

Synergistic effect by combination of different Ceramides

# IACTIVE CERAMIDE

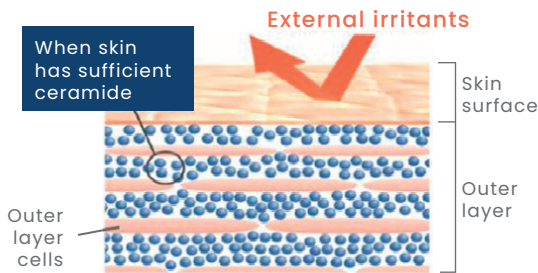
## Ceramides

The sphingolipid backbone ceramide is the major lipid species in the stratum corneum and plays a pivotal function in skin permeability barrier formation.

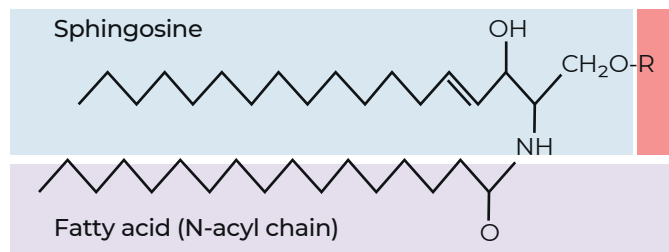


### Skin Barrier

**Prevents** evaporation of water located between each corneous cell.  
**Keeps moisture** of skin and protect from external stimulus.



### Ceramide structure and types



Substituent (R)	Sphingolipid
H	Ceramides
Phosphocholine	Sphingomyelins
Sugar (s)	Glycosphingolipids
- Single sugar (glucose or galactose)	- Cerebrosides
- Lactose (Disaccharide)	-Lactosylceramides
-Oligosaccharide	-Gangliosides
- Sugar + sulfate	-Sulfatides



### Powerful Moisturizing Factor

**Important** for maintaining moisture of skin as it is one of the main.  
**50%** of Intercellular are ceramides.



Combination of Sphingosine and fatty acid

Sphingoid \ Fatty acid	Fatty acid	Non-hydroxy fatty acid [N]	α-Hydroxy fatty acid [A]	Esterified ω-Hydroxy fatty acid [EO]
Dihydrosphingosine [DS]		CER[NDS]	CER[ADS]	Unidentified
Sphingosine [S]		CER[NS]	CER[AS]	CER[EOS]
6-Hydroxy sphingosine [H]		CER[NH]	CER[AH]	CER[EOH]
Phytosphingosine [P]		CER[NP]	CER[AP]	CER[EOP]

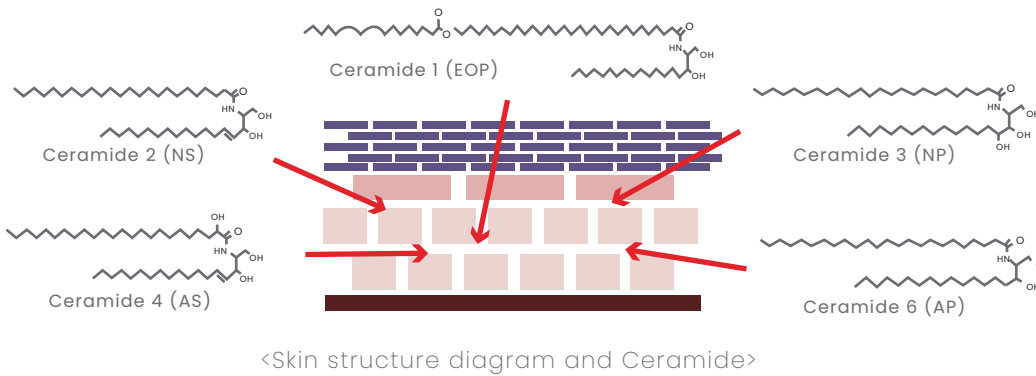
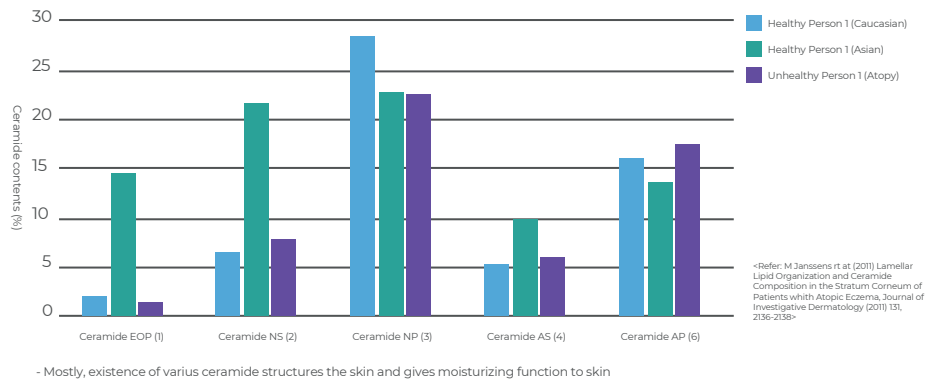
J Ishikawa et al.Changes in the Ceramide Profile of Atopic Dermatitis Patients Journal of Investigative Dermatology (2010) 130, 2511–251



## Ceramide types and functions on the skin

Altered composition of ceramides is regarded as a major cause of skin barrier dysfunction

Analysis of different kind of Ceramide components in real skin



Our skin contains various kinds of Ceramide.

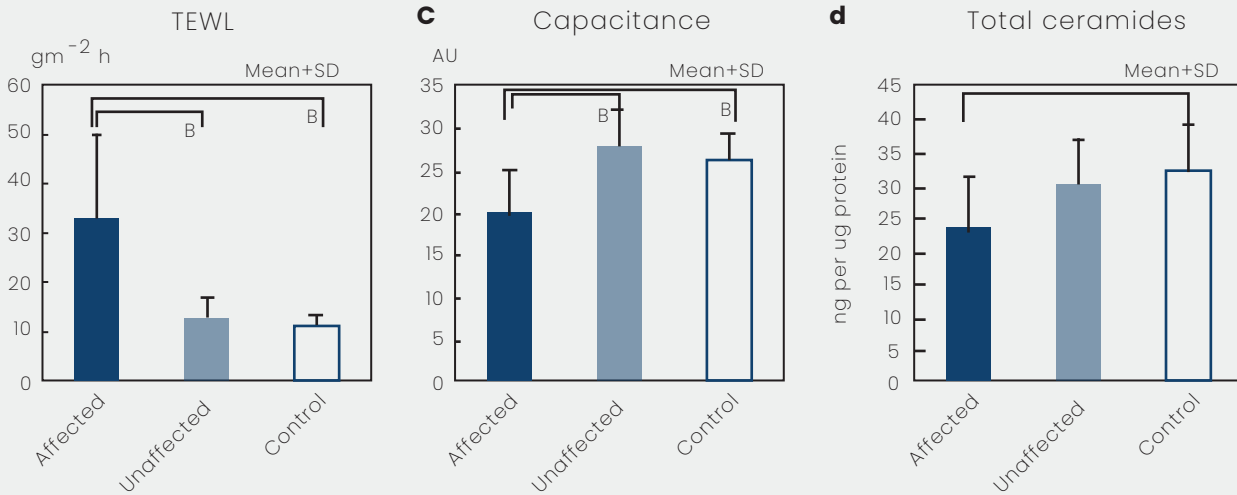
Each Ceramide has different functions and makes cooperative effect.

Gives powerful moisturizing benefit for synergy effect from various Ceramide and increases bio-availability of Ceramide NP by more than 45%.



## Skin Barrier disruption

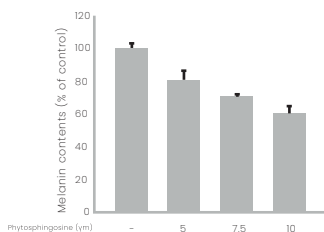
The values of TEWL and pH measured in lesional (or affected) and non-lesional (unaffected) skin in AD patients were significantly higher as compared to healthy skin.



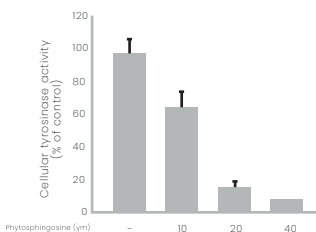


## Pigmentation

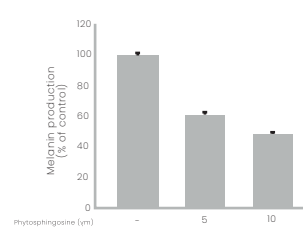
Effect of ceramides on melanin biosynthesis and tyrosinase activities.



Determination of melanin in melan-a-ells were treated with the indicated concentrations of phytosphingosine for 72



Effect of phytosphingosine on tyrosinase activity in melan-a cells.



Melanin biosynthesis in a reconstructed UVB-induced human skin model.

E.J. Jang et al. / Anti-melanogenic activity of phytosphingosine via the modulation of the microphthalmia-associated transcription factor signaling pathway Journal of Dermatological Science 87 (2017) 19-28



## TECHNICAL DATA

### 1. PRODUCT INFORMATION

Ceramides applied for iActive Ceramide		
INCI Name	Function	Content
Ceramide EOP (Ceramide 1)	- Makes skin barrier. - Prevents oxidation of skin. - Prevents atopy.	Sphingolipids (Ceramides) Total: <b>45%</b>
Ceramide NS (Ceramide 2)	- Increase of skin moisture absorption and maintenance	
Ceramide NP (Ceramide 3)	- Structures phospholipid components and Multilamelar and increases the osmosis moisturizing effect. - Prevents atopy	
Ceramide AS (Ceramide 4)	- Prevents atopy. - Strengthen skin cell membrane.	
Ceramide AP (Ceramide 6)	- Restore and maintain skin barrier. - Vitalize moisture between cells.	
Cholesterol	Important component of skin cell membrane.	

### 2. FORMULATIONS ADVICES

Appearance	Powder
Color	Yellowish
Ceramide content	Min. 41%
Melting Point	Max. 30%



### Application

#### Function

Anti-pigmentation, moisturization, skin barrier, sensitive skin, microbioma, anti-aging.

#### Type

Skin toner, serum, gel, Lotion, cream

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