nano kojic acid

Whitening Action

Active Ingredients: Kojic acid and rice extract.

Nano Kojic Acid is a blend of active ingredients encapsulated in lipid particles with particle diameter larger than 200 nm. The blend encapsulation through the technology developed by Nanovetores allows the stabilization of sensitive components, therefore, complex of being formulated in their free form. Due to its natural features and non-existent chemical aggression, Nano Kojic Acid can be used daily providing in continuous applications, whitening and anti-aging action.

Characteristics

Aspect: Milky viscous liquid from cream to beige.
Usage Concentration: 2 to 10%
pH stability: 3.0 to 6.0
Solubility: Water Dispersible
Particle: Lipid
Release Trigger: Enzyme

Benefits

- Whitening action
- Anti-aging
- Indicated for the treatment of skin hyperchromia.

Usage

Emulsions, serums, gels and gel-cream for treating skin hipercromies. Compatible with anionic and nonionic vehicles.

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Description

Nano Kojic acid is a blend with powerful whitening and anti-aging action, also recommended for the treatment of skin hyperchromia. Kojic acid stands out for combating hyperpigmentation without causing irritation or photosensitivity and enabling its use even during the day[1]. It also has anti-wrinkle action and prevents cutaneous photoaging[2] promoting skin rejuvenation.

Kojic acid (5-hydroxy-2-(hydroxymethyl)-4-pyrone) is a biotechnological active ingredient obtained by biotransformation of rice carbohydrate by bacteria and fungi, among them species of Aspergillus, Penicillium and Acetobacter. Among its many properties stand out the antimicrobial and chelating action of copper ions, the latter being responsible for inhibiting melanogenesis. It is an important non-cytotoxic skin depigmentation ingredient, which acts to inhibit tyrosinase by chelating copper ion in the active sites of the enzyme, suppressing the tautomerization of dopachrome 5,6-dihydroxyindole-2-carboxylic acid and inhibiting the conversion of o-quinones, norepinephrine and dopamine to the corresponding shape of melanin[1][3][4].

The presence of iron in the skin is related to the formation of wrinkles caused by chronic exposure to UV radiation. A study conducted in Japan showed that kojic acid has the chelating activity of iron, as its topical application prior to exposure to UV radiation decreased wrinkle formation, epidermal hyperplasia, fibrosis of the lower dermis and increased extracellular matrix components in the upper dermis. These results indicate that kojic acid has anti-wrinkle action and prevents cutaneous photoaging[2].

Encapsulation of this acid allows the stabilization of the formula components and promotes increased skin permeation, benefiting the active ingredient depigmentation and antiaging action. Furthermore, the encapsulated lipid nanoparticles and rice extract promote skin hydration, since they operate in lipid replacement and prevent transepidermal water loss.

Regulatory Information

INCI NAME	CAS NUMBER
AQUA	7732-18-5
LINOLEIC ACID	60-33-3
OLEIC ACID	112-80-3
MIRISTIC ACID	----
KOJIC ACID	501-30-4
AVENA SATIVA KERNEL OIL	84012-26-0
ORIZA SATIVA EXTRACT	-----
POLYSORBATE 80	9005-65-6
PPG-15 STEARYL ETHER	25231-21-4
STEARETH-2	9005-00-9
STEARETH-21	9005-00-9
BHT	128-37-0
PHENOXYETHANOL	122-99-6
CAPRYLYL GLYCOL	1117-86-8

Physical-Chemical Information

PHYSICAL STATE	LIQUID
FORM	VISCOUS MILK
COLOR	BEIGE TO CREAM
ODOR	CHARACTERISTIC
pH	3,0 TO 6,0
SOLUBILITY	WATER DISPERSIBLE
RELATIVE DENSITY	0,9 TO 1,1 g/ML
CHEMICAL IDENTITY	INORGANIC
CHARACTERIZATION	BLEND

*As it contains natural active ingredients, the product may change in color and odor.

**As it is a suspension of nanoparticles, agitate before using.

STORAGE:
MAINTAIN IN TEMPERATURE BETWEEN 20°C – 25°C

COMPATIBILITY:
GELS, CREAM-GELS, SERUNS, EMULSIONS IN GENERAL AND LIQUID SOAPS.

INCOMPATIBILITY:
SODIUM CHLORIDE, ETHANOL AND OTHER ORGANIC SOLVENTS.

Approved by International Regulations:

China – IECIC | Europa – EC Cosing | EUA - CIR | Australia – AICS Inventor | Brasil – ANVISA

References

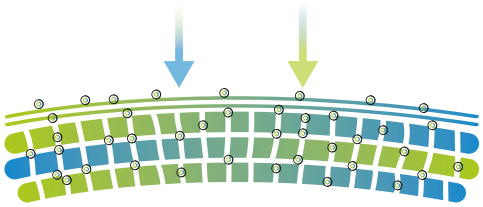
1 - CALAÇA, G.N.; STETS, S.; NAGATA, N. Determinação simultânea de ácido kójico e hidroquinona por espectrofotometria visível e calibração multivariada. Quim. Nova, 34(4): 630-635, 2011.

2 - MITANI, H. et al. Prevention of the photodamage in the hairless mouse dorsal skin by kojic acid as an iron chelator. Eur J Pharmacol. 5;411(1-2):169-174, 2001.

3 - GONCHOROSKI, D.D.; CÔRREA, G.M. Tratamento de hipercromia pós-inflamatória com diferentes formulações clareadoras. Infarma, 17(3/4), 2005.

4 - DAVIS, E.C.; CALLENDER, V.D. Postinflammatory Hyperpigmentation: A Review of the Epidemiology, Clinical Features, and Treatment Options in Skin of Color.The Journal of clinical and aesthetic dermatology.3(7):20-31, 2010.

Nanovetores Encapsulation Technology



Multifuncional Lipid Particles that promote hydration and high permeation.

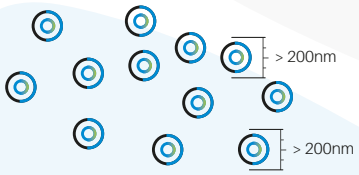
Enzymatic Specific Release Trigger, in which the enzymes present in our skin promote the degradation of the capsule, releasing the active ingredient.

Active Ingredient Protection against oxidation resulted from interaction with external environment and other components of the cosmetic formulation.

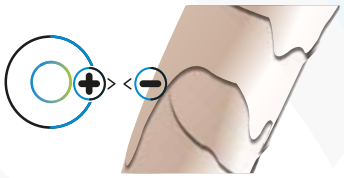
Active ingredient deposition when applied freely

Greater permeation of the active ingredient when encapsulated

Surface Charge Control of the particle, promoting greater affinity with the contact surface.



Monodispersity, that ensures control of the particle size, providing adequate permeation to its proposed action.



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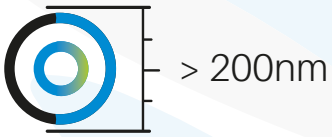

Secure particles larger than 200nm, biocompatible and biodegradable.

Water Base. Active ingredients are manufactured without the use of organic solvents, ensuring safety for users and the environment.

Use Encapsulated Active Ingredients and Ensure:

- Stability Improvement
- Increased compability in the formulation
- Occlusion of odors
- Increased skin permeation
- Reduced dose
- Use of sensitive active ingredients (without refrigeration)
- Increased Solubility
- Prolonged release
- Increased effectiveness

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