L22: Botanically-Derived Skin Surface Lipid Mimetic

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Abstract

L22® (INCI: Jojoba Oil, Macadamia Seed Oil Esters, Squalene, Phytosteryl Macadamiate, Phytosterols) is a unique lipid complex, derived from botanical sources consisting of jojoba (Simmondsia chinensis), macadamia (Macadamia integrifolia), and olive (Olea europaea). This lipid complex was specifically designed to mimic the skin surface lipids found in a healthy 22-year-old. In order to determine the effectiveness of L22 in oil-in-water emulsions, multiple small, Investigational Review Board (IRB) approved, randomized, double-blinded, vehicle controlled clinical studies (12 to 15 subjects each) were carried out under controlled environmental conditions for skin hydration, firmness, and elasticity, as well as barrier function. The results showed that L22 provided short term skin hydration in normal, healthy skin; long term skin hydration and increased firmness and elasticity in aged, sun-damaged skin; and increased barrier recovery in skin that had been delipidized by using acetone. The skin hydration and barrier recovery produced by L22 were amplified when ceramides were present. These studies show that L22 possesses attributes that would be beneficial in many skin care treatment and maintenance products.

Skin Lipid Components

- Triglycerides
- Sterols
- Wax Esters
- Squalene
- Sterol Esters

For More Information...

For more information on L22 visit www.lipids22.com or scan the QR Code below.

References / Footnotes

2. Tewameter is a product of Courage + Khazaka Electronic GmbH, (Köln, Germany).
3. Corneometer is a product of Courage + Khazaka Electronic GmbH, (Köln, Germany).
4. Cutometer is a product of Courage + Khazaka Electronic GmbH, (Köln, Germany).

Objective: To determine if L22 improves the recovery of skin barrier function better than other common emollients with skin-lipid-like components.

Design: In two separate studies, subjects for each were exposed to acetone to partially extract the natural skin lipids. One application of each lotion test article was made (3 mg/cm²) to randomized locations on the forearms of fourteen (Figure 1) or fifteen subjects (Figure 2) male and female subjects.

End Point: Transepidermal water loss (TEWL) was measured using a Tewameter TM300 at baseline on normal, unmodified forearm skin, 30 minutes after acetone extraction, and 60 minutes after test article application. The percent barrier recovery (i.e., reduction in TEWL as compared to the same site after acetone treatment but prior to test article treatment) was then determined for each test article.

Increased Skin Hydration, Elasticity, and Firmness

Objective: To determine if L22 improves skin hydration, elasticity, and firmness in skin that is aged and sun-damaged skin.

Design: One application of each lotion test article was made (2.7 mg/cm²) to randomized locations on the legs of twelve female subjects.

End Point: Skin hydration (Figure 3) and skin elasticity / firmness (Figure 4) were measured using a Corneometer CM 825® and MPA Cutometer®, respectively, at baseline and after one week of twice-daily test article use. Percent change was determined for each parameter for each test article.

Increased Skin Hydration

Objective: To determine if L22 improves skin hydration better than other common emollients with skin-lipid-like components.

Design: One application of each lotion test article was made (2.5 mg/cm²) to randomized locations on the legs of twelve female subjects.

End Point: Skin hydration (Figure 5) was measured using a Corneometer CM 825 at baseline and four hours post test article application. Percent change in skin hydration was determined for each test article.

Conclusions

- L22 improves the recovery of skin barrier function more effectively than other skin-lipid-like emollients.
- L22 has enhanced skin barrier recovery effects when used in combination with Ceramides 1 or 2.
- L22 increases long and short-term skin hydration.
- L22 increases elasticity and firmness in aged and sun-damaged skin.
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