

Cosmetic composition

The subject of the invention is a cosmetic composition in the form of an oil-in-water (O/W) emulsion, intended for advanced care of ageing skin showing signs of atrophy and sensory hyperreactivity. The invention is used in the field of cosmetology and aesthetic dermatology, especially in anti-ageing therapies aimed at simultaneously rebuilding the hydrolipid barrier and stimulating growth factors. The cosmetic composition according to the invention is particularly useful in cosmetic products for the care of the face and body skin showing signs of ageing, loss of firmness and sensory hyperreactivity.

Anti-ageing cosmetics containing antioxidants such as vitamin C or regenerating ingredients such as peptides are known from the prior art. However, the known solutions are characterised by:

- a) limited stability of vitamin C in the aqueous phase, which leads to its oxidation and loss of activity; traditional forms of vitamin C show low permeability through the stratum corneum and rapid degradation under the influence of light and oxygen.
- b) the inability to use copper peptides and vitamin C simultaneously due to antagonistic redox reactions (Fenton reaction), leading to the degradation of both ingredients. The aim of the invention is to develop a stable formulation that solves the problem of chemical incompatibility between copper ions and vitamin C, while providing multi-level skin regeneration.
- c) insufficient neuro-soothing effect, which is crucial when using strong restructuring treatments.

The invention relates to cosmetic products with anti-ageing properties, soothing skin irritations and strengthening the hydrolipid barrier, containing a synergistic combination of encapsulated vitamin C (Lipo Ceravit C) at a concentration of 0.1-1%, Yerba Mate extract at a concentration of 1-5%, bio-placenta (growth factor complex) at a concentration of 0.1-10%, ceramides at a concentration of 0.1-2%, Zanthalene (Sichuan pepper extract) at a concentration of 0.5-5% and resveratrol at a concentration of 0.1-1%.

The uniqueness of the formulation lies in the synergistic combination of ingredients that act at different biochemical and physical levels of the skin, while solving the problems of stability and known from the prior art. The combination of encapsulated vitamin C and resveratrol copper peptide provides an antioxidant effect at the cytoplasmic and mitochondrial levels. Zanthalene, in combination with bio-placenta and ceramides, reduces irritation during fibroblast

regeneration and rebuilds the water-lipid barrier at the stratum corneum level. The main advantage of this application is that it overcomes the technological barrier of simultaneously using copper peptide and vitamin C, which under standard conditions leads to a redox reaction (Fenton reaction) and product degradation.

There is therefore a need for a cosmetic composition that combines the chemical stability of the copper-vitamin C system with an immediate soothing effect on skin discomfort. Unexpectedly, it turned out that the solution to these problems is provided by the cosmetic composition according to the invention in question.

The essence of the invention is a cosmetic composition containing an aqueous phase, an oil phase and emulsifiers, characterised in that it contains a synergistic combination of: a) encapsulated vitamin C (Lipo Ceravit C) in an amount of 0.1-1.0% by weight, b) copper peptide (GHK-Cu) in an amount of 0.03-0.08% by weight, c) a complex of growth factors (Bio-placenta) in an amount of 0.1-10% by weight, d) Zanthoxylum bungeanum extract (Zanthalene) in an amount of 0.5-5.0% by weight.

The essence of the solution is the use of vitamin C in a lipid coating, which, in combination with a specific manufacturing temperature regime, allows it to coexist stably with copper ions, which was considered impossible in the prior art. The uniqueness of the formulation lies in the synergistic combination of ingredients that act at different biochemical and physical levels of the skin, while solving the stability problems known from the prior art.

Detailed description of the mechanism of action

1. Synergy of GHK-Cu and growth factors (Bio-placenta): copper peptide (GHK-Cu) has a proven ability to increase the expression of mRNA for collagen, elastin and metalloproteinases (MMP) and their inhibitors (TIMP), which allows for the reconstruction of the damaged extracellular matrix (ECM) [2]. In combination with the epidermal growth factor (EGF) contained in Bio-placenta, the composition accelerates re-epithelialisation and glycosaminoglycan synthesis much more efficiently than either of these ingredients used separately.
2. Protection against oxidative stress (Yerba Mate + Resveratrol + Vitamin C) Yerba Mate extract, rich in chlorogenic acid and mateine, has a powerful free radical scavenging effect. Resveratrol activates sirtuins (SIRT1), enzymatic proteins that promote cell survival and DNA repair [3]. The synergy of these ingredients with liposomal vitamin C provides cytoplasmic and mitochondrial protection.

3. Neuro-modulation and Barrier (Zanthalene + Ceramides) Hydroxy-alpha-sanshool contained in *Zanthoxylum bungeanum* blocks sodium channels, inhibiting synaptic transmission, which reduces skin muscle tension and itching [4]. This allows the skin to "mechanically rest", which is essential for effective regeneration of the lipid barrier, supported by exogenous ceramides.

Detailed description of ingredients

Encapsulated vitamin C; the use of a liposomal form prevents ascorbic acid from coming into contact with copper ions in the aqueous phase of the product, eliminating the risk of oxidation before application to the skin.

Bio-placenta and GHK-Cu; work synergistically to stimulate fibroblasts to produce collagen and elastin.

Zanthalene: Sichuan pepper extract acts on nerve endings, reducing itching and muscle tension ("botox-like"), creating optimal conditions for regenerative processes.

Uniqueness of the invention:

Overcoming chemical incompatibility (copper & vitamin C): This is the strongest technical point. In typical cosmetics, copper peptides (GHK-Cu) are not combined with vitamin C because copper ions immediately oxidise vitamin C, deactivating both ingredients. The composition according to the invention solves this problem by using vitamin C in a lipid (encapsulated) coating. This allows these two powerful but "conflicting" ingredients to work synergistically in a single cream (antioxidation + matrix remodelling). This is an innovative approach to regeneration. Zanthalene relaxes muscle and skin tension (Botox-like effect). Bio-placenta and copper peptide stimulate collagen production. Your unique patent application: Skin regeneration is more effective when the tissue is relaxed (fewer microcontractions). The composition creates a "resting environment" for fibroblasts, which is an innovative approach to healing and anti-ageing.

The subject of the invention is presented below in examples of implementation

Mechanism of action:

1. GHK-Cu + Bio-placenta synergistically stimulate genes encoding collagen I/III, elastin, MMPs and TIMPs, enhancing ECM renewal.
2. Yerba Mate + resveratrol + encapsulated vitamin C provide cytoplasmic and mitochondrial antioxidant protection, including inhibition of lipid peroxidation.

3. Zanthalene modulates neurosensory sodium channels, reducing discomfort and supporting ceramide-mediated lipid-barrier repair.

Examples of implementation

Example 1 – Anti-Ageing Cream

A cosmetic composition with the following weight composition was produced.

Damask rose hydrolate: 58.00%

Argan oil: 7.00%

Sharohyal Matrix: 3.00%

Encapsulated vitamin C (Lipo Ceravit C): 0.40%

Bio-placenta: 1.00%

Yerba mate extract: 3.00%

Ceramides: 0.50%

Zanthalene: 0.50%

Copper peptide: 0.05%

O/W emulsifier: 4.00%

Humectant (glycerine): 5.00%

Other ingredients (preservative, thickeners): q.s. to 100%

Example 2 – Night Cream (Strong Regeneration)

A composition with an increased content of the lipid phase and growth factors was created

Damask rose hydrolate: 46.00%

Argan oil: 10.00%

Encapsulated vitamin C: 0.60%

Bio-placenta: 1.50%

Copper peptide: 0.08%

Ceramides: 1.00%

Zanthalene: 0.50%

Other base ingredients: q.s. to 100%

Claims

1. A cosmetic composition comprising an aqueous phase and an oil phase, **characterised in that** it comprises a synergistic combination of: a) encapsulated vitamin C in a concentration of 0.1% to 1% by weight, b) Bio-placenta containing growth factors in a concentration of 0.1% to 10%, c) Zanthoxylum bungeanum (Zanthalene) extract in a concentration of 0.5% to 5%, d) copper peptide (GHK-Cu) in a concentration of 0.03% to 0.08%, wherein the encapsulated form of vitamin C has a lipid coating that prevents direct contact with copper ions derived from the copper peptide in the aqueous phase of the product.
2. The composition according to claim 1, **characterised in that** it additionally contains ceramides in a concentration of 0.1-2.0% and Yerba Mate extract in a concentration of 1-5%.
3. The composition according to claim 1, **characterised in that** it has the form of an oil-in-water (O/W) emulsion intended for use as a day cream, night cream or serum.

Abstract

A cosmetic composition containing an aqueous phase and an oil phase, characterised in that it contains a synergistic combination of: a) encapsulated vitamin C in a concentration of 0.1% to 1% by weight, b) Bio-placenta containing growth factors in a concentration of 0.1% to 10%, c) Zanthoxylum bungeanum (Zanthalene) extract in a concentration of 0.5% to 5%, d) copper peptide (GHK-Cu) in a concentration of 0.03% to 0.08%.