

July 12, 2013      Written statement (the demandant) (A12 to A16-4)

July 23, 2013      Written statement (the demandee) (B18 to B22)

August 1, 2013      Written statement (the demandant)

#### No. 2 Request for correction

The request for correction made by the demandee on December 3, 2012 (hereinafter referred to as "the correction request for correction") is to "request the correction of the specification of patent No. 3530247 to the corrected specification attached to the written correction request of the case," requesting correction for the patent in its entirety.

On the other hand, when the body notified the demandee of the reasons for refusal, dated March 4, 2013, on the matter of correction for claim 4, the demandee claimed that "we reserve our opinion about the judgment by the body on '3(2)(B): Burning sensitivity' in the notice of reasons for refusal of correction."

#### 1 The content of the request for correction

The following corrections are included in the correction request filed under the provisions of the main text of Article 134-2 (1) of the Patent Act.

In Claim 4 before correction,

"[Claim 4] The method for improving the taste of an alcoholic beverage according to claim 2, wherein 0.001 to 2.0 parts of sucralose is added to 100 parts of ethyl alcohol contained in the alcoholic beverage." is corrected to read

"[Claim 4] A method for improving the taste of an alcoholic beverage to suppress the bitterness and burning sensation caused by alcohol in the alcoholic beverage while keeping the light taste of the alcohol, wherein 0.002 to 1.0 parts of sucralose with respect to 100 parts of ethyl alcohol contained in the alcoholic beverage is added in an amount that does not cause sweetness sensation with the sucralose." (the underlines show the corrected parts.)

## 2 Described matters in the specification of the patent

In connection with the above corrections, there are the following described matters in the specification of the patent. In addition, the underlines are applied by the body.

"[0003] However, alcoholic beverages have a light taste of alcohol, bitterness attributable to alcohol, and a feeling that the inside of the oral cavity is burned, which is called a burning sensation. ... (Omitted) ...."

"[0007] The alcoholic beverages in the present invention are beverages containing ethanol in an amount of about 1% or more and include, for example, brewed alcoholic beverages, such as beer, wine, and sake; distilled spirits, such as shochu, whiskey, brandy, and vodka; and mixtures of distilled alcohol, brewed alcoholic beverages, alcohol, or other ingredients, such as liqueur, cocktail, fizz, and shochu mixed with soda water. In the present invention,

sucralose is added to an alcoholic beverage to improve the taste of the alcoholic beverage in concert with making use of the light taste of alcohol while suppressing bitterness and burning sensation caused by alcohol. The addition amount of sucralose used for improving taste to the alcoholic beverages is determined by the concentration at which sucralose expresses a taste-enhancing effect and the concentration at which the alcoholic beverage preference decreases due to the sweetness of sucralose. In addition, the taste-enhancing effect of sucralose in an alcoholic beverage depends on the taste of the alcoholic beverage itself rather than the alcohol content contained in the alcoholic beverage. Since alcohol is produced from sucrose as a raw material by fermentation, the concentration of the alcohol at which sweetness of sucralose is developed does not immediately decrease the preference for alcoholic beverages. For alcoholic beverages that impart no sweetness, such as vodka, sake, beer, and whiskey, it is preferable that 0.0001 to 0.002% of sucralose is added to 100 parts of alcohol, and, when the concentration of sucralose exceeds 0.002%, the sweetness may decrease the preference for alcoholic beverages. On the other hand, for alcoholic beverages that impart sweetness, such as cocktails, liqueur, and shochu mixed with soda water, even if sucralose is used in the range of 0.0001 to 2% of sucralose with respect to 100 parts of alcohol, it is possible to develop a desired effect without lowering the preference of the alcoholic beverage. The addition amount of sucralose to be added to the alcoholic beverage is therefore preferably 0.0001 to 2.0 parts, more preferably 0.001 to 2.0 parts, still more preferably 0.002 to 1.0 parts with respect to 100 parts of ethyl alcohol, which can be arbitrarily adjusted according to the caloric content, degree of sweetness, or the like required for the alcoholic beverage.

"[0011]

[Examples] Examples of the taste improver for an alcoholic beverage and the improving method of the present invention are described below.

#### Example 1

Aqueous solutions with 5% alcohol (weight percentage, the same applies hereinafter), which contains various sweeteners shown in the table below, were prepared, respectively. Using the obtained aqueous solution, a sensory assessment was carried out by a pair test with a taste panel of 20 well-trained members with respect to aqueous solutions with 5% alcohol. In the experimental examples and working examples of the present invention, a pure sucralose product was used as a taste improver.

[0012]

[Table 1]

	嗜好性		甘味についての 評価
	苦み	残り	
シュクラロース 0.0025%	0	0	差なし
果糖 0.75%	4	16	コクがない
ぶどう糖 1.25%	5	15	コクがない
アスパルテーム 0.01%	5	20	コクがない
ステビア 0.007%	20	20	後引きあり
サッカリンナトリウム 0.0035%	20	20	苦みあり

シュクラロース                      Sucralose

果糖                      Fructose

ぶどう糖                      Glucose

アスパルテーム                      Aspartame

ステビア Stevia

サッカリンナトリウム Saccharin sodium

嗜好性 Palatability

苦み Bitterness

焼け Burning

甘味についての評価 Evaluation of sweetness

差なし No difference

コクがない Weak

後引きあり Residual taste

苦みあり Bitterness

#### [0013] Remarks

Evaluation items of palatability:

Bitterness: the number of panel members that consider the alcoholic beverage to have bitterness.

Burning: the number of panel members that consider the alcoholic beverage to have burning sensation.

The evaluation of sweetness for alcoholic beverage was described. As described above, when the bitterness and burning sensation of alcohol were evaluated using the addition amounts of various sweeteners lower than the addition amounts thereof in common beverages, sucralose in an addition amount of 0.05% gave a good result with respect



alcohol.

[0014] Experimental Example 2

Alcohol/sucralose aqueous solutions represented in the table below were prepared. The sensory assessment was then carried out with 10 panel members. In the assessment, a sugar aqueous solution (free of alcohol) was targeted for the degree of sweetness, and the alcohol aqueous solution (free of sugar and sucralose) in the same concentration was targeted for bitterness-suppressing effect. The results thereof are listed in Tables 2 to 5.

[0015]

[Table 2]

アルコール	シュクラロース (部)	甘 味 度	苦味抑制効果
5 %	0. 0 0 0 0 5	0	—
	0. 0 0 0 0 1	0	+
	0. 0 0 0 0 5	0. 4	+
	0. 0 0 0 1	0. 6	+
	0. 0 0 0 5	3	+
	0. 0 0 1	6	+
	0. 0 0 2 5	1 0	+
	0. 0 5	1 5	+
	0. 1	2 0	+

アルコール      Alcohol

シュクラロース (部)      Sucralose (parts)

甘味度      Degree of sweetness

苦味抑制効果      bitterness-suppressing effect

[0016]

[Table 3]

アルコール	シュクラロース (部)	甘 味 度	苦味抑制効果
1 0 %	0. 0 0 0 0 5	0	—
	0. 0 0 0 0 1	0	—
	0. 0 0 0 0 5	0	+
	0. 0 0 0 1	0	+
	0. 0 0 0 5	2	+
	0. 0 0 1	4	+
	0. 0 2 5	1 0	+
	0. 0 5	1 5	+
	0. 1	2 0	+

アルコール Alcohol

シュクラロース (部) Sucralose (parts)

甘味度 Degree of sweetness

苦味抑制効果 bitterness-suppressing effect

[0017]

[Table 4]

アルコール	シュクラロース (部)	甘 味 度	苦味抑制効果
2 0 %	0. 0 0 0 0 5	0	—
	0. 0 0 0 0 1	0	—
	0. 0 0 0 0 5	0	+
	0. 0 0 0 1	0	+
	0. 0 0 0 5	1	+
	0. 0 0 1	2	+
	0. 0 2 5	7	+
	0. 0 5	1 2	+
	0. 1	1 5	+

アルコール Alcohol

シュクラロース (部) Sucralose (parts)

甘味度 Degree of sweetness

苦味抑制効果 bitterness-suppressing effect

[0018]

[Table 5]

アルコール	シュクラロース (部)	甘 味 度	苦味抑制効果
40%	0.00005	0	—
	0.0001	0	—
	0.0005	0	+
	0.001	0	+
	0.005	1	+
	0.01	2	+
	0.025	5	+
	0.05	7	+
	0.1	13	+

アルコール      Alcohol

シュクラロース (部)   Sucralose (parts)

甘味度   Degree of sweetness

苦味抑制効果   bitterness-suppressing effect

[0019] As is apparent from Tables 2 to 5, it was found that the bitterness-suppressing effect of alcohol was observed even in the addition amount of sucralose not sufficient to impart sweet taste.

### 3 Judgment of the body on correction request

#### (1) Matters to be understood from the specification of the patent

##### A   Bitterness and burning sensation caused by alcohol

As paragraph [0013] of the specification of the patent describes that

"Evaluation items of palatability:

Bitterness: the number of panel members that consider the alcoholic beverage to have bitterness.

Burning: the number of panel members that consider the alcoholic beverage to have burning sensation." Bitterness and burning sensation are described in the specification of the patent as different indicators.

B The relationship between the bitterness-suppressing effect and the addition amount of sucralose not sufficient to impart sweet taste

In paragraph [0019] of the specification of the patent, it is described that "as is apparent from Tables 2 to 5, it was found that the bitterness-suppressing effect of alcohol was also observed in the addition amount of sucralose not sufficient to impart sweet taste." These described matters are derived from the results of Tables 2 to 5; as represented in Tables 2 to 5, the bitterness-suppressing effect becomes + and the sweetness of sucralose is not felt. That is, it is understood that the maximum amount of addition to attain the degree of sweetness 0 exists as follows:

At an alcohol concentration of 5%, 0.0001 parts of sucralose (Table 2)

At an alcohol concentration of 10%, 0.0005 to 0.001 parts of sucralose (Table 3)

At an alcohol concentration of 20%, 0.0005 to 0.001 parts of sucralose (Table 4)

At an alcohol concentration of 40%, 0.0005 to 0.001 parts of sucralose (Table 5)

Then, although the concentration of sucralose is somewhat different depending on the alcohol concentration, it can be seen that there is a bitterness-suppressing effect of alcohol even in the addition amount of sucralose not sufficient to impart sweet taste.

## (2) Examination

The corrections are "[Claim 4] A method for improving the taste of an alcoholic

beverage to suppress the bitterness and burning sensation caused by alcohol in the alcoholic beverage while keeping the light taste of the alcohol, wherein 0.002 to 1.0 parts of sucralose with respect to 100 parts of ethyl alcohol contained in the alcoholic beverage are added in amount that does not impart sweetness sensation with the sucralose."

Thus, the method is recognized as one in which "0.002 to 1.0 parts of sucralose with respect to 100 parts of ethyl alcohol contained in the alcoholic beverage are added in an amount that does not impart sweetness sensation with the sucralose," leading "to suppress the bitterness and burning sensation caused by alcohol."

Accordingly, we will first consider whether the corrections are matters within the description of the specification attached to the application.

#### A Bitterness

As mentioned in the above "3 (1) B The relationship between the bitterness-suppressing effect and the addition amount of sucralose not sufficient to impart sweet taste," the addition amount of sucralose not sufficient to impart sweet taste but having the bitterness-suppressing effect of alcohol is as follows:

At an alcohol concentration of 5%, 0.0001 parts of sucralose (Table 2)

At an alcohol concentration of 10%, 0.0005 to 0.001 parts of sucralose (Table 3)

At an alcohol concentration of 20%, 0.0005 to 0.001 parts of sucralose (Table 4)

At an alcohol concentration of 40%, 0.0005 to 0.001 parts of sucralose (Table 5)

Here, there is no description what the unit "part" used for the addition amount of sucralose is relative to. Specifically, there is no description whether the "part" is relative to 100 parts of the entire beverage or 100 parts of the alcohol.

In the specification of the patent, Table 2 represents the relationship between the degree of sweetness and the addition amount of sucralose (parts) containing alcohol at a concentration of 5%. Considering that sucralose (parts) for a 5% alcohol aqueous solution, it can be seen that the sweetness threshold of sucralose is between the addition amount of sucralose "0.0001 (parts)" (the degree of sweetness 0) and "0.0005 (parts)" (the degree of sweetness 0.4). That is, it agrees with the technical common sense (B7) that the sweetness threshold of sucralose is "0.00038%w/v on average."

Assuming that sucralose (parts) represented in Table 2 is the ratio (parts) of sucralose to 100 parts alcohol, the addition amounts of sucralose in Table 2 described above, "0.0001 (parts)" (the degree of sweetness 0) and "0.0005 (parts)" (the degree of sweetness 0.4), are converted to "0.000005%" and "0.000025%," respectively. Thus, the sweetness threshold of sucrose is between "0.000005%" and "0.000025%," and is therefore extremely different from and inconsistent with the technical common sense mentioned above in which the threshold value of the sweetness of sucralose is "0.00038% on average."

In the view of the technical common sense mentioned above, therefore, the addition amount of sucralose in Tables 2 to 5 of the specification of the patent is understood to be sucralose (parts) relative to the aqueous solution.

"To suppress the bitterness caused by alcohol" in an "amount that does not impart sweetness sensation with the sucralose" and in an amount of "0.002 to 1.0 parts" relative to "100 parts of ethyl alcohol contained in the alcoholic beverage" in the matters of correction can be recognized as a correction within the scope of the matters disclosed in the

specification attached to the application.

## B Burning sensation

In the specification of the patent, there is no direct description with respect the corrections in which the "amount that does not impart sweetness sensation with the sucralose" is able "to suppress the burning sensation."

In addition, there are two cases indicating that the burning sensation can be suppressed: one is sucralose at a concentration of 0.0025% described in [Table 1] in paragraph [0012] of the specification of the patent; and the other is 0.0075 parts of sucralose added in a plum fizz where the total amount thereof becomes 100 parts when mixed with 50 parts of carbonated water as represented in Example 3 described in paragraphs [0022] to [0023] of the specification of the patent. However, both are added in amounts sufficiently greater than 0.00038%, which is the sweetness threshold value of sucralose. Thus, it is understood that the addition amounts of sucralose in these examples are those allowing the sweet taste to be felt.

From these examples, the corrections in which the "amount that does not impart sweetness sensation with the sucralose" is able "to suppress" the "burning sensation caused by alcohol" cannot be derived even by referring to the technical common sense at the time of filing of the patent.

With respect to the bitterness, as mentioned in the above "A Bitterness," the corrections in which the "amount that does not impart sweetness sensation with the sucralose" is able "to suppress the bitterness" can be derived from the description of the

specification of the patent.

From this description, we will consider whether it is possible to derive the corrections in which the "amount that does not impart sweetness sensation with the sucralose" is able "to suppress the burning sensation."

Bitterness is a feeling sensed by the tongue, and this feeling is thus the technical common sense that everyone experiences and does not have to be exemplified.

On the other hand, "burning sensation" is another feeling other than bitterness sensed inside the oral cavity as described as "a feeling that the inside of the oral cavity is burned, which is called a burning sensation" in paragraph [0003].

To support this fact, paragraph [0013] of the specification of the patent describes that

"Evaluation items of palatability:

Bitterness: the number of panel members that consider the alcoholic beverage to have bitterness.

Burning: the number of panel members that consider the alcoholic beverage to have burning sensation."

Thus, "bitterness" and "burning sensation" are evaluated as completely different evaluation items and thus are recognized as those not related to each other.

In this way, the "bitterness" and the "burning sensation" are completely different sensations unrelated to each other. Thus, "to suppress" the "burning sensation caused by alcohol" by the "amount that does not impart sweetness sensation with the sucralose"



cannot be derived even if the specification of the patent supports that the bitterness can be suppressed by the "amount that does not impart sweetness sensation with the sucralose."

The specification attached to the application does not describe the corrections in which the "amount that does not impart sweetness sensation with the sucralose" is able "to suppress" the "burning sensation caused by alcohol." Even in view of the technical common sense at the time of filing of the patent, the corrections cannot be derived.

#### 4 Conclusion on correction request

The above corrections include those that cannot be said to be corrections made within the specification of the patent; namely, the matters described in the specification attached to the application. Thus, the corrections are not allowed because the corrections do not comply with the provision of the proviso to Article 134(2) of the Patent Act before the revision in 1994 due to the provisions of Article 1 of the Patent Act, of which the provisions then in force shall remain applicable according to revision supplement Article 6(1) of the Partial Amendment of the Patent Act (Act No. 116 of 1994) (hereinafter, referred to as "before the revision in 1994").

Since the correction request is requested to correct the entire patent, the correction request cannot be admitted without examining the corrections on other claims.

#### No. 3 The patent invention

As described above, since the correction request cannot be accepted, the inventions according to claims 1 to 4 of the present patent (hereinafter referred to as "Patent Inventions

1 to 4") are, from the description of the specification attached to the application, the inventions specified by the following matters:

"[Claim 1] A taste improver for alcoholic beverage consisting of sucralose.

[Claim 2] A method for improving the taste of an alcoholic beverage, the method comprising adding sucralose to the alcoholic beverage.

[Claim 3] The method for improving the taste of an alcoholic beverage according to claim 2, wherein 0.0001 to 2.0 parts of sucralose is added to 100 parts of ethyl alcohol contained in the alcoholic beverage.

[Claim 4] The method for improving the taste of an alcoholic beverage according to claim 2, wherein 0.001 to 2.0 parts of sucralose is added to 100 parts of ethyl alcohol contained in the alcoholic beverage.

#### No. 4 The demandant's allegation

The demandant demands the decision, "Any patent for the inventions according to Claims 1 to 4 of Patent No. 3530247 shall be invalidated. The costs in connection with the trial shall be borne by the demandee," and submitted the following means of evidence represented in "2. Means of proof." The demandant alleges the reasons for invalidation as described below. Regarding the reasons for invalidation, the arguments so far are summarized as follows:

#### 1 Gist of reasons for invalidation

##### (1) Reasons for invalidation 1 (Article 123(1)(iv) of the Patent Act)

##### A Patent Invention 1

(A) (Reason for invalidation 1-1) ... Terms

"The terms 'burning sensation' and 'feeling of burning' caused by alcohol are not common, and even if the description of the specification of the patent is taken into consideration, it is unclear what kind of taste the present invention intends to improve." (the written demand for trial, lines 25 to 27 of page 6 and lines 17 to 19 of page 7).

"The term 'making use of the light taste of alcohol' is also not common and is unclear even if the description in the specification of the patent is taken into consideration." (the oral proceedings statement brief, lines 8 to 12 of page 4)

Thus, it does not meet the requirement stipulated in Article 36(4) of the Patent Act before the revision in 1994.

(B) (Reason for invalidation 1-2) ... Range of addition amount

"In the specification of the patent, for example, it is described that the taste-enhancing effect of sucralose in alcoholic beverage depends on the taste of the alcoholic beverage itself rather than the alcohol content contained in the alcoholic beverage; the suitable amounts of sucralose are different between alcoholic beverages that do not impart sweetness such as vodka, sake, beer, whiskey, and alcoholic beverages that impart sweetness, such as cocktails, liqueur, and shochu mixed with soda water; and, in the case of alcoholic beverages that do not impart sweetness, when the concentration of sucralose exceeds 0.002% (which may be a written error of 0.002 parts) relative to 100 parts of alcohol, the sweetness may decrease the preference for alcoholic beverages.

However, the embodiments of the specification of the patent only describe the

results of the evaluation of bitterness suppression and burning suppression by addition of sucralose or the like to aqueous alcohol solutions, as well as the evaluation of the degree of sweetness and the bitterness-suppressing effect by addition of various concentrations of sucralose to three different alcohol beverages; namely, a lemon lime alcoholic beverage, a fruit juice-containing alcoholic beverage, and a plum fizz. Thus, it is completely unknown what the range of sucralose concentration is applied to each of other various alcoholic beverages to improve the taste thereof." (the written demand for trial, lines 11 to 24 of page 17 and lines 1 to 17 of page 18)

"Thus, it does not meet the requirement stipulated in Article 36(4) of the Patent Act before the revision in 1994." (the written demand for trial, last line of page 6 to line 5 of page 7).

(C) (Reason for invalidation 1-3) ... Trial and error

"A person skilled in the art cannot consider that sucralose can improve the taste of various alcoholic beverages that exhibit various tastes depending on the alcohol concentration and other ingredients therein, even taking into consideration the description of the specification of the patent and the technical common sense at the time of filing; and, even if considerable trial and error are repeated, it is very difficult to implement the present invention" (the written demand for trial, lines 7 to 10 of page 18 and line 2 from the bottom of page 19 to line 2 of page 20).

"Thus, it does not meet the requirement stipulated in Article 36(4) of the Patent Act before the revision in 1994." (the written demand for trial, last line of page 6 to line 5 of page 7)

(D) (Reason for invalidation 1-4) ... Generalization

"In order to solve the problems of the invention, even if a person skilled in the art considers the contents of the specification of the patent and the technical common sense at the time of filing, a person skilled in the art cannot recognize that the contents disclosed in the detailed description of the invention can be extended to the full scope of claims or generalized. Thus, the present invention is not described in the detailed description of the invention." (the written demand for trial, lines 20 to 23 of page 7).

Thus, it does not meet the requirement stipulated in Article 36(5)(i) of the Patent Act before the revision in 1994.

B Patent Inventions 2 to 4

"The above '(1) A (A)' to '(1) A (E)' are similar even if the categories of the inventions are formally different, and the same can be said for the inventions 2 to 4" (the written demand for trial, lines 11 to 12 of page 18 and lines 3 to 4 of page 20).

(2) Reasons for invalidation 2 (Article 123(1)(ii) of the Patent Act)

On page 11 of the written demand for trial, it is described that "the section of '(4-3) Comparison between the present invention and Evidence A NO. 1' describes a comparison with the invention described in A1 such that 'in the invention described in Evidence A NO. 1, we will consider whether a person skilled in the art can easily conceive of using sucralose in place of thaumatin' (the written demand for trial, lines 11 to 12 of page 13). Thus, the reason for invalidation can be organized as follows:

Patent Inventions 1 to 4 were easily conceived by a person skilled in the art by using sucralose in place of thaumatin in the invention described in Evidence A No. 1 on the basis of the inventions described in Evidence A Nos. 2 to 5, and thus should not be granted a patent under the provision of Article 29(2) of the Patent Act in force on the filing date of the patent.

Thus, the patent falls under Article 123(1)(ii) of the same Act and should be invalidated.”

## 2 Means of proof

A1 Shiro Ohashi et al., Monthly Food Chemical 10, Food Chemicals Newspaper Inc. October 1, 1985, pages 40 to 47

A2 I. KNIGHT, The development and applications of sucralose, a new high-intensity sweetener, CAN. J. PHYSIOL. PHARMACOL., vol. 72, 1994, pp.435-439

A3 Japanese Unexamined Patent Application Publication No. S57-186459

A4 Japanese Examined Patent Publication No. H5-34943

A5 Japanese Unexamined Patent Application Publication No. S63-173572

A6 Japanese Unexamined Patent Application Publication No.H5-271101

A7 Edited and published by Shogo Itakura, JIS Sensory Evaluation Terms JIS Z 8144-1990, Japan Standards Association, 8th reprint, November 19, 2001, page 6

A8 Website of Sunstar Inc. (Oral care products, liquid toothpastes/mouth rinse products

QA) [Search Date: June 19, 2013], Internet <URL:

[http://jp.sunstar.com/inquiry/qa/page\\_02.html](http://jp.sunstar.com/inquiry/qa/page_02.html)>

A9 SUNSTAR G.U.M product brand site (Product lineup gum/dental rinse) [search date:

June 19, 2013], Internet <URL:<http://www.teamgum.net/lineup/rinseeconde/>>

A10 Re-publication of PCT International Publication No. WO/2002/067702

A11 Notice of Reason for Refusal of Japanese Patent Application No. 2002-567084, dated July 28, 2008

A12 Website of Australian Society of Viticulture and Oenology, [search date: unknown], Internet URL:<http://www.asvo.com.au/training/ASWE%20Taste%20Sensations.pdf>

A13 Website of Indian Wine Academy, [search date: July 12, 2013], Internet <URL: <http://www.indianwineacademy.com/dm154item2.asp>>

A14 Website of Health and Medical of Alcohol Association, [search date: July 12, 2013], Internet <URL:<http://www.arukenkyo.or.jp/health/base/>>

A15 Food Textbook: Basic Knowledge of Whiskey, Ei-Publishing Co Ltd., October 10, 2010, page 142 (The body's note: "Ei" of "Ei-Publishing Co Ltd." represents a Chinese character used in Japanese writing, consisting of "tree" on the left side and "world" on the right side)

A16-1 Website of Suntory Holdings Co., Ltd., [search date: July 12, 2013], February 10, 1989, News Release, Internet <URL:<http://www.suntory.co.jp/news/5115.html>>

A16-2 Website of Suntory Holdings Co., Ltd., [search date: July 12, 2013], February 10, 1989, Glossary of Whiskey, Internet <URL:<http://www.suntory.co.jp/whisky/dictionary/atoz/ta.html>>

A16-3 Glossary of Whiskey, [search date: July 12, 2013], Internet <URL:[http://www7b.biglobe.ne.jp/~usquebaugh/whisky\\_word.htm](http://www7b.biglobe.ne.jp/~usquebaugh/whisky_word.htm)>

A16-4 Website of Kirin Brewery Co., Ltd., website on February 15, 2001, [search date: July 12, 2013], Internet <URL:[http://www.kirin.co.jp/company/news/10/010215\\_2.html](http://www.kirin.co.jp/company/news/10/010215_2.html)>

### 3. Main matters described in Evidence A

#### (1) Matters described in A1

(A1-1) "Characteristics of thaumatin are as described in another section. In particular, thaumatin has a flavor enhancer action to improve sweetness without unpleasant taste smells, such as bitterness and astringency and the tastes of food materials, and thus ...

(Omitted) ... has been used." (from line 4 in the bottom of the left column of page 40 to line 2 in the right column of the same page)

#### (A1-2) "2. Characteristics

Characteristics of thaumatin are summarized in 'Natural sweetener thaumatin' (Ohashi), the outline of which is as follows:

... (Omitted) ...

(6) It has the effects of relieving unpleasant bitterness, astringency, alkaline taste, and odor.

" (from line 6 in the bottom of the right column of page 40 to line 12 in the right column of page 41)

#### (A1-3) "5. Masking of bitterness, saltiness, sourness, astringency

After drinking a solution of thaumatin at a concentration equal to or lower than the sweetness threshold value of thaumatin; for example, a 0.0001% solution thereof, as a bitterness substance, caffeine (0.05%) ... (Omitted) ... was taken, and then the results of examining how each taste will be changed will be described next.

- Caffeine: Bitterness is suppressed to 1/2 and softened.



... (Omitted) ...

Thus, even when the taste substance and thaumatin do not coexist as an aqueous solution, an effect of suppressing each taste can be obtained. This effect is caused by the hydrogen-bonding of thaumatin to the taste bud cells. These effects are obtained by using "Neo-San Mark D" which is a thaumatin preparation at a concentration of 0.1 to 0.2% at the time of eating and drinking." (from line 10 to the last line in the right column of page 43)

(A1-4) "As mentioned earlier, thaumatin has characteristic features of alleviating the sharpness of sourness of vitamin C, eliminating chemical odor, and improving shortness of acidity but not changing pH. ... (Omitted) ...

Next, we will represent exemplified effects of addition of 0.1% "Neo-San Mark D" on smells derived from vitamins, bitterness caused by amino acids, and salty taste, astringency, and bitterness of minerals.

... (Omitted) ...

- Potassium chloride (0.07%): salty with bitterness → Eliminate bitterness and suppress salty taste.
- Magnesium chloride (0.05%): Bitterness and astringency → Eliminate both bitterness and astringency.
- Calcium lactate (0.1%): astringency and salty with bitterness → Eliminate astringency and bitterness, suppress salty taste. ... (Omitted) ...
- Vitamin B2 (0.0002%), B1 (0.0001%): Vitamin odor and bitterness-like taste → Eliminate bitterness-like taste and suppress vitamin odor.
- L-Lysine hydrochloride (0.5%): Bitterness with sweetness → Eliminate bitterness and

enhance sweetness.

- L-arginine hydrochloride (0.3%): Bitterness with sweetness →Eliminate bitterness and enhance sweetness." (line 13 in the left column of page 44 to line 16 in the left column of page 45)

(A1-5) "10. Others

The following examples are given as some examples of those in which the effects of thaumatin have been recognized so far.

... (Omitted) ...

- Retort Miso Soup: Masking the bitterness generated by high temperature sterilization.

... (Omitted) ...

- Grapefruit jelly: Alleviating the bitterness of fruit juice.

- Shake drink: Masking the bitterness of foaming agent.

... (Omitted) ...

- Shochu mixed with soda water: Alleviating the irritation and smell of alcohol.

- Pharmaceuticals: Masking the unpleasant bitterness tastes of antibiotics, mouthwash, and herbal medicines.

- Animal feed, pet food, fish bait: Acting on tastes used for bait and feed.

... (Omitted) ...

improve them as tastes that give agreeable flavors to animals, mask the bitterness and astringency of drugs used ... (Omitted) ... effects are recognized." (line 6 in the right column of page 46 to line 3 in the left column of page 47)

## (2) Matters described in Evidence A2

Translation is based on an abridged translation of Evidence A2 submitted by the demandant, replacing "shucralose" with "sucralose."

### (A2-1) "Mechanism of sweetness

The structures required for compounds to have sweet tastes have been described so far (FIG. 1). Deutsch and Hansch (1966) suggested that expression of sweetness requires a combination of a hydrophobic bond in one region of a molecule and an electron bond in another region of the molecule. A sweetener with a high degree of sweetness is more hydrophobic and produces stronger absorption to the taste buds. On the other hand, a mere sugar is more hydrophilic, weak in sweetness, and weakly absorbed in the taste buds. Deutsch and Hansch (1996) showed the relationship between the sweetness of a 2-amino-4-nitrobenzene derivative and an octanol/water-partition coefficient. Shallenberger and Acree (1967, 1969) pointed out that electronegative atoms represented by A and B, which are apart from each other by 2.5 to 4.0 Å (260 to 300 nm), and a hydrogen atom covalently bonded to A are necessary for sweetness. In carbohydrates, a pair of hydroxy groups (glycol groups) on adjacent carbon atoms becomes an AH/B unit in which one hydroxy group is an AH subunit and the other oxygen atom of the hydroxy group is a B subunit. Shallenberger and Acree (1967) suggested that the sensation of sweetness arises from the formation of a pair of hydrogen bonds between the AH/B unit and a proteinaceous receptor on the tongue.

However, in these past studies, although this mechanism accounts for all sweet taste compounds, it was noted that many compounds do not have sweetness, even though they meet these structural requirements. Thus, it seems that there must be further criteria

to explain the mechanism of sweetness. One of the criteria was mentioned in the study of 1-alkoxy-2-amino-4-nitrobenzene by Kier (1972). In this study, a third site, a site that is hydrophobic and binds a sweet taste compound to a receptor, was recognized. This third site is called X by Shallenberger and Lindley (1977) and van der Heijden et al. (1978) and gives a triangle of functional groups X, AH, and B, which is important for imparting sweetness, as known as a glucophore (FIG. 2).

This hypothesis explaining the mechanism of sweetness was supported by study of sucrose derivatives by Hooft et al. (1991). In the case of sucralose, two chlorine atoms present in the fructose moiety thereof are hydrophobic X sites, which appear to spread throughout the 'outside' region of the fructose moiety. As in the case with sucrose, hydrophobic and hydrophilic regions are located on opposite sides of the molecule, but do not seem to be affected by the third chlorine atom at position C4 of the pyranose ring."

(A2-2) TABLE 5 on page 439

TABLE 5. Approved categories of sucralose use and permitted levels

Category	Maximum level
Tabletop sweeteners	GMP
Breakfast cereals	0.1%
Beverages	0.025%
Desserts, toppings, fillings	0.025%
Chewing gum, breath mints	0.15%
Fruit spreads	0.045%
Salad dressings	0.04%
Confectionary	0.07%
Bakery products	0.065%
Processed fruits and vegetables	0.015%
Alcoholic beverages	0.07%
Puddings	0.04%
Table syrups	0.15%

NOTE: GMP, Good Manufacturing Practice.

(3) Matters described in A3

(A3-1) "Sweet chlorodeoxyglycol has properties of not only masking bitterness associated with a certain sweetening agent but also allowing for the development of true sweetness."  
(lines 17 to 20 in the lower right column of page 2)

(4) Matters described in A4

(A4-1) "1. A method for improving a malt beverage to improve a taste and the stability of taste without sweetening the malt beverage by adding aspartame to the malt beverage:

- (1) brewing a malt beverage in order to produce a fermented product made from components including water, malt, hops, and yeast and containing carbon dioxide;
- (2) after at least the boiling step of brewing the malt beverage, adding aspartame to the malt beverage, wherein the amount of aspartame added results in a concentration between the predetermined minimum concentration and the maximum concentration within a range of 4 to 10 ppm in a final product in any circumstances, wherein the minimum and maximum concentrations are determined according to an evaluation method for brewing industry standard taste, and, at the minimum concentration, with respect to at least one or more of at least sensory feature (a) defined below and further sensory features (b) to (e) defined below, a discriminative taste change that can be found in the final product is detected with a confidence level of at least 90%, compared to a similar product without aspartame:
  - (a) a slight old or oxidized taste and an improved taste stability of the final product after packaging;
  - (b) smoother;
  - (c) less astringent taste;
  - (d) more rich or palatable; and

(e) less after-bitterness,

wherein the maximum concentration is established by the detection of characteristics of sweetness in the final product by the taste evaluation method to determine a concentration at which little or no sweetness is detected so that the taste and taste stability in the final product are substantially improved while the addition of the amount of aspartame to the malt beverage does not result in a detectable change characterized by sweetness in the malt beverage, and wherein the maximum concentration is not greater than 10 ppm in any case and is less than 10 ppm as required to obtain the maximum concentration detected by the taste." (line 2 in column 1 to line 14 in column 2)

(A4-2) "The use of saccharides; for example, the incorporation of small amounts of glucose and corn syrup into finished beer, is a historical method that can make the taste of the beer gentler and sweet." (lines 36 to 40 in column 4)

(A4-3) "Example 5

A standard lager beer similar to beer #3 in Table 1 was treated with 4 ppm aspartame, the lager beer having a primary specific gravity of 10.5 in plateau, an alcohol content of 3.6% w/w, and a caloric value of 41.2 kcal per 100 grams (140 Kcal./12 oz.). The lager beer containing aspartame was then compared with the same kind of beer without aspartame by eleven trained judges. As a result, at a ratio of 8:3, it was judged that the aspartame-containing beer has better mouthfeel, higher sweetness, less oxidation, and less astringency taste." (lines 10 to 19 in column 10)

(5) Matters described in A5

(A5-1) "(1) An alcohol abirritant for distilled spirits comprising a sugar alcohol." (lines 5 to 6 in the lower left column of page 1)

(A5-2) "The present invention relates to an alcohol abirritant for distilled spirits. More specifically, the present invention relates to an alcohol abirritant, which alleviates the stimulative taste of alcohol possessed by distilled spirits, by adding it to distilled spirits.

Here, the alcohol abirritant is a substance having specific properties with an effect of long-term storage ripening, which is conventionally performed in the production of distilled spirits containing ethanol and water as main components, or an effect of making taste mild." (lines 3 to 12 in lower right column of page 1)

(A5-3) "Therefore, the inventors of the present invention have repeatedly studied a method for alleviating irritation of alcohol of distilled spirits, such as shochu, in the oral cavity and throat, and giving a mild taste. As a result, the present invention has been completed by finding that the irritation of alcohol was alleviated and a mild taste was given by adding to distilled spirits a significant amount of sugar alcohol having certain characteristics." (lines 2 to 8 in the upper right column of page 2)

(A5-4) "[Effects of the Invention]

According to the present invention, by adding to distilled spirits a significant amount of sugar alcohol having certain characteristics, the irritation of alcohol in the oral cavity and throat can be alleviated, and the distilled spirits can be provided with a mild taste

in a short time, which is usually obtained by long-term storage ripening." (line 1 to the last line in the lower right column of page 3)

No. 5 The demandee's allegation

The demandee demands the decision, "The demand for trial of the case was groundless. The costs in connection with the trial shall be borne by the demandant," and submitted the following documentary evidence B1 to B22 to insist that the discussion by the demandant is unfounded and there is no reason for invalidation against the invention based on Article 29(2), Article 36(4), and Article 36(5)(i) of the Patent Act.

B1 Experiment Report 1 created by Shin Sasagawa, employee of the demandee, created November 22, 2012

B2 The section of "burn" in the Shogakukan Random House English-Japanese Dictionary, Shogakukan Co., Ltd., 16th edition, January 20, 1990, pages 349 to 350

B3 Experiment Report 2 created by Koji Yoshinaka employee of the demandee, created November 30, 2012

B4 Shiro Ohashi et al., "Taste enhancing effect of natural sweetener Thaumatin," New Food Industry, Vol. 27, No. 3, 1985, pages 33 to 39

B5 Kunimasa Koga, "Science of whiskey, the more you know the mystery of 'aging' the more you want to drink," Kodansha Co., Ltd., November 20, 2009, pages 184 to 185

B6 The written statement "The sweet substance known at the time in 1997" (Attached attachments 1 to 9) dated November 30, 2012 created by Koji Yoshinaka, employee of the demandee

B7 T. H. Grenby, PROGRESS IN SWEETENERS, ELSEVIER APPLIED SCIENCE, 1989,



pages 131 to 132,

B8 Maruzen food general dictionary, Maruzen Co., Ltd., March 25, 1998, section "Taste" on page 924 and section "Flavor" on page 962

B9 JIS Sensory analysis - Vocabulary JIS Z 8144-1990, page 6 and page 18

B10 Encyclopedia of fragrance, Maruzen Co., Ltd., 2nd printing, January 15, 2006, page 610

B11 Comprehensive dictionary of fragrance, Asakura Shoten Co., Ltd., 2nd edition, April 1, 1999, pages 190 to 191

B12 Beverage Term Dictionary, Beveridge Japan Co., Ltd., June 25, 1999, page 154

B13 Beverage and food dictionary, Heibonsha Co., Ltd., First edition 23 printing, published March 25, 1985, page 19

B14 Dictionary of Fragrance, Asakura Shoten Co., Ltd., 8th edition, October 1, 1989, page 214 and page 222

B15 Kanmei Shokujirin 2nd edition, Juseibo Co., Ltd., 2nd edition, April 25, 1997, page 970

B16 Comprehensive Food Dictionary, 6th edition, handy version, Dobunshoin Co., Ltd., September 1, 2000, newly revised edition of version 6, 7th edition, section "Shochu" on page 448

B17 Food and Taste, Kenpakusha Co. Ltd., First edition, April 25, 2008, pages 3 to 6 and pages 26 to 27

B18 Kanmei Shokujirin 7th edition of first edition, May 2, 1994, pages 41 to 42, section "Alcoholic Beverage " and page 389, section "Shusei (alcohol)"

B19 JIS Sensory Evaluation Analysis - Method (JIS Z 9080: 2004), Japan Standards

Association, 1st printing, March 20, 2004, pages 11 to 12 and page 22

B20 Japanese Unexamined Patent Application Publication No. H7-82588

B21 Eri Sasakura, "Study on fragrance ingredients of black tea: Comparative study of top notes of commercial tea," Journal of Japan Society of Home Economics, vol. 21, No. 3, 1970, pages 9 to 14

B22 Japanese Unexamined Patent Application Publication No. 2010-175299

No. 6 Judgment of the body for Reason for invalidation 1

1. Interpretation of Patent Inventions 1 to 4

In Patented Inventions 1 to 4, "taste improvement" is described. As used herein, the taste improvement is interpreted as one that "suppresses the bitterness and burning sensation of an alcoholic beverage caused by alcohol in concert with making use of the light taste of alcohol" in view of, for example, the following described matters in the description of the invention:

"[0004] The present invention has been made in view of the above problems and intends to provide a taste improver for an alcoholic beverage and an improving method therefor, which suppress bitterness and burning sensation of the alcoholic beverage caused by alcohol in the alcoholic beverage in concert with making use of the light taste of alcohol."

"[0024]

[Advantage of the Invention] According to the present invention, sucralose is added to an alcoholic beverage to improve the taste of alcoholic beverage in concert with making use of the light taste of alcohol while suppressing bitterness and burning sensation caused by alcohol in the alcohol beverage." (note that the underline of "the specification of the patent"

is added by the body; the same applies hereinafter)

## 2. Patent Invention 1

### (1) (Reason for invalidation 1-1) Terms

#### (A) "burning sensation" and "feeling of burning"

Everyone experiences a feeling like burning in the oral cavity and throat when eating or drinking alcohol. Moreover, in the section of "burn" in the Shogakukan Random House English-Japanese Dictionary, Shogakukan Co., Ltd., 16th edition, January 20, 1990, pages 349 to 350, submitted as Evidence B2, there is an exemplary sentence "The whiskey burned in his throat. Whiskey was as hot as a fire at throat" (B2, lines 19 to 20 in the left column of page 350). Since the term "burn" has been also used for alcoholic beverages before the application of the patent, there is no sense of incongruity in using the expression "burning" as its current participle for alcohol.

In the examples or the like, evaluation has been made with a taste panel using an alcohol concentration of 5%. In the case of such a taste panel, even though the alcohol concentration is 5%, it can be said that the sensation can be evaluated. Thus, there is no particular unnatural point.

Then, even if the terms "burning sensation" and "feeling of burning" are not common, anyone who drinks alcohol knows such a sensation or feeling, and there is nothing special in particular.

#### B "Making use of the light taste of alcohol"

(A) It is the taste originally possessed by alcohol.

Since "to improve the taste of alcoholic beverage in concert with making use of the light taste of alcohol" in paragraph [0024] of the specification of the patent means "the taste is being utilized," it is obvious that the taste is originally possessed by alcohol before addition of sucralose.

(B) "The light taste of alcohol" is made useful

In JIS Sensory analysis - Vocabulary, "taste" is "a comprehensive sensation of taste, olfaction, etc., when food is put in the mouth" (A7). Thus, "bitterness" and "burning sensation" are also sensations when food is put in the mouth, and these sensations should be included in the meaning of taste.

Although "bitterness" and "burning sensation" are sensations included in the taste, these sensations are targets to be suppressed because of the description of "suppressing bitterness and burning sensation" in paragraph [0024] of the specification of the patent .

In contrast, "the light taste of alcohol" is to be made useful, not a sensation to be suppressed.

(C) Evaluation method and examples of taste itself

There is no description of the definition or evaluation method for "taste" itself in the specification of the patent. Also in the examples, regarding the taste other than "bitterness" and "burning sensation," there are only the following descriptions at best: "becomes refreshing taste and is preferable" (Example 1: paragraph [0021]) and "was a good beverage with the sensation of fruit juice and a refreshing sweetness" (Example 2:

paragraph [0021]).

#### (D) Summary

Depending on the interpretation of the description of "to improve the taste of alcoholic beverage in concert with making use of the light taste of alcohol" in paragraph [0024] in the specification of the patent, "the taste is being utilized" clearly indicates that alcohol has the taste as its own taste. The tastes also include bitterness and burning sensation of alcohol to be suppressed. However, with regard to other tastes, there is no particular mention in the specification of the patent. Therefore, among the tastes, "bitterness" and "burning sensation," which are suppression targets, are suppressed. As a result, it is understood that "making use of the light taste of alcohol," which alcohol originally possessed, is attained, leading "to improve the taste."

From the above, the meaning of "the light taste of alcohol" is clear.

#### (E) The demandee's allegation

The demandee alleges that "in the present invention 'the light taste of alcohol' means the 'top note' even among the tastes of alcohol" (lines 17 to 18 of page 4 of the oral proceedings statement brief submitted by the demandee).

However, since the specification of the patent does not mention any scent including "top note" at all, such an interpretation cannot be adopted.

Moreover, in lines 2 to 5 of page 2 of B3, the "Experiment Report 2," submitted by the demandee, there is described "as for the light taste of alcohol (especially the smell felt when put in the mouth), it showed the effect of suppressing the alcohol taste of a 5%

ethanol aqueous solution to the alcohol taste of a 3.7% equivalent ethanol aqueous solution." Thus, it can be seen that the top note is suppressed.

According to the description of paragraph [0024] of the specification of the present invention, "making use of the light taste of alcohol" must be attained. Thus, the taste cannot be like a "top note" that is suppressed as found in the above B3. The allegation of the demandee therefore contradicts the description of the specification of the patent and cannot be adopted.

#### C Summary of (Reason for invalidation 1-1)

From the above, Patent Invention 1 cannot be invalidated by (Reason for invalidation 1-1).

#### (2) (Reason for invalidation 1-2) to (Reason for invalidation 1-4)

The detailed matters on the amount of sucralose added in the specification of the patent will be reviewed in detail.

(Present-1) Tables 2 to 5 in paragraphs [0014] to [0018] of the specification of the patent show that bitterness-suppressing effect is present with sucralose in an addition amount of 0.0005 parts or more at an alcohol concentration of 5% and with sucralose in an addition amount of 0.005 parts or more at alcohol concentrations of 10%, 20%, and 40%.

(Present-2) "The addition amount of sucralose to the alcoholic beverages used for improving taste is determined by the concentration at which sucralose expresses a taste-enhancing effect and the concentration at which the alcoholic beverage preference decreases due to the sweetness of sucralose." (paragraph [0007])

(Present-3) "In addition, the taste-enhancing effect of sucralose in alcoholic beverage depends on the taste of the alcoholic beverage itself rather than the alcohol content contained in the alcoholic beverage." (Paragraph [0007])

(Present-4) "For alcoholic beverages that do not impart sweetness, such as vodka, sake, beer, and whiskey, it is preferable that 0.0001 to 0.002% of sucralose is added to 100 parts of alcohol, and, when the concentration of sucralose exceeds 0.002%, the sweetness may decrease the preference for alcoholic beverages." (Paragraph [0007])

(Present-5) "On the other hand, for alcoholic beverages that impart sweetness, such as cocktails, liqueur, and shochu mixed with soda water, even if it is used in the range of 0.0001 to 2% of sucralose with respect to 100 parts of alcohol, it is possible to develop a desired effect without lowering the preference of the alcoholic beverage." (Paragraph [0007])

(Present-6) "The addition amount of sucralose to be added to the alcoholic beverage is therefore preferably 0.0001 to 2.0 parts, more preferably 0.001 to 2.0 parts, still more preferably 0.002 to 1.0 parts with respect to 100 parts of ethyl alcohol, which can be arbitrarily adjusted according to the caloric content, degree of sweetness, or the like required for the alcoholic beverage." (Paragraph [0007])

(Present-7) "[0022] Example 3 Plum fizz

To a mixture of 5 parts of a fructose-dextrose solution, 20 parts of white liquor, and 0.0075 part of sucralose, 0.2 parts of 1/5 plum juice, 0.02 parts of Boysenberry pigment, and 0.2 parts of essence were added together with 5 parts of water. Then, the mixture was dissolved by heating to 90°C and volume was increased up to 50 parts in total with addition of 25 parts of water.

[0023] After cooling to 5°C, the mixture was dissolved with 50 parts of carbonated water. The obtained plum fizz was a good beverage without bitterness or feeling of burning."

(Present-8) In paragraphs [0011] to [0012] and [Table 1], it is described that bitterness and burning will be 0 by adding 0.0025% of sucralose to an aqueous solution with an alcohol concentration of 5%.

Regarding the bitterness suppression, it can be seen from the above (Present-1) that there is a difference in the lowest sucralose concentration at which the bitterness-suppressing effect is achieved when the alcohol concentration is 5%, and 10 to 40%. If sucralose is added at a concentration higher than that, it can be seen that bitterness is suppressed in a wide concentration range at any alcohol concentration of 5 to 40%.

Regarding the burning sensation suppression and bitterness suppression, it was confirmed that there was no "feeling of burning" in an example of plum fizz in which 0.0075 parts of sucralose in the above (Present-7) and 20 parts of white liquor with unknown alcohol concentration were mixed with other components, followed by being adjusted to 50 parts in total and dissolved with 50 parts of carbonated water. With respect to the aqueous solution having an alcohol concentration of 5% in the above (Present-8), data are represented in which the bitterness and burning of the solution added with 0.0025% sucralose are 0. It is shown that burning sensation and bitterness are suppressed in the two examples.

From the described matters in the above (Present-2) to (Present-6) and from the



viewpoint of preference lowering, lower concentrations, such as sucralose of 0.0001 to 0.002% with respect to 100 parts of alcohol, are preferable in alcoholic beverages that impart no sweetness. It is understood that, in the alcoholic beverages that impart sweetness, it is possible to achieve the desired effect without lowering the preference of alcoholic beverage even if sucralose is used in the range of 0.0001 to 2% based on 100 parts of alcohol.

It is described that the preferable concentration of sucralose described herein can be determined to be a preferable concentration from the viewpoint of preference; that is, from the viewpoint of a sweetness-enjoyable alcoholic beverage or a sweetness-hindering alcoholic beverage. Even if the concentration of sucralose exceeds a preferable concentration according to the type of alcoholic beverage, some would like it as a sweetened alcoholic beverage, or even if it exceeds a preferable level, it does not describe that the effect of " to improve the taste of alcoholic beverage in concert with making use of the light taste of alcohol while suppressing bitterness and burning sensation " is not achieved.

To summarize the above, in the specification of the patent,

- (i) the suppression of bitterness with the wide concentration range of sucralose at an alcohol concentration of 5 to 40% is represented in [Table 2] to [Table 5];
- (ii) examples representing two cases of burning sensation and bitterness suppression are shown;
- (iii) in order to determine the range of sucralose to be added, it is only necessary to add sucralose to an alcoholic beverage and to verify the taste thereof without any particularly

difficult experiment; and

(iv) from the viewpoint of a sweetness-enjoyable alcoholic beverage or a sweetness-hindering alcoholic beverage and taking into account the preference, the concentration of sucralose can be determined as appropriate.

Based on the description of the specification of the patent, therefore, it is possible to determine the addition amount of sucralose in a wide variety of alcoholic beverages without imposing excessive trial and error to a person skilled in the art.

Thus, Patent Invention 1 cannot be invalidated by (Reason for invalidation 1-2), (Reason for invalidation 1-3), and (Reason for invalidation 1-4).

The demandant alleges that "from sweetness-enjoyable alcoholic beverages to sweetness-hindering alcoholic beverages, considering the tastes required from the viewpoint of the taste and preference of an alcoholic beverage itself are quite varied, it is totally unacceptable that it would be obvious from the description of the specification of the patent as to what extent the amount of sucralose should be in order to exhibit a taste-improving effect." (lines 17 to 20 of page 8 of the oral proceedings statement brief submitted by the demandant).

However, it is obvious that sucralose is a sweetener with a high degree of sweetness, and the more sweetness it adds, the stronger the sweetness. It can be predicted what kind of taste will be imparted when added. As mentioned in the above "No. 6 2(1) (Reason for invalidation 1-1) Terms," the terms "light taste" and "burning sensation" are also clear. Therefore, it is not impossible to determine the amount of sucralose and implement Patent Invention 1 based on the description of the specification of the patent.

Even if trial and error is required to determine the concentration of sucralose that is optimum for a beverage according to preference or the like, there is no need to decide the optimal amount range of sucralose when implementing Patent invention 1. It is sufficient to create even one case of "making use of the light taste of alcohol while suppressing bitterness and burning sensation caused by alcohol in the alcoholic beverage." Even if it is necessary to repeat an experiment to decide the amount of sucralose to be added as claimed by the demandant, therefore, only trial and error may be performed with reference to the addition amount of sucralose in the above two cases described in the specification of the patent in which burning sensation and bitterness are suppressed. It does not require any excessive trial and error from a person skilled in the art. Thus, allegation of the demandant cannot be accepted.

## 2 Patent Inventions 2 to 4

Patent Inventions 2 to 4 cannot be invalidated by Reason for invalidation 1 alleged by the demandant based on the same reason as for the above "No. 6 2(1)" to "No. 6 2(2)."

It should be noted that the demandant separately describes Reason for invalidation due to Violation of Article 36 (lines 13 to 20 of page 18 and lines 5 to 15 of page 20 of the written demand for trial) for Patent Invention 3 and Patent Invention 4. The allegation overlaps with Reason for invalidation1. The demandant also recognizes the duplication in the section of "(3-3) (3) Patent Inventions 3 and 4" on page 10 of the oral proceedings statement brief.

## No. 7 Judgment of the body for Reason for invalidation 2 on Patent Invention 1

It is recognized that the following inventions are described in A1 to 5.

### 1 Invention described in A1

#### "2. Properties

The properties of thaumatin are summarized in 'Natural sweetener Thaumatin' (Ohashi), the outline of which is as follows:

... (Omitted) ...

6) It has the effect of relieving unpleasant bitterness, astringency, alkaline taste, and smell."

(Notation (A1-2)), it is recognized that the following invention (hereinafter referred to as "A1 Invention") is described.

"Thaumatin having an effect of relieving unpleasant bitterness, astringency, alkaline taste, and smell."

## 2. Comparison

Compare Patent Invention 1 with Invention A1.

### (1) Sucralose

"Thaumatin" of A1 Invention 1 and "sucralose" of Patent Invention 1 are common in terms of sweetener.

### (2) Alcoholic beverages

Application of the A1 Invention is not limited to alcoholic beverages.

### (3) Taste

One having "a mitigating effect" on "unpleasant bitterness" of the A1 Invention and a "taste-improver," or an "agent" for "making use of the light taste of alcohol while suppressing bitterness and burning sensation caused by alcohol of alcohol beverages," of Patent Invention 1 are common in terms of a taste-improver having an effect of suppressing bitterness, except for the differences of substances described in Different Feature 1 below.

#### (4) Summary

To summarize the above, the two inventions have the following (Corresponding feature) and (Different features).

##### (Corresponding feature)

"A taste-improver having an action of suppressing bitterness, comprising a sweetener."

##### (Different features) Taste-improver

##### (Different feature 1-1)

The sweetener, which is a component of the taste improver, is "sucralose" in Patent Invention 1, whereas in the A1 invention it is "thaumatin."

##### (Different feature 1-2)

The application subject of the taste improver is an "alcoholic beverage" in Patent Invention 1, while the application subject is not particularly limited in the A1 Invention.

##### (Different feature 1-3)

In Patent Invention 1, the "taste" of the taste improver suppresses "bitterness caused by alcohol of alcoholic beverages" and "makes use of the light taste of alcohol." In

the A1 Invention, on the other hand, it exerts "an effect of relieving unpleasant bitterness," not limited to alcohol.

(Different feature 1-4)

In Patent Invention 1, the "taste" of the taste improver "suppresses burning sensation " "caused by alcohol of alcoholic beverages" and "makes use of the light taste of alcohol." In the A1 Invention, on the other hand, it is unclear whether there is such an effect.

3 Examination on (Different feature 1-1), (Different feature 1-2), and (Different feature 1-4)

(Different feature 1-1), (Different feature 1-2), and (Different feature 1-4) are related to each other, and thus will be examined together.

A1 describes "Shochu mixed with soda water: relaxation of alcohol smell and irritation" (note (A1-5)), and describes that thaumatin has an effect of relieving irritation in alcoholic beverages.

On the other hand, on lines 6 to 17 in the lower left column of page 2 of Japanese Unexamined Patent Application Publication No. H3-22969 (hereinafter referred to as "Publication A"), shochu, which is a raw material of "shochu mixed with soda water" described in A1, is described as follows:

"Compared to high-temperature distillation (for example 50 to 60°C), as is clear from the test examples described later, low-temperature distillation results in a decrease in total amount of volatile components and a decrease in each component (this is why low

temperature distillation has been previously contraindicated in the industry). In the low-temperature distillation, however, the total aroma is improved to a large extent while the so-called shochu smell disappears. Moreover, when it is contained in the mouth, a stimulus taste like stinging the tongue peculiar to shochu is gone and becomes a mild mouthfeel. In addition, the tastes of materials used are further extracted. In addition, taste, flavor, and texture are greatly improved over conventional shochu, and are rather completely new ones not found in the past."

As is clear from Publication A, the fact that shochu has a stimulant taste that pierces the tongue had been known before the application of this patent. In addition, it is remarkable that a stinging stimulus in shochu is a matter everyone experiences from before the application of the patent.

Then, if a person skilled in the art who encounters the description of "shochu mixed with soda water: relaxation of alcohol smell and irritation" described in A1, it is natural to first think of a stinging stimulus of shochu. A person skilled in the art does not understand "stimulus" described herein as "burning sensation."

Even if person skilled in the art understands that the "stimulus" of A1 is "burning sensation," in the A1 Invention, it is only understood that thaumatin has an effect of suppressing burning sensation, and there is no guidance that sucralose has such effect.

A2 relates to the principle of sweetness of sucralose and is not an invention concerning the suppression of burning sensation. In addition, A2 has no description

related to burning sensation.

Although A3 and A4 indicate effects on bitterness suppression, they indicate no effect on burning sensation. In addition, these inventions relate to "sweet chlorodeoxy sugar" and "aspartame," respectively, but not sucralose.

A5 describes the follows:

"(1) an alcohol irritation-relieving agent for distilled spirits, comprising sugar alcohol."

(Extract (A5-1))

"The alcohol irritation-relieving agent used herein has a certain property with an effect of long-term storage ripening conventionally performed in the manufacture of distilled spirits containing ethanol and water as main components, or an effect of mellowing the taste." (Extract (A5-2))

"According to the present invention, by adding to distilled spirits a significant amount of sugar alcohol having certain characteristics, the irritation of alcohol to the oral cavity and throat is alleviated, and a mellow taste usually obtained by long-term storage ripening is given to distilled spirits in a short time." (Extract (A5-4))

In view of these descriptions, it is recognized that the following invention (hereinafter referred to as the "A5 Invention") is described.

"An alcohol irritation-relieving agent for distilled spirits consisting of sugar alcohol, wherein

the alcohol irritation-relieving agent is one exhibiting a specific property having a long-term storage ripening effect, or an effect of mellowing the taste, which has been



conventionally performed in the manufacture of distilled spirits containing ethanol and water as main components, and is able to alleviate irritation of alcohol to the oral cavity and throat, giving distilled spirits a mellow taste normally obtained by long-term storage ripening, in a short period of time."

However, "stimulation" in A5 Invention is defined "a long-term storage ripening effect, or an effect of mellowing the taste, which has been conventionally performed in the manufacture of distilled spirits containing ethanol and water as main components." It is natural to understand that a stinging stimulus possessed by shochu (see, Publication A mentioned above) has become mellowed due to long-term maturation, and it cannot be recognized that burning sensation has been suppressed.

Even if a person skilled in the art understands that the "stimulation" of A5 Invention refers to "burning sensation," the A5 Invention finds an effect as "alcohol irritation-relieving agent" in "sugar alcohol." Since sucralose is not a substance belonging to sugar alcohols, it is even difficult to lead to the fact that sucralose has an effect of relaxing stimulation.

#### (1) Summary

Then, A1 to 5 do not describe that sucralose has the effect of suppressing burning sensation. It cannot be arrived at even if the technical common sense at the time of filing of the patent is taken into consideration.

Even if there is a person skilled in the art who understands "stimulation" of the A1 Invention and the A5 Invention as "burning sensation," neither the A1 Invention nor the A5 Invention is an invention relating to "sucralose." These inventions perform "stimulation" only by thaumatin and sugar alcohol, respectively. In other words, burning sensation is just suppressed. It is difficult to arrive at the fact that sucralose has a burning sensation suppression effect.

Just to be sure, we will consider whether the matters stated in A1 and A5 can lead to technical matters having an effect of suppressing irritation, such as a sweetener, not limited to thaumatin and sugar alcohol. In A1 and A5, there is no description that the suppression effect of "stimulation" can be extended to other sweeteners. Even with consideration of the technical common sense at the time of filing of the patent, it is difficult to consider that other sweeteners have their effects to suppress "stimulation" in view of the actions found in thaumatin and sugar alcohol described in A1 and A5. It is also difficult to generalize to conceptualization that sweeteners can suppress "stimulation" in general.

Even if we consider the other items of Evidence A and the technical common sense at the time of filing, "sucralose" in Patent Invention 1 cannot lead to the action of suppressing "burning sensation caused by alcohol in the alcoholic beverage " included in "taste enhancement."

## 7 Closing

As mentioned above, even with reference to A1 to 5 and other Evidence A and the technical common sense at the time of filing, "sucralose" in Patent Invention 1 cannot lead to the action of suppressing "burning sensation caused by alcohol in the alcoholic beverage " included in "taste enhancement." Thus, needless to consider (Different feature 1-3), Patent Invention 1 cannot be invalidated by Reason for invalidation 2.

#### No. 8 Judgment of the body for Reason for invalidation 2 on Patent Inventions 2 to 4

For reasons similar to those described in the above "No. 7 3. Examination on (Different feature 1-1), (Different feature 1-2), and (Different feature 1-4)," even from any of Evidence A and the technical common sense at the time of filing of the patent, "sucralose" in Patent Inventions 2 to 4 cannot lead to the action of suppressing "burning sensation caused by alcohol in the alcoholic beverage " included in "taste enhancement."

Thus, Patent Inventions 2 to 4 cannot be invalidated by Reason for invalidation 2.

#### No. 9 Concluding Remarks

As described above, the reasons and the means of proof alleged by the demandant cannot invalidate the patent according to Patent Inventions 1 to 4. In addition, no other reasons can be found to conclude that the patent according to Patent Inventions 1 to 4 should be invalidated.

The costs in connection with the trial shall be borne by the demandant under the provisions of Article 61 of the Code of Civil Procedure which is applied mutatis mutandis in the provisions of Article 169(2) of the Patent Act.

Therefore, the trial decision shall be made as described in the conclusion.

August 27, 2013

Chief administrative judge: KORIYAMA, Jun

Administrative judge: OGAWA, Keiko

Administrative judge: SAITO, Mayumi