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GLOBAL PERSONAL CARE

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LIPOID Liposome C Eco: innovative natural product

Encapsulation of cosmetic active ingredients in skin-friendly particles potentiates their skin interaction and results in a superior and long-lasting cosmetic effect. LIPOID Liposome C Eco is an innovative natural product containing ascorbyl glucoside (2-O-alpha-D-glucopyranosyl-L-ascorbic acid), a derivative of Vitamin C. Vitamin C is a powerful antioxidant, neutralizing and removing harmful free radical molecules and enhancing collagen formation. It inhibits the enzyme tyrosinase, thereby reducing melanogenesis and counteracting skin hyperpigmentation.[1] Ascorbyl glucoside is converted into ascorbic acid (Vitamin C) in the skin, providing a long-lasting cosmetic effect.[2]

LIPOID Liposome C Eco combines the cosmetic benefits of ascorbyl glucoside with the excellent skin penetrating and rejuvenating properties of phospholipids and liposomes.[3] The liposomes of LIPOID Liposome C Eco comprise unsaturated phospholipids, which condition the stratum corneum for optimal cosmetic effects.[3] The structure of phospholipid molecules and phospholipid vesicles (liposomes) are provided in Figure 1.

Phospholipids are highly versatile materials offering both technical and physiological benefits for cosmetic formulations. They number among the body's own building blocks and are essential constituents of the human cell membrane. These compounds are therefore highly biocompatible and benign, and hence pre-destined for use in superior high-end skincare products. Owing to their amphiphilic nature and their ability to interact with human skin, phospholipids can serve as active ingredients for skin protection and skin rejuvenation, as carrier systems for cosmetic active ingredients, and as skin-friendly emulsifier systems.

Product features

LIPOID Liposome C Eco is a ready-to-use liquid concentrate of pre-formulated liposomes from soybean phospholipids (non-GMO) with encapsulated ascorbyl glucoside. The formulation is COSMOS-approved and free of preservatives. The ascorbyl glucoside content of the product is 10%, and the particle size of the liposomes is around 40–120 nm. LIPOID Liposome C Eco when stored in closed containers at 2-8 °C and protected from light, is chemically and physically stable for at least 15 months.

Clinical studies on the cosmetic effects of LIPOID Liposome C Eco

Clinical studies on the cosmetic effects of LIPOID Liposome C Eco on the skin of 20 female volunteers were performed regarding brightening of age spots (measured with a Chroma Meter) and skin firmness (measured with a Cutometer®).

Brightening of age spots

The objective of the open, randomized study was to examine the efficacy of LIPOID Liposome C Eco in brightening of age spots compared to placebo and initial conditions. A Chroma Meter was used to measure the brightening of the age spots and skin colour by means of light reflection. A brightening of the skin results in higher L* values.

After 28 days of treatment of age spots with a LIPOID Liposome C Eco containing hydrogel, the skin brightness increased significantly ($p<0.05$). Compared to the initial conditions. Moreover, the age spot brightening effect of LIPOID Liposome C Eco was significantly greater compared to the placebo ($p < 0.05$) after 56 days (Figure 2).

It can be concluded that the advantages of LIPOID Liposome C Eco as cosmetic ingredient were successfully demonstrated in this clinical study. Skin brightness measurement with a

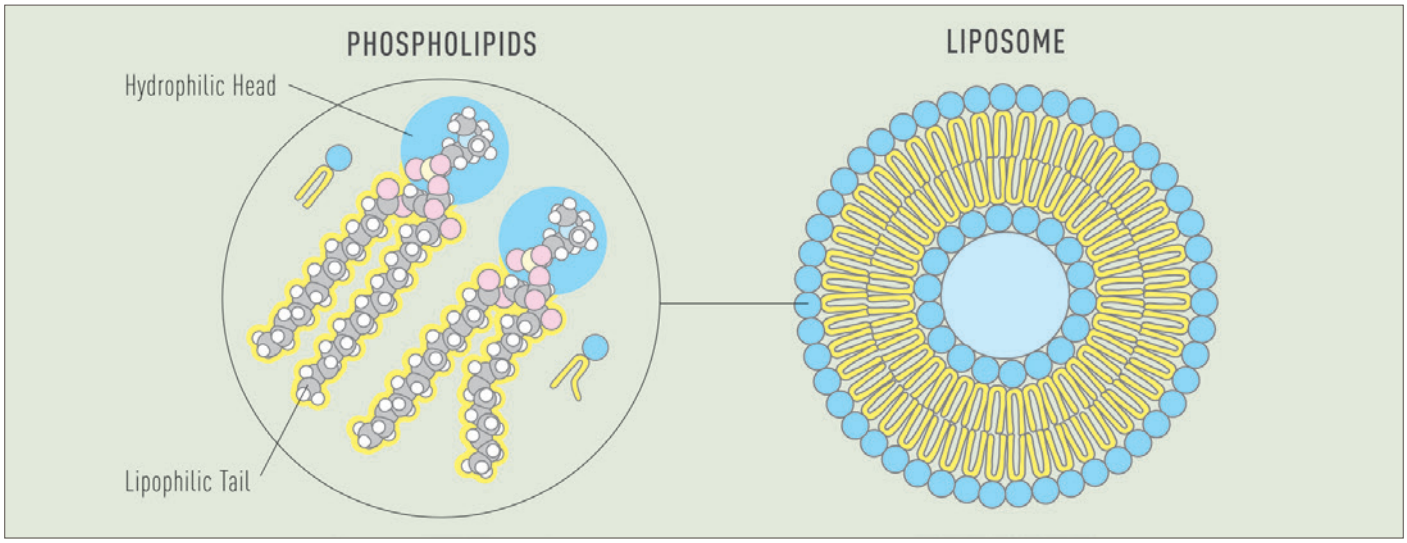

Figure 1: Schematic illustration of phospholipids and a liposome

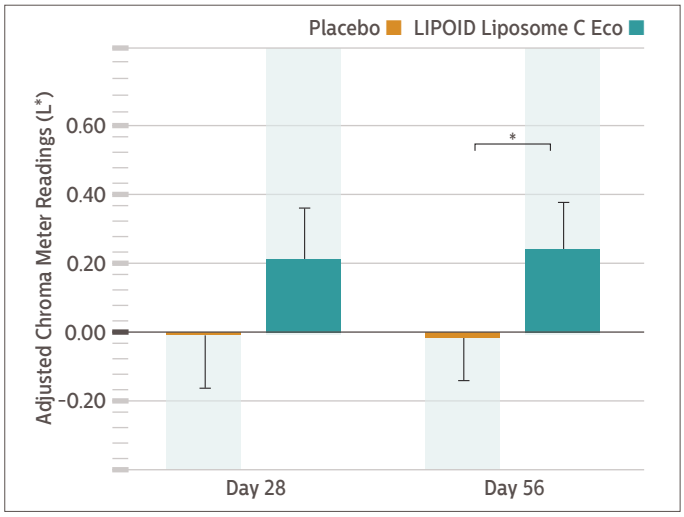

Figure 2: Net age spot brightening effect of a LIPOID Liposome C Eco containing hydrogel (verum) in comparison to placebo. N = 20, Mean + SEM; * = p < 0.05

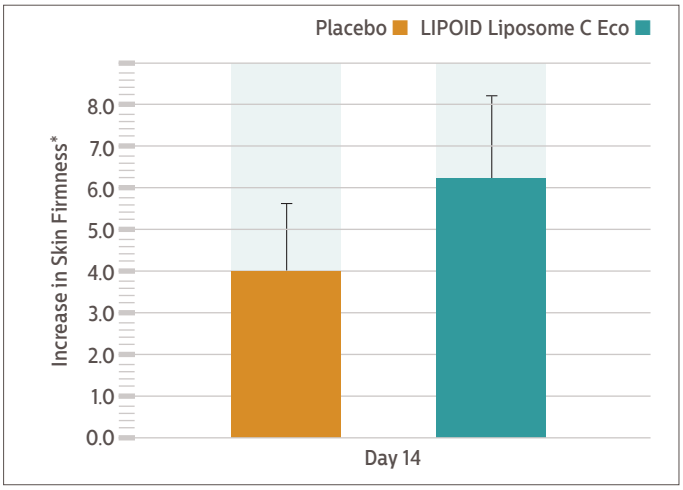

Figure 3: Relative increase of skin firmness after treatment with a LIPOID Liposome C Eco containing hydrogel (verum) compared to placebo. N = 20, Mean + SEM. * Mean increase in skin firmness relative to initial conditions and to untreated [%]

Chroma Meter showed a significant brightening effect on age spots.

Increase of skin firmness

The objective of the open, randomized study was to measure the effect of LIPOID Liposome C Eco on the biomechanical properties of the skin compared to untreated skin and placebo using a Cutometer®: The measurement principle of the Cutometer® is based on the suction method. Negative pressure is produced with a pump in the device and pulls the skin into the opening of the measuring probe. After the pressure is removed, the skin tries to return to its original state, and this process is recorded optically.

After 14 days of treatment with a LIPOID Liposome C Eco containing hydrogel, a statistically significant decrease ($p<0.05$) in Cutometer® readings was observed compared to untreated conditions, indicating an increase in skin firmness. This increase was substantially higher compared to the placebo formulation (Figure 3).

Formulation

Table 1 shows an example of a practical preparation of refine serum containing LIPOID Liposome C Eco as component of a refine serum and simultaneously using other phospholipids (LIPOID H 100-3 and LIPOID H 100) either as emulsifier or as active ingredient, respectively.

In general, LIPOID Liposome C Eco can be added easily to a formulation during the cooling phase. The recommended use level is 1–5 % in a pH range of 5–8. When using LIPOID Liposome C Eco only deionized water should be used.

Conclusion

The benefits of LIPOID Liposome C Eco as cosmetic ingredient were successfully demonstrated in clinical studies on the skin of female volunteers. Measurement with a Chroma Meter showed a clear brightening of age spots treated with LIPOID Liposome C Eco compared to a placebo, and measurement with a Cutometer® revealed an increase in skin firmness.

TABLE 1: FRAME FORMULATION: REFINE SERUM WITH LIPOID H 100-3, LIPOID H 100, LIPOID LIPOSOME C ECO AND HERBAGLOW® NRG

Phase	Ingredients	INCI	Supplier	% w/w
A	Deionized Water	Aqua (Water)		ad 100
	Solagum™ AX	Acacia Senegal Gum, Xanthan Gum	1	0.20
	Corn Starch	Zea Mays (Corn) Starch		2.00
	Glycerin 86.5 %	Glycerin, Aqua (Water)		5.00
	LIPOID H 100-3	**Hydrogenated Phosphatidylcholine**	**2**	**1.50**
	Cosphaderm® Dicapo natural	Caprylyl Glycol, Propanediol, Glyceryl Caprylate	3	0.70
	Cosphaderm® Pentiol	Pentylene Glycol	3	3.75
B	Behenyl Alcohol	Behenyl Alcohol		1.00
	Almond Oil	Prunus Amygdalus Dulcis (Sweet Almond) Oil		3.00
	Castor Oil	Ricinus Communis (Castor) Seed Oil		2.50
	MCT	Caprylic/Capric Triglyceride		3.00
	Baumwoll Soft Butter™	Gossypium Herbaceum (Cotton) Seed Oil, Hydrogenated Vegetable Oil, Tocopherol	4	1.50
	LIPOID H 100	**Phosphatidylcholine, Tocopherol**	**2**	**1.00**
	Covi-ox® T-90 EU C	Tocopherol	5	0.20
C	**LIPOID Liposome C Eco**	**Glycerin, Aqua (Water), Ascorbyl Glucoside, Lecithin, Sodium Hydroxide, Tocopherol**	**2**	**5.00**
	HerbaGlow® NRG	**Propanediol, Aqua (Water), Capparis Spinosa Bud Extract, Rhodiola Rosea Root Extract, Morus Nigra Leaf Extract**	**2**	**1.00**
	PÖ Luxury Cocoa Butter P0241528	Morus Nigra Leaf Extract		0.20
D	Sodium hydroxide	Sodium hydroxide		q.s.

Procedure: Mix components of A at 75°C. Mix components of B at 70°C. Add LIPOID H 100 and Covi-ox® T-90 EU C, stir until homogeneous. Add B to A and homogenize. Cool down while stirring C. Add C to AB. Adjust pH with D to 6.5 if necessary

Suppliers: 1. Seppic 2. Lipoid Kosmetik 3. Cosphatec 4. Greentech 5. BASF

Overall, LIPOID Liposome C Eco is the ideal brightening ingredient in anti-ageing products, due to an improved performance of Vitamin C co-formulated with liposomes which comprise unsaturated phospholipids able to condition the stratum corneum for obtaining optimal cosmetic effects. Since LIPOID Liposome C Eco can be easily combined with any formulation, LIPOID Liposome C Eco is a perfect component for advanced skin care products. PC

References

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Lipoid Kosmetik
Sennweidstrasse 44/46,
CH-6312 Steinhausen,
Switzerland
Tel:+41 (0) 41 748 33 33
Fax:+41 (0) 41 748 33 34
E-Mail: info@lipoid-kosmetik.com