

MOISTURIZING AND REPAIRING CREAM HAVING SOOTHING EFFECT, AND
PREPARATION METHOD THEREFOR

RELATED APPLICATIONS

[0001] This application claims priority to Chinese patent application No. 2023102113253 entitled “MOISTURIZING AND REPAIRING CREAM WITH SOOTHING EFFECT, AND PREPARATION METHOD THEREOF”, filed on March 07, 2023, the content of which is hereby incorporated by reference in its entirety.

TECHNICAL FIELD

[0002] The present application relates to a skincare product, particularly to a moisturizing and repairing cream with a soothing effect and a preparation method thereof.

BACKGROUND

[0003] Atopic dermatitis (AD), also known as “atopic eczema”, is a common chronic, recurrent, inflammatory skin condition, whose pathogenesis is closely associated with genetic and environmental factors. AD is predominantly characterized by dry skin, chronic eczematous dermatitis, and intense itching. The eczema involves multiple inflammatory factors, and thus the critical treatment lies in suppressing the activity of these inflammatory factors.

[0004] Skin biology research indicates that skin barrier dysfunction is a critical factor in the pathogenesis of AD. Ceramide deficiency is one of the main causes of barrier dysfunction. Ceramide deficiency can lead to reduced water content in the stratum corneum, enhanced transepidermal water loss, changes in AD sebaceous glands, decreased lipid secretion, elevated pH, etc., resulting in dry skin, desquamation, increased density of sensory nerve fibers in the skin, and aggravated itching. Proper bathing and emollient use are very important in the treatment of AD.

During acute episodes, topical corticosteroids and calcineurin inhibitors are the primary treatments, supplemented with medical moisturizing creams to reduce disease severity and improve the appearance of affected areas. During remission, medical emollients can be used alone to promote skin barrier recovery, maintain condition stability, and reduce recurrence rates.

[0005] Medical moisturizing and barrier-repairing skincare products exhibit good tolerability, absorbing moisture from the environment to replenish water and certain lipid components that are lost from the stratum corneum. These products form a thin oily film on the skin surface to rebuild chemical and physical barriers, which prevents water loss and achieves moisturizing and skin-nourishing effects, thereby preventing AD recurrence and improving quality of life. Based on these, we propose a moisturizing and repairing cream with a soothing effect.

SUMMARY

[0006] According to various embodiments of the present application, a moisturizing and repairing cream with a soothing effect is provided.

[0007] To achieve the above objective, the present application adopts the following technical solutions:

[0008] A moisturizing and repairing cream with a soothing effect includes the following raw materials:

[0009] Phase A: deionized water, disodium EDTA, allantoin, and p-hydroxyacetophenone;

[0010] Phase A1: ammonium acryloyldimethyltaurate/VP copolymer and acrylates/C10-30 alkyl acrylate cross-linked polymer;

[0011] Phase B: glyceryl stearate, M68 emulsifier, cetearyl alcohol, polydimethylsiloxane, dimethylsiloxane (and) polydimethylsiloxane/vinyl polydimethylsiloxane cross-linked polymer,

olea europaea fruit oil, squalane, a skin conditioning agent, and caprylic/capric triglyceride;

[0012] Phase B1: diethylhexyl carbonate and pentaerythrityl tetra-di-t-butyl hydroxyhydrocinnamate;

[0013] Phase C: deionized water and aminomethyl propanol;

[0014] Phase D: glycyrrhiza inflata root extract and 1,2-pentanediol;

[0015] Phase E: Symstive 1609 and saccharide isomerate A0;

[0016] Phase F: glycerin and glabridin 90;

[0017] wherein the skin conditioning agent is a mixture of butyrospermum parkii lipid extract, argania spinosa kernel oil, and spent grain wax, the Symstive 1609 is a mixture of 1,2-pentanediol and 4-tert-butylcyclohexanol; and the saccharide isomerate A0 is a mixture of saccharide isomerate, water, citric acid, and sodium citrate.

[0018] In some embodiments, the moisturizing and repairing cream further includes a ceramide composition, cholesterol, and linoleic acid.

[0019] In some embodiments, in the moisturizing and repairing cream, a molar ratio of the ceramide composition, cholesterol, and linoleic acid is 3:1:1.

[0020] In some embodiments, the moisturizing and repairing cream includes the following raw materials by weight percentage:

[0021] Phase A: balance of deionized water, about 0.01% to about 0.1% of disodium EDTA, about 0.1% to about 1% of allantoin, and about 0.1% to about 1% of p-hydroxyacetophenone;

[0022] Phase A1: about 0.1% to about 1% of ammonium acryloyldimethyltaurate/VP copolymer and about 0.1% to about 1% of acrylates/C10-30 alkyl acrylate cross-linked polymer;

[0023] Phase B: about 1% to about 5% of glyceryl stearate, about 1% to about 5% of M68

emulsifier, about 1% to about 5% of cetearyl alcohol, about 0.1% to about 1% of polydimethylsiloxane, about 0.1% to about 1% of dimethylsiloxane (and) polydimethylsiloxane/vinyl polydimethylsiloxane cross-linked polymer, about 0.1% to about 1% of olea europaea fruit oil, about 0.1% to about 1% of squalane, about 1% to about 5% of the skin conditioning agent, and about 1% to about 5% of caprylic/capric triglyceride;

[0024] Phase B1: about 1% to about 5% of diethylhexyl carbonate and about 0.01% to about 0.1% of pentaerythrityl tetra-di-t-butyl hydroxyhydrocinnamate;

[0025] Phase B2: about 1% to about 5% of caprylic/capric triglyceride and about 0.1% to about 0.2% of the ceramide composition;

[0026] Phase C: about 1% to about 5% of deionized water and about 0.01% to about 0.1% of aminomethyl propanol;

[0027] Phase D: about 0.1% to about 1% of glycyrrhiza inflata root extract and about 1% to about 5% of 1,2-pentanediol;

[0028] Phase E: about 1% to about 5% of Symsitive 1609, about 1% to about 5% of saccharide isomerate A0, about 0.001% to about 0.005% of cholesterol, and about 0.001% to about 0.005% of linoleic acid;

[0029] Phase F: about 1% to about 5% of glycerin and about 0.0001% to about 0.0005% of glabridin 90.

[0030] In some embodiments, the moisturizing and repairing cream consists of the following raw materials:

[0031] Phase A: deionized water, disodium EDTA, allantoin, and p-hydroxyacetophenone;

[0032] Phase A1: ammonium acryloyldimethyltaurate/VP copolymer and acrylates/C10-30

alkyl acrylate cross-linked polymer;

[0033] Phase B: glyceryl stearate, M68 emulsifier, cetearyl alcohol, polydimethylsiloxane, dimethylsiloxane (and) polydimethylsiloxane/vinyl polydimethylsiloxane cross-linked polymer, olea europaea fruit oil, squalane, the skin conditioning agent, and caprylic/capric triglyceride;

[0034] Phase B1: diethylhexyl carbonate and pentaerythrityl tetra-di-t-butyl hydroxyhydrocinnamate;

[0035] Phase C: deionized water and aminomethyl propanol;

[0036] Phase D: glycyrrhiza inflata root extract and 1,2-pentanediol;

[0037] Phase E: Symsitive 1609 and saccharide isomerate A0;

[0038] Phase F: glycerin and glabridin 90.

[0039] In some embodiments, the moisturizing and repairing cream consists of the following raw materials by weight percentage:

[0040] Phase A: balance of deionized water, about 0.01% to about 0.1% of disodium EDTA, about 0.1% to about 1% of allantoin, and about 0.1% to about 1% of p-hydroxyacetophenone;

[0041] Phase A1: about 0.1% to about 1% of ammonium acryloyldimethyltaurate/VP copolymer and about 0.1% to about 1% of acrylates/C10-30 alkyl acrylate cross-linked polymer;

[0042] Phase B: about 1% to about 5% of glyceryl stearate, about 1% to about 5% of M68 emulsifier, about 1% to about 5% of cetearyl alcohol, about 0.1% to about 1% of polydimethylsiloxane, about 0.1% to about 1% of dimethylsiloxane (and) polydimethylsiloxane/vinyl polydimethylsiloxane cross-linked polymer, about 0.1% to about 1% of olea europaea fruit oil, about 0.1% to about 1% of squalane, about 1% to about 5% of the skin conditioning agent, and about 1% to about 5% of caprylic/capric triglyceride;

[0043] Phase B1: about 1% to about 5% of diethylhexyl carbonate and about 0.01% to about 0.1% of pentaerythrityl tetra-di-t-butyl hydroxyhydrocinnamate;

[0044] Phase C: about 1% to about 5% of deionized water and about 0.01% to about 0.1% of aminomethyl propanol;

[0045] Phase D: about 0.1% to about 1% of glycyrrhiza inflata root extract and about 1% to about 5% of 1,2-pentanediol;

[0046] Phase E: about 1% to about 5% of Symsitive 1609, about 1% to about 5% of saccharide isomerate A0;

[0047] Phase F: about 1% to about 5% of glycerin and about 0.0001% to about 0.0005% of glabridin 90.

[0048] In some embodiments, the moisturizing and repairing cream consists of the following raw materials by weight percentage:

[0049] Phase A: about 77.8698% of deionized water, about 0.02% of disodium EDTA, about 0.2% of allantoin, and about 0.5% of p-hydroxyacetophenone;

[0050] Phase A1: about 0.45% of ammonium acryloyldimethyltaurate/VP copolymer and about 0.15% of acrylates/C10-30 alkyl acrylate cross-linked polymer;

[0051] Phase B: about 1% of glyceryl stearate, about 2% of M68 emulsifier, about 2% of cetearyl alcohol, about 1% of polydimethylsiloxane, about 0.2% of dimethylsiloxane (and) polydimethylsiloxane/vinyl polydimethylsiloxane cross-linked polymer, about 0.2% of olea europaea fruit oil, about 0.2% of squalane, about 1% of the skin conditioning agent, and about 1% caprylic/capric triglyceride;

[0052] Phase B1: about 2% of diethylhexyl carbonate and about 0.05% of pentaerythrityl

tetra-di-t-butyl hydroxyhydrocinnamate;

[0053] Phase C: about 2% of deionized water and about 0.06% of aminomethyl propanol;

[0054] Phase D: about 0.1% of glycyrrhiza inflata root extract and about 2% of 1,2-pentanediol;

[0055] Phase E: about 1% of Symsitive 1609, about 2% of saccharide isomerase A0;

[0056] Phase F: about 3% of glycerin and about 0.0002% of glabridin 90.

[0057] In some embodiments, the moisturizing and repairing cream consists of the following raw materials by weight percentage:

[0058] Phase A: about 73.2698% of deionized water, about 0.02% of disodium EDTA, about 0.2% of allantoin, and about 0.5% of p-hydroxyacetophenone;

[0059] Phase A1: about 0.45% of ammonium acryloyldimethyltaurate/VP copolymer and about 0.15% of acrylates/C10-30 alkyl acrylate cross-linked polymer;

[0060] Phase B: about 1% of glyceryl stearate, about 2% of M68 emulsifier, about 2% of cetearyl alcohol, about 1% of polydimethylsiloxane, about 0.5% of dimethylsiloxane (and) polydimethylsiloxane/vinyl polydimethylsiloxane cross-linked polymer, about 0.5% of olea europaea fruit oil, about 0.2% of squalane, about 3% of the skin conditioning agent, and about 2% of caprylic/capric triglyceride;

[0061] Phase B1: about 2% of diethylhexyl carbonate and about 0.05% of pentaerythrityl tetra-di-t-butyl hydroxyhydrocinnamate;

[0062] Phase C: about 2% of deionized water and about 0.06% of aminomethyl propanol;

[0063] Phase D: about 0.1% of glycyrrhiza inflata root extract and about 2% of 1,2-pentanediol;

- [0064] Phase E: about 1% of Symsitive 1609, about 3% of saccharide isomerate A0;
- [0065] Phase F: about 3% of glycerin and about 0.0002% of glabridin 90.
- [0066] In some embodiments, the moisturizing and repairing cream consists of the following raw materials by weight percentage:
- [0067] Phase A: about 65.4698% of deionized water, about 0.02% of disodium EDTA, about 0.2% of allantoin, and about 0.5% of p-hydroxyacetophenone;
- [0068] Phase A1: about 0.45% of ammonium acryloyldimethyltaurate/VP copolymer and about 0.15% of acrylates/C10-30 alkyl acrylate cross-linked polymer;
- [0069] Phase B: about 2% of glyceryl stearate, about 1% of M68 emulsifier, about 5% of cetearyl alcohol, about 0.5% of polydimethylsiloxane, about 0.3% of dimethylsiloxane (and) polydimethylsiloxane/vinyl polydimethylsiloxane cross-linked polymer, about 0.6% of olea europaea fruit oil, about 0.2% of squalane, about 5% of the skin conditioning agent, and about 5% of caprylic/capric triglyceride;
- [0070] Phase B1: about 3% of diethylhexyl carbonate and about 0.05% of pentaerythrityl tetra-di-t-butyl hydroxyhydrocinnamate;
- [0071] Phase C: about 2% of deionized water and about 0.06% of aminomethyl propanol;
- [0072] Phase D: about 0.5% of glycyrrhiza inflata root extract and about 2% of 1,2-pentanediol;
- [0073] Phase E: about 2% of Symsitive 1609, about 1% of saccharide isomerate A0;
- [0074] Phase F: about 3% of glycerin and about 0.0002% of glabridin 90.
- [0075] In some embodiments, the moisturizing and repairing cream consists of the following raw materials by weight percentage:

[0076] Phase A: about 69.8698% of deionized water, about 0.02% of disodium EDTA, about 0.2% of allantoin, and about 0.5% of p-hydroxyacetophenone;

[0077] Phase A1: about 0.45% of ammonium acryloyldimethyltaurate/VP copolymer and about 0.15% of acrylates/C10-30 alkyl acrylate cross-linked polymer;

[0078] Phase B: about 1% of glyceryl stearate, about 2% of M68 emulsifier, about 3% of cetearyl alcohol, about 0.2% of polydimethylsiloxane, about 0.5% of dimethylsiloxane (and) polydimethylsiloxane/vinyl polydimethylsiloxane cross-linked polymer, about 0.3% of olea europaea fruit oil, about 0.5% of squalane, about 2% of the skin conditioning agent, and about 2% of caprylic/capric triglyceride;

[0079] Phase B1: about 5% of diethylhexyl carbonate and about 0.05% of pentaerythrityl tetra-di-t-butyl hydroxyhydrocinnamate;

[0080] Phase C: about 2% of deionized water and about 0.06% of aminomethyl propanol;

[0081] Phase D: about 0.2% of glycyrrhiza inflata root extract and about 2% of 1,2-pentanediol;

[0082] Phase E: about 2% of Symsitive 1609, about 3% of saccharide isomerase A0;

[0083] Phase F: about 3% of glycerin and about 0.0002% of glabridin 90.

[0084] In some embodiments, the skin conditioning agent is the mixture of butyrospermum parkii lipid extract, argania spinosa kernel oil, and spent grain wax in a weight ratio of (3 to 8):(3 to 5):1.

[0085] A method for preparing a moisturizing and repairing cream with a soothing effect includes the following steps:

[0086] S1: cleaning and sterilizing production equipment and weighing containers for later use;

[0087] S2: precisely weighing the raw materials, placing the weighed raw materials in clean and sterilized containers, rechecking, and then placing the containers including the raw materials on a preparation cart;

[0088] S3: pre-processing the raw materials;

[0089] S4: adding the components of Phase A to an emulsifying tank in sequence, heating to a temperature ranging from about 80 °C to about 85 °C while stirring at a frequency ranging from about 15 Hz to about 35 Hz until complete dissolution;

[0090] S5: activating the emulsifying tank and clockwise stirring at about 3000 rpm for homogenization, adding the components of Phase A1 to the emulsifying tank in sequence, homogenizing while stirring until complete dispersion and dissolution;

[0091] S6: adding the components of Phase B into an oil-phase tank, heating to a temperature ranging from about 80 °C to 85 °C while stirring at a rotation speed ranging from about 200 rpm to about 500 rpm until complete dissolution;

[0092] S7: adding processed Phase B1 to the emulsifying tank, then evacuating to about -0.05 MPa, introducing the Phase B to the emulsifying tank and anticlockwise stirring at about 3400 rpm for homogenization for about 8 min, and stirring for about 15 min at a constant temperature ranging from 80 °C to about 85 °C until defoaming is complete;

[0093] S8: cooling to about 60 °C $\pm$ 2 °C, and adding dispersed Phase C to the emulsifying tank and stirring until uniformly dispersed;

[0094] S9: cooling to about 40 °C $\pm$ 2 °C, adding dissolved Phase D, dissolved Phase F, and dissolved Phase E into the emulsifying tank, and stirring thoroughly until uniformly and fully dispersed;

[0095] S10: cooling to below about 38 °C, conducting preliminary quality inspection, filtering the resulting product through filter cloth with about 100 mesh to about 200 mesh, and storing in a standing room;

[0096] S11: conducting semi-finished product inspection, bottling, and packaging;

[0097] S12: conducting finished product inspection and storage.

[0098] In some embodiments, in step S3, the pre-processing includes the following steps:

[0099] a: reserving about 0.5% deionized water, stirring and heating to a temperature of about 80 °C to about 85 °C, and then cooling to room temperature for later use;

[0100] b: mixing and heating the components of Phase B1, stirring until the components of Phase B1 are fully dissolved for later use;

[0101] c: mixing the reserved about 0.5% deionized water with the components of Phase C, stirring until the Phase C is uniformly dispersed for later use;

[0102] d: mixing the components of Phase D, heating and stirring until the components of Phase D are fully dissolved for later use;

[0103] e: mixing the components of Phase F and stirring until the components of Phase F are fully dissolved for later use.

[0104] Details of one or more embodiments of the present application are set forth in the accompanying drawings and description below. Other features, objectives, and advantages of the present application will become apparent from the description, drawings, and claims.

DETAILED DESCRIPTION

[0105] The technical solutions of the embodiments of the present application will be described more clearly and comprehensively below in conjunction with the accompanying drawings for the

embodiments of the present application. Apparently, the embodiments described herein are only part of, not all of the embodiments of the present application. Base on the embodiments of the present application, other embodiments obtained by those of ordinary skill in the art without creative efforts shall fall within the protection scope of the present application.

[0106] A first aspect of the present application provides a moisturizing and repairing cream with a soothing effect, including the following raw materials:

[0107] Phase A: deionized water, ethylenediaminetetraacetic acid disodium salt (disodium EDTA), allantoin, and p-hydroxyacetophenone;

[0108] Phase A1: ammonium acryloyldimethyltaurate/vinylpyrrolidone copolymer (ammonium acryloyldimethyltaurate/VP copolymer) and acrylates/C10-30 alkyl acrylate cross-linked polymer;

[0109] Phase B: glyceryl stearate, M68 emulsifier (cetearyl glucoside), cetearyl alcohol, polydimethylsiloxane, dimethylsiloxane (and) polydimethylsiloxane/vinyl polydimethylsiloxane cross-linked polymer, olea europaea fruit oil, squalane, a skin conditioning agent, and caprylic/capric triglyceride;

[0110] Phase B1: diethylhexyl carbonate and pentaerythrityl tetra-di-t-butyl hydroxyhydrocinnamate;

[0111] Phase C: deionized water and aminomethyl propanol;

[0112] Phase D: glycyrrhiza inflata root extract and 1,2-pentanediol;

[0113] Phase E: Symstive 1609 and saccharide isomerate A0;

[0114] Phase F: glycerin and glabridin 90;

[0115] wherein the skin conditioning agent is a mixture of butyrospermum parkii lipid extract, argania spinosa kernel oil, and spent grain wax, the Symstive 1609 is a mixture of 1,2-pentanediol

and 4-tert-butylcyclohexanol; and the saccharide isomerate A0 is a mixture of saccharide isomerate, water, citric acid, and sodium citrate.

[0116] It should be noted that the dimethylsiloxane (and) polydimethylsiloxane/vinyl polydimethylsiloxane cross-linked polymer represents a composite composed of polydimethylsiloxane and polydimethylsiloxane/vinyl polydimethylsiloxane cross-linked polymer.

[0117] In some embodiments, the moisturizing and repairing cream further includes a ceramide composition, cholesterol, and linoleic acid.

[0118] In some embodiments, in the moisturizing and repairing cream, a molar ratio of the ceramide composition, cholesterol, and linoleic acid is 3:1:1.

[0119] In some embodiments, the ceramide composition includes ceramide EOP (ceramide 9), ceramide NS/NG (ceramide 2), ceramide NP (ceramide 3), ceramide AS (ceramide 5), and ceramide AP (ceramide 6).

[0120] In some embodiments, the moisturizing and repairing cream includes the following raw materials by weight percentage:

[0121] Phase A: balance of deionized water, about 0.01% to about 0.1% of disodium EDTA, about 0.1% to about 1% of allantoin, and about 0.1% to about 1% of p-hydroxyacetophenone;

[0122] Phase A1: about 0.1% to about 1% of ammonium acryloyldimethyltaurate/VP copolymer and about 0.1% to about 1% of acrylates/C10-30 alkyl acrylate cross-linked polymer;

[0123] Phase B: about 1% to about 5% of glyceryl stearate, about 1% to about 5% of M68 emulsifier, about 1% to about 5% of cetearyl alcohol, about 0.1% to about 1% of polydimethylsiloxane, about 0.1% to about 1% of dimethylsiloxane (and) polydimethylsiloxane/vinyl polydimethylsiloxane cross-linked polymer, about 0.1% to about 1% of

olea europaea fruit oil, about 0.1% to about 1% of squalane, about 1% to about 5% of the skin conditioning agent, and about 1% to about 5% of caprylic/capric triglyceride;

[0124] Phase B1: about 1% to about 5% of diethylhexyl carbonate and about 0.01% to about 0.1% of pentaerythrityl tetra-di-t-butyl hydroxyhydrocinnamate;

[0125] Phase B2: about 1% to about 5% of caprylic/capric triglyceride and about 0.1% to about 0.2% of the ceramide composition;

[0126] Phase C: about 1% to about 5% of deionized water and about 0.01% to about 0.1% of aminomethyl propanol;

[0127] Phase D: about 0.1% to about 1% of glycyrrhiza inflata root extract and about 1% to about 5% of 1,2-pentanediol;

[0128] Phase E: about 1% to about 5% of Symsitive 1609, about 1% to about 5% of saccharide isomerate A0, about 0.001% to about 0.005% of cholesterol, and about 0.001% to about 0.005% of linoleic acid;

[0129] Phase F: about 1% to about 5% of glycerin and about 0.0001% to about 0.0005% of glabridin 90.

[0130] In some embodiments, the moisturizing and repairing cream consists of the following raw materials by weight percentage:

[0131] Phase A: balance of deionized water, about 0.01% to about 0.1% of disodium EDTA, about 0.1% to about 1% of allantoin, and about 0.1% to about 1% of p-hydroxyacetophenone;

[0132] Phase A1: about 0.1% to about 1% of ammonium acryloyldimethyltaurate/VP copolymer and about 0.1% to about 1% of acrylates/C10-30 alkyl acrylate cross-linked polymer;

[0133] Phase B: about 1% to about 5% of glyceryl stearate, about 1% to about 5% of M68

emulsifier, about 1% to about 5% of cetearyl alcohol, about 0.1% to about 1% of polydimethylsiloxane, about 0.1% to about 1% of dimethylsiloxane (and) polydimethylsiloxane/vinyl polydimethylsiloxane cross-linked polymer, about 0.1% to about 1% of olea europaea fruit oil, about 0.1% to about 1% of squalane, about 1% to about 5% of the skin conditioning agent, and about 1% to about 5% of caprylic/capric triglyceride;

[0134] Phase B1: about 1% to about 5% of diethylhexyl carbonate and about 0.01% to about 0.1% of pentaerythrityl tetra-di-t-butyl hydroxyhydrocinnamate;

[0135] Phase C: about 1% to about 5% of deionized water and about 0.01% to about 0.1% of aminomethyl propanol;

[0136] Phase D: about 0.1% to about 1% of glycyrrhiza inflata root extract and about 1% to about 5% of 1,2-pentanediol;

[0137] Phase E: about 1% to about 5% of Symsitive 1609, about 1% to about 5% of saccharide isomerate A0;

[0138] Phase F: about 1% to about 5% of glycerin and about 0.0001% to about 0.0005% of glabridin 90.

[0139] It should be understood that the weight percentages of the above components refer to the weight percentages of the respective components in the moisturizing and repairing cream.

[0140] In some embodiments, the skin conditioning agent is the mixture of butyrospermum parkii lipid extract, argania spinosa kernel oil, and spent grain wax in a weight ratio of (3 to 8):(3 to 5):1.

[0141] The principle of the moisturizing and repairing cream of the present application is as follows: T cell subsets include Th1 and Th2, and the pathogenesis of eczema is related to the

imbalance in the T cell subsets. According to the Guidelines for Diagnosis and Treatment of Atopic Dermatitis (2020 Edition) in China, Th2-type inflammation is a fundamental characteristic of AD, and interleukin-4 (IL-4) and interleukin-13 (IL-13) are important cytokines mediating the pathogenesis of AD. Th2 cells mainly secrete IL-4, interleukin-5 (IL-5), IL-13, interleukin-25 (IL-25), interleukin-31 (IL-31), etc. The abnormal secretion of Th2 cytokines is closely related to the onset, development, and prognosis of eczema. Th2-related pro-inflammatory factors include TSLP and IL-33. TSLP, which is an epithelial cell-derived factor and an IL-7 analog, is involved in the imbalance of Th2 immune responses and acts as a crucial “initiator” of Th2-type immune responses. TSLP is primarily expressed in epithelial cells and keratinocytes. The main sources of IL-33+ST2+ cells are keratinocytes and endothelial cells. The IL-33-ST2 pathway plays an important role in immune-inflammatory responses. High levels of IL-33 are significantly associated with desquamation and xerosis and can downregulate filaggrin in keratinocytes, thereby affecting the skin’s barrier function. IL-33 has gradually become an emerging crucial factor in allergic inflammation, such as asthma and eczema. IL-33 can upregulate the NF- κ B p65 subunit in the cell nucleus, promote inflammation in endothelial cells, and function as a pro-inflammatory factor by combining with the receptor ST2. Th2 cytokines include IL-25, IL-4, IL-5, and IL-13.

[0142] The pro-inflammatory factors involved in eczema further include TRPV-1 (capsaicin receptor), which is mainly expressed in afferent neurons, keratinocytes, dendritic cells, and mast cells. Certain itch and pain regulatory factor, such as capsaicin, arachidonic acid-like substances, histamine, ATP, etc., can activate or sensitize TRPV-1, participating in the formation of AD-related itch. PDE4D and PDE4B, as the main subtypes of phosphodiesterase 4 (PDE4) in inflammatory regulation, play a crucial role in activating tumor necrosis factor- α (TNF- α) responses. TNF- α is a

pro-inflammatory factor, generally synthesized and secreted by monocytes, macrophages, etc., and is involved in a series of inflammatory processes. In AD, mast cell degranulation may be caused by TNF- α and histamine inducing increased expression of intercellular adhesion molecule-1 (ICAM-1) in keratinocytes. Interleukin-1 (IL-1) is a cytokine that plays a central role in local and systemic inflammatory responses. The expression of IL-1 is positively correlated with the degree of inflammation and can serve as a clinical indicator for assessing the severity and therapeutic efficacy of inflammatory diseases. After epidermal activation, IL-1 is released, which then promotes skin inflammatory responses by inducing various cytokines, pro-inflammatory mediators, and adhesion molecules.

[0143] In the present application:

[0144] Butyrospermum parkii lipid extract is derived from the fruit of the butyrospermum parkii, natural moisturizing factors of which share the same components as the moisturizing components extracted from sebaceous glands, and thus is considered as one of the most effective natural moisturizers and conditioners. As a highly nutritious fruit, the fruit of the butyrospermum parkii contains various vitamins, abundant fats and proteins, as well as high contents of sodium, potassium, magnesium, and calcium. The fruit lipid extracted from the butyrospermum parkii has nutritional value similar to wheat germ oil, which contains unsaturated fatty acids and linseed oil and is rich in B vitamins and vitamin E. Additionally, it contains plant sterols, which are excellent skincare ingredients.

[0145] The fruit lipid of the butyrospermum parkii has the following effects: (1) Moisture retention: As a natural plant emulsifier, it can form a milky barrier on the skin's surface, accelerating the penetration of nutrients and providing powerful moisture-locking and hydrating

functions. (2) Antioxidant: The fruit lipid of the *butyrospermum parkii* contains components such as vitamin A, vitamin E, vitamin B6, and proteins, making it a natural antioxidant. (3) UV protection: It contains cinnamate, which is used in sunscreen products to protect the skin from UV radiation damage. The natural latex in the fruit lipid of the *butyrospermum parkii* can also prevent skin allergies caused by sun exposure.

[0146] The anti-inflammatory effects of *butyrospermum parkii* lipid extract are primarily achieved by inhibiting nuclear factor kappa B (NF- κ B), inducible nitric oxide synthase (iNOS), adhesion molecules (intercellular adhesion molecule-1 and vascular cell adhesion molecule-1), and inhibiting the levels of cytokines such as tumor necrosis factor (TNF- α), interleukin-6 (IL-6), and interleukin-8 (IL-8), while promoting the production of interleukin-4 (IL-4) and interleukin-10 (IL-10).

[0147] Verma et al. investigated the anti-inflammatory mechanism of methanolic extracts from shea butter using lipopolysaccharide (LPS)-induced murine macrophage cell line J774. The results show that treatment with the methanol extract significantly reduces LPS-induced levels of nitric oxide (NO), TNF- α , interleukin-1 β (IL-1 β), and interleukin-12 (IL-12) in a dose-dependent manner. Additionally, pro-inflammatory enzymes such as iNOS and cyclooxygenase-2 (COX-2) can also be inhibited. These anti-inflammatory effects are attributed to the methanolic extract's effective inhibition of the phosphorylation of NF- κ B inhibitor protein (I κ B α), thereby suppressing the messenger RNA (mRNA) and protein expression of iNOS, COX-2, TNF- α , IL-1 β , and IL-12. These findings directly provide a molecular-level explanation for the mechanism of the anti-inflammatory activity of the methanolic extract from the fruit lipid of the *butyrospermum parkii*.

[0148] Tert-butylcyclohexanol

[0149] Itching is a common manifestation of eczema. TRPV-1 can be expressed on cutaneous sensory nerve fibers, mast cells, and keratinocytes, participating in both normal physiological functions and the disease pathogenesis of the skin. Both TRPV1 receptor agonists and antagonists have been considered as potential analgesics. TRPV1 receptor antagonists play a crucial role in blocking nociceptive transmission by selectively blocking TRPV1 receptor activity, thereby avoiding the side effects associated with the difficulty in separating the efficacy from the toxicity of agonists, particularly in attenuating acute thermal nociception and thermal hyperalgesia in various inflammatory models. As a TRPV-1 antagonist, 4-tert-butylcyclohexanol primarily exerts its analgesic effects by inhibiting voltage-sensitive calcium channels, blocking depolarization induced by calcium ion influx, and suppressing the actions of nicotinic and voltage-gated calcium channels as well as TRPM8 (a receptor activated by cold). Moreover, it avoids the side effect of hyperthermia caused by other antagonists. Therefore, 4-tert-butylcyclohexanol can effectively soothe sensitive skin, thereby alleviating stinging and burning sensations.

[0150] Saccharide Isomerate

[0151] Saccharide isomerate is produced by converting edible corn sugar into a sugar complex similar to the natural moisturizing factor (NMF) present in the stratum corneum. It can bind to the ϵ -amino group of lysine in keratinocyte keratins. This unique binding mechanism ensures that the active ingredient is not eluted and continuously improves moisturization until it is removed through the natural desquamation process. Saccharide isomerate closely resembles the carbohydrate composition found in human keratin, providing deep skin hydration for up to 72 hours. Thus, it can enhance hydration and moisture retention of stratum corneum in the short term, while improving

desquamation conditions in the medium to long term.

[0152] Glycyrrhiza inflata root extract

[0153] In the early 1980s, studies found that abnormal regulation of inflammatory responses in AD patients was associated with increased phosphodiesterase (PDE) activity. PDE4 is one of the major subtypes of phosphodiesterases and represents the largest group within the PDE family responsible for hydrolyzing cyclic adenosine monophosphate, playing a crucial role in the cyclic adenosine monophosphate signaling pathway. As for the various subtypes of PDE4, PDE4A is closely related to cell proliferation and apoptosis, PDE4B is closely related to cell inflammation and lipid metabolism, and PDE4D is significantly upregulated in both AD and psoriasis groups. The subtypes of PDE4 exhibits differential mRNA expression levels in AD and psoriatic lesional tissues, indicating their important roles in AD pathogenesis. Glycyrrhiza inflata root extract contains a specific active ingredient, licochalcone A, which is a PDE4 inhibitor with high safety and can reduce the release of pro-inflammatory cytokines and alleviate erythema.

[0154] As a PDE4 inhibitor, glycyrrhiza inflata root extract can address the onset and progression of AD through multiple pathways as follows: It can suppress the release of inflammatory mediators/cytokines such as IL-1 β and IL-6, and can suppress the expression of inflammatory cell genes including COX-2 and iNOS, and thereby exerting significant anti-inflammatory effects while improving skin barrier function. Glycyrrhiza inflata root extract is commonly used in skincare to reduce erythema, such as in the prevention and treatment of erythematous, inflammatory, allergic, or autoimmune-related skin conditions. Additionally, it has moisturizing effects and promotes skin immunity in the treatment of skin damage.

[0155] Ceramide composition, cholesterol, and linoleic acid

[0156] The structure of the skin's stratum corneum is a composite of proteins and lipids, often referred to as a "bricks and mortar" structure. Protein-rich corneocytes are embedded in an intercellular matrix, resembling bricks that provide mechanical strength to the stratum corneum. The "mortar" component i.e., the nonpolar lipids, mainly consists of ceramides (CER), cholesterol (CHOL), and free fatty acids (FFA).

[0157] Studies have shown that the decrease of skin barrier function in AD is associated with abnormal epidermal lipid metabolism. Measurements of non-lesional skin in AD patients reveal a significant reduction in long-chain ceramides, particularly ceramide 1 and ceramide 3. Further epidermal analysis shows markedly decreased levels of ceramide 1 and ceramide 9, along with an abnormal ratio of ceramides to cholesterol, leading to barrier dysfunction.

[0158] The ceramide composition of the present application includes ceramide EOP (ceramide 9), ceramide NS/ceramide NG (ceramide 2), ceramide NP (ceramide 3), ceramide AS (ceramide 5), and ceramide AP (ceramide 6), which can comprehensively supplement ceramides.

[0159] In some embodiments, in the moisturizing and repairing cream, the molar ratio of the ceramide composition, cholesterol, and linoleic acid is 3:1:1, which is the same as that in the skin stratum corneum, and thus can better enhance the skin barrier function of atopic dermatitis patients.

[0160] The moisturizing and repairing cream in the present application has the following beneficial effects:

[0161] In the present application, multiple soothing components are employed and combined with emulsifiers, emollients, moisturizers, and skin conditioners. The prepared moisturizing and repairing cream can alleviate itching, reduce inflammation, moisturize the skin, and repair damaged skin. The prepared moisturizing and repairing cream can maintain stable water content in the

stratum corneum, improve skin hydration, effectively protect and restore the skin barrier function, and reduce skin dryness, roughness, and itching.

[0162] In the present application, multiple emollient components are employed to exert a synergistic effect, providing excellent moisturizing effects. The moisturizing and repairing cream can play an auxiliary role in the treatment of atopic dermatitis, and can form a thin oily film on the skin surface to rebuild chemical and physical barriers and prevent water loss, thereby achieving moisturizing and emollient effects, preventing AD recurrence, and improving quality of life. Additionally, the moisturizing and repairing cream can repair dry and rough skin, relieves skin stress, and makes hand skin smooth, soft, and well-hydrated.

[0163] The present application selectively chooses the raw materials to inhibit the inflammatory factors associated with eczema. For example, saccharide isomerase can reduce transepidermal water loss (TEWL), while licochalcone A can inhibit the release of inflammatory mediators/cytokines such as IL-1 β and IL-6, and can suppress the expression of inflammatory cell genes including COX-2 and iNOS, which contribute significantly to the treatment and improvement of dermatitis and eczema symptoms.

[0164] A second aspect of the present application provides a method for preparing the above-described moisturizing and repairing cream with a soothing effect, and the method includes the following steps:

[0165] S1: cleaning and sterilizing production equipment and weighing containers for later use;

[0166] S2: precisely weighing the raw materials, placing the weighed raw materials in clean and sterilized containers, rechecking, and then placing the containers including the raw materials on a preparation cart;

- [0167] S3: pre-processing the raw materials;
- [0168] S4: adding the components of Phase A to an emulsifying tank in sequence, heating to a temperature ranging from about 80 °C to about 85 °C while stirring at a frequency ranging from about 15 Hz to about 35 Hz until complete dissolution;
- [0169] S5: activating the emulsifying tank and clockwise stirring at about 3000 rpm for homogenization, adding the components of Phase A1 to the emulsifying tank in sequence, homogenizing while stirring until complete dispersion and dissolution;
- [0170] S6: adding the components of Phase B into an oil-phase tank, heating to a temperature ranging from about 80 °C to 85 °C while stirring at a rotation speed ranging from about 200 rpm to about 500 rpm until complete dissolution;
- [0171] S7: adding processed Phase B1 to the emulsifying tank, then evacuating to about -0.05 MPa, introducing the Phase B to the emulsifying tank and anticlockwise stirring at about 3400 rpm for homogenization for about 8 min, and stirring for about 15 min at a constant temperature ranging from 80 °C to about 85 °C until defoaming is complete;
- [0172] S8: cooling to about 60 °C±2 °C, and adding dispersed Phase C to the emulsifying tank and stirring until uniformly dispersed;
- [0173] S9: cooling to about 40 °C±2 °C, adding dissolved Phase D, dissolved Phase F, and dissolved Phase E into the emulsifying tank, and stirring thoroughly until uniformly and fully dispersed;
- [0174] S10: cooling to below about 38 °C, conducting preliminary quality inspection, filtering the resulting product through filter cloth with about 100 mesh to about 200 mesh, and storing in a standing room;

[0175] S11: conducting semi-finished product inspection, bottling, and packaging;

[0176] S12: conducting finished product inspection and storage.

[0177] It can be understood that the above only provides a relatively detailed method for preparing the moisturizing and repairing cream, but the method is not limited to this, as long as the components in the moisturizing and repairing cream can be evenly mixed.

[0178] In some embodiments, in step S3, the pre-processing includes the following steps:

[0179] a: reserving about 0.5% deionized water, stirring and heating to a temperature of about 80 °C to about 85 °C, and then cooling to room temperature for later use;

[0180] b: mixing and heating the components of Phase B1, stirring until the components of Phase B1 are fully dissolved for later use;

[0181] c: mixing the reserved about 0.5% deionized water with the components of Phase C, stirring until the components of Phase C are uniformly dispersed for later use;

[0182] d: mixing the components of Phase D, heating and stirring until the components of Phase D are fully dissolved for later use;

[0183] e: mixing the components of Phase F and stirring until the components of Phase F are fully dissolved for later use.

[0184] The moisturizing and repairing cream with the soothing effect and its effects will be further described in detail below with reference to the specific embodiments, in order to make the objectives and advantages of the present application more clear. It should be understood that the embodiments described herein are only used to explain the present application, and cannot be understood as limiting the present application. Unless otherwise specified, the following examples do not include additional components beyond unavoidable impurities. Unless otherwise indicated,

the drugs and instruments used in the embodiments represent conventional choices in the field. Experimental methods without specified conditions are performed under conventional conditions, such as those described in literature, manuals, or as recommended by manufacturers.

[0185] Example 1

[0186] A moisturizing and repairing cream with a soothing effect consists of the following raw materials by weight percentage:

[0187] Phase A: 77.8698% of deionized water, 0.02% of disodium EDTA, 0.2% of allantoin, and 0.5% of p-hydroxyacetophenone;

[0188] Phase A1: 0.45% of ammonium acryloyldimethyltaurate/VP copolymer and 0.15% of acrylates/C10-30 alkyl acrylate cross-linked polymer;

[0189] Phase B: 1% of glyceryl stearate, 2% of M68 emulsifier, 2% of cetearyl alcohol, 1% of polydimethylsiloxane, 0.2% of dimethylsiloxane (and) polydimethylsiloxane/vinyl polydimethylsiloxane cross-linked polymer, 0.2% of olea europaea fruit oil, 0.2% of squalane, 1% of skin conditioning agent, and 1% of caprylic/capric triglyceride;

[0190] Phase B1: 2% of diethylhexyl carbonate and 0.05% of pentaerythrityl tetra-di-t-butyl hydroxyhydrocinnamate;

[0191] Phase C: 2% of deionized water and 0.06% of aminomethyl propanol;

[0192] Phase D: 0.1% of glycyrrhiza inflata root extract and 2% of 1,2-pentanediol;

[0193] Phase E: 1% of Symsitive 1609, 2% of saccharide isomerate A0;

[0194] Phase F: 3% of glycerin and 0.0002% of glabridin 90.

[0195] Example 2

[0196] A moisturizing and repairing cream with a soothing effect consists of the following raw

materials by weight percentage:

[0197] Phase A: 73.2698% of deionized water, 0.02% of disodium EDTA, 0.2% of allantoin, and 0.5% of p-hydroxyacetophenone;

[0198] Phase A1: 0.45% of ammonium acryloyldimethyltaurate/VP copolymer and 0.15% of acrylates/C10-30 alkyl acrylate cross-linked polymer;

[0199] Phase B: 1% of glyceryl stearate, 2% of M68 emulsifier, 2% of cetearyl alcohol, 1% of polydimethylsiloxane, 0.5% of dimethylsiloxane (and) polydimethylsiloxane/vinyl polydimethylsiloxane cross-linked polymer, 0.5% of olea europaea fruit oil, 0.2% of squalane, 3% of the skin conditioning agent, and 2% of caprylic/capric triglyceride;

[0200] Phase B1: 2% of diethylhexyl carbonate and 0.05% of pentaerythrityl tetra-di-t-butyl hydroxyhydrocinnamate;

[0201] Phase C: 2% of deionized water and 0.06% of aminomethyl propanol;

[0202] Phase D: 0.1% of glycyrrhiza inflata root extract and 2% of 1,2-pentanediol;

[0203] Phase E: 1% of Symstive 1609, 3% of saccharide isomerate A0;

[0204] Phase F: 3% of glycerin and 0.0002% of glabridin 90.

[0205] Example 3

[0206] A moisturizing and repairing cream with a soothing effect consists of the following raw materials by weight percentage:

[0207] Phase A: 65.4698% of deionized water, 0.02% of disodium EDTA, 0.2% of allantoin, and 0.5% of p-hydroxyacetophenone;

[0208] Phase A1: 0.45% of ammonium acryloyldimethyltaurate/VP copolymer and 0.15% of acrylates/C10-30 alkyl acrylate cross-linked polymer;

[0209] Phase B: 2% of glyceryl stearate, 1% of M68 emulsifier, 5% of cetearyl alcohol, 0.5% of polydimethylsiloxane, 0.3% of dimethylsiloxane (and) polydimethylsiloxane/vinyl polydimethylsiloxane cross-linked polymer, 0.6% of olea europaea fruit oil, 0.2% of squalane, 5% of the skin conditioning agent, and 5% of caprylic/capric triglyceride;

[0210] Phase B1: 3% of diethylhexyl carbonate and 0.05% of pentaerythrityl tetra-di-t-butyl hydroxyhydrocinnamate;

[0211] Phase C: 2% of deionized water and 0.06% of aminomethyl propanol;

[0212] Phase D: 0.5% of glycyrrhiza inflata root extract and 2% of 1,2-pentanediol;

[0213] Phase E: 2% of Symsitive 1609, 1% of saccharide isomerate A0;

[0214] Phase F: 3% of glycerin and 0.0002% of glabridin 90.

[0215] Example 4

[0216] A moisturizing and repairing cream with a soothing effect consists of the following raw materials by weight percentage:

[0217] Phase A: 69.8698% of deionized water, 0.02% of disodium EDTA, 0.2% of allantoin, and 0.5% of p-hydroxyacetophenone;

[0218] Phase A1: 0.45% of ammonium acryloyldimethyltaurate/VP copolymer and 0.15% of acrylates/C10-30 alkyl acrylate cross-linked polymer;

[0219] Phase B: 1% of glyceryl stearate, 2% of M68 emulsifier, 3% of cetearyl alcohol, 0.2% of polydimethylsiloxane, 0.5% of dimethylsiloxane (and) polydimethylsiloxane/vinyl polydimethylsiloxane cross-linked polymer, 0.3% of olea europaea fruit oil, 0.5% of squalane, 2% of the skin conditioning agent, and 2% of caprylic/capric triglyceride;

[0220] Phase B1: 5% of diethylhexyl carbonate and 0.05% of pentaerythrityl tetra-di-t-butyl

hydroxyhydrocinnamate;

[0221] Phase C: 2% of deionized water and 0.06% of aminomethyl propanol;

[0222] Phase D: 0.2% of glycyrrhiza inflata root extract and 2% of 1,2-pentanediol;

[0223] Phase E: 2% of Symsitive 1609, 3% of saccharide isomerate A0;

[0224] Phase F: 3% of glycerin and 0.0002% of glabridin 90.

[0225] Example 5

[0226] A moisturizing and repairing cream with a soothing effect consists of the following raw materials by weight percentage:

[0227] Phase A: 72.8698% of deionized water, 0.02% of disodium EDTA, 0.2% of allantoin, and 0.5% of p-hydroxyacetophenone;

[0228] Phase A1: 0.45% of ammonium acryloyldimethyltaurate/VP copolymer and 0.15% of acrylates/C10-30 alkyl acrylate cross-linked polymer;

[0229] Phase B: 1% of glyceryl stearate, 2% of M68 emulsifier, 1% of cetearyl alcohol, 0.5% of polydimethylsiloxane, 0.8% of dimethylsiloxane (and) polydimethylsiloxane/vinyl polydimethylsiloxane cross-linked polymer, 0.8% of olea europaea fruit oil, 0.1% of squalane, 4% of the skin conditioning agent, and 3% of caprylic/capric triglyceride;

[0230] Phase B1: 2% of diethylhexyl carbonate and 0.05% of pentaerythrityl tetra-di-t-butyl hydroxyhydrocinnamate;

[0231] Phase C: 2% of deionized water and 0.06% of aminomethyl propanol;

[0232] Phase D: 0.1% of glycyrrhiza inflata root extract and 2% of 1,2-pentanediol;

[0233] Phase E: 1% of Symsitive 1609, 2% of saccharide isomerate A0;

[0234] Phase F: 3% of glycerin and 0.0002% of glabridin 90.

[0235] Example 6

[0236] A moisturizing and repairing cream with a soothing effect consists of the following raw materials by weight percentage:

[0237] Phase A: 71.6698% of deionized water, 0.02% of disodium EDTA, 0.2% of allantoin, and 0.5% of p-hydroxyacetophenone;

[0238] Phase A1: 0.45% of ammonium acryloyldimethyltaurate/VP copolymer and 0.15% of acrylates/C10-30 alkyl acrylate cross-linked polymer;

[0239] Phase B: 1.5% of glyceryl stearate, 1.5% of M68 emulsifier, 2% of cetearyl alcohol, 0.3% of polydimethylsiloxane, 1% of dimethylsiloxane (and) polydimethylsiloxane/vinyl polydimethylsiloxane cross-linked polymer, 1% of olea europaea fruit oil, 0.5% of squalane, 3% of the skin conditioning agent, and 4% of caprylic/capric triglyceride;

[0240] Phase B1: 3% of diethylhexyl carbonate and 0.05% of pentaerythrityl tetra-di-t-butyl hydroxyhydrocinnamate;

[0241] Phase C: 2% of deionized water and 0.06% of aminomethyl propanol;

[0242] Phase D: 0.1% of glycyrrhiza inflata root extract and 2% of 1,2-pentanediol;

[0243] Phase E: 1% of Symsitive 1609, 1% of saccharide isomerate A0;

[0244] Phase F: 3% of glycerin and 0.0002% of glabridin 90.

[0245] Example 7

[0246] A moisturizing and repairing cream with a soothing effect consists of the following raw materials by weight percentage:

[0247] Phase A: 70.7698% of deionized water, 0.02% of disodium EDTA, 0.2% of allantoin, and 0.5% of p-hydroxyacetophenone;

[0248] Phase A1: 0.45% of ammonium acryloyldimethyltaurate/VP copolymer and 0.15% of acrylates/C10-30 alkyl acrylate cross-linked polymer;

[0249] Phase B: 3% of glyceryl stearate, 1% of M68 emulsifier, 2% of cetearyl alcohol, 0.5% of polydimethylsiloxane, 0.5% of dimethylsiloxane (and) polydimethylsiloxane/vinyl polydimethylsiloxane cross-linked polymer, 0.5% of olea europaea fruit oil, 0.1% of squalane, 3% of the skin conditioning agent, and 5% of caprylic/capric triglyceride;

[0250] Phase B1: 2% of diethylhexyl carbonate and 0.05% of pentaerythrityl tetra-di-t-butyl hydroxyhydrocinnamate;

[0251] Phase C: 2% of deionized water and 0.06% of aminomethyl propanol;

[0252] Phase D: 0.2% of glycyrrhiza inflata root extract and 2% of 1,2-pentanediol;

[0253] Phase E: 2% of Symstive 1609, 1% of saccharide isomerate A0;

[0254] Phase F: 3% of glycerin and 0.0002% of glabridin 90.

[0255] Example 8

[0256] A moisturizing and repairing cream with a soothing effect consists of the following raw materials by weight percentage:

[0257] Phase A: 71.0598% of deionized water, 0.02% of disodium EDTA, 0.2% of allantoin, and 0.5% of p-hydroxyacetophenone;

[0258] Phase A1: 0.45% of ammonium acryloyldimethyltaurate/VP copolymer and 0.15% of acrylates/C10-30 alkyl acrylate cross-linked polymer;

[0259] Phase B: 1% of glyceryl stearate, 2% of M68 emulsifier, 2% of cetearyl alcohol, 1% of polydimethylsiloxane, 0.5% of dimethylsiloxane (and) polydimethylsiloxane/vinyl polydimethylsiloxane cross-linked polymer, 0.5% of olea europaea fruit oil, 0.2% of squalane, 3%

of the skin conditioning agent, and 2% of caprylic/capric triglyceride;

[0260] Phase B1: 2% of diethylhexyl carbonate and 0.05% of pentaerythrityl tetra-di-t-butyl hydroxyhydrocinnamate;

[0261] Phase B2: 2% of caprylic/capric triglyceride and 0.2% of the ceramide composition;

[0262] Phase C: 2% of deionized water and 0.06% of aminomethyl propanol;

[0263] Phase D: 0.1% of glycyrrhiza inflata root extract and 2% of 1,2-pentanediol;

[0264] Phase E: 1% of Symsitive 1609, 3% of saccharide isomerate A0, 0.005% of cholesterol, 0.005% of linoleic acid;

[0265] Phase F: 3% of glycerin and 0.0002% of glabridin 90.

[0266] Testing Example 1

[0267] The moisturizing and repairing creams with soothing effects prepared in Examples 1 to 8 were tested for odor, shelf life, bacterial count, heavy metal content, and toxicity. The results are shown in Table 1 below.

[0268] Table 1

	Odor	Bacterial count (CFU/ml)	Heavy metal content (Hg, Pb, As, Cd)	Toxicity
Example 1	None	<50	Not detected	Non-toxic
Example 2	None	<50	Not detected	Non-toxic
Example 3	None	<50	Not detected	Non-toxic
Example 4	None	<50	Not detected	Non-toxic
Example 5	None	<50	Not detected	Non-toxic
Example 6	None	<50	Not detected	Non-toxic
Example 7	None	<50	Not detected	Non-toxic
Example 8	None	<50	Not detected	Non-toxic

[0269] The test results show that the moisturizing and repairing creams with soothing effects prepared in the present application comply with Chinese national hygienic standard for cosmetics.

[0270] Testing Example 2

[0271] The moisturizing and repairing creams with soothing effects prepared in Examples 1 to 8 were tested for thermal stability, light stability, preservative challenge test, soothing effect, repairing effect, and moisturizing performance. The results are shown in Table 2 below.

[0272] Table 2

	Thermal stability	Light stability	Preservative challenge test	Soothing effect	Repairing effect	Moisturizing performance
Example 1	OK	OK	OK	+	++	+
Example 2	OK	OK	OK	+++	+++	+++
Example 3	OK	OK	OK	+	++	+
Example 4	OK	OK	OK	++	+	++
Example 5	OK	OK	OK	++	++	++
Example 6	×	OK	OK	+	+++	++
Example 7	OK	OK	OK	++	+	+++
Example 8	OK	OK	OK	+++	+++	+++

[0273] In Table 2, “OK” indicates that the performance meets the requirements, while “×” indicates that the performance fails to meet the requirements. The symbols “+”, “++”, and “+++” represent three different levels of efficacy, where “+” indicates the presence of the effect, and an

increasing number of “+” denotes a better effect.

[0274] By analysis of the testing results, it can be seen that the moisturizing and repairing creams with soothing effects prepared in the present application exhibit both skin repairing effects and soothing effects, as well as excellent moisturizing performance, repairing over-cleansed skin.

[0275] It should be noted that the testing examples in the present application were conducted with reference to the Hygienic Standards for Cosmetics (2007) and the Technical Safety Standards for Cosmetics (2015) in China. The testing methods referred to GB/T 13531.1-2008, while the preservative challenge test followed the 28-day single-challenge preservative test method recommended by the Personal Care Products Council (PCPC, formerly known as CTFA). The soothing and cleansing effects were evaluated using the human safety evaluation methods specified in Chapter 7 of the Technical Safety Standards for Cosmetics (2015 edition) in China.

[0276] In the description of the present specification, reference terms such as “an embodiment” and “example” mean that a particular feature, structure, material, or characteristic described in connection with the embodiment or example is included in at least one embodiment or example of the present application. In the specification, illustrative descriptions of the above terms do not necessarily refer to a same embodiment or example. Moreover, the described specific features, structures, materials, or characteristics can be incorporated in any one or more embodiments or examples in any suitable manner.

[0277] The technical features of the above-mentioned embodiments can be combined arbitrarily. In order to make the description concise, not all possible combinations of the technical features are described in the embodiments. However, as long as there is no contradiction in the combination of these technical features, the combinations should be considered as in the scope of the present

application.

[0278] The above-described embodiments are only several implementations of the present application, and the descriptions are relatively specific and detailed, but they should not be construed as limiting the scope of the present application. It should be understood by those of ordinary skill in the art that various modifications and improvements can be made without departing from the concept of the present application, and all fall within the protection scope of the present application. Therefore, the patent protection of the present application shall be defined by the appended claims.

CLAIMS

1. A moisturizing and repairing cream with a soothing effect, comprising following raw materials:

Phase A: deionized water, disodium EDTA, allantoin, and p-hydroxyacetophenone;

Phase A1: ammonium acryloyldimethyltaurate/VP copolymer and acrylates/C10-30 alkyl acrylate cross-linked polymer;

Phase B: glyceryl stearate, M68 emulsifier, cetearyl alcohol, polydimethylsiloxane, dimethylsiloxane (and) polydimethylsiloxane/vinyl polydimethylsiloxane cross-linked polymer, olea europaea fruit oil, squalane, a skin conditioning agent, and caprylic/capric triglyceride;

Phase B1: diethylhexyl carbonate and pentaerythrityl tetra-di-t-butyl hydroxyhydrocinnamate;

Phase C: deionized water and aminomethyl propanol;

Phase D: glycyrrhiza inflata root extract and 1,2-pentanediol;

Phase E: Symstive 1609 and saccharide isomerate A0;

Phase F: glycerin and glabridin 90;

wherein the skin conditioning agent is a mixture of butyrospermum parkii lipid extract, argania spinosa kernel oil, and spent grain wax, the Symstive 1609 is a mixture of 1,2-pentanediol and 4-tert-butylcyclohexanol, and the saccharide isomerate A0 is a mixture of saccharide isomerate, water, citric acid, and sodium citrate.

2. The moisturizing and repairing cream with the soothing effect according to claim 1, further comprising a ceramide composition, cholesterol, and linoleic acid.

3. The moisturizing and repairing cream with the soothing effect according to claim 2, wherein a molar ratio of the ceramide composition, cholesterol, and linoleic acid is 3:1:1.

4. The moisturizing and repairing cream with the soothing effect according to claim 2 or 3,

comprising following raw materials by weight percentage:

Phase A: balance of deionized water, about 0.01% to about 0.1% of disodium EDTA, about 0.1% to about 1% of allantoin, and about 0.1% to about 1% of p-hydroxyacetophenone;

Phase A1: about 0.1% to about 1% of ammonium acryloyldimethyltaurate/VP copolymer and about 0.1% to about 1% of acrylates/C10-30 alkyl acrylate cross-linked polymer;

Phase B: about 1% to about 5% of glyceryl stearate, about 1% to about 5% of M68 emulsifier, about 1% to about 5% of cetearyl alcohol, about 0.1% to about 1% of polydimethylsiloxane, about 0.1% to about 1% of dimethylsiloxane (and) polydimethylsiloxane/vinyl polydimethylsiloxane cross-linked polymer, about 0.1% to about 1% of olea europaea fruit oil, about 0.1% to about 1% of squalane, about 1% to about 5% of the skin conditioning agent, and about 1% to about 5% of caprylic/capric triglyceride;

Phase B1: about 1% to about 5% of diethylhexyl carbonate and about 0.01% to about 0.1% of pentaerythrityl tetra-di-t-butyl hydroxyhydrocinnamate;

Phase B2: about 1% to about 5% of caprylic/capric triglyceride and about 0.1% to about 0.2% of the ceramide composition;

Phase C: about 1% to about 5% of deionized water and about 0.01% to about 0.1% of aminomethyl propanol;

Phase D: about 0.1% to about 1% of glycyrrhiza inflata root extract and about 1% to about 5% of 1,2-pentanediol;

Phase E: about 1% to about 5% of Symsitive 1609, about 1% to about 5% of saccharide isomerate A0, about 0.001% to about 0.005% of cholesterol, and about 0.001% to about 0.005% of linoleic acid;

Phase F: about 1% to about 5% of glycerin and about 0.0001% to about 0.0005% of glabridin

90.

5. The moisturizing and repairing cream with the soothing effect according to claim 1, consisting of following raw materials:

Phase A: deionized water, disodium EDTA, allantoin, and p-hydroxyacetophenone;

Phase A1: ammonium acryloyldimethyltaurate/VP copolymer and acrylates/C10-30 alkyl acrylate cross-linked polymer;

Phase B: glyceryl stearate, M68 emulsifier, cetearyl alcohol, polydimethylsiloxane, dimethylsiloxane (and) polydimethylsiloxane/vinyl polydimethylsiloxane cross-linked polymer, olea europaea fruit oil, squalane, the skin conditioning agent, and caprylic/capric triglyceride;

Phase B1: diethylhexyl carbonate and pentaerythrityl tetra-di-t-butyl hydroxyhydrocinnamate;

Phase C: deionized water and aminomethyl propanol;

Phase D: glycyrrhiza inflata root extract and 1,2-pentanediol;

Phase E: Symstive 1609 and saccharide isomerate A0;

Phase F: glycerin and glabridin 90.

6. The moisturizing and repairing cream with the soothing effect according to claim 5, consisting of following raw materials by weight percentage:

Phase A: balance of deionized water, about 0.01% to about 0.1% of disodium EDTA, about 0.1% to about 1% of allantoin, and about 0.1% to about 1% of p-hydroxyacetophenone;

Phase A1: about 0.1% to about 1% of ammonium acryloyldimethyltaurate/VP copolymer and about 0.1% to about 1% of acrylates/C10-30 alkyl acrylate cross-linked polymer;

Phase B: about 1% to about 5% of glyceryl stearate, about 1% to about 5% of M68 emulsifier,

about 1% to about 5% of cetearyl alcohol, about 0.1% to about 1% of polydimethylsiloxane, about 0.1% to about 1% of dimethylsiloxane (and) polydimethylsiloxane/vinyl polydimethylsiloxane cross-linked polymer, about 0.1% to about 1% of olea europaea fruit oil, about 0.1% to about 1% of squalane, about 1% to about 5% of the skin conditioning agent, and about 1% to about 5% of caprylic/capric triglyceride;

Phase B1: about 1% to about 5% of diethylhexyl carbonate and about 0.01% to about 0.1% of pentaerythrityl tetra-di-t-butyl hydroxyhydrocinnamate;

Phase C: about 1% to about 5% of deionized water and about 0.01% to about 0.1% of aminomethyl propanol;

Phase D: about 0.1% to about 1% of glycyrrhiza inflata root extract and about 1% to about 5% of 1,2-pentanediol;

Phase E: about 1% to about 5% of Symsitive 1609, about 1% to about 5% of saccharide isomerate A0;

Phase F: about 1% to about 5% of glycerin and about 0.0001% to about 0.0005% of glabridin 90.

7. The moisturizing and repairing cream with the soothing effect according to claim 6, consisting of following raw materials by weight percentage:

Phase A: about 77.8698% of deionized water, about 0.02% of disodium EDTA, about 0.2% of allantoin, and about 0.5% of p-hydroxyacetophenone;

Phase A1: about 0.45% of ammonium acryloyldimethyltaurate/VP copolymer and about 0.15% of acrylates/C10-30 alkyl acrylate cross-linked polymer;

Phase B: about 1% of glyceryl stearate, about 2% of M68 emulsifier, about 2% of cetearyl

alcohol, about 1% of polydimethylsiloxane, about 0.2% of dimethylsiloxane (and) polydimethylsiloxane/vinyl polydimethylsiloxane cross-linked polymer, about 0.2% of olea europaea fruit oil, about 0.2% of squalane, about 1% of the skin conditioning agent, and about 1% of caprylic/capric triglyceride;

Phase B1: about 2% of diethylhexyl carbonate and about 0.05% of pentaerythrityl tetra-di-t-butyl hydroxyhydrocinnamate;

Phase C: about 2% of deionized water and about 0.06% of aminomethyl propanol;

Phase D: about 0.1% of glycyrrhiza inflata root extract and about 2% of 1,2-pentanediol;

Phase E: about 1% of Symsitive 1609, about 2% of saccharide isomerate A0;

Phase F: about 3% of glycerin and about 0.0002% of glabridin 90.

8. The moisturizing and repairing cream with the soothing effect according to claim 6, consisting of following raw materials by weight percentage:

Phase A: about 73.2698% of deionized water, about 0.02% of disodium EDTA, about 0.2% of allantoin, and about 0.5% of p-hydroxyacetophenone;

Phase A1: about 0.45% of ammonium acryloyldimethyltaurate/VP copolymer and about 0.15% of acrylates/C10-30 alkyl acrylate cross-linked polymer;

Phase B: about 1% of glyceryl stearate, about 2% of M68 emulsifier, about 2% of cetearyl alcohol, about 1% of polydimethylsiloxane, about 0.5% of dimethylsiloxane (and) polydimethylsiloxane/vinyl polydimethylsiloxane cross-linked polymer, about 0.5% of olea europaea fruit oil, about 0.2% of squalane, about 3% of the skin conditioning agent, and about 2% of caprylic/capric triglyceride;

Phase B1: about 2% of diethylhexyl carbonate and about 0.05% of pentaerythrityl

tetra-di-t-butyl hydroxyhydrocinnamate;

Phase C: about 2% of deionized water and about 0.06% of aminomethyl propanol;

Phase D: about 0.1% of glycyrrhiza inflata root extract and about 2% of 1,2-pentanediol;

Phase E: about 1% of Symsitive 1609, about 3% of saccharide isomerate A0;

Phase F: about 3% of glycerin and about 0.0002% of glabridin 90.

9. The moisturizing and repairing cream with the soothing effect according to claim 6, consisting of following raw materials by weight percentage:

Phase A: about 65.4698% of deionized water, about 0.02% of disodium EDTA, about 0.2% of allantoin, and about 0.5% of p-hydroxyacetophenone;

Phase A1: about 0.45% of ammonium acryloyldimethyltaurate/VP copolymer and about 0.15% of acrylates/C10-30 alkyl acrylate cross-linked polymer;

Phase B: about 2% of glyceryl stearate, about 1% of M68 emulsifier, about 5% of cetearyl alcohol, about 0.5% of polydimethylsiloxane, about 0.3% of dimethylsiloxane (and) polydimethylsiloxane/vinyl polydimethylsiloxane cross-linked polymer, about 0.6% of olea europaea fruit oil, about 0.2% of squalane, about 5% of the skin conditioning agent, and about 5% of caprylic/capric triglyceride;

Phase B1: about 3% of diethylhexyl carbonate and about 0.05% of pentaerythrityl tetra-di-t-butyl hydroxyhydrocinnamate;

Phase C: about 2% of deionized water and about 0.06% of aminomethyl propanol;

Phase D: about 0.5% of glycyrrhiza inflata root extract and about 2% of 1,2-pentanediol;

Phase E: about 2% of Symsitive 1609, about 1% of saccharide isomerate A0;

Phase F: about 3% of glycerin and about 0.0002% of glabridin 90.

10. The moisturizing and repairing cream with the soothing effect according to claim 6, consisting of following raw materials by weight percentage:

Phase A: about 69.8698% of deionized water, about 0.02% of disodium EDTA, about 0.2% of allantoin, and about 0.5% of p-hydroxyacetophenone;

Phase A1: about 0.45% of ammonium acryloyldimethyltaurate/VP copolymer and about 0.15% of acrylates/C10-30 alkyl acrylate cross-linked polymer;

Phase B: about 1% of glyceryl stearate, about 2% of M68 emulsifier, about 3% of cetearyl alcohol, about 0.2% of polydimethylsiloxane, about 0.5% of dimethylsiloxane (and) polydimethylsiloxane/vinyl polydimethylsiloxane cross-linked polymer, about 0.3% of olea europaea fruit oil, about 0.5% of squalane, about 2% of the skin conditioning agent, and about 2% of caprylic/capric triglyceride;

Phase B1: about 5% of diethylhexyl carbonate and about 0.05% of pentaerythrityl tetra-di-t-butyl hydroxyhydrocinnamate;

Phase C: about 2% of deionized water and about 0.06% of aminomethyl propanol;

Phase D: about 0.2% of glycyrrhiza inflata root extract and about 2% of 1,2-pentanediol;

Phase E: about 2% of Symsitive 1609, about 3% of saccharide isomerate A0;

Phase F: about 3% of glycerin and about 0.0002% of glabridin 90.

11. The moisturizing and repairing cream with the soothing effect according to any one of claims 1 to 10, wherein the skin conditioning agent is the mixture of butyrospermum parkii lipid extract, argania spinosa kernel oil, and spent grain wax in a weight ratio of (3 to 8):(3 to 5):1.

12. A method for preparing the moisturizing and repairing cream with the soothing effect according to any one of claims 1 to 11, comprising following steps:

S1: cleaning and sterilizing production equipment and weighing containers for later use;

S2: precisely weighing the raw materials, placing the weighed raw materials in clean and sterilized containers, rechecking, and then placing the containers including the raw materials on a preparation cart;

S3: pre-processing the raw materials;

S4: adding the components of Phase A to an emulsifying tank in sequence, heating to a temperature ranging from about 80 °C to about 85 °C while stirring at a frequency ranging from about 15 Hz to about 35 Hz until complete dissolution;

S5: activating the emulsifying tank and clockwise stirring at about 3000 rpm for homogenization, adding the components of Phase A1 to the emulsifying tank in sequence, homogenizing while stirring until complete dispersion and dissolution;

S6: adding the components of Phase B into an oil-phase tank, heating to a temperature ranging from about 80 °C to 85 °C while stirring at a rotation speed ranging from about 200 rpm to about 500 rpm until complete dissolution;

S7: adding processed Phase B1 to the emulsifying tank, then evacuating to about -0.05 MPa, introducing the Phase B to the emulsifying tank and anticlockwise stirring at about 3400 rpm for homogenization for about 8 min, and stirring for about 15 min at a constant temperature ranging from 80 °C to about 85 °C until defoaming is complete;

S8: cooling to about 60 °C $\pm$ 2 °C, and adding dispersed Phase C to the emulsifying tank and stirring until uniformly dispersed;

S9: cooling to about 40 °C $\pm$ 2 °C, adding dissolved Phase D, dissolved Phase F, and dissolved Phase E into the emulsifying tank, and stirring thoroughly until uniformly and fully dispersed;

S10: cooling to below about 38 °C, conducting preliminary quality inspection, filtering the resulting product through filter cloth with about 100 mesh to about 200 mesh, and storing in a standing room;

S11: conducting semi-finished product inspection, bottling, and packaging;

S12: conducting finished product inspection and storage.

13. The method according to claim 12, wherein in S3, the pre-processing comprises following steps:

a: reserving about 0.5% deionized water, stirring and heating to a temperature of about 80 °C to about 85 °C, and then cooling to room temperature for later use;

b: mixing and heating the components of Phase B1, stirring until the components of Phase B1 are fully dissolved for later use;

c: mixing the reserved about 0.5% deionized water with the components of Phase C, stirring until the components of Phase C are uniformly dispersed for later use;

d: mixing the components of Phase D, heating and stirring until the components of Phase D are fully dissolved for later use;

e: mixing the components of Phase F and stirring until the components of Phase F are fully dissolved for later use.