

Ceramide TIC-001

Skin Barrier Maintenance and Repair



PRODUCT: Ceramide TIC-001

EINECS #: 309-560-3

INCI NAME: Ceramide NG

CAS #: 100403-19-8, 2304-80-5

Ceramide TIC-001 is a sphingolipid identical to a lipid found in the skin. Manufactured by Takasago's proprietary asymmetric catalysis technology, **Ceramide TIC-001** is more than 95% optically pure, nature identical, in contrast to other commercially available ceramides that are mixtures of optical isomers. Ceramides play a key role in the establishment of the stratum corneum barrier function for water evaporation and management of outside insults. The barrier enhancement properties are key in the treatment of dry, flaky skin, especially due to aging. Major lipid constituents of the intercellular lamellar sheets, ceramides account for approximately 50% of the stratum corneum lipids by weight. It is incorporated into topically applied formulations to treat dry and mature skin, and to restore skin barrier properties. **Ceramide TIC-001** is the only ceramide that can be metabolized.

Because optical activity is necessary for enzymatic recognition, optically active nature-identical **Ceramide TIC-001** will be recognized and metabolized by skin enzymes and will provide fast and efficient improvement in stratum corneum barrier properties.

Studies have shown that nature identical **Ceramide TIC-001** significantly reduces TEWL and helps retain moisture content in the stratum corneum. When the skin was exposed to sodium dodecylsulfate insult, nature identical **Ceramide TIC-001** was shown to assist in restoring the skin barrier property by reducing the TEWL to normal levels. When tested on menopausal and postmenopausal women, **Ceramide TIC-001** improved barrier properties by reducing TEWL and irritation, both when applied to intact skin and after tape strip insult.

KEY BENEFITS:

- Skin barrier repair
- Nature identical
- Reduces transepidermal water loss (TEWL)
- Helps improve dry, flaky skin especially when due to aging

IDEAL FOR USE:

- Creams & lotions
- Hair care
- Sun care
- Eye creams
- Post-exfoliation creams

 **TAKASAGO**

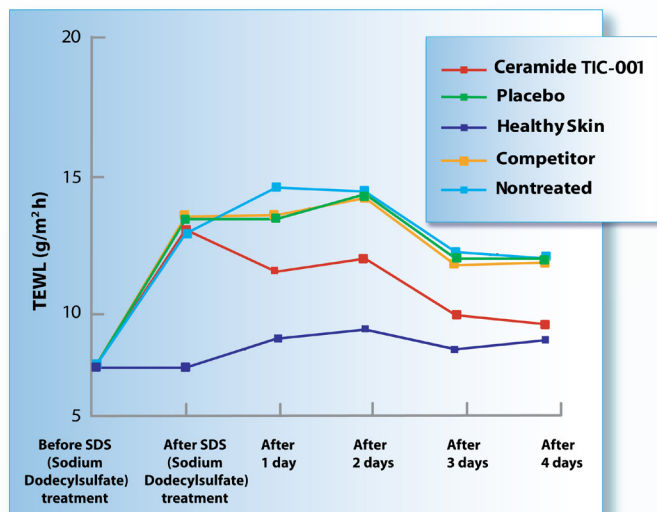
 **Vantage**

ACTIVE INGREDIENTS

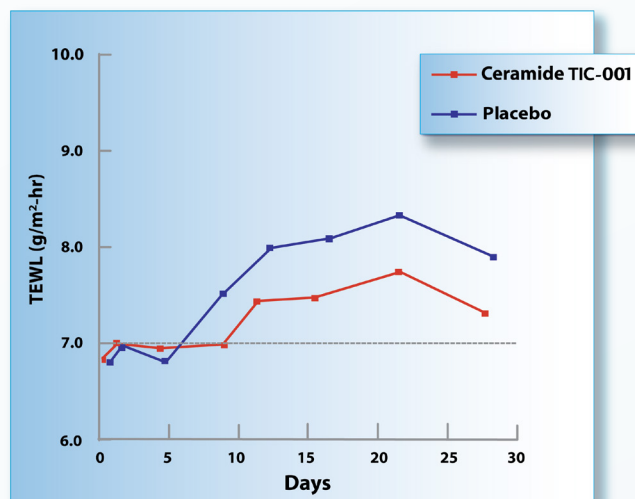
www.vantagegrp.com

STUDY CONDUCTED ON NORMAL YOUNG SKIN

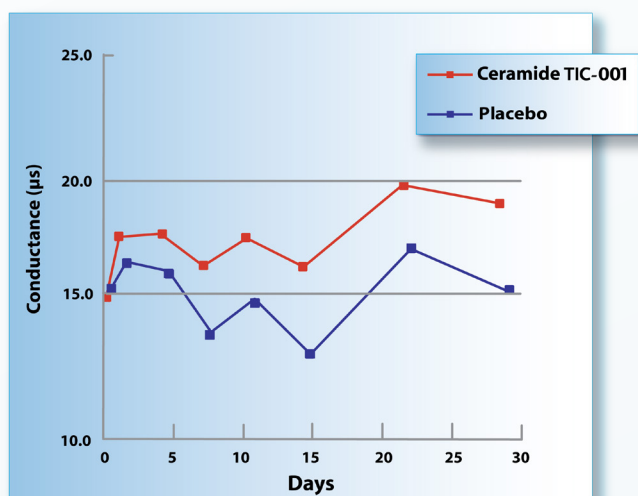
Measurement of Transepidermal Water Loss



Change in TEWL Effect of Ceramide TIC-001 for Daily Skin Care



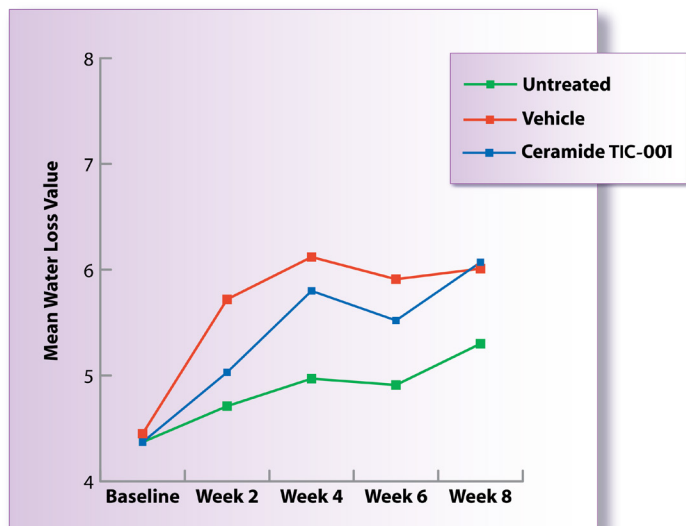
Change in Moisture Content in Stratum Corneum Effects of Ceramide TIC-001 for Daily Skin Care



Ceramide TIC-001 was shown to restore TEWL after SDS insult and 4 days of treatment. It was also shown to elevate skin moisture content measured by conductivity.

EFFECTS OF CERAMIDE TIC-001 ON SKIN BARRIER PROPERTIES IN MENOPAUSAL WOMEN

Changes in TEWL Following the Application of Ceramide TIC-001



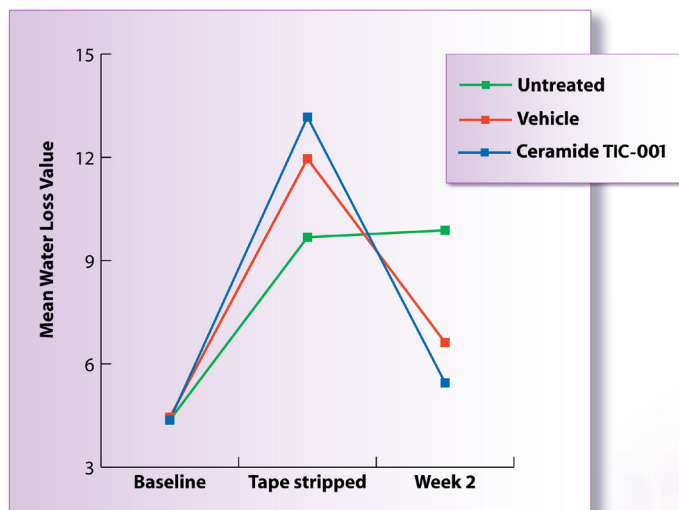
A study conducted on menopausal women showed significant improvement in skin barrier properties when applying **Ceramide TIC-001**.

The study was randomized, double blind and vehicle controlled. It demonstrated the effect of 0.5% **Ceramide TIC-001** in a vehicle when applied twice daily for 8 weeks. Results show an improvement in TEWL, better restoration of barrier function after tape strip insult and elevation of skin conductivity.

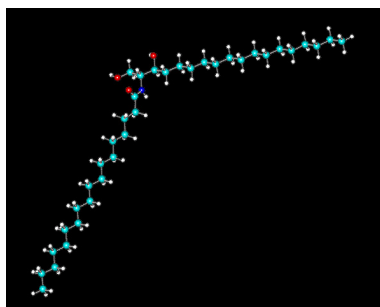
Ceramide TIC-001 controlled and decreased the elevation in TEWL generated by the vehicle, which is also a skin permeation enhancer.

Although the baseline after tape stripping before **Ceramide TIC-001** application was higher than the control, after 2 weeks of twice daily application, it showed a higher reduction in TEWL.

Changes in TEWL After Tape Stripping and Treatment



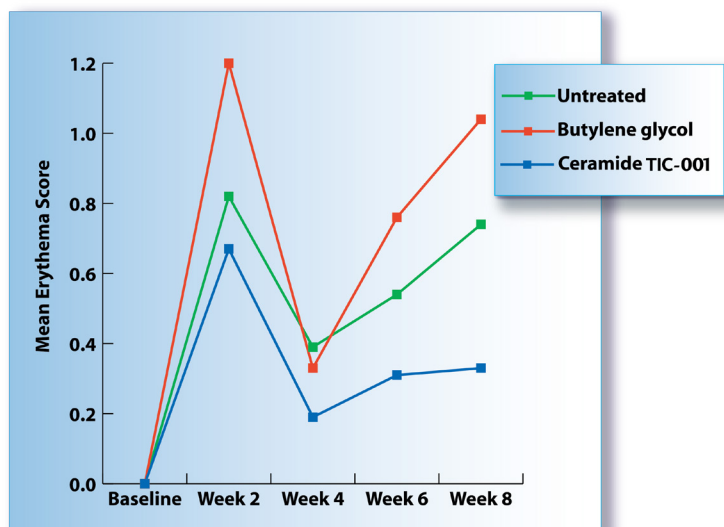
CERAMIDE TIC-001



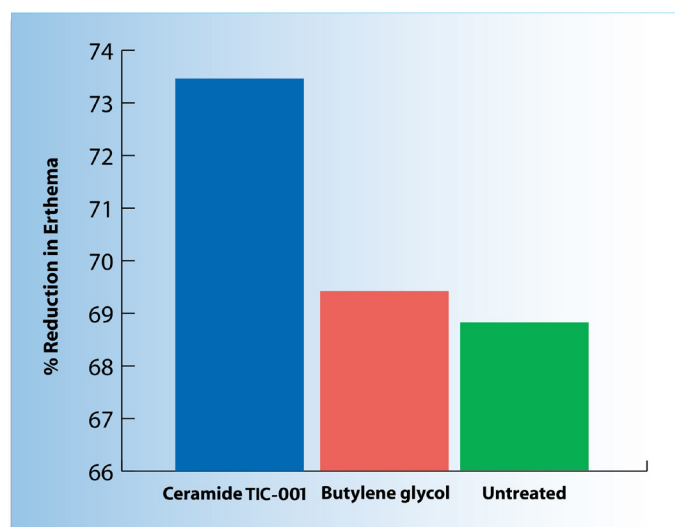
TYPICAL PROPERTIES OF CERAMINE TIC-001

Appearance	White powder
Odor	Almost odorless
Optical Purity(HPLC)	>95%
Assay [(2S, 3R)-Ceramide TIC-001] (HPLC)	>90%
Melting Point	110°C
Recommended Use Level	0.01 - 0.2%

EFFECTS OF CERAMIDE TIC-001 ON SKIN BARRIER PROPERTIES IN MENOPAUSAL WOMEN



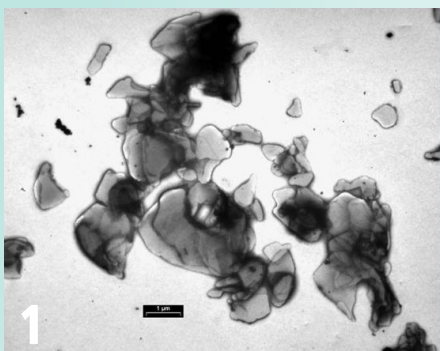
Throughout the entire duration of the study, **Ceramide TIC-001** produced significant reduction in erythema levels both in comparison to the control and the untreated sites.



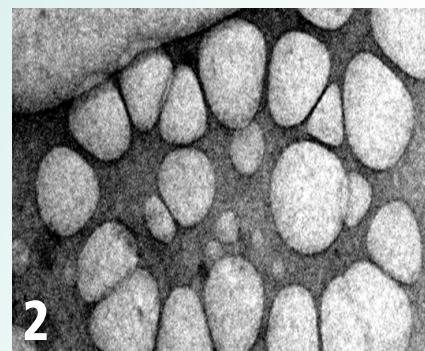
Ceramide TIC-001 also produced reduction in skin erythema after two weeks of treatment, post tape stripping.

CHOOSING THE RIGHT VEHICLE TO ALLOW SOLUBILIZATION AND SKIN PENETRATION:

Transmission electron microscopy:
wrong vehicle- crystals (1),
right vehicle – round lamellar structures (2)



Pentylene Glycol



Butylene Glycol

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