



(43) International Publication Date
20 September 2012 (20.09.2012)

WIPO | PCT

(10) International Publication Number
WO 2012/125183 A1

(51) International Patent Classification:

A61K 36/185 (2006.01) *A61Q 17/04* (2006.01)
A61K 8/97 (2006.01) *A61Q 19/00* (2006.01)
A61P 17/00 (2006.01)

(21) International Application Number:

PCT/US2011/052188

(22) International Filing Date:

19 September 2011 (19.09.2011)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

61/451,654 11 March 2011 (11.03.2011) US

(71) Applicant (for all designated States except US): **ELC MANAGEMENT LLC** [US/US]; 767 Fifth Avenue, New York, New York 10153 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **DALY, Susan M.** [US/US]; 16 Melrose Lane, Commack, New York 11725 (US). **DECLERCQ, Lieve** [BE/BE]; Stadhouderslaan 2, B-2180 Ekeren (BE).

(74) Agents: **MCKELVEY, Idris N.** et al.; 155 Pinelawn Road, Suite 345 South, Melville, New York 11747 (US).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— with international search report (Art. 21(3))

(54) Title: USE OF ANOGEISSUS EXTRACT FOR FIBRILLIN PRODUCTION IN SKIN

(57) Abstract: Use of at least one extract from the Anogeissus genus for treating human skin by producing fibrillin and thereby increasing skin elasticity.



WO 2012/125183 A1

USE OF ANOGEISSUS EXTRACT FOR FIBRILLIN PRODUCTION IN SKIN

CROSS-REFERENCE TO RELATED APPLICATIONS

5

The present application claims priority from U.S. Provisional Application No. 61/451,654, filed March 11, 2011.

Technical Field

10

The invention is in the field of the use of an extract from a plant from the *Anogeissus* genus topical compositions for application to keratinous surfaces such as skin, hair, or nails in order to produce fibrillin.

15

Background of the Invention

20

Companies that make skin care products are always looking for new and improved ingredients and formulas. It is known that skin cells, or keratinocytes, are vulnerable to daily assaults from the environment such as cigarette smoke, wind, sun, environmental toxins, and so on. Skin is also known to suffer from its own challenges such as dryness, oiliness, and natural degradation with age. Zinc is often applied to skin in combination with other ingredients in order to treat various conditions. For example, it is believed that zinc pyrithione is useful for inhibiting sebum production, thereby reducing the oily appearance of skin and keratin fibers. Further to sebum inhibition activity, zinc PCA is known to act as an anti-inflammatory agent in skin care compositions. Zinc PCA and Zinc pyrithione have also been used for various skin benefits, including maintenance of generally healthy-looking skin and even for wound care ointments.

25

30

Various natural ingredients and extracts are also used to deliver skin care benefits. Such ingredients include aloe vera gel, green tea, white birch, grape seed oil, and many others. While each of these ingredients have shown to provide individual benefits to skin, many

ingredients may be exotic or otherwise expensive, which creates formulation limitations due to cost. Therefore, there is an ongoing need for a natural skin care active which provides a synergistic benefit when combined with zinc-based ingredients, such that cost-effective benefits may be delivered to skin.

5

Summary of the Invention

The invention is directed to a personal care composition comprising at least one extract from the *Anogeissus* genus; from about 0.001 to about 5.00% of zinc PCA; a dermatologically acceptable carrier; and methods of treating skin with the composition herein.

10

Detailed Description

All percentages mentioned herein are percentages by weight of the complete composition unless otherwise indicated. The compositions of the invention may be further described as set forth herein.

15

Anogeissus Extract

20

Anogeissus is a genus of trees which are indigenous to Asia and Africa, belonging to the family *Combretaceae*. Extracts from the *Anogeissus* genus provide improved skin texture, feel, hydration, moisturization, and appearance of lines, wrinkles, uneven pigmentation, mottling, and other age-related or undesirable skin conditions. There are about eight species in the *Anogeissus* genus, including *Anogeissus acumintata*, *bentii*, *dhofarica*, *latifolia*, *leiocarpus*, *rotundifolia*, *schimperi*, and *sericea*. The extracts may come from the leaves, stems, seeds, bark, flowers, roots, and so on. In one embodiment the extract may be an aqueous or aqueous/alcoholic extract of the plant parts. The *Anogeissus* extract may be present in the composition in amounts ranging from about 0.0001-75%, preferably from about 0.0005-50%, and most preferably from about 0.001-10%.

25

In one embodiment, the compositions comprise an extract from the bark of *Anogeissus Leiocarpus*. *Anogeissus Leiocarpus* is a tall evergreen tree native to the savannas of Tropical Africa, and it is the only West African species of the *Anogeissus* species. One form of *Anogeissus Leiocarpus* is a brownish powder sold by Actives International LLC under the trade name ViaPure Anogeissus. By way of contrast, the *Anogeissus latifolia* species is a small to medium-sized tree native to India, Nepal, Myanmar, and Sri Lanka. It is commonly referred to as axlewood and is generally known to contain significant amounts of tannin.

Zinc

The zinc salt of L-PCA (pyroglutamine acid, PCA) is an active physiological regulator of sebum production especially formulated for oily skin problems. Zinc is generally known to reduce sebum (suet) secretion. Its activity is enhanced by the content of PCA amino acid. It has been surprisingly discovered that that zinc PCA, in combination with plant extracts from the *Anogeissus* genus, uniquely aids in stimulating fibrillin production. Fibrillin is known to provide a network for elastin deposition, which aids in skin elasticity and provides a youthful skin appearance.

It has been found that zinc-based skin care ingredients are particularly useful in combination with *Anogeissus* extracts for skin rejuvenation benefits. A preferred combination includes zinc PCA in combination with the *Anogeissus leiocarpus* species in a skin care formulation. It is believed that *Anogeissus leiocarpus* acts in concert with zinc PCA to provide a synergistic fibrillin production benefit. As previously discussed, it is believed that fibrillin provides a framework for elastin development, and elastin is important for skin resiliency and youthfulness. Zinc PCA is commercially available from Aston Chemicals under the trademark, Zincidone®. Zinc PCA is present at levels from about 0.001 to about 0.5%, alternatively from about 0.01 to about 0.3%, and alternatively from about 0.10 to about 0.2%.

Zinc PCA may also be combined with zinc pyrithione. Zinc pyrithione may be present at levels of from about 0.01 to about 0.5%, alternatively from about 0.10 to about 0.3%, and alternatively from about 0.10 to about 0.2%.

DNA Repair Enzyme

5 The compositions may also contain one or more DNA repair enzymes. DNA repair enzymes may be present in an amount from about 0.00001 to about 35%, preferably from about 0.00005 to about 30%, more preferably from about 0.0001 to about 25% of one or more DNA repair enzymes.

 DNA repair enzymes as disclosed in U.S. Patent Nos. 5,077,211; 5,190,762; 10 5,272,079; and 5,296,231, are suitable for use in the compositions and method of the invention. One example of such a DNA repair enzyme may be purchased from AGI/Dermatics under the trade name Roxisomes®, and has the INCI name *Arabidopsis Thaliana* extract. It may be present alone or in admixture with lecithin and water. This DNA repair enzyme is known to be effective in repairing 8-oxo-diGuanine base mutation damage.

15 Another type of DNA repair enzyme that may be used is one that is known to be effective in repairing 06-methyl guanine base mutation damage. It is sold by AGI/Dermatics under the tradename Adasomes®, and has the INCI name Lactobacillus ferment, which may be added to the composition of the invention by itself or in admixture with lecithin and water.

 Another type of DNA repair enzyme that may be used is one that is known to be 20 effective in repairing T-T dimers. The enzymes are present in mixtures of biological or botanical materials. Examples of such ingredients are sold by AGI/Dermatics under the tradenames Ultrasomes® or Photosomes®. Ultrasomes® comprises a mixture of *Micrococcus* lysate (an end product of the controlled lysis of various species of *Micrococcus*), lecithin, and water. Photosomes® comprises a mixture of plankton extract (which is the extract of marine 25 biomass which includes one or more of the following organisms: thalassoplankton, green micro-algae, diatoms, greenish-blue and nitrogen-fixing seaweed), water, and lecithin.

Another type of DNA repair enzyme may be a component of various inactivated bacterial lysates such as *Bifida* lysate or *Bifida* ferment lysate, the latter a lysate from *Bifido* bacteria which contains the metabolic products and cytoplasmic fractions when *Bifido* bacteria are cultured, inactivated and then disintegrated. This material has the INCI name *Bifida*

5 Ferment Lysate.

Other Ingredients

The composition may be in the form of an aqueous solution, gel, or suspension; or in the form of an emulsion – either water in oil or oil in water. The composition may also be anhydrous. The composition may be in the liquid, semi-solid, or solid form.

10 If present as an aqueous solution or dispersion, the amount of water present may range from about 0.01-99%, and the amount of dissolved or dispersed solids from about 10 to 99.99%, in addition to the DNA repair enzyme and *Anogeissus* extract mentioned about in the amounts set forth.

If the composition of the invention is in the emulsion form, it may comprise from
15 about 0.1-99% water and from about 0.1-80% oil in addition to DNA repair enzyme and *Anogeissus* extract as specified herein and in the amounts set forth.

If the composition of the invention is in an anhydrous form, it may contain from about 0.1-99% oil in addition to the *Anogeissus* extract and DNA repair enzymes and in the amounts set forth herein.

20 Humectants

The composition may contain one or more humectants. If present, they may range from about 0.1 to 75%, preferably from about 0.5 to 70%, more preferably from about 0.5 to 40%. Examples of suitable humectants include glycols, sugars, and the like. Suitable glycols are in monomeric or polymeric form and include polyethylene and polypropylene glycols such
25 as PEG 4-10, which are polyethylene glycols having from 4 to 10 repeating ethylene oxide units; as well as C₁₋₆ alkylene glycols such as propylene glycol, butylene glycol, pentylene

glycol, and the like. Suitable sugars, some of which are also polyhydric alcohols, are also suitable humectants. Examples of such sugars include glucose, fructose, honey, hydrogenated honey, inositol, maltose, mannitol, maltitol, sorbitol, sucrose, xylitol, xylose, and so on. Also suitable is urea. Preferably, the humectants used in the composition of the invention are C₁₋₆,
 5 preferably C₂₋₄ alkylene glycols, most particularly butylene glycol, glycerin, propylene glycol, or hexylene glycol.

Botanical Extracts

It may be desirable to incorporate one more botanical extracts into the composition in addition to the *Anogeissus* extract. If present suggested ranges are from about 0.0001 to 20%,
 10 preferably from about 0.0005 to 15%, more preferably from about 0.001 to 10%. Suitable botanical extracts include extracts from plants (herbs, roots, flowers, fruits, seeds) such as flowers, fruits, vegetables, and so on, including yeast ferment extract, *Padina Pavonica* extract, *Thermus Thermophilis* ferment extract, *Camelina Sativa* seed oil, *Boswellia Serrata* extract, olive extract, *Acacia Dealbata* extract, *Acer Saccharinum* (sugar maple),
 15 *Acidopholus*, *Acorus*, *Aesculus*, *Agaricus*, *Agave*, *Agrimonia*, algae, aloe, citrus, *Brassica*, cinnamon, orange, apple, blueberry, cranberry, peach, pear, lemon, lime, pea, seaweed, caffeine, green tea, chamomile, willowbark, mulberry, poppy, and those set forth on pages 1646 through 1660 of the CTFA Cosmetic Ingredient Handbook, Eighth Edition, Volume 2. Further specific examples include, but are not limited to, *Glycyrrhiza Glabra*, *Salix Nigra*,
 20 *Macrocystis Pyrifera*, *Pyrus Malus*, *Saxifraga Sarmentosa*, *Vitis Vinifera*, *Morus Nigra*, *Scutellaria Baicalensis*, *Anthemis Nobilis*, *Salvia Sclarea*, *Prunus Amygdalus*, *Rosmarinus Officianalis*, *Sapindus makurossi*, *Caesalpinia spinosa*, *Citrus Medica Limonum*, *Panax Ginseng*, *Siegesbeckia Orientalis*, *Mangifera Indicia*, *Fructus Mume*, *Psidium Guajava*, *Ascophyllum Nodosum*, *Centaurium erythrea*, *Glycine Soja* extract, *Beta Vulgaris*, *Haberlea*
 25 *Rhodopensis*, *Polygonum Cuspidatum*, *Citrus Aurantium Dulcis*, *Vitis Vinifera*, *Selaginella Tamariscina*, *Humulus Lupulus*, *Citrus Reticulata* Peel, *Punica Granatum*, *Asparagopsis*,

Curcuma Longa, *Menyanthes Trifoliata*, *Helianthus Annuus*, *Hordeum Vulgare*, *Cucumis Sativus*, *Evernia Prunastri*, *Evernia Furfuracea*, *Kola Acuminata*, glycyrrhetic acid, and mixtures thereof.

Peptides

5 It may be desired to incorporate one or more peptides into the composition. The term “peptide” means from 2 to 20 amino acids connected by peptide bonds. If so, suggested ranges are from about 0.001 to 20%, preferably from about 0.005 to 15%, more preferably from about 0.01 to 10%. Preferred are biologically active peptides including those set forth in the C.T.F.A. International Cosmetic Ingredient Dictionary and Handbook, Eleventh Edition,
 10 2006, page 2712. Such peptides include, but are not limited to the CTFA names: Acetyl Hexapeptide-1, 7, 8; Acetyl Pentapeptide-1, 2, 3, or 5; Acetyl Tripeptide-1; Acetyl Dipeptide-1 cetyl ester; Acetyl Glutamyl Heptapeptide-3; Acetyl Glutamyl Hexapeptide-6; Acetyl Monofluoropeptide-1; Heptapeptide-1, 2, or 3; Hexapeptide-1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, or 14; Manganese Tripeptide-1; Myristoyl Hexapeptide-5, 12, or 13; Myristoyl
 15 Nonapeptide-2; Myristoyl Pentapeptide-4; Myristoyl Tetrapeptide-4 or 6; Myristoyl Tripeptide-4; Nisin, Nonapeptide-1 or 2; Oligopeptide-1, 2, 3, 4, 5, 6, 7, 8, 9 or 10; Palmitoyl Hexapeptide-14; Palmitoyl Pentapeptide-4; Palmitoyl Pentapeptide-4 or 5; Palmitoyl Tripeptide-1 or 5; Pentapeptide-1, 2, 3, 4, 5, or 6; Tetrapeptide-1, 2, 3, 4, 5, 6, or 7; Tripeptide-1, 2, 3, 4, or 5; or Palmitoyl Oligopeptides.

20 In one preferred embodiment the composition comprises Acetyl Hexapeptide-8, having the trade name Argireline®.

Oils

The composition may also comprise one or more oils in the form of natural, synthetic, or silicone oils. The term “oil” means that the ingredient is pourable at room temperature, e.g.
 25 25° C. Oils may be volatile or non-volatile. The term “volatile” means that the oil has vapor pressure greater than about 2 mm of mercury at 20° C. The term “non-volatile” means that the

oil has a vapor pressure of less than about 2 mm. of mercury at 20° C. If present, suggested ranges are from about 0.1 to 60%, preferably from about 0.5 to 45%.

Examples of volatile oils include volatile linear, cyclic or branched silicones such as cyclopentasiloxane, cyclohexasiloxane (2 cst) , hexamethyldisiloxane (0.65 cst, centistokes),
5 octamethyltrisiloxane (1.0 cst), decamethyltetrasiloxane (1.5 cst), or dodecamethylpentasiloxane (2.0 cst); or branched volatile silicones such as methyl trimethicone (1.5 cst). Also suitable are volatile paraffinic hydrocarbons such as isododecane, isohehexadecane, C11-14 alkanes, and mixtures thereof.

Non-volatile oils include linear silicones commonly referred to as dimethicone; phenyl
10 substituted silicones such as phenyl dimethicone, phenyl trimethicone, trimethylsiloxy phenyldimethicone, cetyl dimethicone, perfluorodimethicone, phenethyl dimethicone, and the like.

Non-volatile oils may also include esters or hydrocarbons. Esters include C1-10 alkyl esters of C1-20 carboxylic acids. One preferred type of ester is a fatty acid (C6-22) ester of a
15 straight or branched chain saturated or unsaturated C1-22 alkyl. Examples include esters that have a low viscosity, e.g. ranging from 10-100 cst at room temperature. Examples of such esters include but are not limited to jojoba esters.

Other non-volatile oils include sterols such as phytosterols, phytosphingosine, and similar plant sterols.

20 Thickeners

Suitable thickeners may be incorporated into the composition. If so, suggested ranges are from about 0.0001-45%, preferably from about 0.0005-40%.

Examples of thickeners include animal, vegetable, mineral, silicone, or synthetic waxes which may have melting points ranging from about 30 to 150° C. including but not limited to
25 Examples of such waxes include waxes made by Fischer-Tropsch synthesis, such as polyethylene or synthetic wax; or various vegetable waxes such as bayberry, candelilla,

ozokerite, acacia, beeswax, ceresin, cetyl esters, flower wax, citrus wax, carnauba wax, jojoba wax, japan wax, polyethylene, microcrystalline, rice bran, lanolin wax, mink, montan, bayberry, ouricury, ozokerite, palm kernel wax, paraffin, avocado wax, apple wax, shellac wax, clary wax, spent grain wax, grape wax, and polyalkylene glycol derivatives thereof such as PEG6-20 beeswax, or PEG-12 carnauba wax; or fatty acids or fatty alcohols, including
5 esters thereof, such as hydroxystearic acids (for example 12-hydroxy stearic acid), tristearin, tribehenin, and so on.

Also suitable as thickening agents are silicas, silicates, silica silylate, and alkali metal or alkaline earth metal derivatives thereof. These silicas and silicates are generally found in the
10 particulate form and include silica, silica silylate, magnesium aluminum silicate, and the like.

Silicone elastomers may also be used as thickening agents. Such elastomers include those that are formed by addition reaction-curing, by reacting an SiH-containing diorganosiloxane and an organopolysiloxane having terminal olefinic unsaturation, or an alpha-omega diene hydrocarbon, in the presence of a platinum metal catalyst. Such elastomers
15 may also be formed by other reaction methods such as condensation-curing organopolysiloxane compositions in the presence of an organotin compound via a dehydrogenation reaction between hydroxyl-terminated diorganopolysiloxane and SiH-containing diorganopolysiloxane or alpha omega diene; or by condensation-curing organopolysiloxane compositions in the presence of an organotin compound or a titanate ester
20 using a condensation reaction between an hydroxyl-terminated diorganopolysiloxane and a hydrolysable organosiloxane; peroxide-curing organopolysiloxane compositions which thermally cure in the presence of an organoperoxide catalyst.

One type of elastomer that may be suitable is prepared by addition reaction-curing an organopolysiloxane having at least 2 lower alkenyl groups in each molecule or an alpha-
25 omega diene; and an organopolysiloxane having at least 2 silicon-bonded hydrogen atoms in each molecule; and a platinum-type catalyst. While the lower alkenyl groups such as vinyl,

can be present at any position in the molecule, terminal olefinic unsaturation on one or both molecular terminals is preferred. The molecular structure of this component may be straight chain, branched straight chain, cyclic, or a network. These organopolysiloxanes are exemplified by methylvinylsiloxanes, methylvinylsiloxane-dimethylsiloxane copolymers, 5 dimethylvinylsiloxyl-terminated dimethylpolysiloxanes, dimethylvinylsiloxyl-terminated dimethylsiloxane-methylphenylsiloxane copolymers, dimethylvinylsiloxyl-terminated dimethylsiloxane-diphenylsiloxane-methylvinylsiloxane copolymers, trimethylsiloxyl-terminated dimethylsiloxane-methylvinylsiloxane copolymers, trimethylsiloxyl-terminated dimethylsiloxane-methylphenylsiloxane-methylvinylsiloxane copolymers, 10 dimethylvinylsiloxyl-terminated methyl(3,3,3-trifluoropropyl) polysiloxanes, and dimethylvinylsiloxyl-terminated dimethylsiloxane-methyl(3,3,-trifluoropropyl)siloxane copolymers, decadiene, octadiene, heptadiene, hexadiene, pentadiene, or tetradiene, or tridiene.

Curing proceeds by the addition reaction of the silicon-bonded hydrogen atoms in the 15 dimethyl methylhydrogen siloxane, with the siloxane or alpha-omega diene under catalysis using the catalyst mentioned herein. To form a highly crosslinked structure, the methyl hydrogen siloxane must contain at least 2 silicon-bonded hydrogen atoms in each molecule in order to optimize function as a crosslinker.

The catalyst used in the addition reaction of silicon-bonded hydrogen atoms and 20 alkenyl groups, and is concretely exemplified by chloroplatinic acid, possibly dissolved in an alcohol or ketone and this solution optionally aged, chloroplatinic acid-olefin complexes, chloroplatinic acid-alkenylsiloxane complexes, chloroplatinic acid-diketone complexes, platinum black, and carrier-supported platinum.

Examples of suitable silicone elastomers for use in the compositions of the invention 25 may be in the powder form, or dispersed or solubilized in solvents such as volatile or non-volatile silicones, or silicone compatible vehicles such as paraffinic hydrocarbons or esters.

Examples of silicone elastomer powders include vinyl dimethicone/methicone silsesquioxane crosspolymers like Shin-Etsu's KSP-100, KSP-101, KSP-102, KSP-103, KSP-104, KSP-105, hybrid silicone powders that contain a fluoroalkyl group like Shin-Etsu's KSP-200 which is a fluoro-silicone elastomer, and hybrid silicone powders that contain a phenyl group such as

5 Shin-Etsu's KSP-300, which is a phenyl substituted silicone elastomer; and Dow Coming's DC 9506. Examples of silicone elastomer powders dispersed in a silicone compatible vehicle include dimethicone/vinyl dimethicone crosspolymers supplied by a variety of suppliers including Dow Corning Corporation under the tradenames 9040 or 9041, GE Silicones under the tradename SFE 839, or Shin-Etsu Silicones under the trade names KSG-15, 16, 18. KSG-

10 15 has the CTFA name cyclopentasiloxane/dimethicone/vinyl dimethicone crosspolymer. KSG-18 has the INCI name phenyl trimethicone/dimethicone/phenyl vinyl dimethicone crosspolymer. Silicone elastomers may also be purchased from Grant Industries under the Gransil trademark. Also suitable are silicone elastomers having long chain alkyl substitutions such as lauryl dimethicone/vinyl dimethicone crosspolymers supplied by Shin Etsu under the

15 tradenames KSG-31, KSG-32, KSG-41, KSG-42, KSG-43, and KSG-44. Cross-linked organopolysiloxane elastomers useful in the present invention and processes for making them are further described in U.S. Pat. No. 4,970,252 to Sakuta et al., issued Nov. 13, 1990; U.S. Pat. No. 5,760,116 to Kilgour et al., issued Jun. 2, 1998; U.S. Pat. No. 5,654,362 to Schulz, Jr. et al. issued Aug. 5, 1997; and Japanese Patent Application JP 61-18708, assigned to Pola

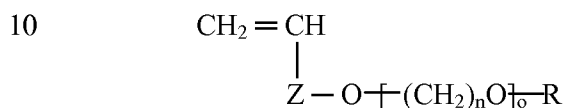
20 Kasei Kogyo KK.

Polysaccharides may be suitable aqueous phase thickening agents. Examples of such polysaccharides include naturally derived materials such as agar, agarose, alicagines polysaccharides, algin, alginic acid, acacia gum, amylopectin, chitin, dextran, cassia gum, cellulose gum, gelatin, gellan gum, hyaluronic acid, hydroxyethyl cellulose, methyl cellulose,

25 ethyl cellulose, pectin, sclerotium gum, xanthan gum, pectin, trehalose, gelatin, and so on.

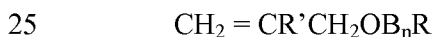
Also suitable are different types of synthetic polymeric thickeners. One type includes acrylic polymeric thickeners comprised of monomers A and B wherein A is selected from the group consisting of acrylic acid, methacrylic acid, and mixtures thereof; and B is selected from the group consisting of a C₁₋₂₂ alkyl acrylate, a C₁₋₂₂ alky methacrylate, and mixtures thereof
 5 are suitable. Acrylic polymer solutions include those sold by Seppic, Inc., under the tradename Sepigel® or those sold under the tradename Aristoflex®.

Also suitable are acrylic polymeric thickeners that are copolymer of A, B, and C monomers wherein A and B are as defined above, and C has the general formula:



wherein Z is -(CH₂)_m; wherein m is 1-10, n is 2-3, o is 2-200, and R is a C₁₀₋₃₀ straight or
 15 branched chain alkyl. Examples of the secondary thickening agent above, are copolymers where A and B are defined as above, and C is CO, and wherein n, o, and R are as above defined. Examples of such secondary thickening agents include acrylates/steareth-20 methacrylate copolymer, which is sold by Rohm & Haas under the tradename Acrysol ICS-1.

Also suitable are acrylate based anionic amphiphilic polymers containing at least one
 20 hydrophilic unit and at least one allyl ether unit containing a fatty chain. Preferred are those where the hydrophilic unit contains an ethylenically unsaturated anionic monomer, more specifically a vinyl carboxylic acid such as acrylic acid, methacrylic acid or mixtures thereof, and where the allyl ether unit containing a fatty chain corresponds to the monomer of formula:



in which R' denotes H or CH₃, B denotes the ethylenoxy radical, n is zero or an integer ranging from 1 to 100, R denotes a hydrocarbon radical selected from alkyl, arylalkyl, aryl, alkylaryl and cycloalkyl radicals which contain from 8 to 30 carbon atoms, preferably from 10 to 24,

and even more particularly from 12 to 18 carbon atoms. More preferred in this case is where R' denotes H, n is equal to 10 and R denotes a stearyl (C18) radical. Anionic amphiphilic polymers of this type are described and prepared in U.S. Patent Nos. 4,677,152 and 4,702,844. Among these anionic amphiphilic polymers, polymers formed of 20 to 60% by weight acrylic acid and/or methacrylic acid, of 5 to 60% by weight lower alkyl methacrylates, of 2 to 50% by weight allyl ether containing a fatty chain as mentioned above, and of 0 to 1% by weight of a crosslinking agent which is a well-known copolymerizable polyethylenic unsaturated monomer, for instance diallyl phthalate, allyl (meth)acrylate, divinylbenzene, (poly)ethylene glycol dimethacrylate and methylenebisacrylamide. One commercial example of such polymers are crosslinked terpolymers of methacrylic acid, of ethyl acrylate, of polyethylene glycol (having 10 EO units) ether of stearyl alcohol or steareth-10, in particular those sold by the company Allied Colloids under the names **SALCARE** SC80 and **SALCARE** SC90, which are aqueous emulsions containing 30% of a crosslinked terpolymer of methacrylic acid, of ethyl acrylate and of steareth-10 allyl ether (40/50/10).

Also suitable are acrylate copolymers such as Polyacrylate-3 which is a copolymer of methacrylic acid, methylmethacrylate, methylstyrene isopropylisocyanate, and PEG-40 behenate monomers; Polyacrylate-10 which is a copolymer of sodium acryloyldimethyltaurate, sodium acrylate, acrylamide and vinyl pyrrolidone monomers; or Polyacrylate-11, which is a copolymer of sodium acryloyldimethylacryloyldimethyl taurate, sodium acrylate, hydroxyethyl acrylate, lauryl acrylate, butyl acrylate, and acrylamide monomers.

Also suitable are crosslinked acrylate based polymers where one or more of the acrylic groups may have substituted long chain alkyl (such as 6-40, 10-30, and the like) groups, for example acrylates/C₁₀₋₃₀ alkyl acrylate crosspolymer which is a copolymer of C₁₀₋₃₀ alkyl acrylate and one or more monomers of acrylic acid, methacrylic acid, or one of their simple esters crosslinked with the allyl ether of sucrose or the allyl ether of pentaerythritol. Such

polymers are commonly sold under the Carbopol or Pemulen tradenames and have the CTFA name carbomer.

One particularly suitable type of aqueous phase thickening agent are acrylate based polymeric thickeners sold by Clariant under the Aristoflex trademark such as Aristoflex AVC, which is ammonium acryloyldimethyltaurate/VP copolymer; Aristoflex AVL which is the same polymer has found in AVC dispersed in mixture containing caprylic/capric triglyceride, trilaureth-4, and polyglyceryl-2 sesquiisostearate; or Aristoflex HMB which is ammonium acryloyldimethyltaurate/behent-25 methacrylate crosspolymer, and the like.

Also suitable as thickening agents are various polyethylene glycols (PEG) derivatives where the degree of polymerization ranges from 1,000 to 200,000. Such ingredients are indicated by the designation "PEG" followed by the degree of polymerization in thousands, such as PEG-45M, which means PEG having 45,000 repeating ethylene oxide units. Examples of suitable PEG derivatives include PEG 2M, 5M, 7M, 9M, 14M, 20M, 23M, 25M, 45M, 65M, 90M, 115M, 160M, 180M, and the like.

Also suitable are polyglycerins which are repeating glycerin moieties where the number of repeating moieties ranges from 15 to 200, preferably from about 20-100. Examples of suitable polyglycerins include those having the CTFA names polyglycerin-20, polyglycerin-40, and the like.

Surfactants

If desired, the compositions of the invention may contain one or more surfactants. This is particularly desirable when the composition is in the form of an aqueous gel or emulsion. If present, the surfactant may range from about 0.001 to 50%, preferably from about 0.005 to 40%, more preferably from about 0.01 to 35% by weight of the total composition. Suitable surfactants may be silicone or organic, nonionic, anionic, amphoteric or zwitterionic. Such surfactants include, but are not limited to, those set forth herein and are well known in the art.

Vitamins and Antioxidants

The compositions may comprise from about 0.0001% to about 50%, alternatively from about 0.001% to about 10%, alternatively from about 0.01% to about 5%, and alternatively from about 0.1% to about 1%, of one or more vitamins. Herein, "vitamins" means vitamins, pro-vitamins, and their salts, isomers and derivatives. Non-limiting examples of suitable vitamins include: vitamin B compounds (including B1 compounds, B2 compounds, B3 compounds such as niacinamide, niacinnicotinic acid, tocopheryl nicotinate, C1-C18 nicotinic acid esters, and nicotinyl alcohol; B5 compounds, such as panthenol or "pro-B5", pantothenic acid, pantothenyl; B6 compounds, such as pyroxidine, pyridoxal, pyridoxamine; carnitine, thiamine, riboflavin); vitamin A compounds, and all natural and/or synthetic analogs of Vitamin A, including retinoid compounds such as retinol, retinyl acetate, retinyl palmitate, retinoic acid, retinaldehyde, retinyl propionate; carotenoids (pro-vitamin A); vitamin D compounds; vitamin K compounds; vitamin E compounds, or tocopherol, including tocopherol sorbate, tocopherol acetate, other esters of tocopherol and tocopheryl compounds; vitamin C compounds, including ascorbate, ascorbyl esters of fatty acids, and ascorbic acid derivatives, for example, ascorbyl phosphates such as magnesium ascorbyl phosphate and sodium ascorbyl phosphate, ascorbyl glucoside, and ascorbyl sorbate; and vitamin F compounds, such as saturated and/or unsaturated fatty acids. In one embodiment, the composition comprises a vitamin selected from the group consisting of vitamin B compounds, vitamin C compounds, vitamin E compounds and mixtures thereof. Alternatively, the vitamin is selected from the group consisting of niacinamide, tocopheryl nicotinate, pyroxidine, panthenol, vitamin E, vitamin E acetate, ascorbyl phosphates, ascorbyl glucoside, and mixtures thereof.

Parabens

It is further recognized that there is an ongoing need for stable cosmetic systems which maximize the use of natural ingredients and therefore avoid negative side effects of certain synthetic preservatives. Accordingly, in one embodiment, the compositions are substantially

free of parabens. Known parabens include butylparaben, ethylparaben, methylparaben, propylparaben, and mixtures thereof. The term, "substantially free" as used herein, means that less than 0.050%, and preferably no paraben materials are present in the composition.

Dermatologically Acceptable Carrier

5 The compositions comprise a dermatologically acceptable carrier for the skin care active materials. "Dermatologically acceptable," as used herein, means that the compositions or components described are suitable for use in contact with human keratinous tissue without undue toxicity, incompatibility, instability, allergic response, and the like. The compositions may comprise from about 50% to about 99.99%, alternatively from about 60% to about
10 99.9%, alternatively from about 70% to about 98%, and alternatively from about 80% to about 95% of the composition.

 The carrier can be a wide variety of types, non-limiting examples of which include solutions, dispersions, emulsions and combinations thereof. Herein, "emulsions" generally contain an aqueous phase and an oil phase. The oils may be derived from animals, plants, or
15 petroleum, may be natural or synthetic, and may include silicone oils. Emulsion carriers include, but are not limited to oil-in-water, water-in-oil and water-in-oil-in-water emulsions. In one embodiment, the carrier comprises an oil-in-water emulsion, a water-in-oil emulsion a silicone-in-water emulsion, and/or a water-in-silicone emulsion. The emulsions may comprise from about 0.01% to about 10%, and alternatively from about 0.1% to about 5%, of a
20 nonionic, anionic or cationic emulsifier, and combinations thereof. Suitable emulsifiers are disclosed in, for example, U.S. Pat. No. 3,755,560, U.S. Pat. No. 4,421,769, and McCutcheon's Detergents and Emulsifiers, North American Edition, pages 317-324 (1986).

 The invention will be further described in connection with the following example which is set forth for purposes of illustration only.

EXAMPLES

A skin treatment serum is prepared as follows:

Ingredient	A	B	C	D	E
Water	QS100	QS100	QS100	QS100	QS100
Butylene glycol	5.20	5.00	5.20	5.30	5.00
Dimethicone	4.25	2.00	2.80	3.25	4.25
Acetyl hexapeptide-8	2.00	2.00	2.00	2.00	2.00
Arginine/salicylic acid/tocopheryl acetate/mixed soy phospholipids	2.00	2.00	2.00	2.00	2.00
Jojoba esters	1.50	1.50	1.50	1.50	1.50
Glycerin	1.25	1.25	1.25	1.25	1.25
Dicaprylyl carbonate	1.00	1.00	1.00	1.00	1.00
Methyl trimethicone	1.00	1.00	1.00	1.00	1.00
Dimethicone/Polysilicone-11	1.00	1.00	1.00	1.00	1.00
Water/ <i>Prunus amygdalus</i> ducis (sweet almond) seed extract	1.00	1.00	1.00	1.00	1.00
Silica	0.75	0.75	0.75	0.75	0.75
Carbomer	0.50	0.50	0.50	0.50	0.50
Ammonium acryloyldimethyltaurate/VP copolymer	0.50	0.50	0.50	0.50	0.50
Glycerin/water/Sapindus mukurossi fruit extract/ <i>Caesalpinia spinosa</i> gum	0.50	0.50	0.50	0.50	0.50
Butylene glycol/ <i>Centaurium erythraea</i> (Centaury) extract	0.50	0.50	0.50	0.50	0.50
<i>Siegesbeckia Orientalis</i> extract/glycerin	0.50	0.50	0.50	0.50	0.50
Tromethamine	0.45	0.45	0.45	0.45	0.45
Phenoxyethanol	0.43	0.43	0.43	0.43	0.43
Caprylyl glycol/phenoxyethanol/hexylene glycol	0.40	0.40	0.40	0.40	0.40
Caffeine	0.20	0.20	0.20	0.20	0.20
Water/butylenes glycol/ <i>Scutellaria baicalensis</i> (root) extract/ <i>Pyrus Malus</i> (Apple) extract/ <i>Cucumis Sativus</i> (cucumber) extract	0.20	0.20	0.20	0.20	0.20
Tetrahexyldecyl ascorbate	0.20	0.20	0.20	0.20	0.20
Phytosphingosine	0.20	0.20	0.20	0.20	0.20
<i>Anogeissus Leiocarpus</i> extract	0.15	0.0015	5.00	0.50	0.75
Fragrance	0.15	0.15	0.15	0.15	0.15
Glycyrrhetic acid	0.10	0.10	0.10	0.10	0.10
<i>Mangifera Indica</i> (Mango) leaf	0.10	0.10	0.10	0.10	0.10

extract					
<i>Psidium Guajava</i> (Guava) fruit extract	0.10	0.10	0.10	0.10	0.10
<i>Zinc PCA</i>	0.10	0.20	0.10	0.10	0.10
<i>Zinc Pyrithione</i>	0.10	0.00	0.00	0.20	0.10
<i>Polygonum cuspidatum</i> root extract	0.05	0.05	0.05	0.05	0.05
Sodium hyaluronate	0.02	0.02	0.02	0.02	0.02
Phosphatidyl choline	0.009	0.009	0.009	0.009	0.009
Sodium chloride	0.009	0.009	0.009	0.009	0.009
Phytosterol	0.0019	0.0019	0.0019	0.0019	0.0019
Disodium phosphate	0.001	0.001	0.001	0.001	0.001
Ursolic acid/Rosmarinus Officinalis (Rosemary) extract	0.001	0.001	0.001	0.001	0.001
<i>Anthemis Nobilis</i> (Chamomile) flower extract	0.0005	0.0005	0.0005	0.0005	0.0005
<i>Micrococcus Luteus</i> powder	0.0005	0.0005	0.0005	0.0005	0.0005
Potassium phosphate monobasic	0.0002	0.0002	0.0002	0.0002	0.0002
Potassium chloride	0.0002	0.0002	0.0002	0.0002	0.0002
Phosphatidyl ethanolamine	0.00009	0.00009	0.00009	0.00009	0.00009
Disodium EDTA	0.00006	0.00006	0.00006	0.00006	0.00006
BHT	0.00002	0.00002	0.00002	0.00002	0.00002
Oleic acid	0.00002	0.00002	0.00002	0.00002	0.00002
Sodium hydroxide	0.000007	0.000007	0.000007	0.000007	0.000007
OGGI fermentate	0.000002	0.000002	0.000002	0.000002	0.000002

The composition is prepared by combining the ingredients and mixing well.

- 5 While the invention has been described in connection with the preferred embodiment, it is not intended to limit the scope of the invention to the particular form set forth but, on the contrary, it is intended to cover such alternatives, modifications, and equivalents as may be included within the spirit and scope of the invention as defined by the appended claims.

What we claimed is:

1. Use of at least one extract from the *Anogeissus* genus, and preferably the *Anogeissus leiocarpus* species of said *Anogeissus* genus, to produce fibrillin in human skin.

5

2. A use according to claim 1, wherein said extract is formulated in a personal care composition to provide a benefit selected from improved skin texture, feel, hydration, moisturization; preventing the appearance of lines, wrinkles, uneven pigmentation, mottling, and age-related skin conditions.

10

3. A use according to claim 2, wherein said personal care composition comprises at least one additional skin care active, said active being preferably selected from a DNA repair enzyme, a peptide, a botanical extract, and zinc PCA.

15

4. A use according to claim 3, wherein said DNA repair enzyme is selected from one or more of OGGI, or found in *Micrococcus* lysate, *Bifidus*, *Arabidopsis Thaliana* extract, *Lactobacillus*, plankton extract, or mixtures thereof or ferments thereof.

5. A use according to claims 3 or 4, wherein the peptide is selected from a hexapeptide, pentapeptide, tripeptide, dipeptide, a palmitoyl derivative, or mixtures thereof.

20

6. A use according to claim 5, wherein said peptide is Acetyl Hexapeptide-8.

7. A use according to any one of claims 3-6, wherein said botanical extract is selected from *Scutellaria baicalensis*, *Pyrus malus*, *Cucumis sativus*, glycyrrhetic acid, *Mangifera indica*, *Psidium guava*, *Polygonum cuspidatum*, *Rosmarinus officinalis*, *Anthemis nobilis*, caffeine, and mixtures thereof.

25

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2011/052188**A. CLASSIFICATION OF SUBJECT MATTER*****A61K 36/185(2006.01)i, A61K 8/97(2006.01)i, A61P 17/00(2006.01)i, A61Q 17/04(2006.01)i, A61Q 19/00(2006.01)i***

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

A61K 36/185; A61K 49/00; A61Q 1/02; A61K 36/82; A61Q 19/08; A61P 17/00; A61K 8/66; A61K 35/78; A61K 8/97; A61K 36/00

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Korean utility models and applications for utility models

Japanese utility models and applications for utility models

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

eKOMPASS(KIPO internal) & Keywords: Anogeissus, fibrillin, skin, leiocarpus, extract, peptide, topical

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2008-0206373 A1 (C. L. MILLIKIN et al.) 28 August 2008	1,2
Y	See paragraphs [0004], [0029], [0035], [0067], [0094] and claims 1, 3.	3-6
Y	US 2005-0271595 A1 (J. S. BROWN) 08 December 2005 See abstract and claims 1, 2, 5, 6.	3-6
A	US 7592024 B1 (D. S. PTCHELINTSEV et al.) 22 September 2009 See abstract, line 50 in column 2 - line 15 in column 3, lines 36-40 in column 11, and claims 14, 22, 23.	1-6
A	US 2010-0209369 A1 (P. ANDRE et al.) 19 August 2010 See claims 1, 9, 11.	1-6
E	US 2011-0280850 A1 (E. I. STARR et al.) 17 November 2011 See abstract, paragraph [0077] and claims 1-11.	1-6

☐ Further documents are listed in the continuation of Box C.☒ See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search

04 APRIL 2012 (04.04.2012)

Date of mailing of the international search report

09 APRIL 2012 (09.04.2012)

Name and mailing address of the ISA/KR

Korean Intellectual Property Office
Government Complex-Daejeon, 189 Cheongsu-ro,
Seo-gu, Daejeon 302-701, Republic of Korea

Facsimile No. 82-42-472-7140

Authorized officer

LEE, SUN HWA

Telephone No. 82-42-481-5606



INTERNATIONAL SEARCH REPORT

International application No.

PCT/US2011/052188**Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)**

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
3. ☒ Claims Nos.: 7
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
- ☐ The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- ☐ No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/US2011/052188

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2008-0206373 A1	28.08.2008	CN 101621987 A WO 2008-104941 A2 WO 2008-104941 A3	06.01.2010 04.09.2008 06.11.2008
US 2005-0271595 A1	08.12.2005	AU 2005-327300 A1 CA 2568888 A1 EP 1765260 A2 GB 0412329 D0 GB 0821820 D0 GB 2414666 A GB 2414666 B GB 2452189 A GB 2452189 B JP 2008-508189 A US 2009-0274629 A1 WO 2006-085907 A2 ZA 200610309 A	17.08.2006 17.08.2006 28.03.2007 07.07.2004 07.01.2009 07.12.2005 07.01.2009 25.02.2009 15.07.2009 21.03.2008 05.11.2009 17.08.2006 30.04.2008
US 7592024 B1	22.09.2009	CA 2748312 A1 EP 2379046 A1 TW 201023908 A WO 2010-077396 A1	08.07.2010 26.10.2011 01.07.2010 08.07.2010
US 2010-0209369 A1	19.08.2010	DE 102010000410 A1 FR 2942236 A1 GB 201002301 D0 GB 2468016 A GB 2468016 B JP 2010-195780 A KR 10-2010-0094370 A	16.12.2010 20.08.2010 31.03.2010 25.08.2010 11.05.2011 09.09.2010 26.08.2010
US 2011-0280850 A1	17.11.2011	WO 2011-143171 A2	17.11.2011