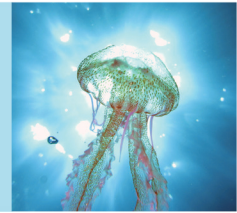


SHIELD PRO

Skin Shield against Environmental Stresses



Jellyfish : a rich source of natural glycosaminoglycans

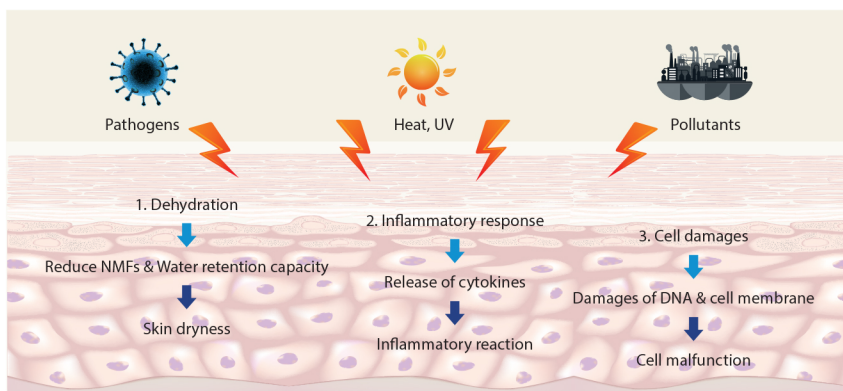
The mucin is served to maintain the hydration and to provide lubrication and anti-adhesive properties between the cells. A qniumucin has been isolated from jellyfish and its structure has been characterized (Masuda et al., 2007). **Qniumucin is similar to human mucin, MUC5AC.** MUC5AC is one of the major contributors to the rheological properties of the mucus that has a critical role in the defense against pathogenic and environmental challenges. This marine mucin from jellyfish **exhibits three times more moisturizing and hygroscopic activity than hyaluronic acid** (Ushida et al., 2008). Furthermore, chemical and biophysical properties of this marine mucin can lead the way of utilization and application of this compound as a protective biomaterial with lubrication and moisturizing effects.

Benefits of Mucin

1. Mucins protect cells against infection by microorganisms.
2. Mucins protect cells against dehydration.
3. Mucins protect cells against physical or chemical injury.

Environmental Stresses and Skin Dysfunction

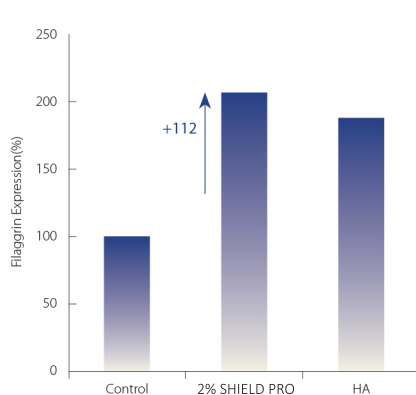
1. Environmental stresses decrease the water holding capacity of epidermis and result in dry skin.
2. Environmental stresses promote the aging of the cell by cellular inflammatory.
3. Environmental stresses induce the production of free radicals and DNA damages.



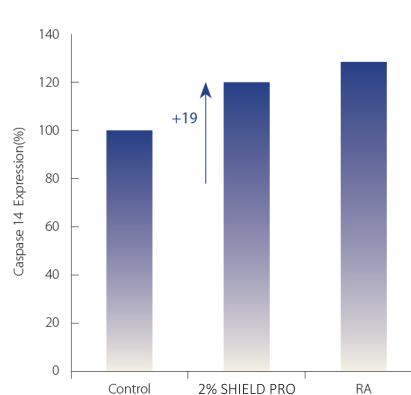
SHIELD PRO protects the skin from environmental stresses.

1. SHIELD PRO restores the NMFs and binding proteins of keratinocytes, and increases the moisturizing activity.
2. SHIELD PRO protects the epidermal cells from aging by reducing the inflammatory reaction.
3. SHIELD PRO reduces the cellular damage induced from environmental stresses and increases the cell viability.

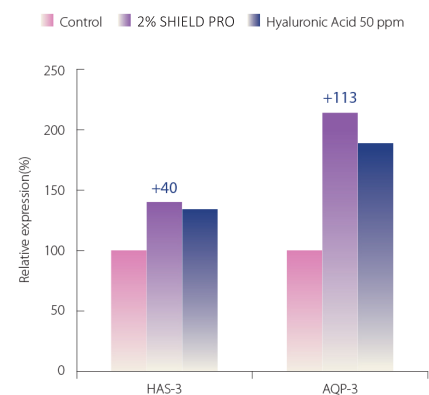
IN-VITRO : Moisturizing Effect



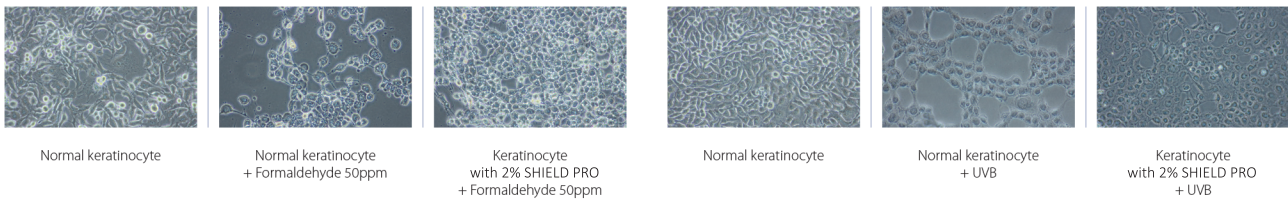
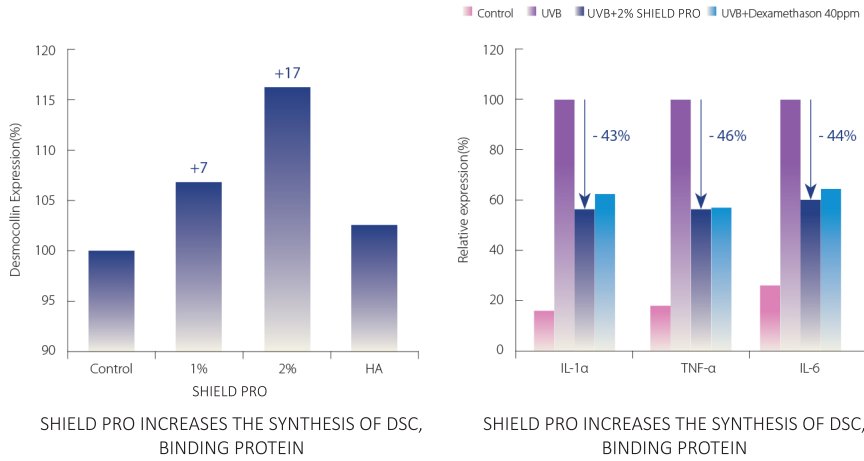
SHIELD PRO STIMULATES THE SYNTHESIS OF FILAGGRIN



SHIELD PRO STIMULATES THE EXPRESSION OF CASPASE 14



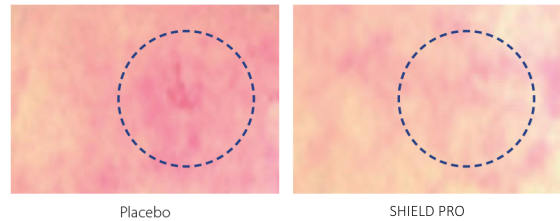
SHIELD PRO INCREASES THE EXPRESSION OF HAS-3 & AQP-3



IN-VIVO : Skin Protection Effect

SHIELD PRO PROTECTS THE SKIN FROM IRRITATION

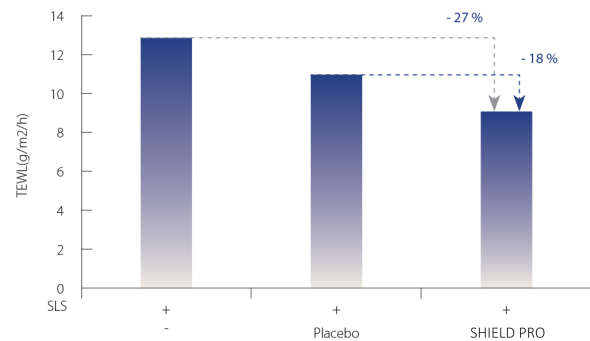
Method : Apply 1% SLS solution with 2% SHIELD PRO emulsion vs Placebo during 12 hours, and evaluate skin irritation with Antera 3D (Miravex Limited)



SHIELD PRO effectively protects the skin against SLS Irritation. Its reduces the redening intensity

SHIELD PRO REDUCES THE TEWL OF SKIN

Method : Apply 1% SLS solution with 2% SHIELD PRO emulsion vs Placebo during 12 hours, and evaluate TEWL with Cortex Technology



SHIELD PRO reduces the TEWL on skin -27% vs Non-treatment and -18% vs Placebo

Cosmetic activities	<ul style="list-style-type: none"> • Enhancement of the NMF via Filaggrin • Stimulation of Hyaluronic acid synthesis • Anti-inflammatory effect 	<ul style="list-style-type: none"> • Stimulation of HAS-3 & AQP-3 expression • Reinforcement of the Epidermal cohesion • Protecting effect against Cell damage
INCI name	SHIELD PRO Water (and) Butylene Glycol (and) Phenoxyethanol (and) Ethylhexylglycerin (and) Glycosaminoglycans SHIELD PRO (HD) Water (and) Butylene Glycol (and) 1,2-Hexanediol (and) Glycosaminoglycans	
Recommended % of use	SHIELD PRO 2% SHIELD PRO(HD) 2%	