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(54) **Liquid detergent composition**

Flüssige Reinigungsmittelzusammensetzung

Composition de détergent liquide

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(56) References cited:
EP-A- 0 337 354 WO-A-83/04412
GB-A- 2 128 627 US-A- 3 764 531
US-A- 4 668 422

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Description**BACKGROUND OF THE INVENTION**5 **Field of the Invention:**

This invention relates to a liquid detergent composition, and, more particularly, to a liquid detergent composition having low irritation to the skin, exhibiting an excellent antibacterial effect, and particularly giving superior anti-dandruff and deodorant effects when used as a detergent for washing the scalp and hair.

10 GB-A-2 128 627 describes a mild cleaning composition for the hair and skin which contains in a cosmetically acceptable medium at least one non-ionic surface-active agent in combination with very specific non-ionic polymers. The composition may further contain an antiseptic so as to give a treatment-product which can be used in the dermatological field of cleaning wounds and the treatment of eczema.

15 **Description of the Background Art:**

Conventionally, synthetic anionic surfactants such as alkyl sulfates, ethoxylated alkyl sulfates have widely been used in liquid detergent compositions for skin and hair. They are excellent in detergency and foaming capability, however, they have a drawback of strong irritation to the skin and hair. The irritation of these surfactants closely relates to a skin-barrier function and to cell division of keratinocytes. There has been a report [Gibson W. T. *et al.*, *Food Chem. Toxic.*, 23, 103, (1985)] that a skin-barrier function is lowered and cell division of keratinocytes is promoted with increased irritation of surfactants.

In the meantime, it is believed that dandruff is mostly caused by abnormal desquamation of horny cells and sebaceous hypersecretion and worsened by the growth of bacteria. For anti-dandruff shampoo compositions, therefore, synthetic anionic-surfactants and an antibacterial agent are usually incorporated to wash the secretive sebum and restrain the growth of bacteria. However, dandruff is often developed in a relatively short time after shampooing, although they frequently shampoo the hair and scalp with these anti-dandruff shampoo compositions. This is because the more frequent shampooing increases the chances of contacting surfactants having high irritation to the skin with the scalp, thus irritating the skin and lowering a barrier function of the skin, and promoting cell division of keratinocytes resulting in the acceleration of the development of dandruff.

As for body detergent compositions, most of these detergent compositions usually contain highly irritant surfactants. These surfactants inevitably give an adverse effect on a skin-barrier function. In this respect, washing the skin with these detergents consequently weaken the resistance of the skin against external stimuli such as microbial contagion to the skin.

35 From the above facts, the development of detergent compositions which can restrain dandruff and never weaken the resistance of the skin against external stimuli has been desired.

In view of this situation, the present inventors have undertaken extensive studies to resolve the above-mentioned problem. As a result, the inventors have found that by incorporating a saccharide nonionic surfactant and an antibacterial agent into a detergent composition, the above-mentioned problem could be solved and also an antibacterial effect of the detergent composition was greatly improved. This finding has led to the completion of this invention.

SUMMARY OF THE INVENTION

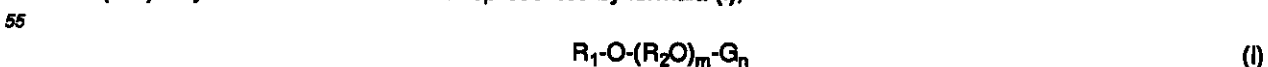
45 The present invention provides an anti-dandruff composition for scalp and hair comprising

- (a) 0.1 to 95% by weight of a saccharide nonionic surfactant, and
- (b) 0.01 to 5% by weight of an anti-dandruff agent as defined in Claim 1.

DETAILED DESCRIPTION OF THE INVENTION AND PREFERRED EMBODIMENTS

50 Given as examples of saccharide nonionic surfactants which are an essential component of the present invention are the following compounds (A-1) and (A-2):

(A-1) alkyl saccharide surfactants represented by formula (I),



wherein R_1 represents a linear or branched alkyl, alkenyl, or alkylphenyl group having 6-18 carbon atoms, R_2 represents an alkylene group having 2-4 carbon atoms, G is a reducing sugar having 5-6 carbon atoms, m denotes a value of 0-10, and n denotes a value of 1-10.

For R_1 in formula (I), among linear or branched alkyl, alkenyl, or alkylphenyl groups having 6-18 carbon atoms, linear or branched alkyl groups having 9-14 carbon atoms such as decyl-, lauryl-, myristyl group are particularly preferable from the aspect of detergent performances such as foaming capability and the like. The value of m in formula (I), which is a polymerization degree of alkylene oxide, can be 0 to 10, but is preferably from 0 to 3 and particularly preferably 0 from the aspect of detergent performances such as foaming capability and the like. The basic unit of the saccharide portion, i.e., G in formula (I), which is the hydrophilic group of the alkyl saccharide surfactant, is a reducing sugar having 5-6 carbon atoms. Glucose, galactose, and fructose are named as examples of desirable reducing sugars. The degree of polymerization of saccharide (S), i.e., the value of n in formula (I), is 1 to 10. In particular, the use of alkyl saccharide surfactants containing 80% or more of saccharide portion having the degree of polymerization (S) of 1 to 4 is desirable. When the influence of both the polymerization (S) and the group R_1 on the compound (I) are taken into account, the desirable value of (S) is 1 to 1.4 when the R_1 group is C_{8-11} , and 1.5 to 4.0 when the R_1 group is C_{12-14} . The mean value of (S) is determined by the proton-NMR method. Given as specific examples of alkyl saccharide surfactants are those synthesized by the Koenings-Knorr method such as β -glucoside, e.g., octylglucoside, nonylglucoside, decylmaltoside, dodecylmaltoside, polyoxyethylene(3 E.O.)dodecylglucoside, and the like. Included also as these alkyl saccharide surfactants are those synthesized from a reducing sugar such as glucose, galactose, maltose, fructose, or the like and a natural alcohol, higher alcohol synthesized by oxo synthesis, and higher alcohol of polyoxyethylene oxide adduct (USP 3,219,656, USP 3,839,318, and USP 4,223,129). Included further as these alkyl saccharide surfactants are alkyl fructoside and the like synthesized from sucrose and a higher alcohol by heat-alcoholysis reaction.

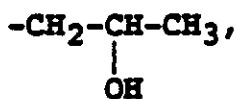
(A-2) saccharide amide surfactants represented by formula (II)



wherein R_3 represents a linear or branched alkyl, alkenyl, or alkylphenyl group having 5-17 carbon atoms, R_4 represents a hydrogen atom, a linear or branched alkyl or alkenyl group having 1-18 carbon atoms, a group

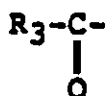


wherein R_5 represents a hydrogen atom or methyl group and p denotes a value of 0-10, or a group $-CH_2-CH_2-OH$,



or $-CH_2-CH_2-CH_2-OH$, and X represents a polyhydroxyalkyl group derived from saccharide residue having 4-30 carbon atoms.

Among R_3 in formula (II), which represents a linear or branched alkyl, alkenyl, or alkylphenyl group having 5-17 carbon atoms, preferable examples are those of which a group



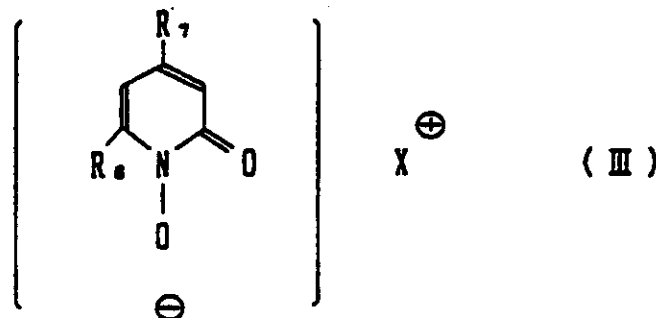
is induced from capric acid, caprylic acid, lauric acid, myristic acid, palmitic acid, stearic acid, isostearic acid and oleic acid, and particularly preferable are those from capric acid and lauric acid. Enumerated as examples of R_4 in formula (II) are a hydrogen atom, methyl group, ethyl group, n-propyl group, isopropyl group, n-butyl group, t-butyl group, n-hexyl group, octyl group, 2-ethylhexyl group, decyl group, dodecyl group, stearyl group, isostearyl group, polyethylene or polypropylene glycol with polymerization degree of 2-10, or 2-hydroxyethyl group, 2-hydroxypropyl group, 3-hydroxypropyl group, and the like. Among them, a hydrogen atom, methyl group, ethyl group, 2-hydroxyethyl group, 2-hydroxypropyl group, and 3-hydroxypropyl group are preferable. X in formula (II), which represents a polyhydroxyalkyl group having 4-30 carbon atoms, or may be a polyhydroxyalkyl group having 4-7 carbon atoms which is glucoside-bonded with a mono-, di-, or oligo-saccharide. Given as examples of these polyhydroxyalkyl groups are 1-deoxyerythrityl group, 1-deoxyarabityl group, 1-deoxyxylyl group, 1-deoxysorbitol group, 2-deoxysorbitol-2-yl group, 1-deoxymannityl group, 2-deoxymannitol-2-yl group, 1-deoxygalactyl group, 1-deoxy-4-glucoside-sorbitol group, 1-deoxy-4-galactoside-sorbitol group, 2-deoxy-4-glucoside-sorbitol-2-yl group, 2-deoxy-4-glucoside-mannitol-2-yl group, 1-deoxy-4-maltoglucoside-sorbitol group, 1-deoxy-4-oligoglucoside-sorbitol group, 1-deoxy-4-polyglucoside-sorbitol group, and the like. Among them, 1-deoxysorbitol group and 1-deoxy-4-glucoside-sorbitol group are preferable.

A saccharide nonionic surfactant can be incorporated in the detergent composition of the present invention in an amount of 0.1-95% by weight and preferably 5-20% by weight. If the amount is less than 0.1% by weight, the detergency will be insufficient while the amount exceeds 95% by weight, the detergency will not be improved any more.

Examples of antidandruff agents to be used in the present invention are the following compounds (B-1) - (B-7):

(B-1) calcium-, magnesium-, barium-, strontium-, zinc-, cadmium-, tin-, or zirconium salts of 2-mercaptopyridine-N-oxide.

(B-2) 1-hydroxy-2-pyrrolidone derivatives represented by formula (III),



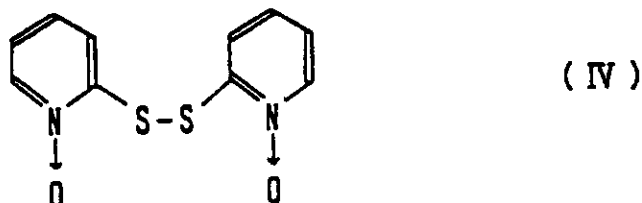
wherein R_6 represents an alkyl group having 1-17 carbon atoms, alkenyl group having 2-17 carbon atoms, cycloalkyl group having 5-8 carbon atoms, bicycloalkyl group having 7-9 carbon atoms, cycloalkyl-alkyl group wherein the alkyl group has 1-4 carbon atoms and the cycloalkyl group may be substituted with an alkyl group having 1-4 carbon atoms, aryl group, aralkyl group with an alkyl group having 1-4 carbon atoms, aryl-alkenyl group with the alkenyl group having 2-4 carbon atoms, aryloxyalkyl or arylmercaptoalkyl group with the alkyl group having 1-4 carbon atoms, benzhydryl group, phenylsulfonylalkyl group with the alkyl group having 1-4 carbon atoms, furylalkenyl group with the furyl or alkenyl group having 2-4 carbon atoms, wherein the above-mentioned aryl residual group may be substituted with an alkyl group having 1-4 carbon atoms, alkoxy group having 1-4 carbon atoms, nitro group, cyano group, or a halogen atom; R_7 represents a hydrogen atom, alkyl group having 1-4 carbon atoms, alkenyl group having 2-4 carbon atoms, halogen atom, phenyl group, or benzyl group; and X^+ represents an organic base, alkali metal ion, ammonium ion, alkaline earth metal ion, or a divalent to tetravalent cationic ion.

Given as examples of the compounds represented by formula (III) are those disclosed in Japanese Patent Laid-open No. 50142/1974: for example, 6-alkyl compounds such as 1-hydroxy-2-pyridone, 1-hydroxy-4-methyl-2-pyridone, 1-hydroxy-6-methyl-2-pyridone, 1-hydroxy-4,6-dimethyl-2-pyridone, 1-hydroxy-4-methyl-6-(2,4,4-trimethylpentyl)-2-pyridone; 6-cyclohexane compounds such as 1-hydroxy-4-methyl-6-cyclohexyl-2-pyridone, 1-hydroxy-4-methyl-6-(methyl-cyclohexyl)-2-pyridone, 1-hydroxy-4-methyl-6-(2-bicyclo[2,2,1]heptyl)-2-pyridone; 6-phenyl compounds such as 1-hydroxy-4-methyl-6-(4-methyl-phenyl)-2-pyridone, 1-hydroxy-4-methyl-6-[1-(4-nitrophenoxy)-butyl]-2-pyridone, 1-hydroxy-4-methyl-6-(4-cyanophenoxymethyl)-2-pyridone, 1-hydroxy-4-methyl-6-(phenylsulfonylmethyl)-2-pyridone, 1-hydroxy-4-methyl-6-(4-bromo-benzyl)-2-pyridone, and the like. Among them, 6-alkyl compounds are preferable.

Compounds (III) may also be used as a salt of various organic or inorganic bases. Examples of these organic bases are low molecular alkanol amines, e.g. ethanolamine, diethanolamine, N-ethylethanolamine, triethanolamine, diethylaminoethanol, 2-amino-2-methylpropanediol; non-volatile bases, e.g. ethylenediamine, hexamethylenedi-

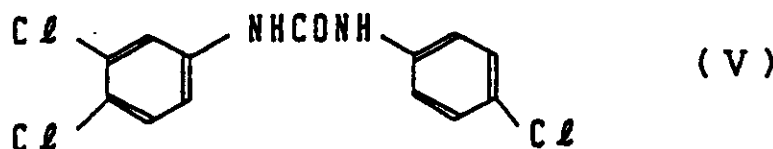
amine, cyclohexylamine, benzylamine, N-methylpiperazine; quaternary ammonium hydroxides, e.g. trimethylbenzyl hydroxide; guanidine and its derivatives, and especially their alkylated products; and the like. Given as examples of inorganic bases are salts of an alkali metal, e.g. sodium, potassium; ammonium salts, salts of an alkaline earth metal, e.g. magnesium, calcium; salts of a divalent to tetravalent cationic ion, e.g. zinc, aluminium, zirconium; and the like. Among the above-mentioned salts, non-volatile organic salts, e.g. low molecular alkanolamine, ethylenediamine; and inorganic salts, e.g. salts of an alkali metal are preferable.

(B-3) 2,2'-dithio-bis-(pyridine-N-oxide) represented by formula (IV),

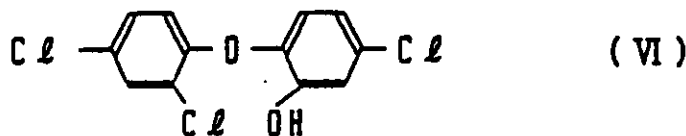


The compounds represented by formula (IV) may be incorporated as a complex salt with an inorganic salt in the detergent composition of the present invention. Examples of such inorganic salts are magnesium sulfate and the like.

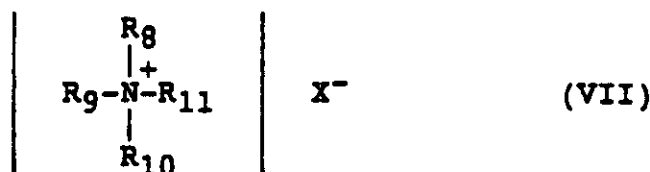
(B-4) trichloro carbanide (TCC) represented by formula (V),



(B-5) trichlosan represented by formula (VI),

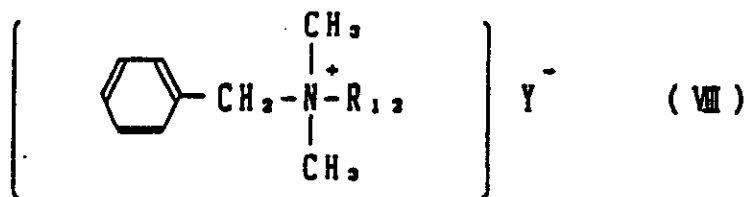


(B-6) linear mono- or di-alkyl quaternary ammonium salts represented by formula (VII),



wherein R_8 - R_{11} represent hydrocarbon groups, and one or two of R_8 - R_{11} have 8-24 carbon atoms and others are an alkyl or hydroxyalkyl group having 1-3 carbon atoms; and X^- represents a halogen atom, amino acid, fatty acid, an anionic residue of phosphate, phosphonate, sulfonate, or sulfate having an alkyl or alkenyl group of branched or straight 1-30 carbon atoms, and an anionic oligomer or polymer selected from formalin condensates of sulfonized polycyclic aromatic compounds which may have a three or more polymerized styrene sulfonic acid as an essential constituent or a hydrocarbon group as a substituent.

(B-7) benzalkonium salts represented by formula (VIII),



wherein R_{12} represents a hydrocarbon group having 8-24 carbon atoms; and Y^- represents a halogen atom, amino acid, fatty acid, an anionic residue of phosphate, phosphonate, sulfonate, or sulfate having an alkyl or alkenyl group of branched or straight chain 1-30 carbon atoms, and an anionic oligomer or polymer selected from formalin condensates of sulfonized polycyclic aromatic compounds which may have a three or more polymerized styrene sulfonic acid as an essential constituent or a hydrocarbon group as a substituent.

Other than compounds (B-1) - (B-7), sulfur, selenium sulfide, cadmium sulfide, allantoin, menthols, salicylic acid, undecylenic acid, and the like may be used as the antibacterial agent.

The above-mentioned antibacterial agents can be used single or as a mixture of one or more of them. The antibacterial agent is incorporated in the composition of the present invention in an amount of 0.01-5% by weight, and preferably 0.1-1.5% by weight.

The amount less than 0.01% by weight provides insufficient dandruff-preventive and deodorant effects. The amount greater than 5% by weight is undesirable because the effect will not increase while the irritation of the antibacterial agent causes a problem.

With the embodiment of the present invention, a desired antibacterial effect can be achieved using a small amount of antibacterial agent compared with conventional detergent compositions.

Any antibacterial agents can be used for the detergent compositions of the present invention insofar as they exhibit good antibacterial effect and are adaptable to the human body, however, those exemplified before are preferable. Especially for dandruff-preventive detergents, salts of mercaptopyridine oxide shown as compounds (B-1) and 1-hydroxy-2-pyridones shown as compounds (B-2); and for deodorant detergents, trichloro carbanide (TCC) shown as compounds (B-4) and trichlosan shown as compounds (B-5) are preferable as an antibacterial agent.

Besides the above essential components, the composition of the present invention may further comprise conventionally known components inasmuch as the effect of the present invention is not impaired. Such components may include various surfactants such as alkylsulfate, polyoxyethylenealkylsulfate, α -olefinalkylsulfate, half alkylsulfsuccinate, acylated glutamic acid, monoalkyl phosphate, soaps, and the like; water; humectants such as glycerol, propylene glycol, and the like; conditioning agents such as cationized cellulose and the like; viscosity-adjusting agents such as ethanol, hydroxyethyl cellulose, methyl cellulose, and the like; antiseptics such as methyl parabene, urea, and the like; antiphlogistics such as potassium glycyrrhizate, and the like; UV-ray absorbers such as oxybenzone and the like; antioxidants such as dibutylhydroxytoluene, tocopherol acetate, and the like; pearlescent agents; perfumes; pigments; and the like.

The pH of the detergent compositions of the present invention may be adjusted to 2-10, preferably to 4-8 using an alkali or acid agent.

The detergent compositions of the present invention can be provided in any form used for conventional detergent compositions, e.g. solid, powder, cream, liquid.

Other features of the invention will become apparent in the course of the following description of the exemplary embodiments which are given for illustration of the invention and are not intended to be limiting thereof.

EXAMPLES

Example 1

Shampoo composition:

A shampoo composition was prepared using 20% by weight of decylpolyglucoside [R_1 : decyl group, G: glucose, m: 0, n: 1.3 in formula (I)] as a saccharide nonionic surfactant and 1% by weight of zincpyrithion (Zpt) as an antibacterial agent, and subjected to the test shown below to evaluate an anti-dandruff effect. A shampoo composition prepared using 20% by weight of laurylsulfate triethanolamine salt (anionic surfactant) and 1% by weight of zincpyrithion (Zpt) was used as a control. The results are shown in Table 1.

(Test method)

Four (4) men, age 20-32, who are annoyed by relatively large amount of dandruff and to whom ordinary dandruff shampoos give no anti-dandruff effect were selected as subjects.

For the control period, first, the hair and the scalp of the subject four men was washed with a shampoo prepared using laurylsulfate triethanolamine salt without Zpt over a period of two weeks and the state of dandruff was observed by the naked eye. Next, the above two shampoos were applied to the subject four men over a period of one month according to the half-head method. The state of dandruff after the one month period was observed, at right and left positions of the head respectively, by the naked eye, and compared with those of the scalps immediately after the control period, to evaluate an anti-dandruff effect according to the following evaluation standard.

(Evaluation standard)

AAA: anti-dandruff effect is excellent.

BBB: anti-dandruff effect is slightly observed.

CCC: no anti-dandruff effect is observed.

Table 1

Subject	Laurylsulfate triethanolamine salt and Zpt	Decylpolyglucoside (S=1.3) and Zpt
1	CCC	BBB
2	CCC	BBB
3	BBB	AAA
4	BBB	AAA

The shampoo composition of the present invention exhibited significantly excellent anti-dandruff effect compared with a conventional shampoo composition containing an antibacterial agent.

Example 2

Body shampoo

	% by weight
Decylpolyglucoside [R_1 : decyl group, G: glucose, m: 0, n: 1.4 in formula (I)]	10
Triethanolamine laurylphosphate	10
Laurylhydroxysulfobetaine	3
Potassium glycyrrhizate	0.3
Oxybenzone	0.2
trichlosan	0.5
Perfume	small amount
Water	balance
Total	100

This body shampoo exhibited extremely low irritation to the skin and gave an excellent deodorant effect.

Example 3

Shampoo:

	% by weight
Decylfructoside [R_1 : decyl group, G: fructose, m: 0, n: 1.3 in formula (I)]	15
Lauric acid diethanolamide	2
Cationic polymer (Polymer JR400 manufactured by Union Carbide Co.)	0.1
2-dodecylhexadecyltrimethyl ammonium chloride	0.2
Zincpyrithion	0.1
Polyvinyl alcohol	0.5
Antiseptic	0.1
Perfume, Pigment	q.s.
Water	balance
Total	100

This shampoo exhibited extremely low irritation to the skin and gave an excellent anti-dandruff effect.

Example 4

Shampoo:

	% by weight
N-methyl lauric acid glucamide [R_3 : decyl group, R_4 : methyl group, X: glucose in formula (II)]	15
Lauric acid diethanolamide	2
Cationic polymer (Merquat 550, manufactured by Merck Co.)	0.1
2-dodecylhexadecyltrimethyl ammonium chloride	0.2
Octopirox, manufactured by Hoechst AG	1.0
Antiseptic	0.1
Perfume, Pigment	q.s.
Water	balance
Total	100

This shampoo exhibited extremely low irritation to the skin and gave an excellent anti-dandruff effect.

The detergent compositions of the present invention are excellently mild to the skin, exhibiting a high antibacterial effect, without influencing or weakening the cutaneous metabolic and barrier functions of the skin.

Accordingly, when used as detergents for the scalp and the hair, the detergent compositions of the present invention can effectively restrain the early occurrence of dandruff after shampooing. They also exhibit high antibacterial effect when used as body detergents.

Obviously, numerous modifications and variations of the present invention are possible in light of the above teachings. It is therefore to be understood that within the scope of the appended claims, the invention may be practiced otherwise than as specifically described herein.

5 Claims

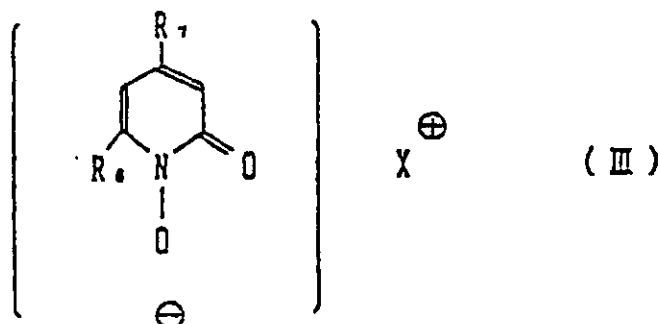
1. An antidandruff composition for scalp and hair comprising:

(A) 0.1 to 95 % by weight of a saccharide nonionic surfactant, and,

(B) 0.01 to 5 % by weight of an anti-dandruff agent selected from the group consisting of the following components (a) and (b);

(a) calcium-, magnesium-, barium-, strontium-, zinc-, cadmium-, tin-, or zirconium salts of 2-mercaptopyridine-N-oxide,

(b) 1-hydroxy-2-pyrrolidone derivatives represented by formula (III),



wherein R_6 represents an alkyl group having 1-17 carbon atoms, alkenyl group having 2-17 carbon atoms, cycloalkyl group having 5-8 carbon atoms, bicycloalkyl group having 7-9 carbon atoms, cycloalkyl-alkyl group wherein the alkyl group has 1-4 carbon atoms and the cycloalkyl group may be substituted with an alkyl group having 1-4 carbon atoms, aryl group, aralkyl group with an alkyl group having 1-4 carbon atoms, aryl-alkenyl group with the alkenyl group having 2-4 carbon atoms, aryloxyalkyl or arylmercaptoalkyl group with the alkyl group having 1-4 carbon atoms, benzhydryl group, phenylsulfonylalkyl group with the alkyl group having 1-4 carbon atoms, furylalkenyl group with the furyl or alkenyl group having 2-4 carbon atoms, wherein the above-mentioned aryl residual group may be substituted with an alkyl group having 1-4 carbon atoms, alkoxy group having 1-4 carbon atoms, nitro group, cyano group, or a halogen atom; R_7 represents a hydrogen atom, alkyl group having 1-4 carbon atoms, alkenyl group having 2-4 carbon atoms, halogen atom, phenyl group, or benzyl group; and X^+ represents an organic base, alkali metal ion, ammonium ion, alkaline earth metal ion, or a divalent to tetravalent cationic ion,

2. The antidandruff composition according to claim 1, wherein said saccharide nonionic surfactant is an alkyl saccharide surfactant represented by:



wherein R_1 represents a linear or branched alkyl, alkenyl, or alkylphenyl group having 6-18 carbon atoms, R_2 represents an alkylene group having 2-4 carbon atoms, G is a reducing sugar having 5-6 carbon atoms, m denotes a value of 0-10, and n denotes a value of 1-10.

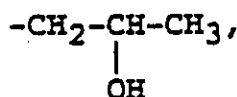
3. The antidandruff composition according to claim 1, wherein said saccharide nonionic surfactant is a saccharide amide surfactant represented by:



wherein R_3 represents a linear or branched alkyl, alkenyl, or alkylphenyl group having 5-17 carbon atoms, R_4 represents a hydrogen atom, a linear or branched alkyl or alkenyl group having 1-18 carbon atoms, a group



wherein R_5 represents a hydrogen atom or methyl group and p denotes a value of 0-10, or a group $-\text{CH}_2\text{CH}_2\text{OH}$,



or $-\text{CH}_2\text{CH}_2\text{CH}_2\text{OH}$, and X represents a polyhydroxyalkyl group derived from saccharide residue having 4-30 carbon atoms.

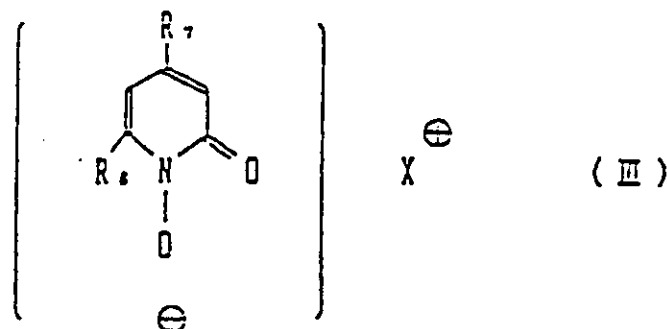
Patentansprüche

1. Antischuppenzusammensetzung für Kopfhaut und Haar, umfassend:

(A) 0,1 bis 95 Gew.-% eines nicht-ionischen Saccharidensids, und
(B) 0,01 bis 5 Gew.-% eines Antischuppenmittels, ausgewählt aus der Gruppe, bestehend aus den folgenden Bestandteilen (a) und (b);

(a) Calcium-, Magnesium-, Barium-, Strontium-, Zink-, Cadmium-, Zinn- oder Zirkoniumsalze von 2-Mercaptopyridin-N-oxid,

(b) 1-Hydroxy-2-pyrrolidonderivate, dargestellt durch Formel (III)



wobei R_8 eine Alkylgruppe mit 1 bis 17 Kohlenstoffatomen, eine Alkenylgruppe mit 2 bis 17 Kohlenstoffatomen, eine Cycloalkylgruppe mit 5 bis 8 Kohlenstoffatomen, eine Bicycloalkylgruppe mit 7 bis 9 Kohlenstoffatomen, eine Cycloalkylalkylgruppe, wobei die Alkylgruppe 1 bis 4 Kohlenstoffatome hat und die Cycloalkylgruppe substituiert sein kann mit einer Alkylgruppe aus 1 bis 4 Kohlenstoffatomen, einer Arylgruppe, einer Aralkylgruppe mit einer Alkylgruppe aus 1 bis 4 Kohlenstoffatomen, einer Arylalkenylgruppe

mit der Alkenylgruppe mit 2 bis 4 Kohlenstoffatomen, Aryloxyalkyl- oder Arylmercaptoalkylgruppe mit der Alkylgruppe mit 1 bis 4 Kohlenstoffatomen, einer Benzhydrylgruppe, einer Phenylsulfonylalkylgruppe mit der Alkylgruppe mit 1 bis 4 Kohlenstoffatomen, einer Furylalkenylgruppe mit der Furyl- oder Alkenylgruppe mit 2 bis 4 Kohlenstoffatomen, wobei die oben genannte Aryl-Restgruppe substituiert sein kann mit einer Alkylgruppe mit 1 bis 4 Kohlenstoffatomen, einer Alkoxygruppe mit 1 bis 4 Kohlenstoffatomen, einer Nitrogruppe, einer Cyanogruppe oder einem Halogenatom darstellt; R_7 ein Wasserstoffatom, eine Alkylgruppe mit 1 bis 4 Kohlenstoffatomen, eine Alkenylgruppe mit 2 bis 4 Kohlenstoffatomen, ein Halogenatom, eine Phenylgruppe oder eine Benzylgruppe darstellt; und X^+ eine organische Base, ein Alkalimetallion, ein Ammoniumion, ein Erdalkalimetallion oder ein zweiwertiges bis vierwertiges kationisches Ion darstellt.

2. Antischuppenzusammensetzung gemäß Anspruch 1, wobei das nicht-ionische Saccharidensid ein Alkylsaccharidensid ist, dargestellt durch Formel (I):

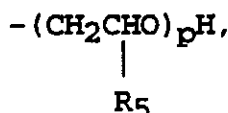


wobei R_1 eine lineare oder verzweigte Alkyl-, Alkenyl- oder Alkylphenylgruppe mit 6 bis 18 Kohlenstoffatomen darstellt, R_2 eine Alkylengruppe mit 2 bis 4 Kohlenstoffatomen darstellt, G ein reduzierender Zucker mit 5 bis 6 Kohlenstoffatomen ist, m einen Wert von 0 bis 10 bezeichnet, und n einen Wert von 1 bis 10 bezeichnet.

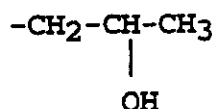
3. Antischuppenzusammensetzung gemäß Anspruch 1, wobei das nicht-ionische Saccharidensid ein Saccharidam-
idensid ist, dargestellt durch Formel (II):



wobei R_3 eine lineare oder verzweigte Alkyl-, Alkenyl- oder Alkylphenylgruppe mit 5 bis 17 Kohlenstoffatomen darstellt, R_4 ein Wasserstoffatom, eine lineare oder verzweigte Alkyl- oder Alkenylgruppe mit 1 bis 18 Kohlenstoffatomen, eine Gruppe



wobei R_5 ein Wasserstoffatom oder eine Methylgruppe darstellt, und p einen Wert von 0 bis 10 bezeichnet, oder eine Gruppe $-CH_2-CH_2-OH$,



oder $-CH_2-CH_2-CH_2-OH$ darstellt, und X eine Polyhydroxyalkylgruppe, abgeleitet von einem Saccharidrest mit 4 bis 30 Kohlenstoffatomen, darstellt.

Revendications

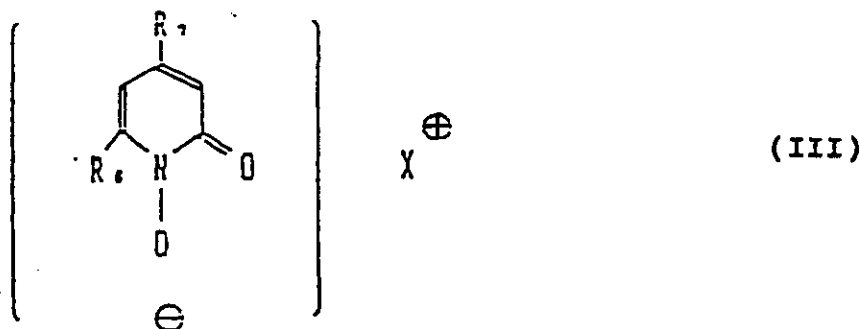
1. Composition anti-pellicules pour le cuir chevelu et les cheveux, comportant:

(A) 0,1 à 95% en poids d'un agent tensioactif non ionique constitué par un saccharide, et

(B) 0,01 à 5% en poids d'un agent anti-pellicules choisi dans le groupe constitué des composants (a) et (b) ci-dessous:

(a) sels de calcium, de magnésium, de baryum, de strontium, de zinc, de cadmium, d'étain ou de zirconium du 2-mercaptopyridine-N-oxyde,

(b) dérivés de la 1-hydroxy-2-pyrrolidone, représentés par la formule (III),



dans laquelle R_6 représente un groupe alkyle présentant 1-17 atomes de carbone, un groupe alcényle présentant 2-17 atomes de carbone, un groupe cycloalkyle présentant 5-8 atomes de carbone, un groupe bicycloalkyle présentant 7-9 atomes de carbone, un groupe cycloalkyl-alkyle dans lequel le groupe alkyle présente 1-4 atomes de carbone et le groupe cycloalkyle peut être substitué avec un groupe alkyle présentant 1-4 atomes de carbone, un groupe aryle, un groupe aralkyle avec un groupe alkyle présentant 1-4 atomes de carbone, un groupe aryl-alcényle dans lequel le groupe alcényle présente 2-4 atomes de carbone, un groupe aryloxyalkyle ou arylmercaptoalkyle dans lequel le groupe alkyle présente 1-4 atomes de carbone, un groupe benzhydryle, un groupe phénylsulfonylalkyle dans lequel le groupe alkyle présente 1-4 atomes de carbone, un groupe furylalcényle dans lequel le groupe furyle ou alcényle présente 2-4 atomes de carbone, le groupe résiduel aryle mentionné plus haut pouvant être substitué avec un groupe alkyle présentant 1-4 atomes de carbone, un groupe alkoxy présentant 1-4 atomes de carbone, un groupe nitro, un groupe cyano, ou un atome d'halogène; R_7 représente un atome d'hydrogène, un groupe alkyle présentant 1-4 atomes de carbone, un groupe alcényle présentant 2-4 atomes de carbone, un atome d'halogène, un groupe phényle ou un groupe benzyle; et X^+ représente une base organique, un ion de métal alcalin, un ion ammonium, un ion de métal alcalino-terreux ou un ion cationique divalent à tétravalent.

2. Composition anti-pellicules selon la revendication 1, dans laquelle ledit agent tensioactif non ionique constitué par un saccharide est un agent tensioactif constitué par un alkylsaccharide représenté par:

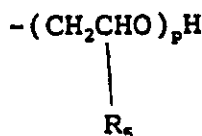


dans laquelle R_1 représente un groupe alkyle, alcényle ou alkylphényle linéaire ou ramifié présentant 6-18 atomes de carbone, R_2 représente un groupe alkylène présentant 2-4 atomes de carbone, G est un sucre réducteur présentant 5-6 atomes de carbone, m désigne une valeur de 0-10, et n désigne une valeur de 1-10.

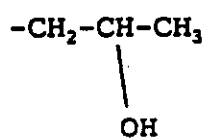
3. Composition anti-pellicules selon la revendication 1, dans laquelle ledit agent tensioactif non ionique constitué par un saccharide est un agent tensioactif constitué par un amide saccharide, représenté par:



dans laquelle R_3 représente un groupe alkyle, alcényle ou alkylphényle linéaire ou ramifié présentant 5-17 atomes de carbone, R_4 représente un atome d'hydrogène, un groupe alkyle ou alcényle linéaire ou ramifié présentant 1-18 atomes de carbone, un groupe



dans lequel R_5 représente un atome d'hydrogène ou un groupe méthyle et p désigne une valeur de 0-10, ou un groupe $-\text{CH}_2\text{CH}_2\text{OH}$,



ou $-\text{CH}_2\text{CH}_2\text{CH}_2\text{OH}$, et X représente un groupe polyhydroxyalkyle dérivé d'un résidu de saccharide présentant 4-30 atomes de carbone.

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