

# Retinoic Acid-Like Peptide DermaPep™ A350

## DermaPep™ A350

### Myristoyl Tripeptide-31, Retinoic Acid-Like Multi-Functional Peptide

### Product Information

#### 1. Anti-aging, Anti-wrinkle Efficacy

- Inhibition of MMP-1 gene transcription and translation
- Induction of procollagen I protein production
- Anti-aging effect *in vivo*

#### 2. Whitening Efficacy

- Inhibition of melanin synthesis
- Inhibition of tyrosinase activity
- Inhibition of melanogenic genes expression
- Skin-lightening effect *in vivo*

#### 3. Anti-inflammatory Efficacy

- Inhibition of pro-inflammatory cytokines

#### Need for New substitute of Retinoic acid

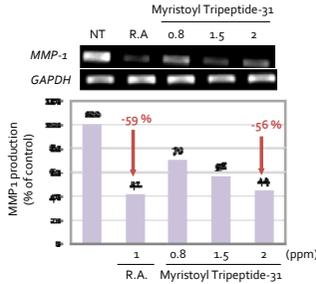
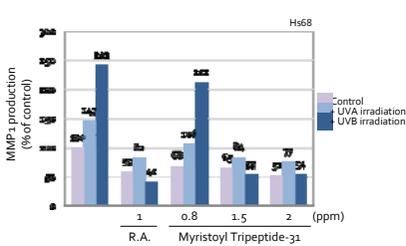
- Adverse effects of retinoic acid : Retinoic dermatitis (erythema, scaling, xerosis, pruritus)
- Derivatives of retinoic acid : Retinol, Retinyl palmitate, Retinyl acetate, Retinaldehyde
- Problems of usage : Reactivity (Light sensitivity) Low efficacy Persistence tendency Skin irritation

Appearance	Transparent solution
INCI/CTFA declaration	Myristoyl Tripeptide-31, Butylene Glycol
Active ingredient content	0.02 % Myristoyl Tripeptide-31
Purity	95 % up
Preservative	None
Applications	Anti-aging, wrinkle and face lifting treatment products such as gels, serums, lotion, creams
Recommended use dosage	2~4 %

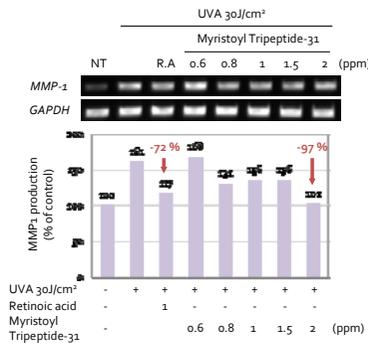
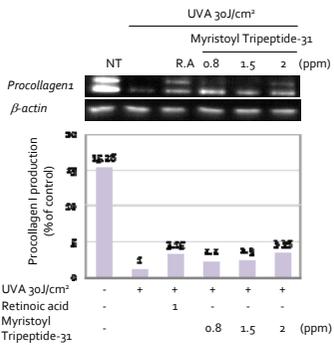
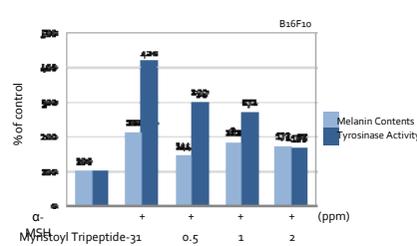
## In Vitro Efficacy

- Hs68 human fibroblasts, B16F10 mouse melanoma and HaCaT human keratinocytes .
- Myristoyl tripeptide-31 (0.5~1 ppm), Retinoic acid (R.A.)(1 ppm) and  $\alpha$ -MSH (1 ppm) treated for 48 h.
- Western blot, ELISA, RT-PCR, melanin contents assay and tyrosinase activity assay were performed.

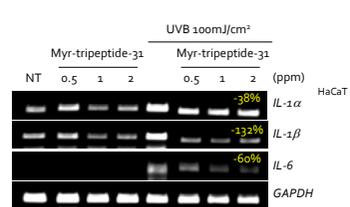
### Anti-wrinkle effect



### Whitening effect



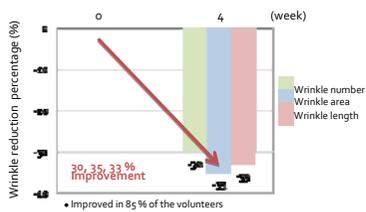
### Anti-inflammatory effect



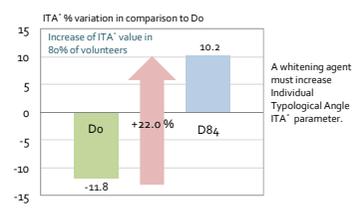
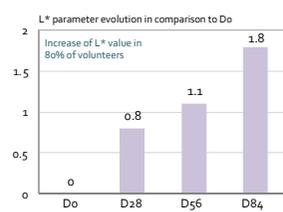
## In Vivo Efficacy

- The clinical test was performed on 30 Asian female volunteers (Bangkok), aged 35 to 60.
- 2% formula containing DermaPep™ A350 has been applied twice daily during 12 weeks on the crow's feet area.
- Evaluation was performed by replica analysis (evaluation of the anti-wrinkle effect), chromameter and digital photography.

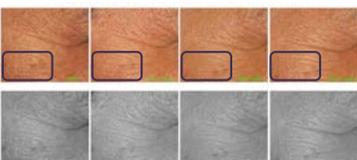
### Anti-wrinkle effect



### Lightening effect of skin tone



### Illustrative picture



Code F00667	2% DERMAPEP™ A350			
	To	T+4 weeks	T+8 weeks	T+12 weeks
Number of wrinkles	38	16	2	3
Total wrinkle area (mm²)	11.11	2.77	0.46	1.04
Total wrinkle length (mm)	47.16	15.17	2.13	3.75

Illustrative pictures of one of the volunteers showed that DermaPep™ A350 was very effective in reducing wrinkles and mottled hyperpigmentation.