Gene Expression Testing of L22®

**What:** L22 [INCI: Jojoba Oil/Macadamia Seed Oil Esters (and) Squalene (and) Phytosteryl Macadamiate (and) Phytosterols (and) Tocopherol] is a patented, noncomedogenic, lipid complex exclusively from botanical sources designed to provide the same balanced skin-lipid profile of a healthy 22 year old.

**Purpose:** To understand how topical materials influence gene expression in the skin. The study was conducted on 3% L22 in a simple o/w emulsion using a full-thickness (epidermis + dermis) in vitro culture model (EFT-400, MatTek).

**Results:** 3% L22 delivers statistically significant change (i.e. down-regulation) in gene expression over the vehicle (without L22) for the following genes and associated biological functions in the skin:

### Decreased Collagen Degradation

- **MMP** suggests reduced degradation of extracellular matrix (e.g. collagen)

**Application to skin care:** MMP is a collagenase which breaks down collagen resulting in increased fine lines and wrinkles, and decreased skin elasticity. Down-regulation may help to reduce wrinkle-related signs of aging.

### Decreased Pigmentation / Increased Brightening

- **EDN1 / ICAM1** suggests decreased expression of genes which promote skin pigmentation, resulting in a potential brightening effect

**Application to skin care:** EDN1 reacts to UV by stimulating the production of melanin. This results in increased pigmentation, including age spots.

### Reduced Inflammatory Response

- **CXCL8/IL8 / IL10 / IL1B / PTGS2 / TLR2** suggests reduced inflammation and barrier disruption

**Application to skin care:** Inflammation and barrier disruption triggers up-regulation of these genes (which are categorized as cytokines). A decrease in cytokines can indicate a reduction in inflammation and barrier disruption.

Visit www.lipids22.com for more information about L22.

1. Gene-expression testing of L22 was conducted by Genemarkers, LLC (Kalamazoo, MI). Final report available upon request.

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