

FDS



EXO FDS FolliXield

Deep Delivery Nanovesicles with
2% Trifolium Pratense Extract and 0.50% Acetyl
Tetrapeptide-3

EXO FDS FolliXield_01

+36%
HAIR
REGENERATION

-72%
OXIDATIVE DAMAGE
IN THE FOLLICLE



Intertek



ASI-ACC-096

 **Ndermal**
by Nanovex Biotechnologies

EXO FDS FolliXield

Code: 20411

Description:

TRIFOLIUM PRATENSE EXTRACT (2 %) and ACETYL TETRAPEPTIDE-3 (0.1 %) encapsulated in vegan follicular release biomimetic exosomes (EXO FDS - Follicular Delivery System) to add in cosmetic, cosmeceutical or dermo pharmaceutical formulations.

INCI:

AQUA, GLYCERIN, PHOSPHATIDYLCHOLINE, MANNITOL, METHYLPROPANEDIOL, TRIFOLIUM PRATENSE EXTRACT, CAPRYLYL GLYCOL, ETHYLHEXYLGLYCERIN, SORBITAN OLEATE, BETASITOSTEROL, ACETYL TETRAPEPTIDE-3, PHENYLPROPANOL, POTASSIUM SORBATE, CETRIMONIUM CHLORIDE, PHYTOSPHINGOSINE

Appearance: Light yellow. Liquid

Preservatives: ETHYLEXYLGLYCERIN, CAPRYLYL GLYCOL, PHENYLPROPANOL AND POTASSIUM SORBATE



APPLICATIONS



Hair care

- Strengthen hair roots · Prevent hair loss · Stimulate hair production · Protection against environmental stressors ·

CLAIMS

-72% oxidative damage*

+36% stimulation of hair regeneration*

*(according to efficacy study)

1-10%
RECOMMENDED DOSAGE

98.9 %
NATURAL ORIGIN*

x MILLION
EXOSOME
CONCENTRATION
A million times more concentration than natural exosome sources

[NANO FREE]
150-300 nm
AVERAGE SIZE

Readily Biodegradable**



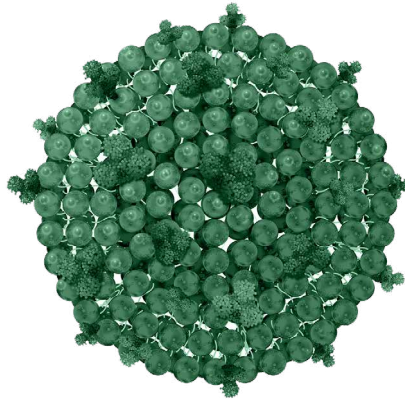
* According to ISO 16128.

** According to OECD criteria. The biodegradability of this product is calculated from the accumulated biodegradability data of the individual constituents used in the manufacture of this product.

*** According to patch test

Certifications





EXO FDS Delivery System

Exosomes, natural lipid vesicles facilitating cell communication, are harnessed in cosmetics for their ability to modulate physiological processes, mimicking intercellular communication. Biomimetic Exosomes combine ancient plant extracts rich in biocompounds with cutting-edge delivery technology, marking a cosmetic revolution. Follicular Delivery bioexosomes transport active ingredients into the hair follicle.

BENEFITS ENCAPSULATION IN BIOEXOSOMES

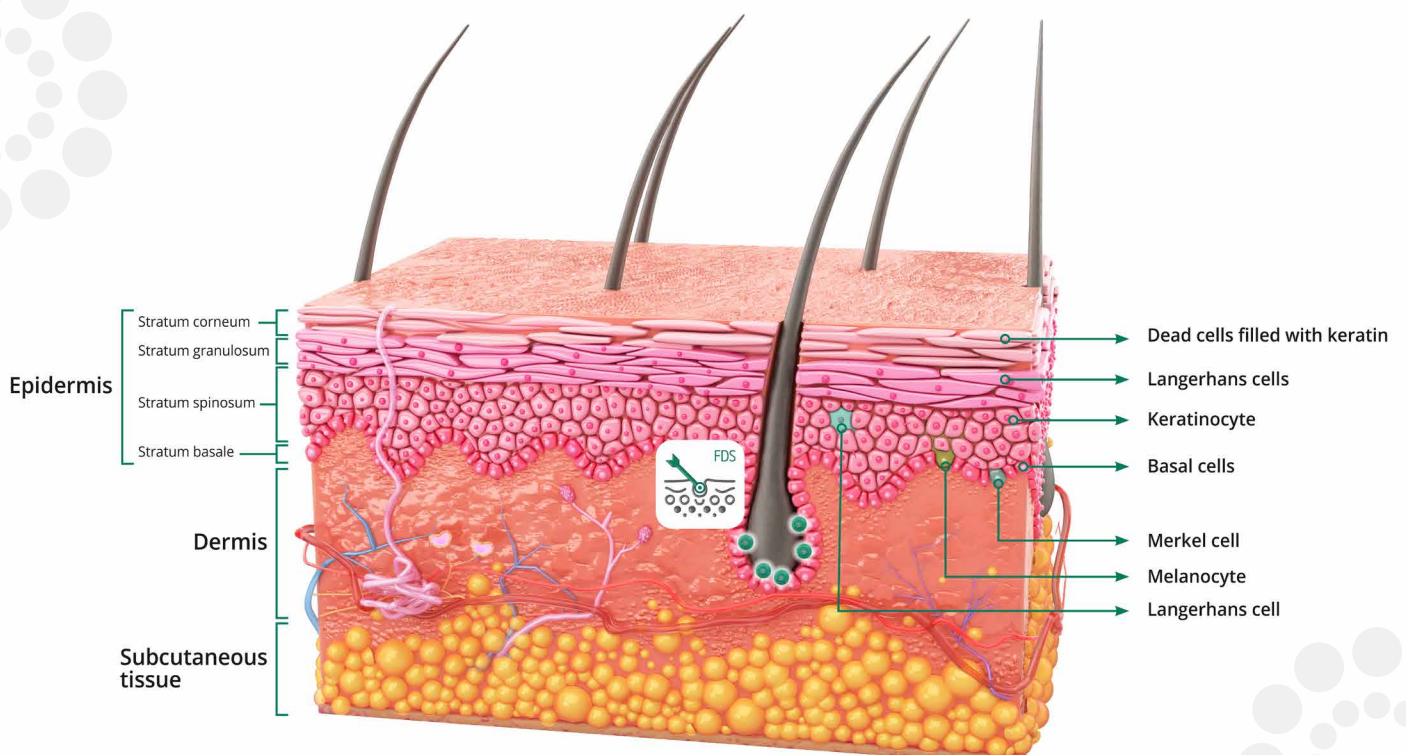
- ✔ Protects against degradation caused by pH or interaction
- ✔ Delivery of the active ingredient to the interior of the hair follicle which optimises its access to the sebaceous gland
- ✔ Non-invasive penetration and specific delivery
- ✔ A million times more concentration than natural sources
- ✔ Cellular affinity
- ✔ Surface loaded proteins

Active encapsulated

Acetyl tetrapeptide-3 and red clover extract are known for their synergistic effects in preventing hair loss. Acetyl tetrapeptide-3 strengthens hair roots by boosting collagen production, enhancing elasticity, and resistance to breakage. Red clover extract stimulates scalp circulation and hair cell production, promoting thicker growth. Their combined anti-inflammatory and antioxidant properties soothe the scalp and enhance hair growth.

ACTIVE INGREDIENTS PROPERTIES

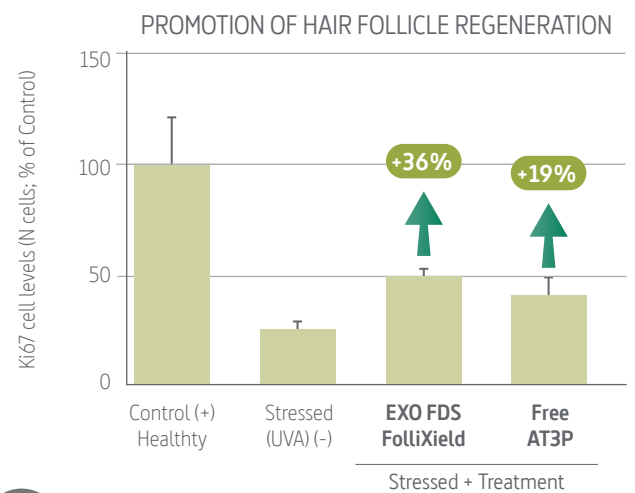
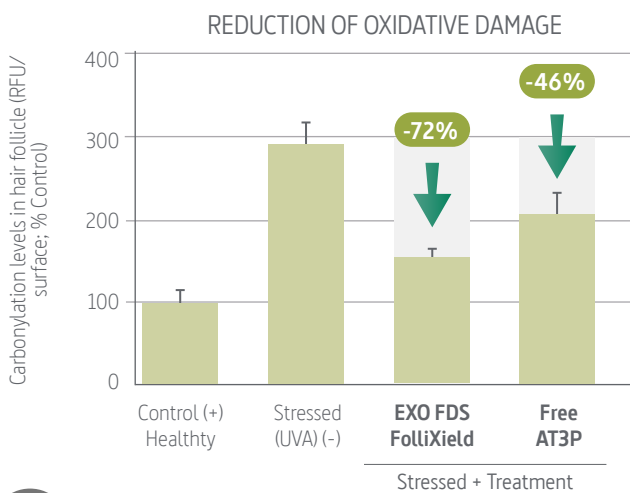
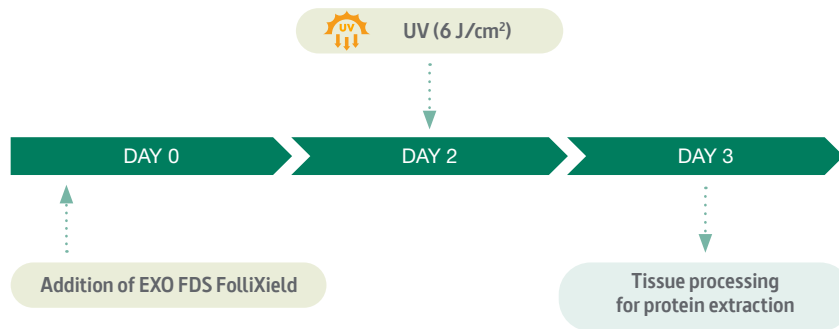
- ✔ Strengthens follicles
- ✔ Enhances matrix proteins
- ✔ Reduces hair shedding
- ✔ Promotes hair anchorage
- ✔ Prevents hair loss
- ✔ Stronger, more resilient hair
- ✔ Protection against environmental stressors





Proven efficacy ex vivo

- + Gel with 5 % EXO FDS FolliXield vs the equivalent concentration of AT3P (0,005% of acetyl tetrapeptide-3)
- + Human organotypic skin explant cultures (hOSECs)
- + Total of 1 application for 24 hours before irradiation
- + Sun-like light irradiation (5 J/cm²) for 40 minutes for hOSEC to simulate follicle stress that causes hair loss



x1.6 more effective
than free AT3P in protein carbonylation reduction*

*The accumulation of damaged proteins (i.e. carbonylated proteins) can disrupt normal cellular functions and lead to cell death, which affects the health of hair follicles and leading to hair loss.



x1.9 more effective
than free AT3P in Ki67 follicle cells increase**

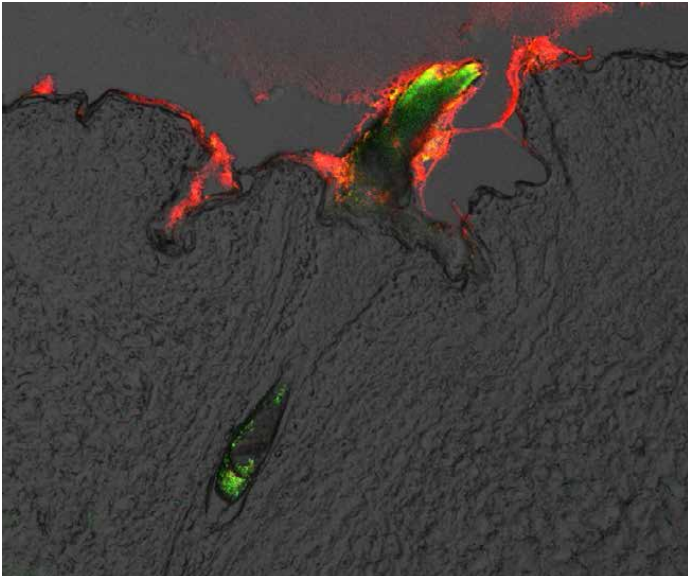
**Ki67 is a marker for cell proliferation. Ki67 positive cells are those that are actively dividing. A higher number of Ki67 positive cells in the follicle indicate active hair growth and health which contributes to preventing hair loss.



DOWNLOAD EFFICACY STUDY



Targeted delivery



Specific release of the active ingredient into the follicle

 **DOWNLOAD
DELIVERY STUDY**





Notes for formulators: how to use

- Shake before using.
- If the product is stored under 12°C, let the product get room temperature before shaking. At low temperatures reversible changes in viscosity can occur.
- Add to bulk during the final phase of the production process, ensuring that the temperature does not exceed 40°C to avoid degradation of the encapsulated molecules. If you need to add it to higher temperatures, please consult our technical service.
- **Maximum homogenization:** 20.000 rpm
- **Formulation pH:** 3 – 11
- Ethanol concentrations higher than 15% may damage liposomes (contact our technical service for advice) Too high concentration of detergents may break liposomes.
- If you use them in a o/w formula, add them in aqueous phase.



Add at room temperature:

The liposome does not protect heat-sensitive actives from heat



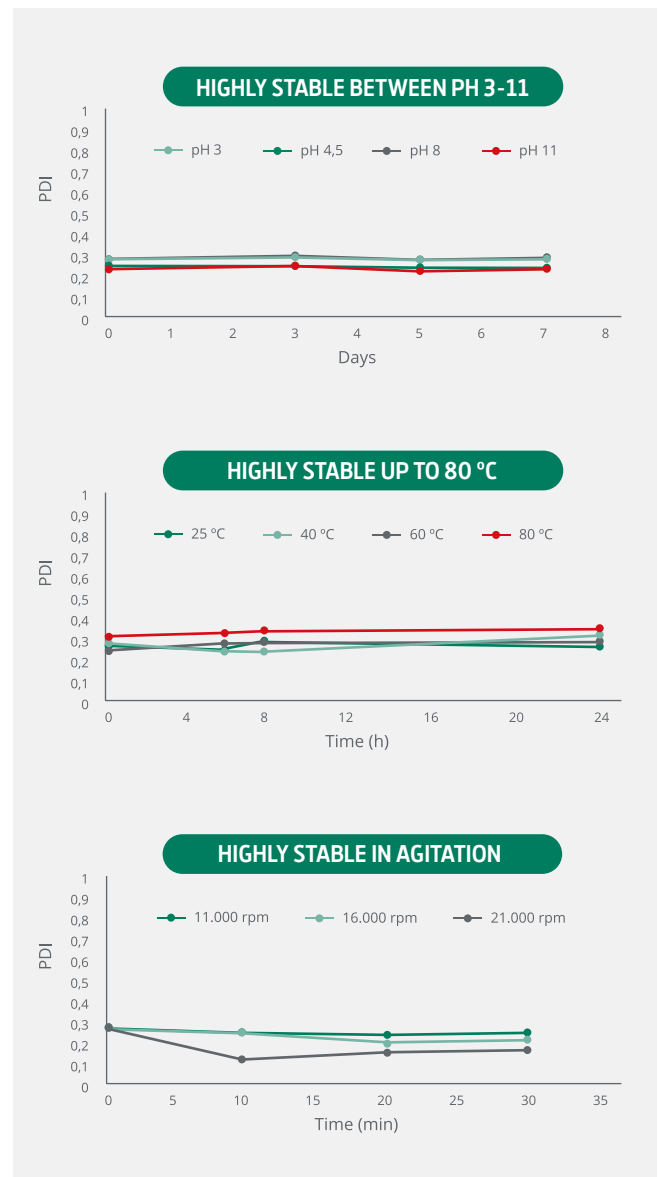
Liposomes can be added without any problem to any cosmetic mixture

- Water-based formulas
- Oil-in-water emulsions
- Water-in-oil emulsions
- Gels
- Serums



Important:

Add the liposomes in the **aqueous** phase of the emulsion or in the last stage of the manufacture process



Stability of the empty Delivery System nanovesicles in different conditions

OUR 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, minimizing 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.



HAIR DELIVERY SYSTEM

The “Hair Delivery” nanovesicles are formulated with cationic phospholipids and ceramides which give them high capillary adhesion and a considerable resistance to washing and rinsing. They progressively deliver the active ingredients to the hair stem cuticle, penetrating up to the cortex of the hair medulla, particularly when treating damaged hair.



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.



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.



**DOWNLOAD
CATALOGUE**



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