(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
14 November 2024 (14.11.2024)

WIPO | PCT

(10) International Publication Number
WO 2024/231438 A2

(51) International Patent Classification:
Not classified

(21) International Application Number:
PCT/EP2024/062695

(22) International Filing Date:
08 May 2024 (08.05.2024)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
23382427.5 09 May 2023 (09.05.2023) EP

(71) Applicant: **MEDICHEM, S.A.** [ES/ES]; C. Fructuós Gelabert, 6-8, 08970 SANT JOAN DESPÍ (ES).

(72) Inventors: **FERNÁNDEZ GARROSA, Isabel**; C. Juan de Yepes, 1, 05002 ÁVILA (ES). **GONZÁLEZ PLÁGARO, Jordi**; C. Valldoreix 26, 2on 1ª, 08172 SANT CUGAT DEL VALLÈS (ES). **BORDA BOREU, Maria**; C. Sant Jordi 19ª, 08320 EL MASNOU (ES).

(74) Agent: **ZBM PATENTS - ZEA, BARLOCCI & MARK-VARDSEN**; Rambla de Catalunya, 123, 08008 Barcelona (ES).

(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, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CV, CZ, DE, DJ, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IQ, IR, IS, IT, JM, JO, JP, KE, KG, KH, KN, KP, KR, KW, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, MG, MK, MN, MU, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, SC, SD, SE, SG, SK, SL, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, WS, ZA, ZM, ZW.

(84) Designated States *(unless otherwise indicated, for every kind of regional protection available)*: ARIPO (BW, CV, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SC, SD, SL, ST, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, 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, ME, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, KM, ML, MR, NE, SN, TD, TG).

Declarations under Rule 4.17:
— *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))*

Published:
— *without international search report and to be republished upon receipt of that report (Rule 48.2(g))*

(54) Title: COSMETIC TOPICAL COMPOSITION

(57) Abstract: The present invention relates to the field of cosmetics. In particular, it relates to cosmetic topical compositions in the form of an oil-in-water (O/W) emulsion which are useful for improving the symptoms of atopic dermatitis.

WO 2024/231438 A2

Cosmetic topical composition

This application claims the benefit of European Patent Application EP23382427 filed on May 9th, 2023.

Technical field

The present invention relates to the field of cosmetics. In particular, it relates to cosmetic topical compositions in the form of an oil-in-water (O/W) emulsion which are useful for improving the symptoms of atopic dermatitis.

Background art

Octenidine is the international commonly accepted name (INN) for 1,1'-(decane-1,10-diyl)bis(N-octylpyridin-4-(1H)-imine). Octenidine is preferably used in form of its dihydrochloride salt. Octenidine dihydrochloride is a microbiocidal active substance which is mainly used in skin, mucous membrane, and wound antiseptics.

Atopic dermatitis is a condition that causes dry, itchy, and inflamed skin that may be localized to a few parts or involve large portions of the body. Atopic dermatitis is a chronic inflammatory skin disease, which is characterized by a strong itching, xeroderma and inflammatory skin lesions. If these symptoms do not cease, can lead into a vicious cycle of severe pruritus and sleep disorders. Continuous scratching may make the skin more vulnerable to infection.

There is evidence that the prevalence of atopic dermatitis has increased over recent years. This disease is typically developed in childhood but can occur at any age. Since it is a chronic disease it may improve at times, but at other times it may get worse. It's common in young children. The condition can vary from mild to severe with subsequent detriment to quality of life.

Atopic dermatitis is caused by the interaction of different factors such as genetic and environmental conditions. Moreover, it has been seen that an imbalance on the microbiome exists in atopic skin, concretely an overgrowth of Staphylococcus aureus on the skin surface. The overexpression of this bacteria can aggravate the status of the disease.

WO2007031520A2 relates to a semisolid pharmaceutical composition, such as a gel, an O/W (oil in water) cream, W/O (water in oil) cream, O/W/O cream, W/O/W cream, ambiphilic

cream, ointment or a suppository, for the treatment of wounds, atopic dermatitis, infected eczemas, dermatomycoses, vaginal infections, acne, herpes, and/or for controlling multidrug-resistant pathogens comprising from 0.005 to 5% by weight octenidine dihydrochloride and optionally further active ingredients which supplement the activity of octenidine dihydrochloride. These further active ingredients include: clotrimazole and other antimycotics with local activity, cortisones, tretinoin, benzoyl peroxide, acyclovir, local anaesthetics (e.g. benzocaine, lidocaine, polidocanol inter alia), antibiotics, bufexamac, etc.. The only example of an O/W cream refers to a composition with 0.1 g octenidine dihydrochloride, 4.0 g glycerol monostearate 40-50, 6.0 g cetyl alcohol, 7.5 g medium-chain triglycerides (at least 95% by weight saturated fatty acids with 8 to 10 carbon atoms), 25.5 g white petrolatum, and 7.0 g macrogol 1000 glycerol monostearate. Petrolatum is a mineral hydrocarbon derived from petroleum.

WO2015091692A1 relates to a topical pharmaceutical or cosmetic composition comprising (a) 0.01-3.0 wt.% of octenidine dihydrochloride; (b) 1-20 wt.% of at least one petroleum hydrocarbon; (c) 0.5-10 wt.% of at least one C6-C24 fatty acid triglyceride; (d) 1-20 wt.% of at least one C6-C24 fatty alcohol; (e) 1-15 wt% of at least one non-ionic surfactant; (f) 1 to 20 wt. % of at least one polyol; and (g) 30-70 wt.% of water that can be used by patients suffering from atopic dermatitis and/or dry skin to prevent microbial proliferation and to restore the skin barrier function.

WO2022122898A1 relates to a cosmetic or pharmaceutical composition, preferably a dermatological composition for reducing the sebum overproduction, comprising or consisting of a synergistic combination of a specific antimicrobial component and an effective amount of 1,2-nonanediol and/or 2,3-nonanediol or of a specific alkanediol or a mixture of two or more different specific alkanediols. Among the extensive list of the antimicrobial agents (more than 100 components) used in the composition, octenidine hydrochloride and silver citrate are indicated. The composition can also contain one or more lenitive substances, wherein any lenitive substances can be used which are suitable or customary in cosmetic or pharmaceutical applications such as alpha-bisabolol, azulene, guaiazulene, 18-beta-glycyrrhetinic acid, allantoin, Aloe vera juice or gel, extracts of Hamamelis virginiana (witch hazel), Echinacea species, Centella asiatica, chamomile, Arnica monatana, Glycyrrhiza species, algae, seaweed and Calendula officinalis, and vegetable oils such as sweet almond oil, baobab oil, olive oil and panthenol, Laureth-9, Trideceth-9 and 4-t-butylcyclohexanol.

Therefore, from what is known in the prior art, there is a need in developing an efficient cosmetic topical composition comprising octenidine for use for alleviating atopic symptoms

without using petroleum hydrocarbons and which has a very-good cutaneous acceptability in subjects with sensitive skin. The present invention fulfils this and related needs.

Summary of the invention

The inventors have found a new cosmetic topical composition comprising octenidine dihydrochloride, silver citrate solution, Laureth-9, and water useful for improving the skin's moisture, and the skin's barrier function, and alleviating atopic symptoms such as itching and redness.

In a first aspect of the invention there is provided a cosmetic topical composition in the form of an oil-in-water (O/W) emulsion comprising:

(a) 0.01 to 0.50% by weight of octenidine,

(b) 2.20 to 14.20 ppm of silver ion,

(c) 0.50 to 3.00% by weight of Laureth-9, and

(d) 60.00 to 80.00% by weight of water

relative to the total weight of the cosmetic composition.

Finally, the second aspect of the invention relates to the cosmetic topical composition in the form of an oil-in-water (O/W) emulsion as defined herein above and below, for use in alleviating atopic symptoms such as itching and redness.

Detailed description of the invention

All terms as used herein in this application, unless otherwise stated, shall be understood in their ordinary meaning as known in the art. Other more specific definitions for certain terms as used in the present application are as set forth below and are intended to apply uniformly through-out the specification and claims.

All percentages referred herein are by weight. The term "percentage (%) by weight" refers to the percentage of each ingredient in relation to the total weight of the cosmetic topical composition. The term "percentage (%) by weight" may be denoted as "wt %" herein. The

term “part per million” refers to one part per one million parts of the total weight of the cosmetic topical composition. The term “part per million” may be denoted as “ppm” herein.

The term "about" or “around” as used herein refers to a range of values ± 10% of a specified value. For example, the expression "about 10" or “around 10” includes ± 10% of 10, i.e. from 9 to 11.

The term “room temperature” refers to a temperature of the environment, without heating or cooling, and is generally from 20 ºC to 25 ºC.

For the purposes of the present invention, any ranges given include both the lower and the upper end-points of the range. Ranges and values given, such as temperatures, times, and the like, should be considered approximate, unless specifically stated.

It is noted that, as used in this specification and the appended claims, the singular forms ”a”, “an”, and “the” include plural referents unless the context clearly dictates otherwise.

The term “emollient” as used herein refers to an ingredient that softens, smoothens, and hydrates the skin.

The term “emulsifier” as used herein refers to an ingredient that promotes the formation of intimate mixtures by modifying the interfacial tension between immiscible liquids, as in the mixture of oil and water.

The term “humectant” as used herein refers to an ingredient that holds and retains moisture.

The term “thickener” as used herein refers to an ingredient that increases the viscosity of the cosmetic product.

The term “skin conditioning agent” as used herein refers to an ingredient that is added to the cosmetic product to maintain skin in good condition, for example by reducing flaking and restoring suppleness.

The term “metal chelator” as used herein refers to an ingredient that binds to metal ions.

The term “surfactant” as used herein refers to an ingredient that reduces surface tension and facilitates the formation of emulsions between non-miscible liquids of different polarities.

The term “buffer” as used herein refers to an ingredient that maintains the pH of the cosmetic product.

The term “parfum” as used herein refers to an ingredient that provides a pleasant odor.

The term “opacifier” as used herein refers to an ingredient that is added to the cosmetic product to make it opaque.

The term “antistatic” as used herein refers to an ingredient that reduces or eliminates buildup of static electricity.

The term “preservative” as used herein refers to an ingredient that inhibits microbial growth.

The term “solvent” as used herein refers to an ingredient that helps to dissolve or dilute other cosmetic ingredients.

As mentioned above, the first aspect of the present invention provides a cosmetic topical composition in the form of an oil-in-water (O/W) emulsion comprising:

(a) 0.01 to 0.50% by weight of octenidine,

(b) 2.20 to 14.20 ppm of silver ion,

(c) 0.50 to 3.00% by weight of Laureth-9, and

(d) 60.00 to 80.00% by weight of water

relative to the total weight of the cosmetic topical composition.

The cosmetic topical composition in the form of an oil-in-water (O/W) emulsion according to the present invention, when applied on the sensitive skin, provides, as shown from the experimental results, a very good cutaneous acceptability and efficacy, preserves, respects, and improves the skin’s moisture and the skin’s barrier function, and alleviates atopic symptoms such as itching and redness. The cosmetic topical composition in the form of an oil-in-water (O/W) emulsion according to the present invention exhibits an adequate chemical and physical stability.

The term "oil-in-water (O/W) emulsion" as used herein refers to a formulation containing an oil phase dispersed in an aqueous phase.

In a preferred embodiment, the cosmetic topical composition in the form of an oil-in-water (O/W) emulsion according to the present invention comprises octenidine in form of its dihydrochloride salt.

Octenidine, preferably octenidine dihydrochloride, can be obtained by any of the processes disclosed in the prior art. It can be in any crystalline form, solvate or hydrate, thereof. These forms may differ in some physical properties, but they are equivalent for the purposes of the present invention.

The amount of octenidine used in the cosmetic topical composition of the present invention is from 0.01 to 0.50% by weight, preferably from 0.05 to 0.30% by weight and more preferably about 0.15% by weight, relative to the total weight of the cosmetic topical composition.

The concentration of silver ion present in the cosmetic topical composition of the present invention is from 2.20 to 14.20 ppm, preferably from 3.20 to 9.50 ppm, and more preferably about 7.40 ppm of silver ion relative to the total weight of the cosmetic topical composition.

The silver ion present in the cosmetic topical composition of the present invention is preferably in form of its salt with citric acid, or a hydrate or solvate thereof. Since citric acid is a trivalent carboxylic acid, silver can form different salts with citric acid such as silver dihydrogen citrate salt ($AgC_6H_7O_7$), silver monohydrogen citrate salt ($Ag_2C_6H_6O_7$) and silver citrate salt ($Ag_3C_6H_5O_7$) or mixtures, hydrates or solvates thereof. The ratio between the different salts of silver ion with citric acid that is present in the cosmetic topical composition of the present invention depends on the pH of the cosmetic topical composition. For the sake of simplicity, concentration of the salts of silver ion with citric acid in the cosmetic topical composition is expressed as the equivalent concentration of silver citrate ($Ag_3C_6H_5O_7$) salt. In this sense, the amount of silver citrate used in the cosmetic topical composition of the present invention is from 3.5 to 22.5 ppm, preferably from 5 to 15 ppm, and more preferably about 11.8 ppm of silver citrate relative to the total weight of the cosmetic topical composition.

The silver citrate can be used in solid form or alternatively as a silver citrate aqueous solution, such as a stable aqueous mixture of citric acid monohydrate and silver dihydrogen citrate monohydrate. A preferred commercially available silver citrate solution contains a

silver ion concentration of 2280 to 2640 ppm corresponding to 0.228 to 0.264% by weight of silver ion, which is a broad-spectrum antimicrobial agent.

Laureth-9 also named polidocanol or PEG-9 lauryl alcohol is a polyethylene glycol ether of lauryl alcohol, where the average number of ethylene oxide monomers in the molecule is 9. It relieves itching caused by eczema and dry skin due to its anti-itch properties. It has also emulsifying properties.

The amount of Laureth-9 used in the cosmetic topical composition of the present invention is from 0.50 to 3.00% by weight, preferably from 0.70 to 2.00% and more preferably about 1.00% by weight, relative to the total weight of the cosmetic topical composition.

The amount of water used in the cosmetic topical composition of the present invention is from 60.00 to 80.00% by weight, preferably from 65.00% to 75.00% by weight, and more preferably about 70.00% by weight, relative to the total weight of the cosmetic topical composition.

The cosmetic topical composition of the present invention may optionally further comprise other well-known cosmetic agents such as emollients, emulsifiers, humectants, thickeners, skin conditioning agents, metal chelators, surfactants, buffers, perfumes, opacifiers, antistatics, preservatives, solvents, and mixtures thereof. Some of the agents may have more than one function in the cosmetic topical composition of the present invention.

Non-limiting examples of emollients which can be used in the cosmetic topical composition of the present invention are caprylic/capric triglyceride, coco-caprylate/caprate, tetradecane, dodecane, diethyl succinate, cetearyl alcohol, squalene, bis-diglyceryl polyacyladipate-2, 2-ethylhexyl stearate, cetearyl ethylhexanoate, paraffinum liquidum, dicaprylyl ether, myreth-3 myristate, glyceryl stearate, dimethicone, propylene glycol dicaprylate/dicaprate, sodium polyacrylate, beeswax, caprylyl glycol, oenothera biennis oil, behenyl alcohol, glycine soja seed extract, C_{12-15} alkyl benzoate, sphingolipids, cetyl palmitate, glyceryl oleate, diethyl succinate, and mixtures thereof.

Preferably, the emollient used in the cosmetic topical composition of the present invention is selected from the group consisting of caprylic/capric triglyceride, coco-caprylate/caprate, tetradecane, dodecane, diethyl succinate, cetearyl alcohol, squalene, bis-diglyceryl polyacyladipate-2, sodium polyacrylate, and mixtures thereof.

Non-limiting examples of emulsifiers which can be used in the cosmetic topical composition

of the present invention are polyglyceryl-3-methylglucose distearate, potassium cetyl phosphate, microcrystalline cellulose, cellulose gum, Ceteareth-20, cetearyl glucoside, glyceryl oleate, lanolin, lecithin, PEG-120 methyl glucose dioleate, PEG-20 glyceryl stearate, PEG-40 stearate, PEG-7 hydrogenated castor oil, PEG-7 glyceryl cocoate, polyglyceryl-3 diisostearate, polyglyceryl-3 methylglucose distearate, polyglyceryl-3 polyricinoleate, polyglyceryl-4 caprylate, polysorbate 20, potassium stearate, sodium C_{12-13} pareth sulfate, sodium stearate, sorbitan laurate, sorbitan oleate, sorbitan stearate, Steareth-2, Steareth-21, stearic acid, sucrose laurate, sucrose myristate, sucrose ricinoleate, Tricetеareth-4 phosphate, and mixtures thereof.

Preferably, the emulsifier used in the cosmetic topical composition of the present invention is selected from the group consisting of polyglyceryl-3-methylglucose distearate, potassium cetyl phosphate, ~~Laureth-9~~, microcrystalline cellulose, cellulose gum, and mixtures thereof.

Non-limiting examples of humectants which can be used in the cosmetic topical composition of the present invention are glycerin, glycol, lactic acid, PEG-6, saccharide isomerate, sodium lactate, sorbitol, hydroxyethyl urea, propanediol, sodium hyaluronate, and mixtures thereof.

Preferably, the humectant used in the cosmetic topical composition of the present invention is glycerin.

Non-limiting examples of thickeners which can be used in the cosmetic topical composition of the present invention are xanthan gum, aluminum starch octenylsuccinate, hydroxyethyl acrylate/sodium acryloyldimethyl taurate copolymer, acrylates/C_{10-30} alkyl acrylate crosspolymer, sodium polyacrylate, carbomer, 2-ethylhexyl stearate, methoxy PEG-22-dodecyl glycol copolymer, ammonium polyacryloyldimethyl taurate, polyisobutene, and mixtures thereof.

Preferably, the thickener used in the cosmetic topical composition of the present invention is 2-ethylhexyl stearate.

Non-limiting examples of skin conditioning agents which can be used in the cosmetic topical composition of the present invention are D-panthenol, alpha-bisabolol, chamomille extract, Sphingomonas ferment extract, ceteraryl ethylhexanoate, butyrospermum parkii butter, avena satiiva leaf, beta-sitosterol, hydroxyethyl urea, oxidized corn oil, tocopherol, alpha-glucan oligosaccharide, allantoin, persea gratissima oil, hydrolyzed linseed extract, glycine,

1-2 hexanediol, ethylhexylglycerin, tocopheryl acetate, myristyl myristate, ceramides, laminaria ochroleuca extract.

Preferably, the thickener used in the cosmetic topical composition of the present invention is selected fom the group consistint of D-panthenol, alpha-bisabolol, chamomille extract, Sphingomonas ferment extract, and mixtures thereof.

Non-limiting examples of metal chelators which can be used in the cosmetic topical composition of the present invention are disodium EDTA, 2,6-dicarboxypyridine, citric acid, sodium citrate, tetrasodium glutamate diacetate, and mixtures thereof.

Preferably, the metal chelator used in the cosmetic topical composition of the present invention is disodium EDTA.

Non limiting examples of surfactants which can be used in the cosmetic topical composition of the present invention are disodium lauryl sulfosuccinate, PEG-100 stearate, polysorbate 20, poloxamer 338, trideceth-6, caprylyl/capryl glucoside, and mixtures thereof.

Preferably, the surfactant used in the cosmetic topical composition of the present invention is trideceth-6.

Non limiting examples of buffers which can be used in the cosmetic topical composition of the present invention are sodium hydroxide, triethanolamine, citric acid, ascorbic acid, potassium sorbate, and mixtures therefore.

Preferably, the buffer used in the cosmetic topical composition of the present invention is triethanolamine.

Preferably, the cosmetic topical composition in the form of an oil-in-water (O/W) emulsion of the present invention comprises:

(a) 0.01 to 0.50% by weight of octenidine,

(b) 2.20 to 14.20 ppm of silver ion,

(c) 0.50 to 3.00% by weight of Laureth-9,

(d) 60.00 to 80.00% by weight of water,

(e) 0.50-2.50% by weight of potassium cetyl phosphate,

(f) 3.00-5.00% by weight of polyglyceryl-3 methylglucose distearate,

(g) 0.05-0.30% by weight of alpha-bisabolol, and

(h) 0.10-3.00% by weight of D-panthenol

relative to the total weight of the cosmetic topical composition.

Potassium cetyl phosphate is an oil-in-water anionic emulsifier that also works as a surfactant. The amount of potassium cetyl phosphate used in the cosmetic topical composition of the present invention is from 0.50 to 2.50% by weight, preferably from 1.00 to 2.25% and more preferably about 2.00% by weight.

Polyglyceryl-3 methylglucose distearate is a vegetable-based emulsifier. The amount of polyglyceryl-3 methylglucose distearate used in the cosmetic topical composition of the present invention is from 3.00 to 5.00% by weight, preferably from 3.50 to 4.50% and more preferably about 4.00% by weight.

Alpha-bisabolol or α-(-)-bisabolol is a natural monocyclic sesquiterpene with skin healing properties that can be used in cosmetic formulations as a skin conditioning agent. The amount of alpha-bisabolol used in the cosmetic topical composition of the present invention is from 0.05 to 0.30% by weight, preferably from 0.10 to 0.25% and more preferably about 0.15% by weight.

D-panthenol is derived from vitamin B5 with skin healing properties that can be used in cosmetic formulations as a skin conditioning agent. The amount of D-panthenol used in the cosmetic topical composition of the present invention is from 0.10 to 3.00% by weight, preferably from 0.15 to 1.00% and more preferably about 0.25% by weight.

More preferably, the cosmetic topical composition in the form of an oil-in-water (O/W) emulsion of the present invention comprises:

(a) 0.01 to 0.50% by weight of octenidine,

(b) 2.20 to 14.20 ppm of silver ion,

(c) 0.50 to 3.00% by weight of Laureth-9,

(d) 60.00 to 80.00% by weight of water,

(e) 0.50-2.50% by weight of potassium cetyl phosphate,

(f) 3.00-5.00% by weight of polyglyceryl-3 methylglucose distearate,

(g) 0.05-0.30% by weight of alpha-bisabolol,

(h) 0.10-3.00% by weight of D-panthenol,

(i) 6.00-8.00% by weight of caprylic/capric triglyceride, and

(j) 2.00-6.00% by weight of coco-caprylate/caprate

relative to the total weight of the cosmetic topical composition.

Caprylic/capric triglyceride is derived from coconut oil and glycerin that can be used in cosmetic formulations as an emollient. The amount of caprylic/capric triglyceride used in the cosmetic topical composition of the present invention is from 6.00 to 8.00% by weight, preferably from 6.50 to 7.50% and more preferably about 7% by weight.

Coco-caprylate/caprate is an ester of natural fatty alcohol, caprylic acid and capric acid hat can be used in cosmetic formulations as an emollient. The amount of coco-caprylate/caprate used in the cosmetic topical composition of the present invention is from 2.00 to 6.00% by weight, preferably from 3.00 to 5.00% and more preferably about 4.00% by weight.

The cosmetic topical composition in the form of an oil-in-water (O/W) emulsion of the present invention can be in the form of a lotion, cream, gel, spray, and foam, and the like.

Preferably, the cosmetic topical composition in the form of an oil-in-water (O/W) emulsion of the present invention is in the form of a lotion, and more preferably in the form of a body lotion.

The cosmetic topical composition in the form of an oil-in-water (O/W) emulsion of the present invention, preferably in the form of a lotion, and more preferably in the form of body lotion, can be obtained by any of the process known to a person skilled in the art.

As mentioned above, the second aspect of the present invention relates to the cosmetic topical composition in the form of an oil-in-water (O/W) emulsion as defined herein above and below, for use for alleviating atopic symptoms such as itching and redness. This aspect may also be formulated as the use of the components of the cosmetic topical composition in the form of an oil-in-water (O/W) emulsion as defined herein above and below for the manufacture of a topical composition for alleviating atopic symptoms such as itching and redness. The present invention also relates to a method for alleviating atopic symptoms such as itching and redness, comprising administering an effective amount for alleviating such atopic symptoms of the components of the cosmetic topical composition as defined herein above and below, in a subject in need thereof, including a human.

The expression " effective amount for alleviating atopic symptoms such as itching and redness " as used herein, refers to the amount of components that, when administered, is sufficient to prevent development of, or alleviate to some extent, one or more of the symptoms of the condition which is addressed. The particular dose of components of the topical composition administered according to this invention will of course be determined by the particular circumstances surrounding the case, including, the route of administration, the particular symptoms being treated, and the similar considerations.

The cosmetic topical composition in the form of an oil-in-water (O/W) emulsion of the present invention can be applied directly to the affected area of the skin of a subject in the usual way and in a usual frequency for cosmetics, such as once or twice daily.

Examples

Hereinafter, the present invention is described in more detail and specifically with reference to the Examples, which however are not intended to limit the present invention.

Example 1: Octenidine dihydrochloride body lotion

An octenidine dihydrochloride body lotion was prepared by the following method based on the ingredients indicated in Table 1.

Ingredient	Concentration (% w/w)
Water	70.13
Caprylic/capric triglyceride	7.00
Coco-caprylate/caprate	4.00
Polyglyceryl-3 methylglucose distearate	4.00
Glycerin	3.00
Potassium cetyl phosphate	2.00
Vita Silky Fluid® (commercial mixture of dodecane, tetradecane, and diethyl succinate)	2.00
Cetearyl alcohol	1.25
Bis-diglyceryl polyacyladipate-2	1.00
Laureth-9	1.00
Squalene	1.00
Saecare® ATH (commercial mixture of sodium polyacrylate, 2-ethylhexyl stearate, and Trideceth-6)	1.00
Chamomilla extract	0.50
PemuPur™ START (commercial mixture of microcrystalline cellulose, Sphingomonas ferment extract, and cellulose gum)	0.50
Parfum	0.40
Silver citrate solution (contains 2,474 ppm of silver, 21.4% of citric acid and 78.4% of water)	0.30(*)
D-panthenol	0.25
Disodium EDTA	0.25
Alpha-bisabolol	0.15
Octenidine dihydrochloride	0.15(**)
Triethanolamine 99%	0.12

(*) Represents 7.42 ppm of silver ion or 11.76 ppm of silver citrate relative to the total weight of the cosmetic topical composition.

(**) Equivalent to 0.13% (w/w) of octenidine.

Table 1

In a suitable container the aqueous phase ingredients (water (65.13% of the total weight of the cosmetic topical composition), PemuPur™ START, D-panthenol, glycerin, potassium cetyl phosphate, disodium EDTA, and octenidine dihydrochloride) were combined through stirring at 50 ºC to 60 ºC and the resulting mixture was heated at about 85 ºC.

In a suitable container the oil phase ingredients (polyglyceryl-3 methylglucose distearate, cetearyl alcohol, caprylic/capric triglyceride, coco-caprylate/caprate, Laureth-9, Vita Silky Fluid®, squalene, bis-diglyceryl polyacyladipate-2, and alpha-bisabolol) were combined through stirring and the resulting mixture was heated at 75 ºC to 80 ºC.

The content of the container with the oil phase was added over the container with the aqueous phase and after homogenization at 3000 rpm for 3 minutes, the mixture was cooled down below about 40 ºC. Then, a mixture of water (5.00% of the total weight of the cosmetic topical composition), silver citrate solution, and triethanolamine 99% was added to the homogenized mixture.

Finally, chamomilla extract, Saecare™ ATH, and parfum were added sequentially keeping the temperature below 40 ºC.

EXAMPLE 2: Clinical study

The efficacy of the composition of Example 1 in improving the skin barrier function in subjects with atopic predisposition and sensitive body skin was assessed with clinical verification. 19 adult subjects with sensitive body skin, atopic predisposition, habitual body itching and skin discomfort (ex. tingling, stiffness, warmth, burning, and redness) used the lotion of Example 1 for 4 weeks. The composition was applied topically to the body under normal conditions of use twice daily.

The characteristics of the subjects included into the study are summarized in the following Table 2:

Subjects	Number: 19 Women: 18 (95%) Men: 1 (5%) Mean age: 56.2 years old Age minimum: 22 years old Age maximum: 70 years old
Body skin nature	Normal: 3 (16%)

	Dry: 9 (47%) Very dry: 7(37%)
Body skin sensitivity	19 (100%)
Habitual body itching	19 (100%)
Subjects with atopy background	19 (100%)
With antecedents of reactions to cosmetics	3 (16%)
With antecedents of reactions to this type of products	0 (0%)
Regular users of this kind of product	17 (89%)

Table 2

Product acceptability was based on the occurrence of adverse events, participants self-reported feeling of skin discomfort, dermatologist, and instrumental evaluation. The result of the clinical study depicted below in Table 3 shows that the composition of Example 1 is useful for alleviating atopic symptoms such as itching and redness and improves skin barrier function after 4 weeks of use with a very good cutaneous acceptability (in % of the subjects questioned).

The product nourishes the skin	100%
Product provides softness and suppleness from the first application	100%
Product provides softness, suppleness and hydration for 12 hours after application	100%
The product soothes the skin	100%
The product leaves a moisturizing sensation	100%
The product improves the hydration of the skin	100%
The product does not irritate the skin	95%
The product relieves itching	100%
The product reduces redness	100%
By comparing with the product generally used, the subject found their body skin "just as good" to "better"	100%
By comparing the efficiency of the investigational product with the one normally used: . the investigational product was more efficient . no difference . the usual product was more efficient	 65 % 29 % 6 %

Table 3

EXAMPLE 3: Stability tests

The composition of Example 1 has been found to be chemically and physically stable after subjecting the composition to accelerated stability studies at 40ºC for 3 months and after subjecting the composition to stability studies at 25ºC for 6 months, and 5ºC for 6 months.

CLAIMS

1. A cosmetic topical composition in the form of an oil-in-water (O/W) emulsion comprising:

(a) 0. 01 to 0.50% by weight of octenidine,

(b) 2.20 to 14.20 ppm of silver ion,

(c) 0.50 to 3.00% by weight of Laureth-9, and

(d) 60.00 to 80.00% by weight of water

relative to the total weight of the cosmetic composition.

2. The cosmetic topical composition in the form of an oil-in-water (O/W) emulsion according to claim 1, wherein the octenidine is in form of its dihydrochloride salt.

3. The cosmetic topical composition in the form of an oil-in-water (O/W) emulsion according to any of claims 1 or 2, wherein the silver ion is in form of a salt with citric acid, or a hydrate or solvate thereof.

4. The cosmetic topical composition in the form of an oil-in-water (O/W) emulsion according to claim 3, wherein the silver ion salt with citric acid is silver citrate.

5. The cosmetic topical composition in the form of an oil-in-water (O/W) emulsion according to any of the claims 1 to 4, comprising:

(a) 0.01 to 0.50% by weight of octenidine,

(b) 2.20 to 14.20 ppm of silver ion,

(c) 0.50 to 3.00% by weight of Laureth-9,

(d) 60.00 to 80.00% by weight of water,

(e) 0.50-2.50% by weight of potassium cetyl phosphate,

(f) 3.00-5.00% by weight of polyglyceryl-3 methylglucose distearate,

(g) 0.05-0.30% by weight of alpha-bisabolol,

(h) 0.10-3.00% by weight of D-panthenol

relative to the total weight of the cosmetic topical composition.

6. The cosmetic topical composition in the form of an oil-in-water (O/W) emulsion according to any of the claims 1 to 5, comprising:

(a) 0.01 to 0.50% by weight of octenidine,

(b) 2.20 to 14.20 ppm of silver ion,

(c) 0.50 to 3.00% by weight of Laureth-9,

(d) 60.00 to 80.00% by weight of water,

(e) 0.50-2.50% by weight of potassium cetyl phosphate,

(f) 3.00-5.00% by weight of polyglyceryl-3 methylglucose distearate,

(g) 0.05-0.30% by weight of alpha-bisabolol,

(h) 0.10-3.00% by weight of D-panthenol,

(i) 6.00-8.00% by weight of caprylic/capric triglyceride,

(j) 2.00-6.00% by weight of coco-caprylate/caprate

relative to the total weight of the cosmetic topical composition.

7. The cosmetic topical composition in the form of an oil-in-water (O/W) emulsion according to any of the claims 1 to 6, in the form of a lotion, cream, gel, spray, and foam, and the like.

8. The cosmetic topical composition in the form of an oil-in-water (O/W) emulsion according to any of the claims 1 to 7, in the form of a lotion.

9. The cosmetic topical composition in the form of an oil-in-water (O/W) emulsion according to any of the claims 1 to 8, in the form of a body lotion.

10. The cosmetic topical composition in the form of an oil-in-water (O/W) emulsion according to any of the claims 1 to 9 for use in alleviating atopic symptoms.

11. The cosmetic topical composition in the form of an oil-in-water (O/W) emulsion according to claim 10 for use in alleviating itching.

12. The cosmetic topical composition in the form of an oil-in-water (O/W) emulsion according to claim 10 for use in alleviating redness.