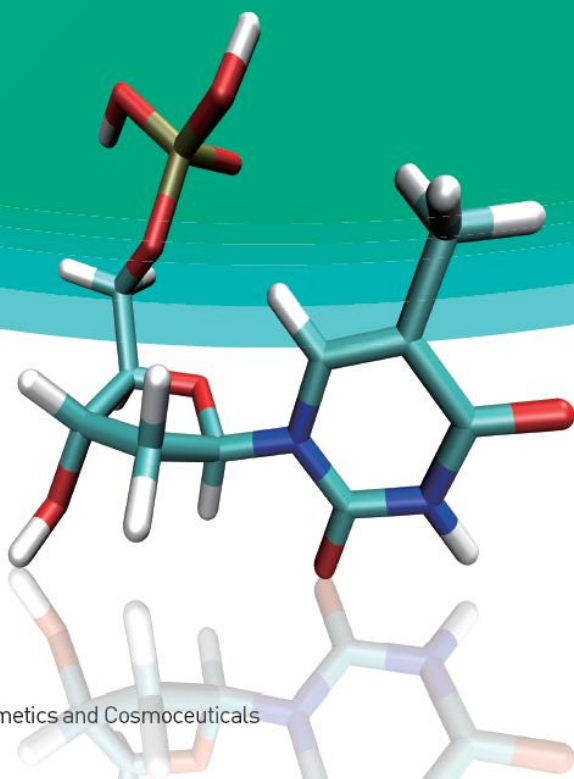


Peptides as Cosmetic Ingredient



Provides Functional Cosmetic Ingredients for High Value Cosmetics and Cosmeceuticals

<http://www.cosmo-bio.com>

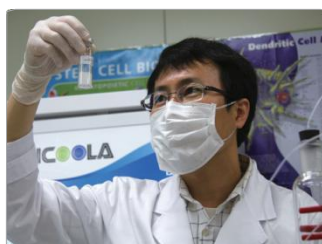
<http://www.biofdnc.com>

전남 화순군 화순읍 내평리 121번지(산단길 12-55번지) 전남생물의약품연구센터 내 (주)바이오에프디앤씨 김수정 연구개발이사
Tel: 82-61-373-8381 Fax: 82-61-373-8382 e-mail: sjkim@biofdnc.com homepage: www.cosmo-bio.com

BIO-FD&C Peptides List

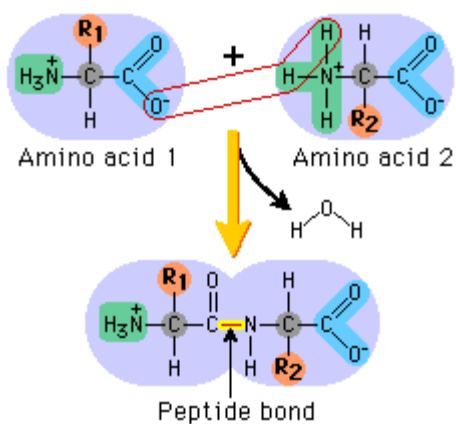
Anti-aging Peptide	Anti-wrinkle peptide	Whitening peptide	Anti-hair loss & hair growing peptide
BF-Dynorphin	Elastin essential peptide	Cyclitol	Anagen
BF-Enkephalin	Elastin anti-wrinkle peptide	ElaX-MV	Elanoren
Epiderm-X	Healix	Gallovac	Elastin scalp peptide
Heal-VB7	Keratin essential peptide	Melabet	Elastin hair peptide
Neuropeptide-1	Lipovax	Purosol	HG-Thymopentin
Neoendorphin	Prospin	Redovax	HG-Phyto-Thymopentin
Polyol	Skinup-US	Respep	Innogrowin
Rejuccell-US	Silk essential peptide	Sonitin	Keratin essential peptide
Retinovax	Sinpep	Symvastin	Keratin scalp peptide
VH-Cellup	Wrinkle-X	Whitening peptide	Phyto-thymosin beta 4

Anti-inflammatory & Anti-oxidant peptide	Anti-microbial and skin protecting peptide	Anti-acne peptide	Anti-atopic dermatitis peptide
Antiox-VH	Anti-Microbial Peptide-Aurein	Acnobet	Phyto-NEP
Qtant		Acnoheal	
Ursolin		Acnoin	
Phytopeptide-1		Hairen	
Therapep			
Vitamin peptide			

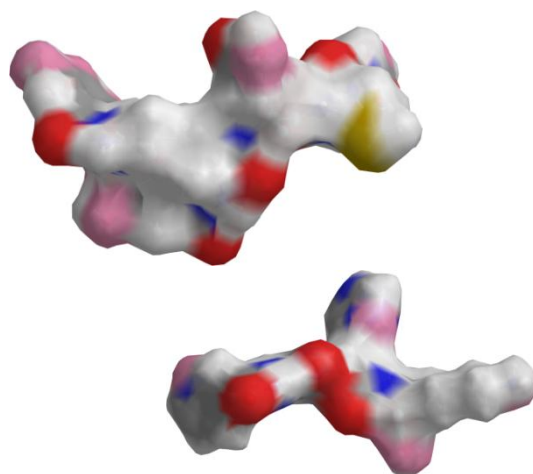


What is Peptides ?

Peptides are short polymer formed from the linking, in a defined order, of α -amino acid. The link between one amino acid residue and the next is known as an amide bond or a peptide bond.



Peptide bond



Molecular structure of BIO-FD&C biomimetic peptide

BIO-FD&C Cosmetic Biomimetic Peptides ?

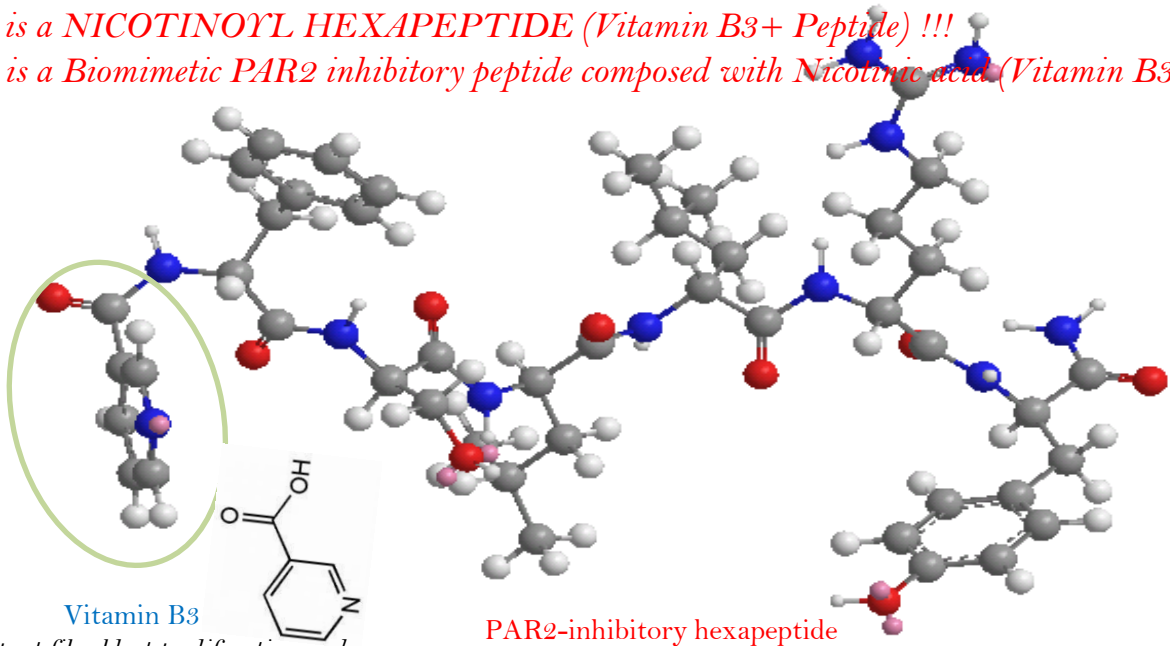
- *highly active biological materials can bind cellular receptors*
- *physically stable in cosmetic chemical conditions*
- *very small to effectively penetrate skin barrier and transdermal layers*
- *highly safe based on amino acid composition*

● General Information

Trade Name	Prospin™
INCI Name	Nicotinoyl Hexapeptide-44
Molecular Characteristics	Vitamin B3 (Niacin) conjugated with PAR-2 inhibitory hexapeptide
Product Type	Pure Peptide Powder or Liposome Encapsulated Solution
Cosmetic Function	Strong anti-aging, tissue and DNA repair in skin aging, anti-inflammatory in UVB-induced aging
Biological Function	Stimulation of NAD synthesis, collagen & ECM synthesis, inflammation blocking
Recommended Dosage	~ 25 ppm

● Introduction on Prospin

is a NICOTINOYL HEXAPEPTIDE (Vitamin B3+ Peptide) !!!
is a Biomimetic PAR2 inhibitory peptide composed with Nicotinic acid (Vitamin B3) !!!



Vitamin B3

To support fibroblast proliferation and healthy skin tissue

PAR2-inhibitory hexapeptide

To prevent exogenous inflammation and its related extrinsic aging process

Nicotinoic Acid (Niacin & Vitamin B3)

So, Why Niacin ?

Definition

Niacin is a type of B vitamin. It is water-soluble, which means it is not stored in the body. Water-soluble vitamins dissolve in water. Leftover amounts of the vitamin leave the body through the urine. That means you need a continuous supply of such vitamins in your diet.

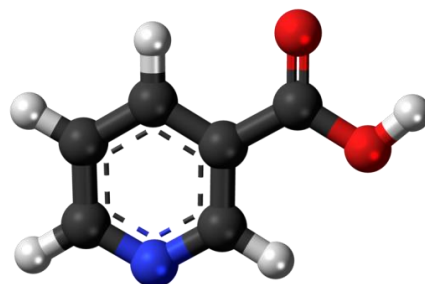
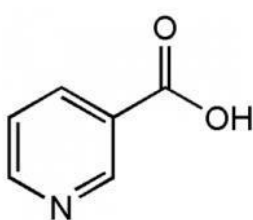
Alternative Names

Nicotinic acid; Vitamin B3

Function

Niacin helps the digestive system,
healthy skin, healthy hair,
and nerves to function.

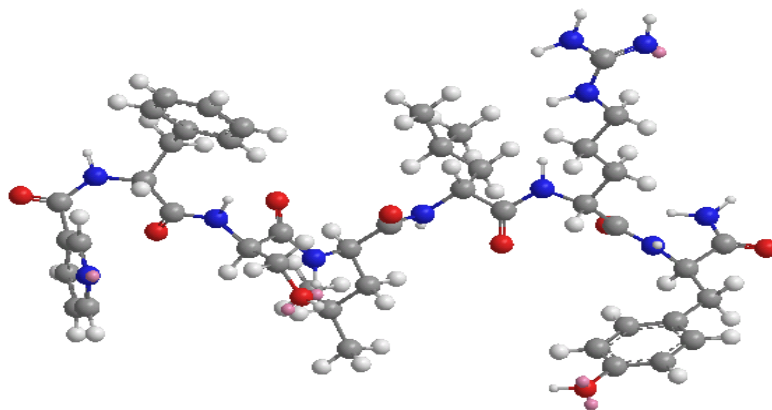
It is also important for converting food to energy.



Food Sources

Niacin (also known as vitamin B3) is found in: Dairy products , Eggs , Enriched breads and cereals , Fish , Lean meats , Legumes , Nuts, Poultry

Now, Prostin™ supports biological active and
safe biomimic NIACIN (Vitamin B3) !!!



Niacin (Vitamin B3) conjugated with PAR2-inhibitory hexapeptide

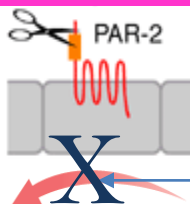
Inflammatory stimuli (such as UV irradiation)



Trypsin, tryptase, FVIIa, Fxa, other proteases



PAR-2 activation



cellular
inflammatory
signaling
induced
extrinsic aging
phenomena



Total Solution, PROSPIN against Exogenous (Extrinsic) Aging in Skin !!!

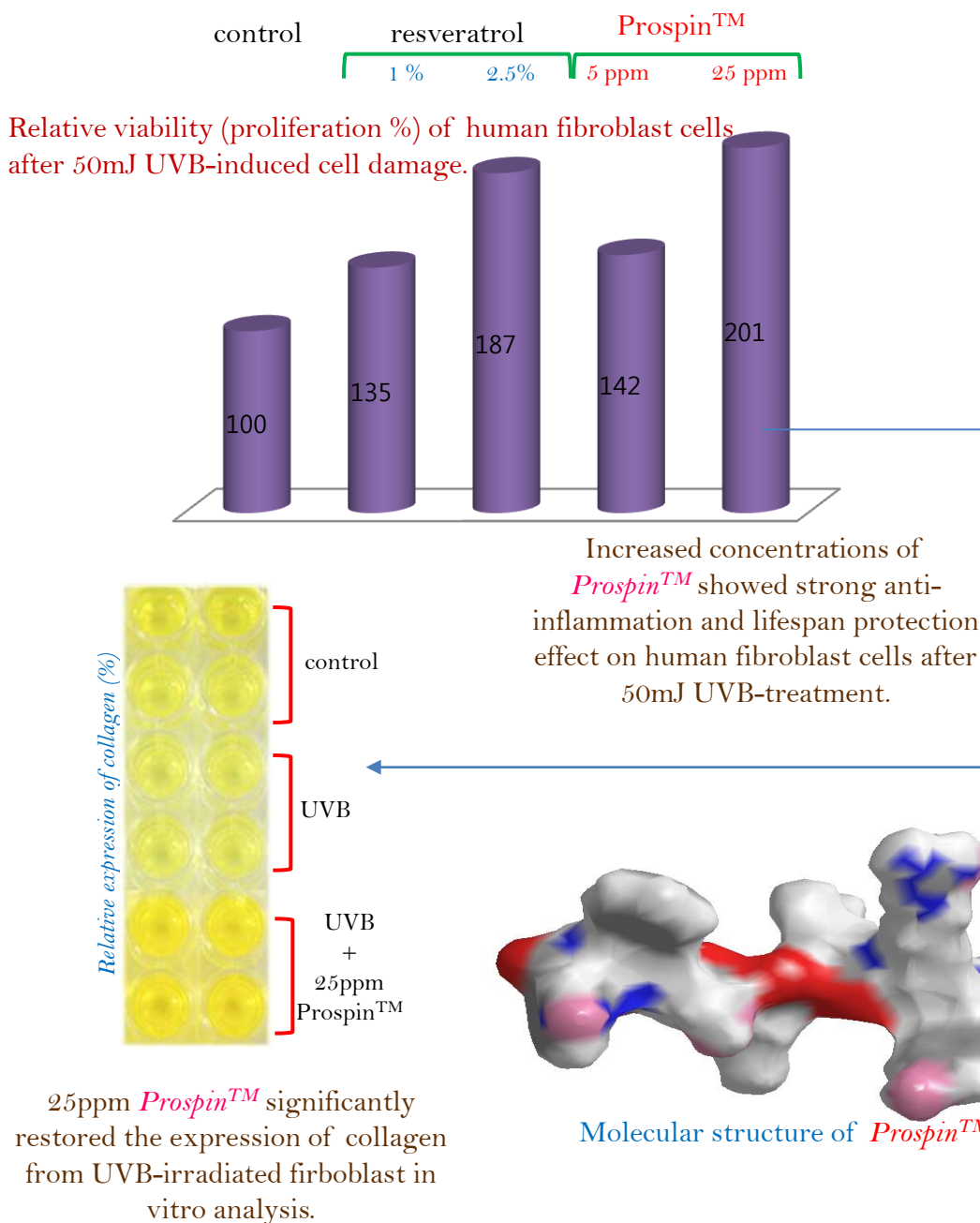
Biological Mechanism

*Bio-mimic PAR2 inhibitory hexapeptide in PROSPIN block inflammatory aging in human skin !
Such as UV-INDUCED AGING !*

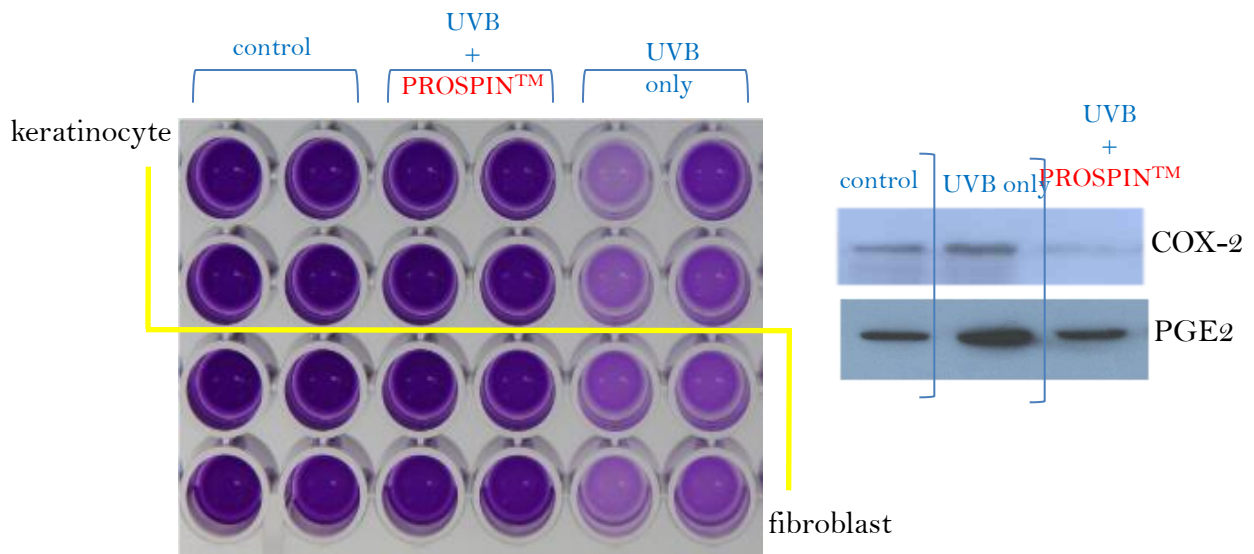
Skin aging is a complex phenomenon induced by endogenous (chronological) and exogenous (extrinsic) factors. Chronological aging is a genetically programmed, unavoidable process, while extrinsic influences (e.g., sunlight, wind, heat, cigarette smoke, or exposure to chemicals) could be at least partially controlled by the individual. Among the extrinsic factors, ultraviolet (UV) irradiation (sunlight, tanning beds) is the single most important cause of skin aging. UV exposure leads to numerous changes in the skin, including epidermal and dermal thinning, a decline in collagen production and in the functionality of the dermal elastic network, and an uneven distribution of pigment deposition, all resulting in an aged-skin phenotype.

● Experimental Data

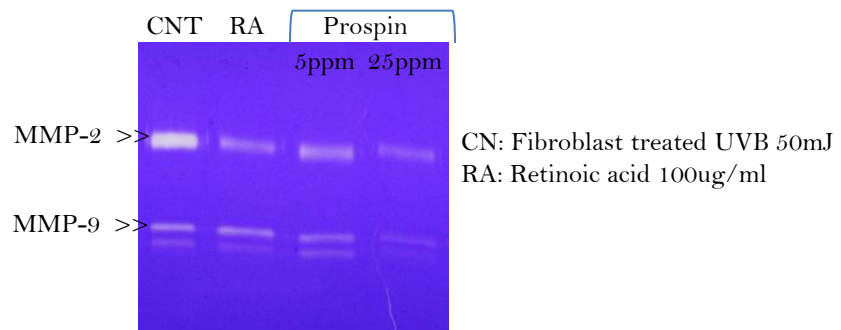
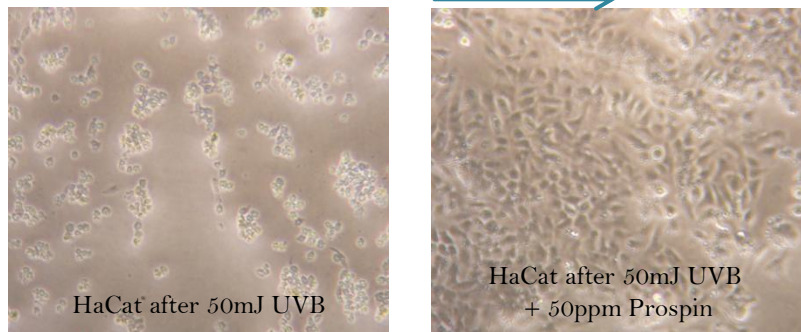
Treatment 25ppm *PROSPIN*TM showed similar protective effect on 50mJ UVB-irradiated fibroblast survival with 2.5% resveratrol !



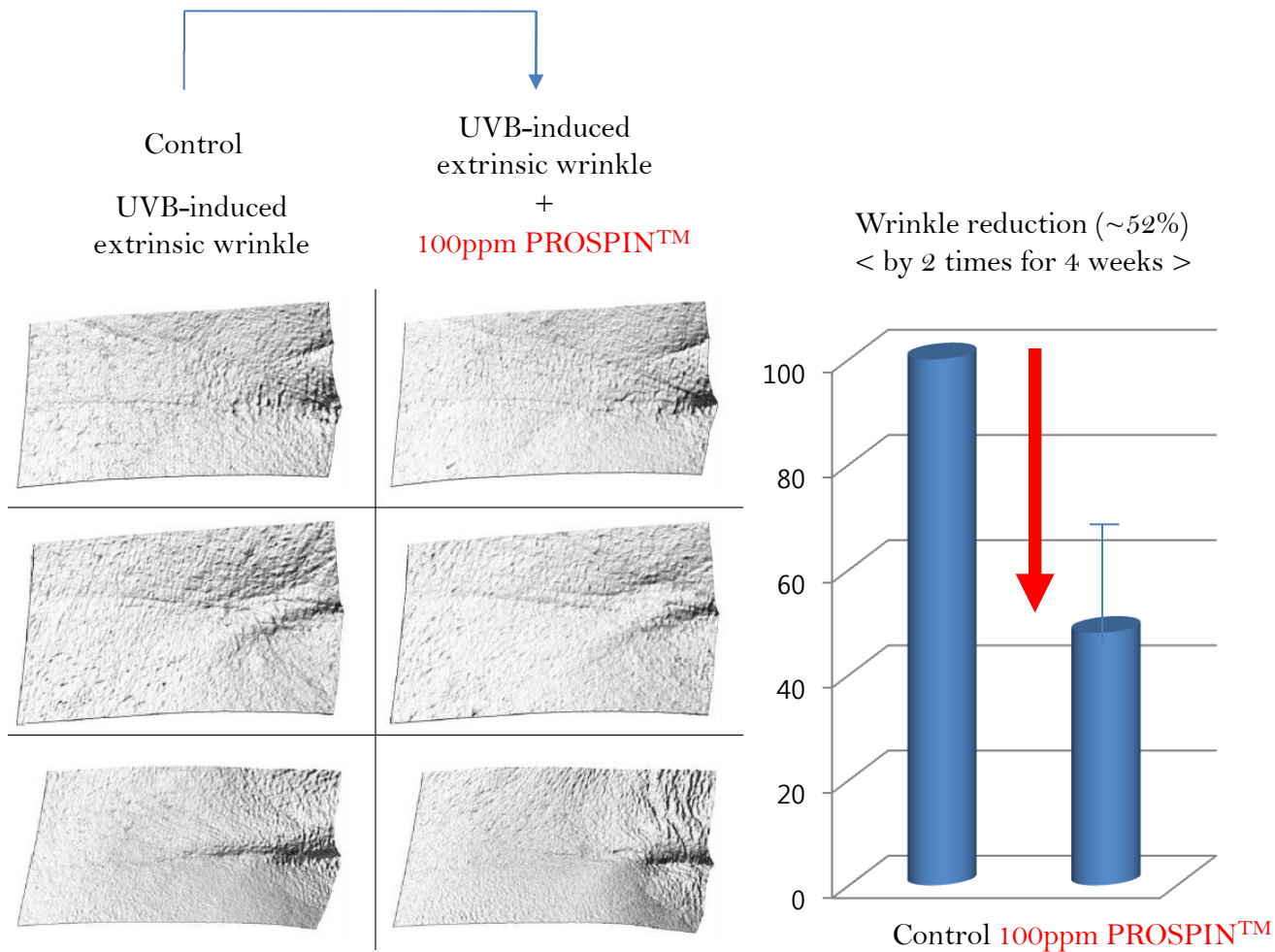
1. *PROSPIN* enhance proliferation of epidermal cell growth under inflammatory stimuli.
2. *PROSPIN* protect exogenous stresses by anti-oxidant and anti-inflammation activities.
3. *PROSPIN* help to keep healthy and young epidermal cells from aging-related biological stimuli.



Treatment 25ppm *Prospin™* significantly restored UVB-induced cellular damage in keratinocyte and fibroblast (left). The expression of inflammatory COX-2 and PGE2 were significantly reduced by treatment of PAR-2 inhibitory 25ppm *Prospin™*.



Treatment 5 and 25ppm *Prospin™* significantly reduced UVB-induced extrinsic wrinkle formation by MMP-2 and MMP-9 reduction from fibroblast.



Treatment 100ppm Prospin™ significantly reduced UVB-induced extrinsic wrinkle formation on face skin of human (2 times/day, 4 weeks).

PROSPIN against Exogenous (Extrinsic) Aging in Skin !!!

Biological Mechanism

Bio-mimic PAR2 inhibitory hexapeptide in PROSPIN block inflammatory aging in human skin !

*Protect your Healthy Skin from UV, Stress,
and Contamination by **PROSPIN** !!!*

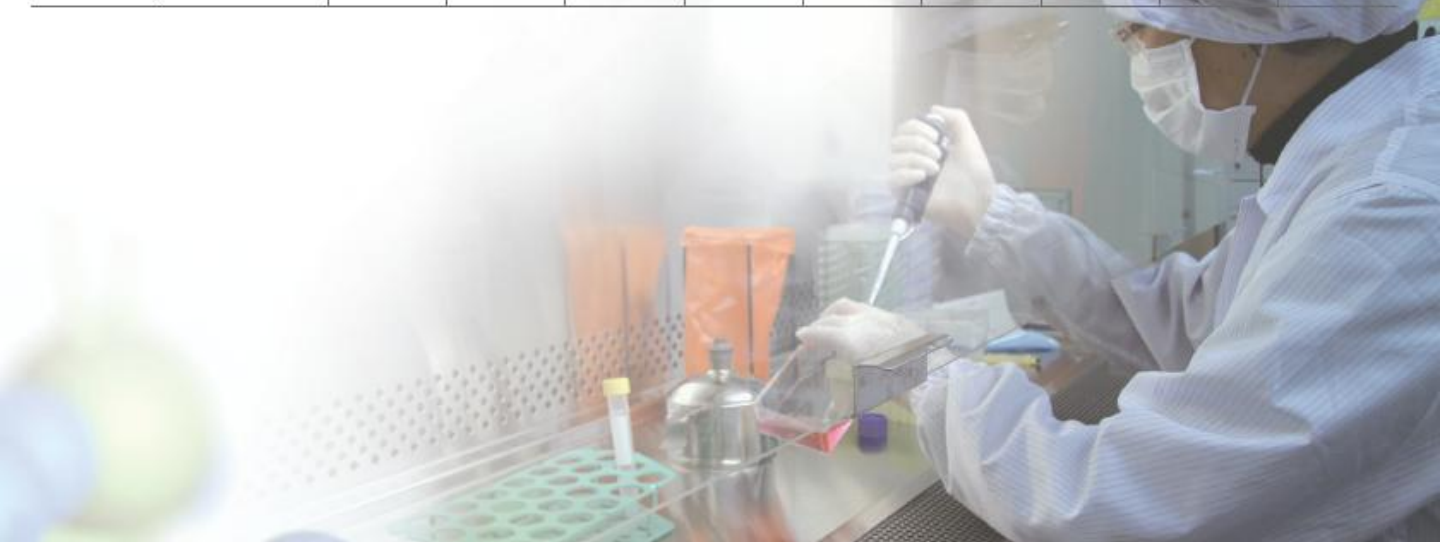
Do you need more peptide ?

BIO-FD&C Peptides Selection Guide

Biomimetic Peptides	Anti-aging	Anti-wrinkle	Whitening	Anti-hair loss & hair growing	Anti-inflammation	Anti-oxidant	Anti-microbial	Anti-acne	Anti-atopy
BF-Dynorphin	★★★	★★		★★					
BF-Enkephalin	★★★	★★		★★					
Epiderm-X	★★★	★★	★	★	★	★★			
Heal-VB7	★★★	★★	★	★★	★	★			
Neuropeptide-1	★★★	★★		★★					
Neoendorphin	★★★	★★		★★					
Polyol	★★★	★	★★		★	★			★
Rejucell-US	★★★	★	★		★	★			
Retinovax	★★★	★★		★	★★	★			
VH-Cellup	★★★	★	★★	★★	★	★		★	
Elastin essential peptide	★★	★★★		★★					
Elastin anti-wrinkle peptide	★★	★★★		★					
Healix	★	★★★	★	★	★★	★★			
Keratin essential peptide	★★	★★★		★★					
Lipovax	★	★★★		★★	★★	★★		★	
Prospin	★★	★★★	★★		★	★			
Skinup-US	★★	★★★	★		★	★		★	★
Silk essential peptide	★★	★★★		★★					
Sinpep	★	★★★		★			★★		
Wrinkle-X	★★	★★★			★	★	★		
Cyclitol	★		★★★		★★	★★		★	★
ElaX-MV		★	★★★		★		★		
Gallowax	★		★★★		★★	★★		★	★
Melabet	★★	★	★★★		★★				
Purosol		★	★★★	★	★	★			
Redovax		★	★★★	★	★★	★★		★	
Respe	★		★★★		★★	★			
Sonitin	★	★	★★★		★	★			
Symvastin		★	★★★		★★	★★		★	★
Whitening peptide	★		★★★						

Peptides Selection Guide

Biomimetic Peptides	Anti-aging	Anti-wrinkle	Whitening	Anti-hair loss & hair growing	Anti-inflammation	Anti-oxidant	Anti-microbial	Anti-acne	Anti-atopy
Anagen	★	★	★★	★★★★					
Elanoren	★	★	★★	★★★★			★★	★	★
Elastin scalp peptide	★	★		★★★★					
Elastin hair peptide	★	★		★★★★					
HG-Thymopentin		★	★	★★★★					
HG-Phyto-Thymopentin		★	★	★★★★	★	★	★		
Innogrowin		★		★★★★	★				
Keratin essential peptide	★	★★		★★★★					
Keratin scalp peptide	★	★	★	★★★★					
Phyto-thymosin beta 4		★	★	★★★★	★	★			
Antiox-VH	★				★★★★	★★★★			
Qtant	★	★	★		★★★★	★★★★		★	
Ursolin		★★	★		★★★★	★★★★		★	
Phytopeptide-1		★★	★		★★★★	★★★★			★
Therapep		★★	★		★★★★	★★★★			★
Vitamin peptide		★★	★★		★★★★	★★★★			
Anti-Microbial Peptide-Aurein							★★★★	★★	★★
Acnobet							★★	★★★★	★
Acnoheal							★★	★★★★	★
Acnoin							★★	★★★★	★
Hairen	★	★					★★	★★★★	★★
Phyto-NEP		★★		★★★★	★★	★★		★★	★★★★



Provides Functional Cosmetic Ingredients for
High Value Cosmetics and Cosmeceuticals



BIO-FD&C

*Innovative Leader
in Cosmeceutical Ingredient*

Phytopeptides
*from BIO-FD&C revolutionizes anti-aging
and skin cell rejuvenating!*

***BIO-FD&C Co., Ltd.,
We are your innovative partner for
your most valuable cosmetics!***

Phytopeptides are the latest innovations from BIO-FD&C skin research. Phytopeptides are bio-active ingredients obtained cutting-edge technologies improving efficacy, solubility, and stability of functional peptides by conjugating with various plant-originated phytochemicals possessing high anti-oxidant and anti-inflammation activities.



BIO-FD&C
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