

Phytoceramide Cream

Phytoceramides help to maintain the appearance of healthy, youthful skin. It's a powerful antioxidant that slows the rate of free-radical damage, which causes skin's dryness, fine lines, and wrinkles. It helps combat and even reverse time's effect on your skin by producing collagen – a protein which makes skin appear plump and firm. The skin is left feeling soft, smooth, with a radiant glow.

Directions: Apply a pea to dime size amount of cream to the face and neck twice a day, or as needed. Smooth gently into skin after cleansing and foaming. Allow to absorb fully before applying make-up.

Caution: For external use only. Avoid direct contact with eyes, and mouth. If irritation occurs, discontinue use. Keep out of reach of children

Ingredients: Purified Water, Isopropyl Myristate, Glycerin, Stearyl Alcohol, Cetearyl Alcohol, Dimethicone, Cetearth 20, Glyceryl Stearate, PEG-100 Stearate, [Ceramide3](#), [Ceramide6II](#), [Ceramide1](#), [Phytosphingosine](#), Cholesterol, Sodium Lauroyl Lactylate, Carbomer, Xanthan Gum, Phenoxyethanol, Fragrance, Potassium Sorbate, Tocopherol Acetate, Sodium Benzoate, Triethanolamine, Disodium EDTA Polysorbate 20, Sodium Hyaluronate, Cyclopentasiloxane, [Palmitoyl Oligopeptide](#), [Palmitoyl Tetrapeptide-7](#), Retinol Palmitate (Vitamin A Palmitate), Lactamide MEA, Rosemary Extract, Balm Mint Extract.

[Clinically Supported Ingredients: SK Influx V](#) [Clinically Supported Ingredients: Matrixyl 3000](#)



MATRIXYL®3000



Pal-GHK and Pal-GQPR

Function:
Anti-wrinkle.

Definition:
Association of 2 palmitoylated matrikines: Pal-Gly-His-Lys and Pal-Gly-Glu-Pro-Arg.

Properties:
Matrixyl®3000 supports the activation of the cutaneous repair process, and in particular at the level of the fragile and UV-damage prone papillary dermis. Matrixyl®3000 promotes wrinkle smoothing and improves tone and elasticity.

Characteristics:
Matrikines are messenger peptides capable of regulating cell activities by interacting with their specific receptors. They activate certain genes involved in the process of extracellular matrix renewal and cell proliferation. These mechanisms become weaker and weaker with age.

INCI Name:
(Check PCPC on-line dictionary for latest INCI name)
Glycerin – Aqua (Water) – Butylene Glycol – Carbomer – Polysorbate 20 – Palmitoyl Oligopeptide – Palmitoyl Tetrapeptide-7

Applications:
Anti-wrinkle products.

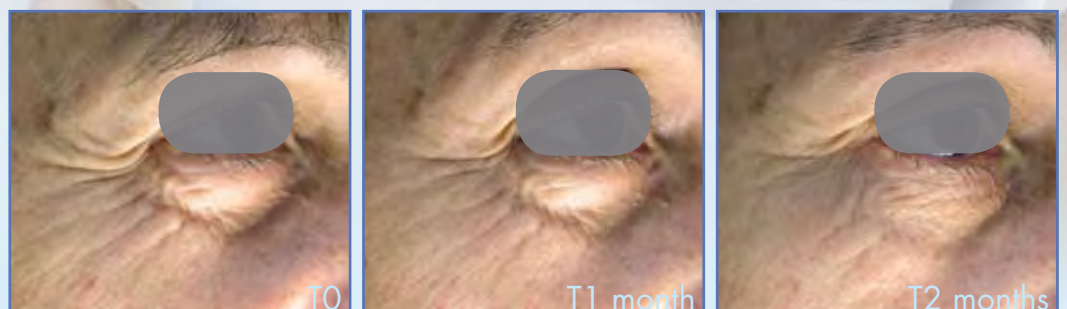
Formulation:
Water soluble.

Recommended use level:
3%

Patent:
WO 2005/048968



NEW TEST reveals age gain by **2** years in just **1** month



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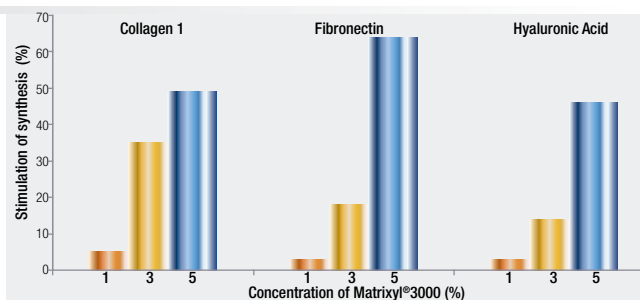
In vitro tests

● SYNTHESIS OF MATRIX MACROMOLECULES

Study of the stimulation of synthesis of extracellular matrix components by fibroblasts incubated for 72 hours with Matrixyl®3000 (1, 3, 5%).

● STIMULATION OF GENE EXPRESSION

Study of the regulation of dermal and epidermal genes by matrikines from Matrixyl®3000, using DNA-Array technique on reconstructed epidermis and fibroblast culture.



Matrixyl®3000 can boost the synthesis of extracellular matrix macromolecules. Its matrikines showed a complementary activation profile of genes involved in the mechanism of cutaneous restructuring.

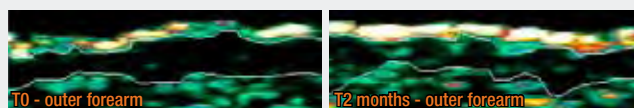
In vivo tests

REPAIR OF THE PAPILLARY DERMIS

28 female volunteers aged from 51 to 72 years, mean age 59. Twice daily application of a cream containing 3% of Matrixyl®3000 for 2 months to one half of the face and the forearm (inner and UV-exposed outer forearm) against placebo.

● ANALYSIS OF THE SUBEPIDERMAL LOW ECHOGENICITY BAND

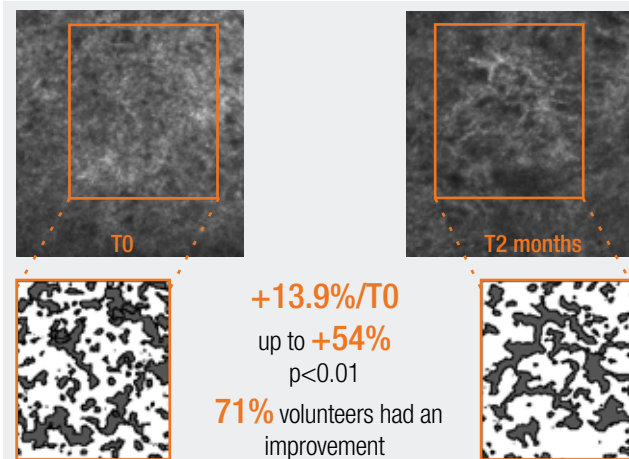
after 2 months	Inner forearm	Outer forearm
THICKNESS	-9.8%/T0 up to -23%, p<0.01	-9.8%/T0 up to -33%, p<0.01
	93% volunteers	86% volunteers
	-11%/placebo, p<0.01	-14.4%/placebo, p<0.01
DENSITY	+11.4%/T0 up to +44%, p<0.01	+11.5%/T0 up to +45%, p<0.01
	68% volunteers	82% volunteers
	+15.2%/placebo, p<0.01	+15.1%/placebo, p<0.01
AGE GAIN	-3.8 years	-5.5 years



Significant improvement of the SLEB characteristics in just one month (thickness: -5.5%/placebo; density: +7.8%/placebo, on the inner arm) and confirmed after two months. The ageing process is slowed down by 1.8 years in just one month.

● ANALYSIS OF THE FIBRE NETWORK

Measurements of the fibre defragmentation by confocal laser microscopy (Vivascope) on the face, next to the external eye corner.



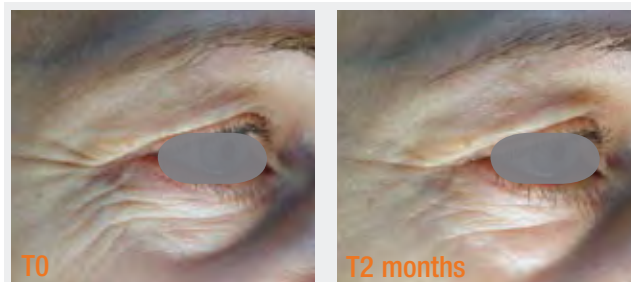
Matrixyl®3000 helps reduce the fibre fragmentation and notably supports the reconstruction of the papillary dermal fibre network.

ANTI-WRINKLE EFFICACY, SKIN TONE AND ELASTICITY

23 female volunteers aged from 42 to 67 years / Twice daily application on one half of the face of a cream containing 3% of Matrixyl®3000 against placebo, for 2 months. Assessment of the anti-wrinkle efficacy by profilometry, cutometry and photography compared to T0.

Compared to T0 (%)	Matrixyl®3000	Placebo
Surface occupied by deep wrinkles	- 39.4**	4.3ns
Main wrinkle density	- 32.9**	- 9.6ns
Main wrinkle average depth	- 19.9**	- 3.2ns
Main wrinkle average volume	- 23.3**	- 8.7*
Roughness	- 16.0**	1.4ns
Complexity (Lifting effect)	- 16.2**	4.2ns
Elasticity	+5.5*	4.1ns
Skin tone	+15.5**	6.5ns

ns : non significant *significant/T0 (p<0.05) **significant/T0 (p<0.01)



The repairing effect of Matrixyl®3000 promotes the visible quality of the skin by decreasing the appearance of wrinkles and improving tone and elasticity.

SK-influx V

A skin-identical lipid concentrate for enhanced skin moisturization and protection

- Restores the protective barrier function of the skin
- Ideal for ageing skin, dry skin and sensitive skin
- Enhanced delivery and exchange of skin lipids
- **SK-influx V** is a new version of SK-influx, with non-animal cholesterol (vegetal-derived, semi-synthetic cholesterol)
- **SK-influx V** is paraben-free

Personal Care

INCI Name (CTFA name)

Ceramide 3; Ceramide 6 II; Ceramide 1;
Phytosphingosine; Cholesterol; Sodium Lauroyl
Lactylate; Carbomer; Xanthan Gum

Chemical and physical properties (not part of specifications)

Form	viscous liquid
Active matter	2.5 %
Preservatives	Phenoxyethanol and Ethylhexylglycerin

Properties

- SK-influx is a skin-identical lipid concentrate, which restores the protective barrier function of the skin.
- SK-influx is a concentrated formulation, consisting of a multi-lamellar (membrane) system resembling the structure of the lipid barrier in the Stratum Corneum.
- A concentrated mix of different types of ceramides, cholesterol, free fatty acids and phytosphingosine makes it an ideal ingredient for personal care products with unique restoring capabilities.
- Cholesterol is a key ingredient of SK-influx and essential for the performance of the product. However, its animal origin (sheep's woolgrease) prevents some customers from using SK-influx. In order to fulfil market expectation, Degussa Goldschmidt Personal care has been looking for alternatives and testing them. As a result, **SK-influx V** is now available with vegetal derived, semi-synthetic cholesterol that is chemically and physically indistinguishable from the animal-based product.
- Application of SK-influx V will result in an enhanced moisturization and protection, ultimately leading to a less sensitive and less dry skin.
- Depending on the type of skin and desired effect, SK-influx V is used with concentrations varying from 1 – 15 %.
However, for typical applications such as ageing and dry skin a dosage level of 3 – 5 % is

recommended.

Efficacy studies

Uptake of Ceramide into Stratum Corneum (Ex-vivo incorporation study)

Introduction: This study investigated the extent to which Ceramides can be incorporated into the natural lipid barrier of the stratum corneum when topically applied in different types of formulations.

Study: The study was performed by Prof. P.W. Wertz at the Dows Institute (University of Iowa, USA).

Methods: C14-radiolabeled Ceramide VI was formulated in three different systems at a concentration of 0.5 % (specific activity of 59 000 dpm/nmol):

System 1: Oil/water with ethoxylated sorbitan ester

System 2: Oil/water with polyglyceryl ester

System 3: SK-influx system

Ceramide VI was chosen as a representative Ceramide for this study.

50 µl of each formulation was topically applied to isolated Stratum Corneum (1.5 cm x 1.5 cm). After 1 hour, excess formulation was removed and new formulation (50 µl) was applied. This was repeated after the second hour. After 3 hours, excess formulation was removed from the surface. Ten layers of Stratum Corneum were removed by successive stripping with tape. Radioactivity in each strip was determined by liquid scintillation counting. The residual Stratum Corneum was excised to calculate the total amount of Ceramide incorporated (strips plus residue radioactivity).

Results: The graph shows the amount of Ceramide VI incorporated in the layers of the Stratum Corneum. S1–S10 refer to ten sequential tape strips (fig. 1).

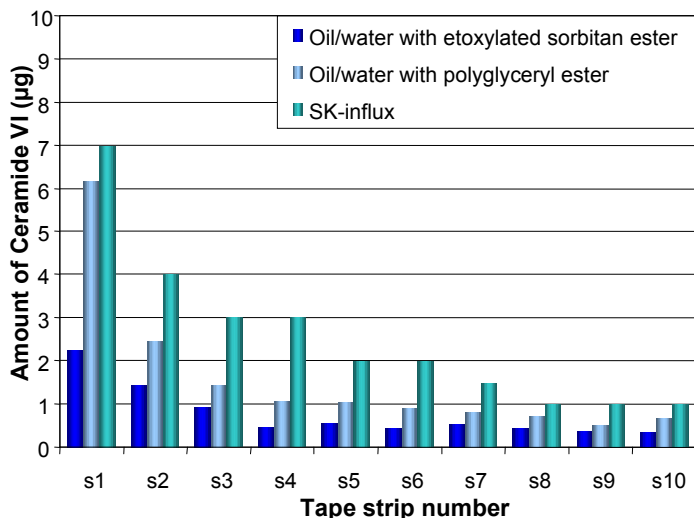


Fig. 1: Ex-vivo incorporation study with C14-radio-labeled Ceramide VI

The largest amount of Ceramide VI, thus the best incorporation, can be found with the SK-influx system. The lower layers of the Stratum Corneum showed decreasing amounts of incorporated Ceramide VI.

Total amounts of incorporated Ceramide VI (strips plus residue) were 20, 31 and 44 µg/cm² for systems 1 to 3 respectively.

Conclusion: It was demonstrated that Ceramides are effectively incorporated into the lipid barrier of the Stratum Corneum when topically applied.

Furthermore, the SK-influx formulation increased the bioavailability of Ceramide VI by more than 38 % compared to the other oil/water emulsions.

Other efficacy studies are available on request.

Preparation

In emulsions SK-influx should be added to the water phase before the homogenisation step.

Adding SK-influx to an existing recipe of an O/W emulsion drops the viscosity significantly. The reason for this is a rearrangement of the liquid crystalline structures. But the emulsion is not necessarily less stable in spite of the lower viscosity. To increase the viscosity it is suggested to increase the amount of consistency enhancer, e. g. the amount of TEGO® Alkanol 18 (Stearyl Alcohol).

Since SK-influx contains an anionic surfactant as a liposome builder cationic emulsifier systems should be avoided due to possible interactions.

Application

Consequently SK-influx V has a wide range of applications, such as O/W creams and lotions of the segments:

- Moisturizing products
- Ageing and anti-wrinkle products
- Skin repair
- Skin protection

Recommended usage concentration

Normal skin:	1.5 – 5 %	SK-influx V
Dry skin:	3 – 5 %	SK-influx V
Ageing skin:	3 – 5 %	SK-influx V
Skin repair/protection:	3 – 15 %	SK-influx V

Packaging

5 and 25 kg package

Storage

- The product is stable for 1 year when stored at 10 – 15 °C.
- Kept at room temperature the product is stable for 6 months.
- The product should not be stored at temperatures lower than 10 °C.

Hazardous goods classification

Information concerning

- classification and labelling according to regulations for transport and for dangerous substances
- protective measures for storage and handling
- measures in accidents and fires
- toxicity and ecological effects

is given in our material safety data sheets.