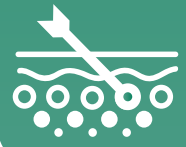


# Vegan DDS Ethyl C

Deep Delivery Nanovesicles with  
3% Ethyl-O-Ascorbic Acid

Vegan DDS Ethyl C\_01

DDS



**-92.28%**  
INFLAMMATION  
(CYTOKINES)

**-136.97%**  
UV DAMAGE  
(MMP9)

**-216%**  
AGES-9  
LEVELS



Intertek



asi  
accredited

ASI-ACC-056



VEGAN  
CAAE



Ndermal

by Nanovex Biotechnologies

# Vegan DDS Ethyl C

**Code:** 20338

## Description:

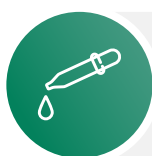
ETHYL-O-ASCORBIC ACID (3 %) encapsulated in vegan deep delivery nanovesicles (DDS - Deep Delivery System) to add in cosmetic, cosmeceutical or dermo pharmaceutical formulations.

## INCI:

AQUA, MANNITOL, PHOSPHATIDYLCHOLINE, GLYCERIN, 3-O-ETHYL ASCORBIC ACID, POLYGLYCERYL10 LAURATE, CETYL ALCOHOL, SODIUM BENZOATE, POTASSIUM SORBATE

**Appearance:** White. Liquid

**Preservatives:** POTASSIUM SORBATE, SODIUM BENZOATE



**1-10%**  
RECOMMENDED DOSAGE



**95.08%**  
NATURAL ORIGIN\*



Up to **15 times greater** concentration than other standard liposome products



**150-300 nm**  
AVERAGE SIZE

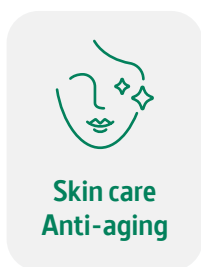


**Readily Biodegradable\*\***

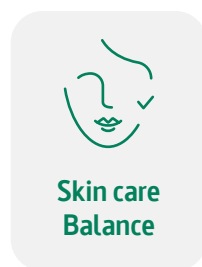


**Very good skin compatibility\*\*\***

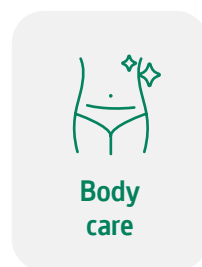
## APPLICATIONS



**Skin care**  
Anti-aging



**Skin care**  
Balance



**Body care**

· Anti-oxidation · Wrinkles · Brightness · Spot prevention · Pigmentation · Irritation ·

## CLAIMS

**-92.28%**  
inflammation (according to efficacy study)

**-136.97%**  
UV damage (MMP9) (according to efficacy study)

**-216%**  
AGEs-9 levels (according to efficacy study)



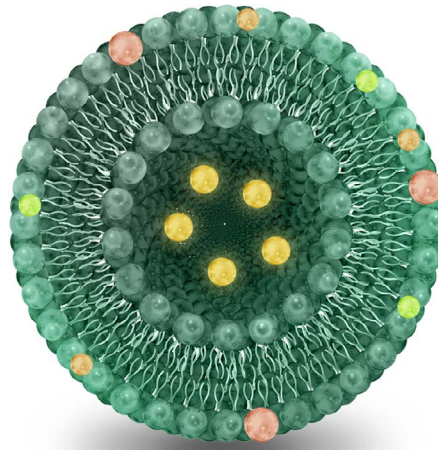
\* According to ISO 16128.

\*\* 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





## Vegan DDS Delivery System

DDS or Deep delivery system is composed of mainly phospholipids and membrane stabilizers. It contains the right amount of penetration enhancers and edge activators that help the system reach the desired cells.

### BENEFITS OF THE ENCAPSULATION VEGAN DDS

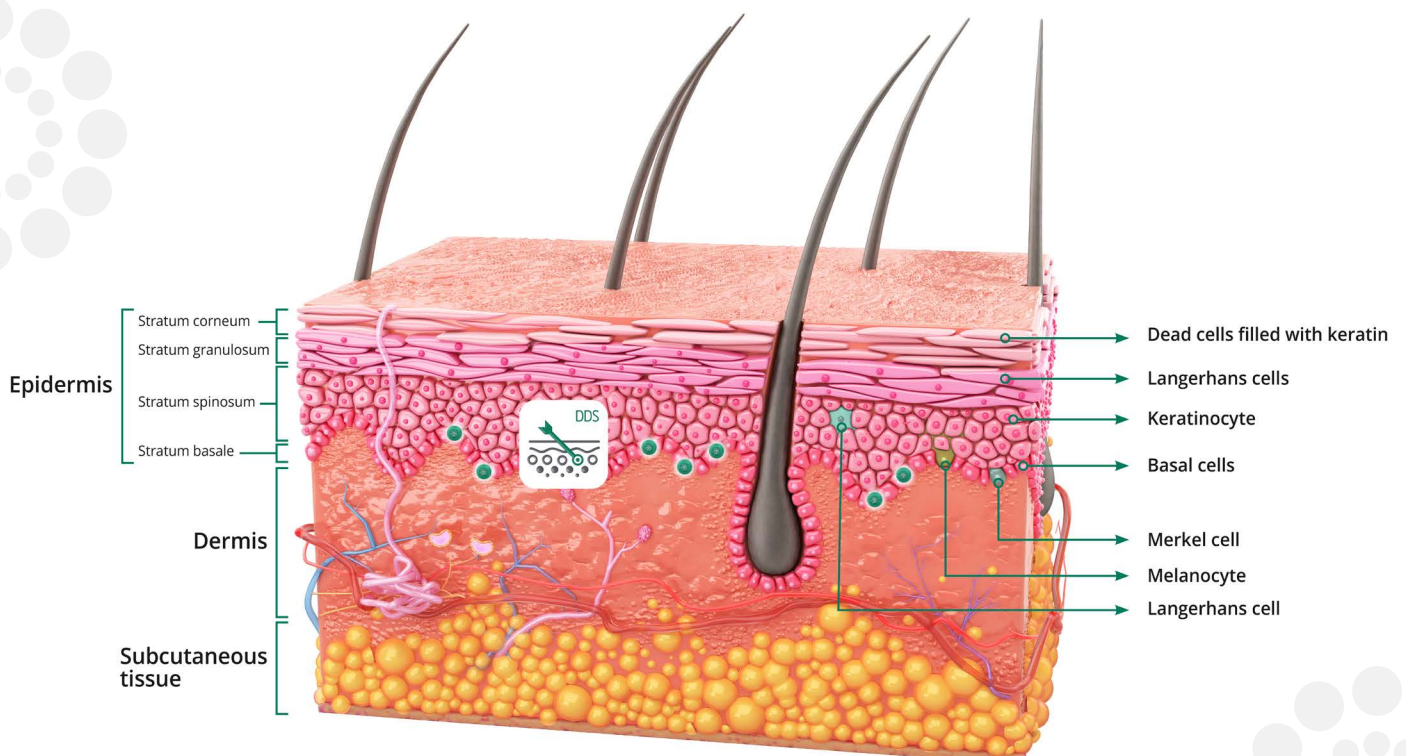
- ✔ Protects active against degradation
- ✔ Maximum delivery of the active ingredient into the deep skin levels
- ✔ Gradual delivery for longer lasting effect
- ✔ Increases the bioavailability of the active ingredient
- ✔ Avoids colour changes in the cosmetic product
- ✔ Biomimetic nanovesicle with high moisturising and restorative action

## Active encapsulated

Ethyl-O-Ascorbic Acid is the most stable form of Vitamin C (ascorbic acid) that offers all the primary benefits vitamin C is known for, such as brightening, wrinkle reduction, visible firming, fading hyperpigmentation to restore a more even skin tone and offsetting numerous triggers of environmental damage. In summary, this active offers almost 85% of the effectiveness of pure ascorbic acid, with the stability of sodium ascorbyl phosphate.

### ACTIVE INGREDIENTS PROPERTIES

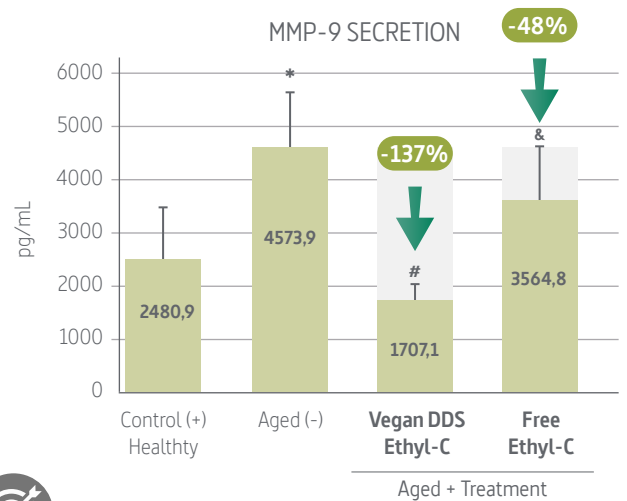
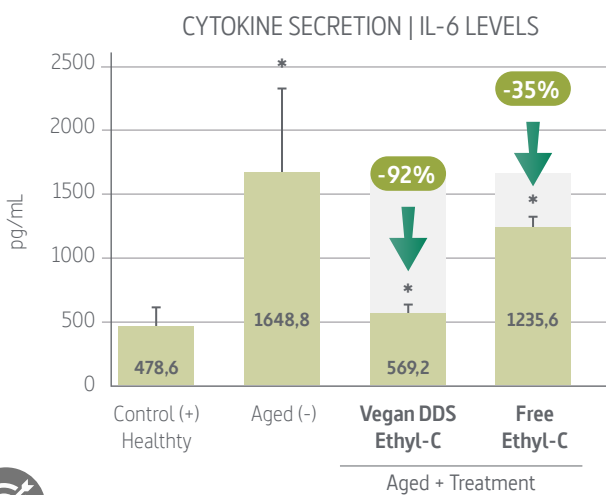
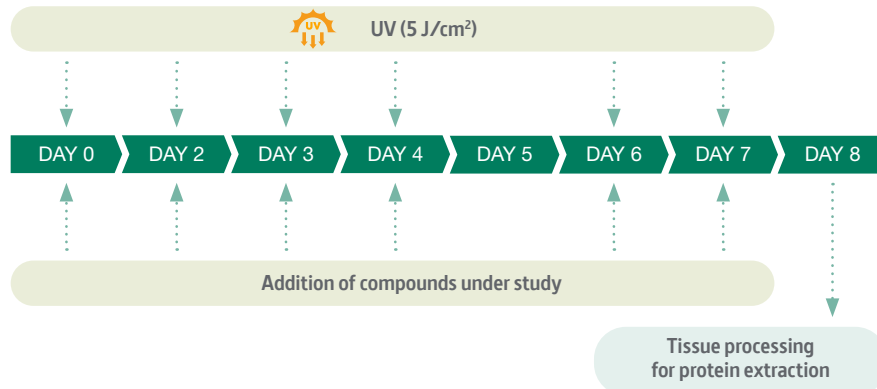
- ✔ It is a powerful antioxidant to fight free radicals.
- ✔ Can easily be metabolized into the pure Ascorbic Acid (Vitamin C) in the skin
- ✔ It is highly effective and known to dispense better overall benefits
- ✔ One of the most stable forms of Vitamin C





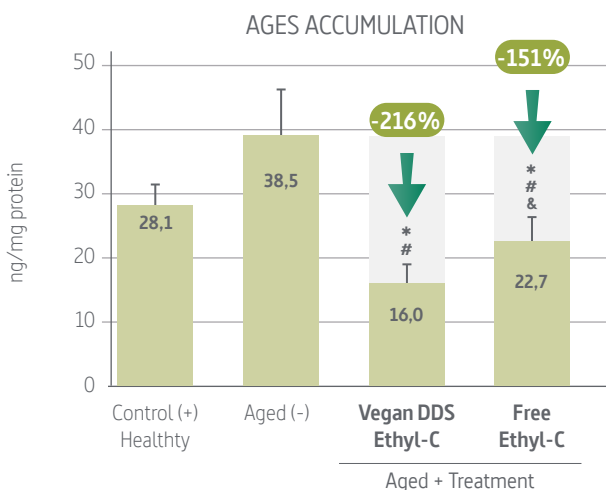
## Proven efficacy

- + Gel with 10% Vegan DDS Ethyl C vs gel with same concentration of free Ethyl C
- + Human organotypic skin explant cultures (hOSECs)
- + To mimic skin photo-aging, sun-like light irradiation (5 J/cm<sup>2</sup>) was applied daily to the hOSEC
- + Total of 7 consecutive applications



**x2.6 more effective**  
than free ethyl C in IL-6 reduction

**x2.8 more effective**  
than free ethyl C in MMP-9 reduction



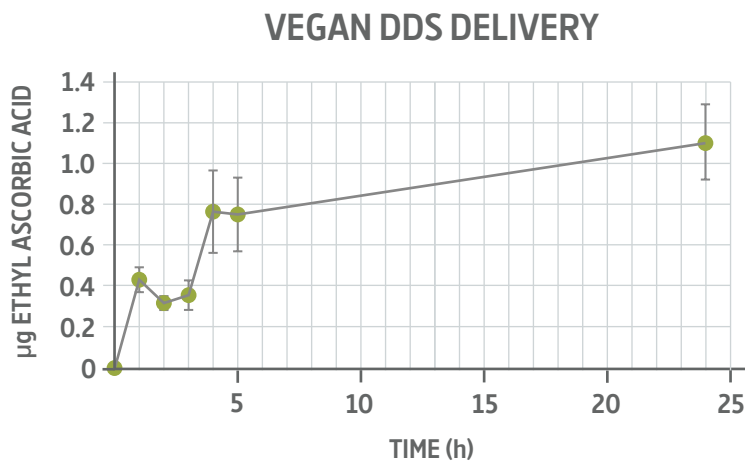
**x1.4 more effective**  
than free ethyl C in AGES reduction

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## Sustained penetration

- + The sustainable and progressive delivery study over 24 h of the Vegan DDS system
- + Using a model analyte (ethyl ascorbic acid)
- + Human skin explants
- + Application of the sample containing ethyl ascorbic acid encapsulated into Vegan DDS liposomes
- + Epidermal concentration of the active at different times
- + Determined using HPLC-RC after extraction from the human epidermis

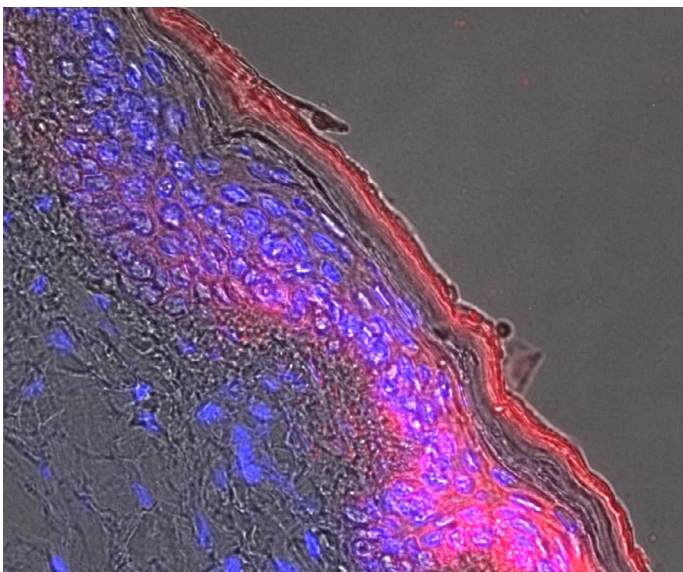


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DDS by INdermal nanovesicles are ideal for the cosmetic application of active ingredients which require a progressive and sustained delivery over time in the epidermal layer

## Targeted delivery



- + Fluorescent Vegan DDS liposomes with rhodamine-labelled phospholipids (18:1 PE CF) in the membrane of the liposomes can be seen in red.
- + The skin was dyed with DAPI, that stains cellular nuclei with an emission maximum at 461 nm in blue.



Specific release of the active ingredient into the epidermal layer of the skin

[↓ 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



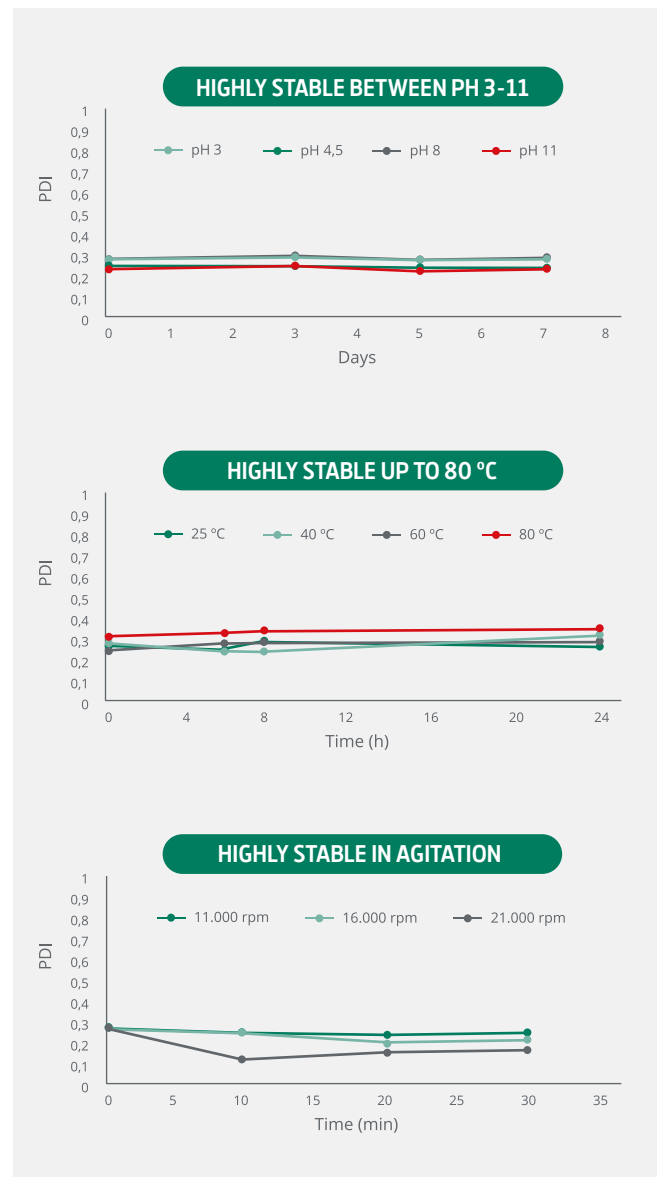
### Liposomes can be added without any problem to any cosmetic mixture

- 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

## OTHER DELIVERY SYSTEMS AVAILABLE



### 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.



### 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.



### 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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