

SPECIFICATION

HAIR CLEANSING AGENT

5 FIELD OF THE INVENTION

[0001]

The present invention relates to a hair cleansing agent.

RELATED ART

[0002]

10 Hair is likely to be affected by ultraviolet rays, heat, drying or the like from or by sunlight, and exposed to a damage due to daily shampooing, brushing, heat of a dryer or the like. In addition, in recent years, it has become popular to enjoy being stylish by changing the appearance of the hair
15 such as freely changing a hair color (a coloring or the like) or changing a hairstyle by a chemical treatment (a permanent wave or the like). It is found that, if the frequency of such treatment is increased, damage is accumulated in the hair, split ends or a hair breakage is generated, or hair ends
20 become dry or rough.

[0003]

Specifically, in Japanese Patent Laid-Open No. 2000-327540, it is described that detachment of cuticle during a shampooing process occurs by rubbing of hairs at a time of
25 lift-up due to swelling of a cuticle portion by an anionic surfactant, and a technique for suppressing the cuticle lift-up is proposed.

[0004]

Also, as a technique for improving a gloss and a manageability of the hair by essentially reforming the hair, a technique using an organic dicarboxylic acid is proposed
5 (Japanese Patent Laid-Open No. 2005-239667).

[0005]

In addition, a technique using a sulfate-type anionic surfactant having a specific structure and an ether carboxylate-type surfactant having a specific structure, which
10 imparts excellent foaming properties, suppresses swelling of a horny layer of the scalp, and suppresses an irritation or itching of the scalp is proposed (Japanese Patent Laid-Open No. 2010-235523).

[0006]

15 Additionally, a technique imparting sufficient foaming even under the conditions when there is dirt of sebum or the like, excellent detergency, smoothness at a time of foaming and at a time of rinsing, smoothness or softness after drying the hair, and manageability, by using a specific anionic
20 surfactant, a nonionic surfactant, or an amphoteric surfactant is proposed (Japanese Patent Laid-Open No. 2012-1512).

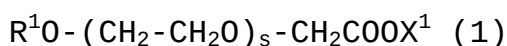
SUMMARY OF THE INVENTION

[0007]

25 In one embodiment, there is provided a hair cleansing agent including the following components (A) to (C) and water.

(A) An ether carboxylate-type anionic surfactant

represented by the following General Formula (1) in a concentration of equal to or greater than 0.5% by mass and equal to or less than 12% by mass.



5 wherein, in General Formula (1), R^1 represents an alkyl group or an alkenyl group having equal to or more than 10 and equal to or less than 18 carbon atoms, X^1 represents an alkali metal, an alkali earth metal, ammonium, a cation derived from an alkanolamine or a basic amino acid, and s represents a number
10 of equal to or greater than 0.5 and equal to or less than 10 as a mass average.

(B) Succinic acid or a salt thereof in a concentration of equal to or greater than 0.1% by mass and equal to or less than 5% by mass.

15 (C) A surfactant represented by the following General Formula (2) in a concentration of equal to or greater than 0.1% by mass and equal to or less than 2% by mass.



wherein, in General Formula (2), R^2 represents a linear or
20 branched alkyl group or alkenyl group having equal to or more than 8 and equal to or less than 10 carbon atoms, and u is a number of equal to or greater than 0.5 and equal to or less than 4 as a mass average.

25 DETAILED DESCRIPTION OF THE INVENTION

[0008]

The invention will be now described herein with reference

to illustrative embodiments. Those skilled in the art will recognize that many alternative embodiments can be accomplished using the teachings of the present invention and that the invention is not limited to the embodiments

5 illustrated for explanatory purposes.

[0009]

For consumers who want to enjoy being stylish by changing the appearance of their hair, coloring or a permanent wave is a necessity, and in daily hair care routines, a force such as
10 extending the hair by brushing, blowing, or usage of an iron is applied to the hair. In a case where the hair is stretched, a phenomenon (lift-up) in which the cuticle is curled-up is observed, and this is considered to promote peeling of the cuticle. Accordingly, a hair cosmetic which suppresses the
15 lift-up which occurs when a force such as stretching the hair is applied, and thus, can suppress cuticle peeling is required.

[0010]

In this regard, in Japanese Patent Laid-Open No. 2000-327540, it is disclosed that, by acting a specific acid to an
20 anionic surfactant and setting pH to be in a specific range, the lift-up of cuticle is suppressed, and due to this, peeling of cuticle is suppressed, but there is room for improvement in terms of insufficient lift-up suppression effects when stretching the hair.

25 In addition, in Japanese Patent Laid-Open Nos. 2005-239667, 2010-235523, and 2012-1512, various hair care effects are disclosed, but description regarding suppression effects

of peeling of cuticle when stretching the hair is not shown, and there is room for improvement in terms of the insufficient effects.

[0011]

5 The present invention has been made in consideration of the above-described circumstances, and provides a hair cleaning agent composition which suppresses cuticle peeling at a time of stretching the hair due to repetition of brushing, blowing, usage of an iron, or the like in daily hair care
10 routines and is capable of reducing deterioration of texture or improving finish gloss and manageability.

[0012]

 The present inventors have found that the above problems can be solved by blending a specific organic acid and a
15 nonionic surfactant in a specific anionic surfactant.

[0013]

 In addition, in another embodiment, there is provided a method for cleaning a hair including applying the hair cleansing agent of the present invention to the hair and
20 rinsing the hair.

[0014]

 According to the present invention, the hair cleaning agent composition which suppresses cuticle peeling at the time of stretching the hair due to repetition of brushing, blowing,
25 usage of an iron, or the like in daily hair care routines and is capable of reducing deterioration of texture or improving finish gloss and manageability can be provided.

[0015]

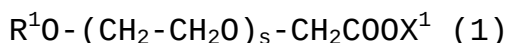
Hereinafter, an embodiment of the present invention will be described based on specific examples of respective components. Moreover, respective components may be used alone
 5 or in combination of two or more types thereof.

In addition, in the specification, pH means a measured value in the case of being diluted 20-fold at 25°C (glass electrode measurement method).

[0016]

10 (Component (A))

A component (A) is an ether carboxylate-type anionic surfactant represented by the following General Formula (1).



Wherein, in General Formula (1), R^1 represents an alkyl group
 15 or an alkenyl group having equal to or more than 10 and equal to or less than 18 carbon atoms, X^1 represents an alkali metal, an alkali earth metal, ammonium, a cation derived from an alkanolamine or a basic amino acid, and s represents a number of equal to or greater than 0.5 and equal to or less than 10
 20 as a mass average.

[0017]

In the hair cleansing agent in the present embodiment, an ether carboxylate-type anionic surfactant which is the component (A) is a compound group having a hydrophobic group
 25 and a carboxyl group through a polyoxyethylene chain, and represented by General Formula (1).

[0018]

In General Formula (1), R^1 is preferably an alkyl group having equal to or more than 12 carbon atoms, and preferably an alkyl group having equal to or less than 16 carbon atoms, from the viewpoint of enriching foaming at a time of washing
5 and sufficiently obtaining the cuticle peeling suppression effects when stretching the hair by used in combination with components (B) and (C) described below.

[0019]

In addition, in General Formula (1), s which is the
10 average addition molar number of ethylene oxide is equal to or greater than 0.5 and preferably equal to or greater than 1, and equal to or less than 10 and preferably equal to or less than 6, from the viewpoint of improving foaming.

[0020]

15 In addition, in General Formula (1), as X^1 which is a counterion, an alkali metal such as sodium or potassium; an alkali earth metal such as calcium or magnesium; ammonium; a cation derived from an alkanolamine such as monoethanolamine, diethanolamine, or triethanolamine; and a cation derived from
20 a basic amine such as arginine or lysine.

[0021]

The component (A) may be used alone or in combination of two or more types thereof, and the content thereof in the hair cleansing agent is equal to or greater than 0.5% by mass and
25 preferably equal to or greater than 0.7% by mass, and equal to or less than 12% by mass and preferably equal to or less than 8% by mass, with respect to the total amount of the hair

cleansing agent, from the viewpoint of cuticle peeling suppression. Furthermore, from the viewpoint of the solubility of a base, the content is more preferably equal to or less than 4% by mass.

5 [0022]

(Component (B))

Next, a component (B) will be described. The component (B) is succinic acid or a salt thereof.

In the present embodiment, by using the component (B) with the component (A) and a component (C) described below in combination in the hair cleansing agent, it is possible to effectively suppress cuticle peeling occurring at a time of daily hair care routines. In addition, since it is possible to keep the hair in a healthy state by using the components (A) to (C) in combination in the hair cleansing agent, for example, deterioration of texture of the hair can be reduced, or finish gloss and manageability can be improved.

[0023]

The content of the component (B) in the hair cleansing agent can be equal to or greater than 0.1% by mass, preferably equal to or greater than 0.3% by mass, more preferably equal to or greater than 2% by mass, and still more preferably equal to or greater than 3% by mass, with respect to the total amount of the hair cleansing agent, from the viewpoint of the peeling suppression effects of cuticle at the time of hair-stretching or imparting gloss to the hair. In addition, the content of the component (B) can be equal to or less than 5%

by mass and preferably equal to or less than 3.5% by mass with respect to the total amount of the hair cleansing agent, from the viewpoint of the stability of the hair cleansing agent.

[0024]

5 (Component (C))

Next, a compound (C) will be described. The component (C) is a polyoxypropylene alkyl ether-type nonionic surfactant represented by the following General Formula (2).



10 Wherein, in General Formula (2), R^2 represents a linear or branched alkyl group or alkenyl group having equal to or more than 8 and equal to or less than 10 carbon atoms, and u is a number of equal to or greater than 0.5 and equal to or less than 4 as a mass average.)

15 [0025]

In General Formula (2), R^2 preferably has 8 carbon atoms from the viewpoint of improving foaming or gloss of the hair.

In addition, in General Formula (2), u is preferably equal to or greater than 2 and equal to or less than 3.5 as a
20 mass average from the viewpoint of improving foaming or gloss of the hair.

[0026]

The content of the component (C) in the hair cleansing agent is equal to or greater than 0.1% by mass, preferably
25 equal to or greater than 0.5% by mass, and more preferably equal to or greater than 1% by mass, with respect to the total amount of the hair cleansing agent, from the viewpoint of

foaming of the hair cleansing agent or improving gloss of the hair. In addition, the content of the component (C) is equal to or less than 2% by mass, preferably equal to or less than 1.5% by mass, and more preferably equal to or less than 1.2%
5 by mass, with respect to the total amount of the hair cleansing agent, from the viewpoint of reduction of creak of the hair at a time of washing.

[0027]

In addition, in the hair cleansing agent of the present
10 embodiment, a content ratio (mass ratio) of the components (A), (B), and (C) is preferably as follows from the viewpoint of achieving the balance of cuticle peeling suppression effects at the time of hair-stretching and effects of cleaning ability with respect to dirt and improvement of finish gloss and
15 manageability.

[0028]

That is, from the viewpoint of improving cuticle peeling suppression effects at the time of hair-stretching, cleaning ability with respect to dirt, and finish gloss and
20 manageability, the mass ratio ((A)/(B)) of the component (A) to the component (B) in the hair cleansing agent is preferably equal to or greater than 0.5, more preferably equal to or greater than 0.8, and still more preferably equal to or greater than 1, and preferably equal to or less than 50, more
25 preferably equal to or less than 20, and still more preferably equal to or less than 15.

[0029]

In addition, from the viewpoint of improving cuticle peeling suppression effects at the time of hair-stretching, cleaning ability with respect to dirt, and finish gloss and manageability, the mass ratio ((A)/(C)) of the component (A) to the component (C) in the hair cleansing agent is preferably equal to or greater than 0.8, more preferably equal to or greater than 2, and still more preferably equal to or greater than 3, and preferably equal to or less than 45, more preferably equal to or less than 10, and still more preferably equal to or less than 8.

[0030]

In addition, from the viewpoint of improving cuticle peeling suppression effects at the time of hair-stretching, cleaning ability with respect to dirt, and finish gloss and manageability, the mass ratio ((B)/(C)) of the component (B) to the component (C) in the hair cleansing agent is preferably equal to or greater than 0.05, more preferably equal to or greater than 0.3, and still more preferably equal to or greater than 1, and preferably equal to or less than 40, more preferably equal to or less than 10, and still more preferably equal to or less than 6.

[0031]

The hair cleansing agent in the present embodiment is more specifically an aqueous hair cleansing agent.

That is, the hair cleansing agent in the present embodiment further includes water. As the water, ion exchange water, distilled water, or the like can be used.

The content of the water in the hair cleansing agent, for example, can be a remaining portion excluding the components other than the water in the hair cleansing agent. In addition, the content of the water is preferably equal to or greater than 50% by mass, and more preferably equal to or greater than 60% by mass, with respect to the total mass of the hair cleansing agent. In addition, the content is preferably equal to or less than 98% by mass, and more preferably equal to or less than 95% by mass.

10 [0032]

Next, the pH of the hair cleansing agent will be described.

In the hair cleansing agent in the present embodiment, the pH at 25°C when diluted 20-fold with water is preferably equal to or lower than 10, more preferably equal to or lower than 9.6, and still more preferably equal to or lower than 6.5, from the viewpoint of maximizing the effects of succinic acid which is the component (B) suppressing cuticle peeling at the time of hair-stretching. The pH is equal to or lower than 6.5, preferably equal to or lower than 6, and more preferably equal to or lower than 5.5, from the viewpoint of dirt removing performance of the hair cleansing agent. In addition, the pH is preferably equal to or higher than 2, more preferably equal to or higher than 3, and still more preferably equal to or higher than 3.5 from the same viewpoint as described above.

25 [0033]

In addition, in the present embodiment, the hair

cleansing agent may contain a component other than the components described above.

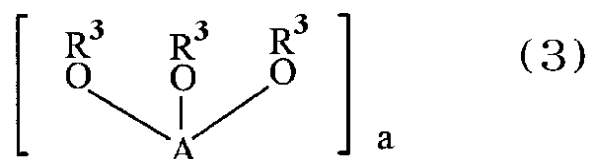
For example, the hair cleansing agent may contain the following component (D).

- 5 (D) one or more types of cationized polysaccharides selected from the group consisting of cationized celluloses and cationized guar gums

[0034]

Among the components (D), as the cationized cellulose, a
10 cellulose represented by the following General Formula (3) is preferable.

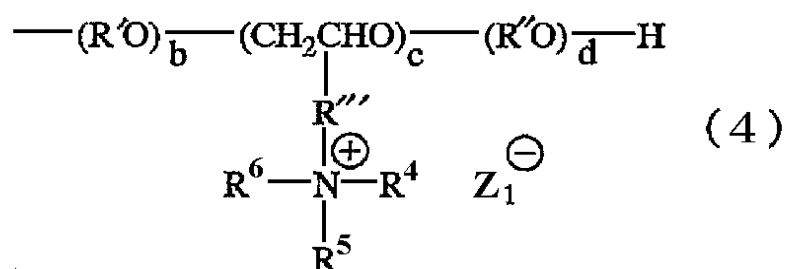
[0035]



[0036]

- 15 In General Formula (3), A represents a residue of the anhydroglucose unit, a is an integer of equal to or greater than 50 and equal to or less than 20,000, and each R³s represents a substituent represented by the following General Formula (4).

20 [0037]



[0038]

Wherein, in General Formula (4), each of R' and R'' independently represents an alkylene group having 2 or 3 carbon atoms, b is an integer of equal to or greater than 0 and equal to or less than 10, c is an integer of equal to or greater than 0 and equal to or less than 3, d is an integer of equal to or greater than 0 and equal to or less than 10, R''' represents an alkylene or hydroxy alkylene group having equal to or more than 1 and equal to or less than 3 carbon atoms, R⁴, R⁵, and R⁶ are the same as or different from each other, each of R⁴, R⁵, and R⁶ represents an alkyl group having equal to or less than 10 carbon atoms, an aryl group, or an aralkyl group or may form a heterocycle including a nitrogen atom in the formula, and Z₁ represents a monovalent anion (chlorine, bromine, iodine, sulfuric acid, sulfonic acid, methyl sulfate, phosphoric acid, nitric acid, or the like).

[0039]

The cation substitution degree of the cationized cellulose represented by General Formula (3) is preferably equal to or greater than 0.01 and equal to or less than 1. That is, in General Formula (4), the average value of c which

is the anhydroglucose unit is preferably equal to or greater than 0.01 and equal to or less than 1, and more preferably equal to or greater than 0.02 and equal to or less than 0.5. In addition, the total value of $b + d$ is preferably equal to
5 or greater than 1 and equal to or less than 3 as an average. In addition, the substitution degree is preferably equal to or less than 1 from the viewpoint of the reaction yield.

For example, as R^4 , R^5 , and R^6 , it is preferable that all of R^4 , R^5 , and R^6 are CH_3 groups, or two of R^4 , R^5 , and R^6 are a
10 short-chain alkyl group such as CH_3 groups and the remaining one is a long-chain alkyl group having equal to or more than 10 and equal to or less than 20 carbon atoms. The molecular weight of the cationized cellulose used here is preferably about equal to or greater than 100000 and equal to or less
15 than 8000000.

[0040]

Examples of commercially available products of the cationized cellulose include POIZ C-60H (manufactured by Kao Corporation), POIZ C-80H (manufactured by Kao Corporation),
20 Caticelo L-150 (manufactured by Kao Corporation), and Polymer JR-400 (manufactured by Dow Chemical Company).

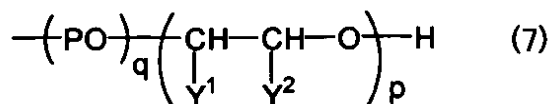
[0041]

In addition, the component (D) may include a cationized hydroxypropyl cellulose having a main chain represented by the
25 following General Formula (5) derived from anhydroglucoses, and in which the substitution degree of the cationized ethyleneoxy group is equal to or greater than 0.01 and equal

$$\left(\begin{array}{c} \text{OR}^7 \\ | \\ \text{---} \text{C} \text{---} \text{O} \text{---} \\ / \quad \backslash \\ \text{R}^9\text{O} \quad \text{OR}^8 \\ \backslash \quad / \\ \text{---} \text{C} \text{---} \text{O} \text{---} \end{array} \right)_n \quad (5)$$

[0043]

Wherein, in General Formula (5), each of R⁷, R⁸, and R⁹ independently represents a substituent having a cationized ethyleneoxy group and a propyleneoxy group represented by the following General Formula (6) or (7), n represents the average degree of polymerization of anhydroglucose, and is equal to or greater than 50 and equal to or less than 5000.

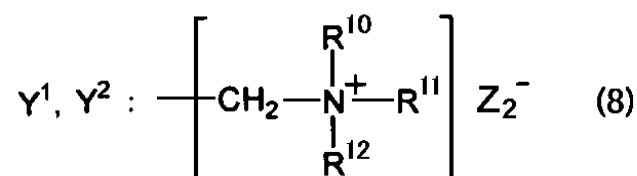
$$R^7, R^8, R^9 : \left(\begin{array}{c} \text{CH} - \text{CH} - \text{O} \\ | \quad | \\ Y^1 \quad Y^2 \end{array} \right)_p (\text{PO})_q \text{H} \quad (6)$$


15 [0045]

Wherein, in General Formulae (6) and (7), one of Y¹ and Y² represents a hydrogen atom, the other represents a cationic group represented by the following General Formula (8), and PO

represents a propyleneoxy group. p represents the number of cationized ethyleneoxy groups (-CH(Y¹)-CH(Y²)-O-) included in General Formula (6) or (7), q represents the number of propyleneoxy groups (-PO-) included in General Formula (6) or (7), and each of p and q independently represents 0 or a positive integer. In a case where neither of p or q is 0, an addition order of the cationized ethyleneoxy group and the propyleneoxy group is not limited, and in a case where p and/or q is equal to or greater than 2, the cationized ethyleneoxy group and the propyleneoxy group may be block-bonded or random-bonded.

[0046]



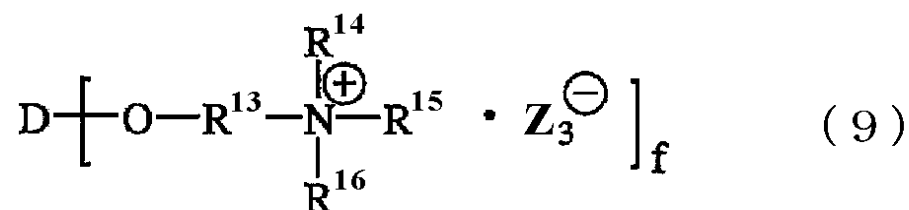
[0047]

Wherein, in General Formula (8), each of R¹⁰, R¹¹, and R¹² independently represents a linear or branched alkyl group having equal to or more than 1 and equal to or less than 3 carbon atoms, and Z₂⁻ represents an anionic group.

[0048]

In addition, among the components (D), as the cationized guar gum, a guar gum represented by the following General Formula (9) is preferable.

[0049]



[0050]

Wherein, in General Formula (9), D represents a guar gum residue, R¹³ represents an alkylene group or a hydroxyalkylene group, R¹⁴, R¹⁵, and R¹⁶ are the same as or different from each other, each of R¹⁴, R¹⁵, and R¹⁶ represents an alkyl group, an aryl group, or an aralkyl group having 10 or less carbon atoms, or may form a heterocycle including a nitrogen atom in the formula, Z₃[−] represents an anion (chlorine, bromine, iodine, sulfuric acid, sulfonic acid, methyl sulfate, phosphoric acid, or the like), and f represents a positive integer.

[0051]

The cation substitution degree of a cationized guar gum derivative is preferably equal to or greater than 0.01 and equal to or less than 1, and more preferably equal to or greater than 0.02 and equal to or less than 0.5 cation groups are introduced into one saccharide unit. This type of cationic polymer is described in Japanese Examined Patent Publication Nos. 58-35640 and 60-46158, and Japanese Patent Laid-open No. 58-53996, and for example, as a commercially available product, the trade name Jaguar, manufactured by Rhodia Inc., is sold on the market, and Jaguar C-13C, Jaguar C-14SK, and the like are exemplified. In addition, Raborugamu CG-M manufactured by

Sumitomo Dainippon Pharma Co., Ltd. is exemplified.

[0052]

The content of the component (D) in the hair cleansing agent is preferably equal to or greater than 0.01% by mass, more preferably equal to or greater than 0.1% by mass, and still more preferably equal to or greater than 0.2% by mass, with respect to the total amount of the hair cleansing agent, from the viewpoint of improving running of fingers through the hair at the time of washing or manageability of the hair after drying. In addition, the content of the component (D) is preferably equal to or less than 2.5% by mass, more preferably equal to or less than 1.2% by mass, and still more preferably equal to or less than 1% by mass, with respect to the total amount of the hair cleansing agent, from the viewpoint of improving the viscosity of a washing base.

[0053]

In the hair cleansing agent of the present embodiment, an anionic surfactant other than the component (A), a nonionic surfactant other than the component (C), a cationic surfactant, an amphoteric surfactant, silicones, and other oils may be further included, to obtain desired effects such as improvement of the cleaning performance and finish after drying.

[0054]

Among these, specific examples of the anionic surfactant other than the component (A) include sulfate-type anionic surfactants such as alkyl sulfate, alkenyl sulfate,

polyoxyalkylene alkyl ether sulfate, polyoxyalkylene alkenyl ether sulfate, and sulfosuccinic acid alkylene alkyl phenyl ether sulfate; and sulfonic acid-type anionic surfactants such as a sulfosuccinic acid alkyl ester salt, a polyoxyalkylene

5 sulfosuccinic acid alkyl ester salt, and alkane sulfonate.

Among these, polyoxyalkylene alkyl ether sulfate,

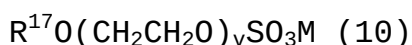
polyoxyalkylene alkenyl ether sulfate, alkyl sulfate, or

alkenyl sulfate is preferable, and among these, as the

polyoxyalkylene alkyl ether sulfate, polyoxyethylene alkyl

10 ether sulfate represented by the following General Formula (10) is preferable.

[0055]



Wherein, in General Formula (10), R^{17} represents an alkyl group

15 or an alkenyl group having equal to or more than 10 and equal to or less than 18 carbon atoms, M represents an alkali metal, an alkali earth metal, ammonium, a cation derived from an alkanolamine or a basic amino acid, and v is an average addition molar number of ethyleneoxide and represents a number

20 of equal to or greater than 0.5 and equal to or less than 5 as a mass average.

[0056]

Among these, from the viewpoint of achieving both quick foaming and good texture of foam, R^{17} in General Formula (10)

25 is preferably an alkyl group having equal to or more than 12 and equal to or less than 14 carbon atoms. In addition, the average addition molar number v of ethyleneoxide is preferably

equal to or greater than 0.9 and equal to or less than 4, and more preferably equal to or greater than 1 and equal to or less than 3. Furthermore, polyoxyethylene alkyl ether sulfate in which M is ammonium or sodium is preferable.

5 [0057]

The content of the anionic surfactants other than the component (A) is preferably equal to or greater than 3% by mass, more preferably equal to or greater than 5% by mass, and still more preferably equal to or greater than 7% by mass,
10 with respect to the total amount of the hair cleansing agent, from the viewpoint of further improving foaming. In addition, the content of the anionic surfactants other than the component (A) with respect to the total amount of the hair cleansing agent is preferably equal to or less than 20% by
15 mass, more preferably equal to or less than 18% by mass, and still more preferably equal to or less than 15% by mass, from the viewpoint of improvement of a foam removability and suppression of a residual feeling at a time of rinsing.

[0058]

20 In addition, in the hair cleansing agent in the present embodiment, a pH adjuster other than the component (B) may be blended. As the pH adjuster, organic acids other than the component (B) are exemplified, and an organic carboxylic acid such as lactic acid, malic acid, or citric acid can also be
25 used. In addition, as other pH adjusters, bases such as sodium hydroxide, potassium hydroxide, and ammonium chloride may be used in combination with these organic acids.

[0059]

In the hair cleansing agent in the present embodiment, in addition to the above components, the components used in typical hair cleansing agents can be suitably blended
5 depending on the desired effects. Examples of such optional components include an anti-dandruff agent, vitamins, a fungicide, an anti-inflammatory agent (glycyrrhizic acid, glycyrrhetinic acid, derivatives thereof, or the like), a preservative, a chelating agent, a humectant (sorbitol,
10 panthenol, or the like), a colorant (a dye, a pigment, or the like), extracts (a polar solvent extract of eucalyptus, protein obtainable from a shell having a nacreous layer or pearls or hydrolyzates thereof, honey, royal jelly, protein obtainable from silk or hydrolyzates thereof, protein-
15 containing extract obtainable from seeds of legumes, Asian ginseng extract, rice germ extract, Fucus extract, aloe extract, lotus extract, pomegranate extract, eglantine extract, chamomilla extract, licorice extract, Alpinia speciosa leaf extract, chlorella extract, and the like), pearling agents
20 such as titanium oxide, perfume, an ultraviolet absorber, an antioxidant, shea butter, rose water, orange oil, and eucalyptus oil.

[0060]

The hair cleansing agent in the present embodiment is,
25 for example, produced by suitably mixing the components (A) to (C) with other components and dissolving the resultant product in water. Specifically, the components (B) and (C) are added

to water heated to about 70°C to 100°C, and the resultant product is stirred to be dissolved. Furthermore, after the component (A) is added thereto, the resultant product is stirred to be uniform, and cooled to room temperature, whereby
5 the hair cleansing agent in the present embodiment is obtainable. Furthermore, in a case where other surfactants are included, the surfactants may be mixed in while heating, but preferably for example, other surfactants other than the components (A) and (C) are added to water heated to about 70°C
10 to 100°C, and the resultant product is stirred to be uniform. Thereafter, after the components (B) and (C) are added thereto, the resultant product is stirred to be dissolved, the component (A) is added thereto, and the resultant product is stirred to be uniform and cooled to equal to or lower than
15 30°C. pH adjustment with acid or base other than the component (B) is preferably performed at equal to or lower than 40°C. In a case where the component (D) is included, the component (D) may be mixed in at any time if water is heated to about 70°C to 100°C, but, it is preferable that the component (D) is
20 added before the component (A) is added and the resultant product is dissolved or uniformly dispersed.

[0061]

The form of the hair cleansing agent of the present embodiment can be suitably selected from a liquid state, a gel
25 state, and the like, and a hair cleansing agent in a liquid state using water or water and a lower alcohol as a solvent is preferable.

[0062]

In addition, a method for cleaning the hair using the hair cleansing agent of the present embodiment includes, for example, applying the hair cleansing agent to the hair and
5 rinsing the hair.

Since the components (A) to (C) are used in combination in the hair cleansing agent in the present embodiment, it is possible to suppress peeling of cuticle. For example, since it is possible to suppress peeling of cuticle which proceeds when
10 the force to extend the hair is applied by the use of a heating tool such as a brushing tool, a blowing tool, an iron, in daily hair care routines, it is also possible to keep the hair in a healthy state. In addition, by using the hair cleansing agent in the present embodiment, it is also possible
15 to reduce deterioration of texture or improve finish gloss and manageability.

[0063]

Up to now, the embodiments of the present invention have been described. However, the embodiments are merely examples
20 of the present invention, and various constituents other than the above can be adopted.

[0064]

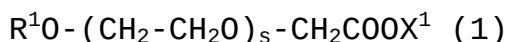
Regarding the embodiments described above, preferable embodiments of the present invention will be further disclosed
25 below.

[0065]

<1> A hair cleansing agent including the following

components (A) to (C) and water.

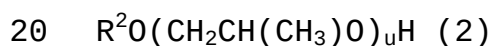
(A) An ether carboxylate-type anionic surfactant represented by the following General Formula (1) in a concentration of equal to or greater than 0.5% by mass and equal to or less than 12% by mass.



Wherein, in General Formula (1), R^1 represents an alkyl group or an alkenyl group having equal to or more than 10 and equal to or less than 18 carbon atoms, X^1 represents an alkali metal, an alkali earth metal, ammonium, a cation derived from an alkanolamine or a basic amino acid, and s represents a number of equal to or greater than 0.5 and equal to or less than 10 as a mass average.

(B) Succinic acid or a salt thereof in a concentration of equal to or greater than 0.1% by mass and equal to or less than 5% by mass.

(C) A surfactant represented by the following General Formula (2) in a concentration of equal to or greater than 0.1% by mass and equal to or less than 2% by mass.



Wherein, in General Formula (2), R^2 represents a linear or branched alkyl group or alkenyl group having equal to or more than 8 and equal to or less than 10 carbon atoms, and u is a number of equal to or greater than 0.5 and equal to or less than 4 as a mass average.

[0066]

<2> The hair cleansing agent according to <1>, in which

the mass ratio ((A)/(B)) of the component (A) to the component (B) in the hair cleansing agent is preferably equal to or greater than 0.5, more preferably equal to or greater than 0.8, and still more preferably equal to or greater than 1, and
5 preferably equal to or less than 50, more preferably equal to or less than 20, and still more preferably equal to or less than 15.

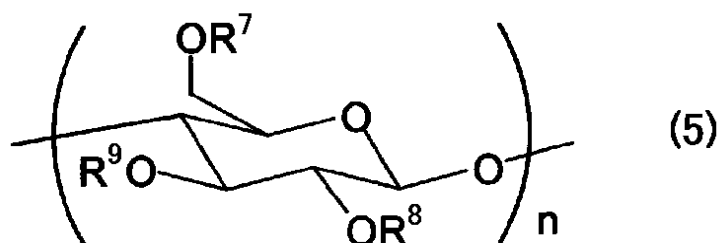
<3> The hair cleansing agent according to <1> or <2>, in which the mass ratio ((B)/(C)) of the component (B) to the
10 component (C) in the hair cleansing agent is preferably equal to or greater than 0.05, more preferably equal to or greater than 0.3, and still more preferably equal to or greater than 1, and preferably equal to or less than 40, more preferably equal to or less than 10, and still more preferably equal to or less
15 than 6.

<4> The hair cleansing agent according to any one of <1> to <3>, which further includes (D) one or more types of cationized polysaccharides selected from the group consisting of cationized celluloses and cationized guar gums; preferably
20 includes one or more types selected from the group consisting of the cationized celluloses represented by the above-described General Formula (3), the cationized celluloses represented by the following General Formula (5) and the cationized guar gums represented by the above-described
25 General Formula (9); and more preferably includes one or more types selected from the group consisting of POIZ C-60H, POIZ C-80H, Caticelo L-150, Polymer JR-400, Jaguar C-13C, Jaguar C-

14SK, and Raborugamu CG-M.

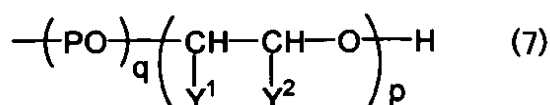
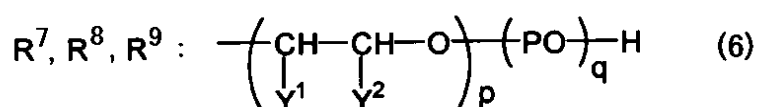
<5> The hair cleansing agent according to <4>, in which, the component (D) includes a cationized hydroxypropyl cellulose having a main chain represented by the following

5 General Formula (5) derived from anhydroglucoses, and in which the substitution degree of the cationized ethyleneoxy group is equal to or greater than 0.01 and equal to or less than 2.5 and the substitution degree of the propyleneoxy group is equal to or greater than 0.1 and equal to or less than 2.8.



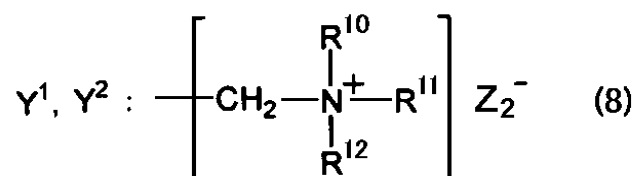
10

Wherein, in General Formula (5), each of R^7 , R^8 , and R^9 independently represents a substituent having a cationized ethyleneoxy group and a propyleneoxy group represented by the following General Formula (6) or (7), n represents the average
15 degree of polymerization of anhydroglucose, and is equal to or greater than 50 and equal to or less than 5000.



Wherein, in General Formulae (6) and (7), one of Y^1 and Y^2

represents a hydrogen atom, the other represents a cationic group represented by the following General Formula (8), and PO represents a propyleneoxy group. p represents the number of cationized ethyleneoxy groups (-CH(Y¹)-CH(Y²)-O-) included in General Formula (6) or (7), q represents the number of propyleneoxy group (-PO-) included in General Formula (6) or (7), and each of p and q independently represents 0 or a positive integer. In a case where neither of p or q is 0, an addition order of the cationized ethyleneoxy group and the propyleneoxy group is not limited, and in a case where p and/or q is equal to or greater than 2, the cationized ethyleneoxy group and the propyleneoxy group may be block-bonded or random-bonded.



Wherein, in General Formula (8), each of R¹⁰, R¹¹, and R¹² independently represents a linear or branched alkyl group having equal to or more than 1 and equal to or less than 3 carbon atoms, and Z₂⁻ represents an anionic group.

<6> The hair cleansing agent according to any one of <1> to <5>, in which, in the component (A), R¹ in General Formula (1) is preferably an alkyl group having 12 or more carbon atoms, and preferably an alkyl group having 16 or less carbon atoms;
s in General Formula (1) is preferably equal to or greater

than 1, and preferably equal to or less than 6;
and X^1 in General Formula (1) is preferably an alkali metal
selected from the group consisting of sodium and potassium; an
alkali earth metal selected from the group consisting of
5 calcium and magnesium; ammonium; a cation derived from an
alkanolamine selected from the group consisting of
monoethanolamine, diethanolamine, and triethanolamine; or a
cation derived from a basic amino acid selected from the group
consisting of arginine and lysine.

10 <7> The hair cleansing agent according to any one of <1>
to <6>, in which the content of the component (A) in the hair
cleansing agent is preferably equal to or greater than 0.5% by
mass and more preferably equal to or greater than 0.7% by mass,
and preferably equal to or less than 12% by mass, more
15 preferably equal to or less than 8% by mass, and still more
preferably equal to or less than 4% by mass, with respect to
the total amount of the hair cleansing agent.

20 <8> The hair cleansing agent according to any one of <1>
to <7>, in which the content of the component (B) in the hair
cleansing agent is preferably equal to or greater than 0.1% by
mass, more preferably equal to or greater than 0.3% by mass,
still more preferably equal to or greater than 2% by mass, and
still more preferably equal to or greater than 3% by mass, and
preferably equal to or less than 5% by mass, and more
25 preferably equal to or less than 3.5% by mass, with respect to
the total amount of the hair cleansing agent.

 <9> The hair cleansing agent according to any one <1> to

<8>, in which, in the component (C), R^2 in General Formula (2) preferably has 8 carbon atoms; and u in General Formula (2) is preferably equal to or greater than 2 and equal to or less than 3.5 as a mass average.

5 <10> The hair cleansing agent according to any one of <1> to <9>, in which the content of the component (C) in the hair cleansing agent is preferably equal to or greater than 0.1% by mass, more preferably equal to or greater than 0.5% by mass, and still more preferably equal to or greater than 1% by mass,
10 and preferably equal to or less than 2% by mass, more preferably equal to or less than 1.5% by mass, and still more preferably equal to or less than 1.2% by mass, with respect to the total amount of the hair cleansing agent.

15 <11> The hair cleansing agent according to any one of <1> to <10>, in which the mass ratio ((A)/(C)) of the component (A) to the component (C) in the hair cleansing agent is preferably equal to or greater than 0.8, more preferably equal to or greater than 2, and still more preferably equal to or greater than 3, and preferably equal to or less than 45, more
20 preferably equal to or less than 10, and still more preferably equal to or less than 8.

25 <12> The hair cleansing agent according to any one of <1> to <11>, in which the content of the water in the hair cleansing agent is preferably a remainder when the components other than water in the hair cleansing agent are excluded, and is more preferably equal to or greater than 50% by mass and still more preferably equal to or greater than 60% by mass,

and more preferably equal to or less than 98% by mass and still more preferably equal to or less than 95% by mass, with respect to the total amount of the hair cleansing agent.

<13> The hair cleansing agent according to any one of <1> to <12>, in which the pH at 25°C when the hair cleansing agent is diluted 20-fold with water is preferably equal to or lower than 10, more preferably equal to or lower than 9.6, and still more preferably equal to or lower than 6.5; or the pH at 25°C when the hair cleansing agent is diluted 20-fold with water is preferably equal to or lower than 6.5, more preferably equal to or lower than 6, and still more preferably equal to or lower than 5.5, and preferably equal to or higher than 2, more preferably equal to or higher than 3, and still more preferably equal to or higher than 3.5.

<14> The hair cleansing agent according to any one of <1> to <13>, which further includes (D) one or more types of cationized polysaccharides selected from the group consisting of cationized celluloses and cationized guar gums, and in which the content of the component (D) in the hair cleansing agent is preferably equal to or greater than 0.01% by mass, more preferably equal to or greater than 0.1% by mass, and still more preferably equal to or greater than 0.2% by mass, and preferably equal to or less than 2.5% by mass, more preferably equal to or less than 1.2% by mass, and still more preferably equal to or less than 1% by mass, with respect to the total amount of the hair cleansing agent.

<15> The hair cleansing agent according to any one of <1>

to <14>, which further includes one or more types selected from the group consisting of an anionic surfactant other than the component (A), a nonionic surfactant other than the component (C), a cationic surfactant, an amphoteric surfactant, 5 silicones, and other oils; preferably, further includes an anionic surfactant other than the component (A); more preferably, includes one or more types selected from the group consisting of sulfate-type anionic surfactants such as alkyl sulfate, alkenyl sulfate, polyoxyalkylene alkyl ether sulfate, 10 polyoxyalkylene alkenyl ether sulfate, and sulfosuccinic acid alkylene alkyl phenyl ether sulfate; and sulfonic acid-type anionic surfactants such as a sulfosuccinic acid alkyl ester salt, a polyoxyalkylene sulfosuccinic acid alkyl ester salt, and alkane sulfonate; still more preferably includes one or 15 more types selected from the group consisting of polyoxyalkylene alkyl ether sulfate, polyoxyalkylene alkenyl ether sulfate, alkyl sulfate, and alkenyl sulfate; still more preferably includes polyoxyethylene alkyl ether sulfate represented by the above-described General Formula (10); and 20 still more preferably includes polyoxyethylene alkyl ether sulfate in which, in General Formula (10), R^{17} is an alkyl group having equal to or more than 12 and equal to or less than 14 carbon atoms, v is equal to or greater than 0.9 and equal to or less than 4, and M is ammonium or sodium.

25 <16> The hair cleansing agent according to any one of <1> to <15>, which further includes an anionic surfactant other than the component (A), and in which the content of the

anionic surfactant other than the component (A) in the hair
cleansing agent is preferably equal to or greater than 3% by
mass, more preferably equal to or greater than 5% by mass, and
still more preferably equal to or greater than 7% by mass, and
5 preferably equal to or less than 20% by mass, more preferably
equal to or less than 18% by mass, and still more preferably
equal to or less than 15% by mass, with respect to the total
amount of the hair cleansing agent.

<17> The hair cleansing agent according to any one of <1>
10 to <16>, which further includes a pH adjuster other than the
component (B), and preferably further includes one or more
types selected from the group consisting of organic carboxylic
acids such as lactic acid, malic acid, and citric acid, and
bases such as sodium hydroxide, potassium hydroxide, and
15 ammonium chloride.

<18> A method for cleaning a hair, which includes
applying the hair cleansing agent according to any one of <1>
to <17> to the hair and rinsing the hair.

<19> A method for suppressing cuticle peeling at a time
20 of hair-stretching, which includes applying the hair cleansing
agent according to any one of <1> to <17> to the hair and
rinsing the hair.

<20> A method for using a hair cleansing agent, which
includes applying the hair cleansing agent according to any
25 one of <1> to <17> to a hair and rinsing the hair, and
preferably after rinsing the hair, stretching the hair.

<21> A use of the hair cleansing agent according to any

one of <1> to <17> for suppressing cuticle peeling at a time of hair-stretching.

<22> A use of the hair cleansing agent according to any one of <1> to <17> for producing a cleansing agent which
5 suppresses cuticle peeling at a time of hair-stretching.

[Examples]

[0067]

(Examples 1 to 15 and Comparative Examples 1 to 7)

Shampoos having the compositions shown in Tables 2 and 3
10 were prepared according to the following method, and the obtained sample solutions were evaluated. The evaluation method and evaluation criteria are shown below.

(Method for Producing Shampoo)

Polyoxyethylene (1) lauryl sulfuric acid ammonium was
15 added to water heated to about 80°C, and the resultant product was stirred to be uniform. Next, after the component (B) or (B') and the component (C) were respectively added to this and completely dissolved, the component (D) which had been uniformly dispersed in a little water was added and dissolved.
20 Thereafter, the component (A) was added thereto, the resultant product was cooled to room temperature, and the pH thereof was adjusted with sodium hydroxide (25°C).

In Table 2 and Table 3, the shampoo of each of examples contains water so that the total amount of all components in
25 the shampoo is to be 100 mass %.

[0068]

(Preparation of Hair Sample for Evaluation)

By sandwiching 10 g of Japanese hair which had been subjected to a cosmetic treatment (3 times treatment using Prettia foam bleach high bleach manufactured by Kao Corporation, bath ratio of 1:3, and treatment time of 40 min/time) between two plastic plates having a width of 5.7 cm and fixing with a two-part type adhesive, a hair bundle having a hair length of about 30 cm was made, and the hair bundle was evaluated according to the following order.

[0069]

10 (Evaluation Method of Hair Cuticle Peeling Suppression)

1. A 20-fold diluted solution of each sample solution obtained in the examples and the comparative examples was prepared, then, 300 mL of the solution was put into a 500 mL beaker, and the above hair bundle was immersed in the solution
15 for 1 minute.

2. Thereafter, 300 mL of ion exchange water was put into a 500 mL beaker, and then the hair bundle treated in 1 was put into the beaker, and rinsed while being vibrated up and down for 30 seconds.

20 3. Thereafter, the hair bundle was taken out from the ion exchange water, and the water was removed from the hair bundle by towel-drying.

4. In a case where the operation of 1 to 3 is defined as a single shampooing operation, two types, that is, a hair
25 bundle on which the operation had been performed only one time and a hair bundle on which the operation had been repeatedly performed 30 times were prepared as hair samples for

evaluation. Moreover, when performing the evaluation described below, to solve the entanglement of the hair, 1 g of a conditioner for evaluation described below was applied thereto, then, the hair was sufficiently rinsed with ion exchange water, and dried for 3 minutes with a dryer while performing towel drying and finger combing operation. The formulation of a conditioner for evaluation is shown in the following Table 1.

[0070]

[Table 1]

Conditioner for evaluation	
Component	Blending amount (% by mass)
Stearyl trimonium chloride	1.5
Cetearyl alcohol	2.5
Propylene glycol	5.0
Perfume	0.3
Purified water	Balance
Total	100.0

10

[0071]

(Evaluation of Degree of Damage Promotion of Hair

(Evaluation of Stretched Hair))

1. Five strands of the hair were randomly picked from the hair bundle of the hair sample for evaluation on which the above-described treatment had been performed, and the portion 10 cm to 15 cm distant from hair ends (hair length of 5 cm) was cut out with a razor. A mending tape (manufactured by Scotch Co., Ltd.) was attached to the portions 0.5 cm distant from both ends of the cut-out hair such that the portions are

20

sandwiched from the top and the bottom, and this taken as a fixing portion.

Then, the cut-out hair was stretched such that the tensile speed in the axial direction of the hair gripped by the fixing portion became 0.1 cm/sec and the stretching rate became 25% (the hair in the portion which had not been attached with a tape was extended until the hair became 5 cm from 4 cm before stretching). The hair after stretching was fixed on slide glass with a two-part type adhesive so as not to be moved, and this was taken as a sample for measurement.

2. The hair surface shape of the sample for measurement was measured using a laser microscope (VK-8700, manufactured by KEYENCE Corporation) (measurement pitch: 0.1 μm), and a surface inclination correction (3 points specified) was performed on the inclination (due to slide glass, a mending tape, a masking tape, or the like) other than inclination derived from the hair generated in manufacturing a sample using a software. Thereafter, the mean height R_c value of the roughness profile element which is the JIS standard (JIS B0601: 2001) was calculated. As the calculation method, a straight line having a length of 200 μm in the axial direction on the hair surface which had been subjected to the inclination correction above was drawn, and the R_c value on the straight line was calculated by using a software. This operation was performed five times on the hair surface randomly selected, and the average thereof was calculated.

It is suggested that as the R_c value (μm) is larger, the

surface shape become rough, that is, peeling of cuticle be promoted, and it is shown that as the value is smaller, cuticle peeling is suppressed.

[0072]

5 (Evaluation of Manageability of Dried Hair)

Manageability of the hair bundle (after a cosmetic treatment, shampooing, and drying with a drier) of the hair sample for evaluation treated by the above-described method was evaluated by the following method.

10 1. Widths of the hair bundle at five points which were 5 cm, 10 cm, 15 cm, 20 cm, and 25 cm distant from the hair bundle base before the shampoo operation described above was performed were respectively measured, and the average value thereof was calculated.

15 2. Thereafter, after the shampoo operation was performed once or 30 times according to the order of 1. to 4. of "Evaluation Method of Hair Cuticle Peeling Suppression" described above, widths of the hair bundle at five points were respectively measured in the same manner as described above,
20 and the average value thereof was calculated.

3. The difference Δd (cm) of the width of the hair bundle before and after the shampoo treatment was determined.

Here, it means that as Δd is larger, the width of the hair bundle after the shampoo treatment is wider compared to
25 the width before the shampoo treatment, and the manageability is lost.

[0073]

(Sensory Evaluation: Glossy Feeling after Drying Hair)

Glossy feeling of the hair bundle (after a cosmetic treatment, one or 30 times shampooing, and drying with a drier) of the hair sample for evaluation treated by the above-

5 described method was evaluated by the following criteria by ten professional panelists, and the total score was calculated respectively.

+2: there was gloss compared to that in Comparative Example 1

10 +1: there was slight gloss compared to that in Comparative Example 1

0: there was gloss substantially equal to that in Comparative Example 1

15 -1: there was little gloss compared to that in Comparative Example 1

-2: there was no gloss compared to that in Comparative Example 1

[0074]

[Table 2] (Continued)

pH (20-fold diluted)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
(A)/(B)	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
(B)/(C)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
(A)/(C)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Evaluation result	Stretching lift-up after one treatment (Rc value (μm))	1.24	1.12	1.49	1.53	0.95	1.82	2.62	2.37	1.55	1.3	1.23	1.55	1.48	1.62	1.38		
	Stretching lift-up after 30 times treatment (Rc value (μm))	1.58	1.13	2.44	1.88	1.07	2.9	3.11	2.92	3.23	1.29	1.53	1.91	1.89	1.63	1.53		
	Gloss of hair after one treatment	17	17	15	15	17	10	9	14	13	17	16	15	15	17	15		
	Gloss of hair after 30 times treatment	15	18	10	11	18	8	8	11	8	11	13	11	12	18	11		
	Manageability of hair after one treatment (Δd value (cm))	0.8	0.3	0.3	0.4	0.2	0.6	1.1	0.7	0.4	0.4	1.1	0.3	0.6	0.3	0.4		
	Manageability of hair after 30 times treatment (Δd value (cm))	1.1	0.4	0.5	0.6	0.6	1.2	1.4	1.2	0.9	0.9	1.3	0.5	0.9	0.5	0.6		

*1: Caticeo L-150 manufactured by Kao Corporation

*2: Jaguar C14-SK manufactured by Rhodia Inc.

[0075]

[Table 3]

Component (% by mass)		Comparative example						
		1	2	3	4	5	6	7
(A)	Sodium polyoxyethylene(2.6)lauryl ether carboxylate	4	-	4	4	-	-	4
	Sodium polyoxyethylene(10)lauryl ether carboxylate	-	-	-	-	-	-	-
(B)	Succinic acid	-	3	3	-	3	3	-
(B')	Lactic acid	-	-	-	3	-	-	-
(B')	Malic acid	-	-	-	-	-	-	3
(C)	Polyoxypropylene(3)octyl ether	1	1	-	1	-	-	1
(D)	Polyquaternium-10*1	-	-	-	-	-	0.5	-
	Guar Hydroxypropyltrimonium Chloride *2	-	-	-	-	-	-	-
(Others)	Ammonium polyoxyethylene(1)lauryl sulfate	8	8	8	8	8	8	8
	Sodium hydroxide	Suitable amount	Suitable amount	Suitable amount	Suitable amount	Suitable amount	Suitable amount	Suitable amount
Total		100	100	100	100	100	100	100
pH (20-fold diluted)		6.0	6.0	6.0	6.0	6.0	6.0	6.0
(A)/(B)				1.3				
(B)/(C)			3.0					
(A)/(C)		4.0			4.0			4.0
Evaluation result	Stretching lift-up after one treatment (Rc value (μm))	5.43	1.72	1.67	3.43	2.4	2.55	2.19
	Stretching lift-up after 30 times treatment (Rc value (μm))	6.64	5.47	3.94	4.5	5.7	5.5	3.87
	Gloss of hair after one treatment	0	11	13	5	9	9	13
	Gloss of hair after 30 times treatment	0	6	3	1	2	2	8
	Manageability of hair after one treatment (Δd value (cm))	1.7	0.6	0.5	1.2	0.5	0.4	0.5
	Manageability of hair after 30 times treatment (Δd value (cm))	3	2.2	1.8	2.6	2.6	2	1.7

*1: Caticelo L-150 manufactured by Kao Corporation

*2: Jaguar C14-SK manufactured by Rhodia Inc.

5 [0076]

In the hair samples for evaluation obtained by washing

with the shampoos obtained in Examples 1 to 15, in any case, deterioration of texture after 30 times treatment was suppressed.

In addition, as shown in Tables 1 and 2, in the hair samples for evaluation obtained by washing with the shampoos obtained in Examples 1 to 15, the Rc value at the time of stretching lift-up after shampooing was repeated 30 times was smaller compared to that in each comparative example, and the better suppression effects of peeling of cuticle were shown.

10 In addition, in the hair samples for evaluation obtained by washing with the shampoos obtained in Examples 1 to 15, the Δd value after shampooing was repeated 30 times was smaller compared to that in each comparative example, and the better effects of maintaining the manageability of the hair were

15 shown. In addition, in the hair samples for evaluation obtained by washing with the shampoos obtained in Examples 1 to 15, the balance of the effects of suppression of cuticle peeling, gloss of the hair, and manageability after shampooing was repeated 30 times was improved, compared to that in each

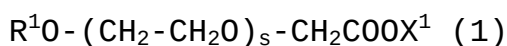
20 comparative example.

It is apparent that the present invention is not limited to the above embodiment, and may be modified and changed without departing from the scope and spirit of the invention.

CLAIMS

1. A hair cleansing agent, comprising following components (A) to (C) and water:

5 (A) an ether carboxylate-type anionic surfactant represented by the following General Formula (1) in a concentration of equal to or greater than 0.5% by mass and equal to or less than 12% by mass,



10 wherein, in General Formula (1), R^1 represents an alkyl group or an alkenyl group having equal to or more than 10 and equal to or less than 18 carbon atoms, X^1 represents an alkali metal, an alkali earth metal, ammonium, a cation derived from an alkanolamine or a basic amino acid, and s represents a number
15 of equal to or greater than 0.5 and equal to or less than 10 as a mass average;

(B) succinic acid or a salt thereof in a concentration of equal to or greater than 0.1% by mass and equal to or less than 5% by mass; and

20 (C) a surfactant represented by the following General Formula (2) in a concentration of equal to or greater than 0.1% by mass and equal to or less than 2% by mass,



wherein, in General Formula (2), R^2 represents a linear or
25 branched alkyl group or alkenyl group having equal to or more than 8 and equal to or less than 10 carbon atoms, and u is a number of equal to or greater than 0.5 and equal to or less

than 4 as a mass average.

2. The hair cleansing agent according to claim 1,

wherein the mass ratio $((A)/(B))$ of the component (A) to
5 the component (B) in the hair cleansing agent is equal to or
greater than 0.5 and equal to or less than 50.

3. The hair cleansing agent according to claim 1 or 2,

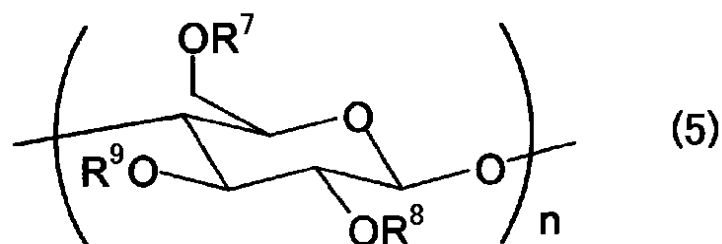
wherein the mass ratio $((B)/(C))$ of the component (B) to
10 the component (C) in the hair cleansing agent is equal to or
greater than 0.05 and equal to or less than 40.

4. The hair cleansing agent according to any one of claims 1
to 3, further comprising:

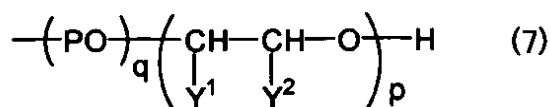
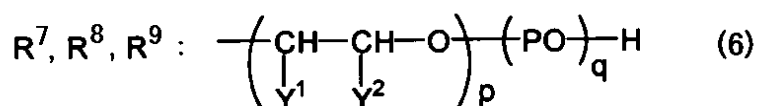
15 (D) one or more types of cationized polysaccharides
selected from the group consisting of cationized celluloses
and cationized guar gums.

5. The hair cleansing agent according to claim 4,

20 wherein the component (D) includes a cationized
hydroxypropyl cellulose having a main chain represented by the
following General Formula (5) derived from anhydroglucoses,
and in which the substitution degree of a cationized
ethyleneoxy group is equal to or greater than 0.01 and equal
25 to or less than 2.5 and the substitution degree of a
propyleneoxy group is equal to or greater than 0.1 and equal
to or less than 2.8,

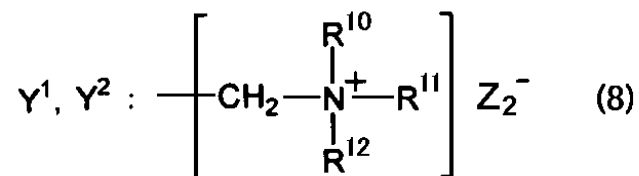


wherein, in General Formula (5), each of R⁷, R⁸, and R⁹ independently represents a substituent represented by the following General Formula (6) or (7) having a cationized ethyleneoxy group and a propyleneoxy group, n represents an average degree of a polymerization of the anhydroglucose, and is equal to or greater than 50 and equal to or less than 5000,



wherein, in General Formulae (6) and (7), one of Y^1 and Y^2 represents a hydrogen atom, the other represents a cationic group represented by the following General Formula (8), and PO represents a propyleneoxy group, p represents the number of cationized ethyleneoxy groups ($-CH(Y^1)-CH(Y^2)-O-$) included in General Formula (6) or (7), q represents the number of propyleneoxy group ($-PO-$) included in General Formula (6) or (7), and each of p and q independently represents 0 or a positive integer, and in a case where neither of p or q is 0, an addition order of the cationized ethyleneoxy group and the propyleneoxy group is not limited, and in a case where p and/or q is equal to or greater than 2, the cationized

ethyleneoxy group and the propyleneoxy group may be block-bonded or random-bonded,



wherein, in General Formula (8), each of R^{10} , R^{11} , and R^{12} independently represents a linear or branched alkyl group having equal to or more than 1 and equal to or less than 3 carbon atoms, and Z_2^- represents an anionic group.

6. A method for cleaning a hair, comprising:

applying the hair cleansing agent according to any one of claims 1 to 5 to the hair and rinsing the hair.