INdermal

VeganHDS-KERADEFENCE

Hair Delivery Nanovesicles with 1% Ferulic Acid, 1% 3-O-Ethyl Ascorbic Acid and 0.25% Tocopherol

VeganHDS-KeraDefence_02

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Keratins are proteins with a fibrous structure which constitute the main component of the hair fiber. It has been shown that exposure of the hair to UV radiation and environmental pollutants causes irreversible damage to the keratin structure. As a result of this degradation, the hair loses flexibility and becomes dehydrated, weakened and more brittle.

Antioxidants are commonly used as protective agents for hair, but so far, the results have not been fully satisfactory. The main reason for the low efficacy levels is that these molecules are oxidised rapidly in contact with air and lose their antiradical capacity in a short time. Moreover, they are unable on their own to reach the keratin fibers inside the hair.

VeganHDS-KeraDefence is a **combination of powerful antioxidants (Ferulic Acid, Vitamin C and Vitamin E)** encapsulated in the INdermal VeganHDS system, which has proven to be able to **penetrate inside the hair** homogeneously and reach even the medulla of the hair shaft.

The protection applied to the antioxidant molecules by the nanovesicles allows them to maintain their properties intact until they are released inside the hair fiber, where they combat the free radicals which cause keratin degradation.

For all these reasons, VeganHDS-KeraDefence is indicated for the **formulation of hair protection products** in any cosmetic form (shampoo, conditioner, lotion, serum, mist...) which are intended for use in conditions of sun exposure or in urban environments with medium or high levels of pollution

ACTIVE INGREDIENT PROPERTIES

- Maintains the integrity of the hair's keratin structure.
- Prevents hair deterioration caused by exposure to UV radiation and pollution
- Protects hair fiber from breakage and split ends
- Reduces frizz and enables easier combing
- Prevents hair dehydration
- Protects hair from color loss caused by exposure to sunlight

BENEFITS OF THE ENCAPSULATION VeganDDS

- Maintains the antioxidant capacity of active ingredients intact until their release
- Deep, homogeneous and immediate transfer to the hair fiber
- Increase of the bioavailability of the active ingredients
- Cationic system for improved adhesion and resilience to washing
- The ceramide and phospholipid content of the nanovesicle enhances the repairing and moisturizing effect

PROPERTY CHARACTERISTICS

- 1% Ferulic Acid, 1% 3-O-Ethyl Ascorbic Acid and 0.25% Tocopherol encapsulated in the INdermal VeganHDS system
- White coloured liquid
- Biometric nanovesicle

IN VIVO EFFICACY STUDY

Hair fibers showed 89,45% protection from keratin degradation

1-10%
RECOMMENDED DOSAGE

96,4%
NATURAL ORIGIN

x15
LIPOSOME CONCENTRATION
Up to 15 times greater concentration than other standard liposome products

150-300 nm
AVERAGE SIZE

INCI

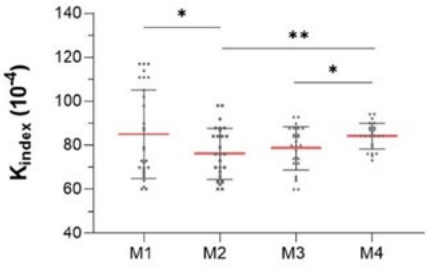
AQUA, MANNITOL, PHOSPHATIDYLCHOLINE, GLYCERIN, FERULIC ACID, 3-O-ETHYL ASCORBIC ACID, CETYL ALCOHOL, POTASSIUM SORBATE, SODIUM BENZOATE, POLYGLYCERYL-10 LAUREATE, CERAMIDE NP, TOCOPHEROL, SODIUM CHLORIDE, CETRIMONIUM CHLORIDE .

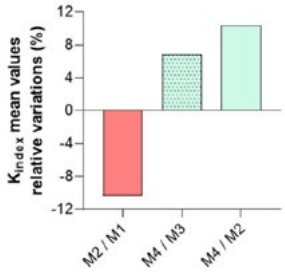
REQUEST **FREE SAMPLE**

Our Vegan products are 100% Vegan-Friendly and free from animal origin ingredients, without altering the efficiency of the systems.

EFFICACY TESTS

INdermal conducted a comparative study to evaluate the protective effect against UV-A radiation and pollution of a 5% VeganHDS-KeraDefence product and another product with an equivalent amount of the same antioxidants but in its non-encapsulated version. XPOLAR® analysis of the keratin structure of hair fibers showed **89.45% protection from keratin degradation** with the VeganHDS-KeraDefence product. A significantly higher value than obtained with the non-encapsulated antioxidant product.





STUDY ON PENETRATION IN HUMAN HAIR OF THE VEGANHDS SYSTEM

In this study, the amount of encapsulate present in the hair sections of the different samples analysed was evaluated by confocal laser scanning microscopy to determine the penetration properties of a cosmetic product formulated with 5% VeganHDS nanovesicles (empty and labelled with a fluorophore) as the only active ingredient, 30 and 120 minutes after a single application.

As shown in the images (Fig. 1 and Fig 2), the resulting fluorescence intensity, after incubation of the product on the hair, is high, immediate and homogeneous over the whole hair surface. For this reason, the INdermal VeganHDS system is suitable for encapsulating active hair care ingredients which act on the cortex and/or hair root: moisturisers, repairers, antioxidants and protectors. The excellent penetration from the first minutes of contact enables these active ingredients to be transported even when they are formulated in products which have rinsing instructions.

Fig 1.-
Non-treated hair

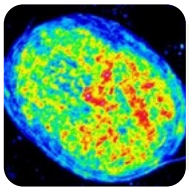


Fig 2.- Treated hair during 120 minutes of incubation with 5% Vegan HDS

HAIR DELIVERY SYSTEM

The active ingredients encapsulated in the **"HAIR Delivery"** systems are specifically released in the hair shaft to act on this structure with higher intensity and precision and to penetrate the cortex and hair root.

"Hair Delivery" nanovesicles are formulated with cationic phospholipids which achieve **high hair adhesion and significant resilience to rinsing and even washing.**

INdermal's "Hair Delivery" systems are especially useful in the transport and protection of **protein molecules**, since encapsulation avoids their degradation during the formulation process of the cosmetic product, which often damages the peptide bonds due to temperature or shear forces, considerably reducing their functionality and thus the results obtained in the treatment.

In addition, the **phospholipids and ceramides** which form the nanovesicle itself **repair and intensely moisturize** the hair due to their high quality, bioavailability and concentration.

WATCH HDS VIDEOS

OTHER DELIVERY SYSTEMS AVAILABLE

DEEP DELIVERY SYSTEM

The active ingredients encapsulated in the "Deep Delivery" systems are delivered specifically to the deepest layers of the epidermis in order to have the most precise and intense effect on the structures and cells located therein: melanocytes, Langerhans cells, keratinocytes, basal cells, Merkel cells…

CORNEUM DELIVERY SYSTEM

The use of these superficial delivery systems substantially increases the concentration of the active ingredient in the stratum corneum, minimalizing penetration at deeper levels. This is particularly useful in avoiding unwanted effects that can be caused at this level, for example when using active ingredients with a high irritant capability, like AHA.

FOLLICULAR DELIVERY SYSTEM

The "Follicular Delivery" nanovesicles vectorise the active ingredients to the deepest areas of the hair follicle in order to have the most powerful and selective effect on the germ cells, hair bulb, dermal papilla and sebaceous gland. They are ideal for hair loss and sebum regulating products.

CUSTOMISED PROJECTS

At INdermal, we are happy to place our processes, knowledge and collaboration at your entire disposal in order to provide you with an accessible and speedy nanobiotechnological service, as if it were an extension of your own R+D department. We also offer you any nanoencapsulation system that you may require for your formulations. We would be delighted to receive your ideas or proposals as well as carry out a preliminary analysis free of charge and in complete confidence.

INdermal

Incorporate encapsulated active ingredients in your formulations and take your products to the next level of efficiency to surprise your customers and stand out from the competition.

CONTACT FORM

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