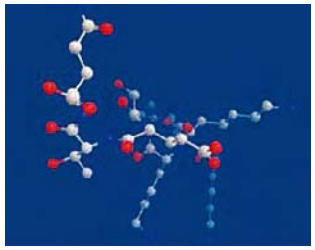
CG-Prohairin-β4

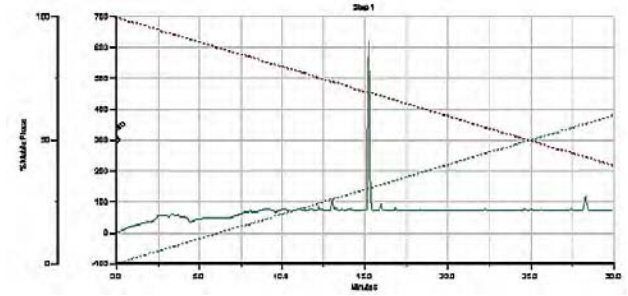
1 Hair Growth

INCI Name	Effect	Application
Octapeptide-2	Hair Growth / Anti-Aging / Anti-Wrinkle	Hair Care / Skin Care / Body Care



Structure of CG-Prohairin-β4

Verified through HPLC



HPLC analysis

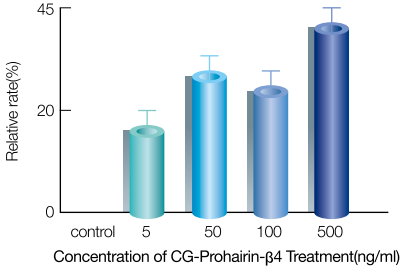
Function

- Increase cell growth and migration.
- Promote hair growth by activating the stem cells of hair follicle.
- More stable and prolong action than native proteins.

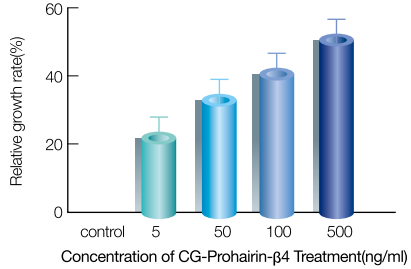
Trade Name	CG-Prohairin-β4
Source	Chemical synthesis
Appearance	White Milky Solution
Purity	>90% (HPLC)
Amino Acid	8 a.a
Molecular Weight	1,017.2 Da
pH	7.0±1.00
Shape	Double-layered Encapsulation
Preservative	Phenoxyethanol 0.2%
Recommended Dose	10ppm ~ 25ppm
Concentration	500ppm

A Cell Proliferation with Keratinocyte and Fibroblast cells

Keratinocyte cell line

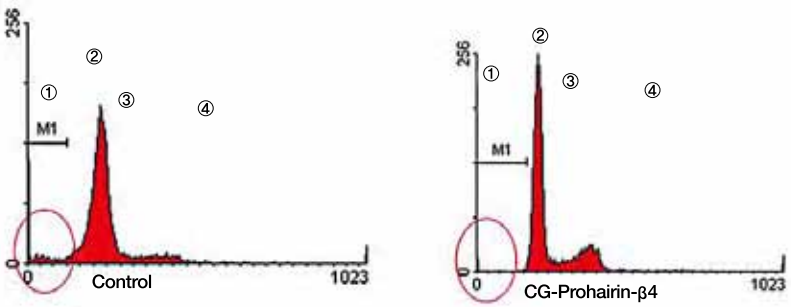


Fibroblast cell line



The enhancement of fibroblast cell and keratinocyte cell proliferation by CG-prohairin-β4 was quantified by OD590nm. The peptide increased fibroblast cell and keratinocyte cell proliferation in a dose dependant manner.

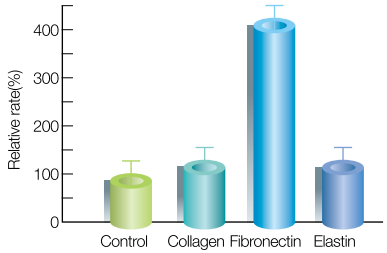
B Anti-Apoptosis Analysis by FACS



① pro G1 Phase ② G1 Phase ③ S Phase ④ G2 Phase

CG-Prohairin-β4 treated HacaT showed decreased apoptotic ProG1 phase (2.82%) compared to control (7.1%). Data was generated using FACS.

C Regulation of Extracellular Matrix

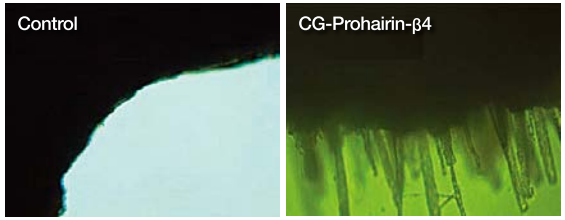


relative rate (%)	control	CG-Prohairin-β4
collagen	100	138
fibronectin	100	184
elastin	100	120

Treatment Concentration
CG-Prohairin-β4 :1ug/ml

CG-Prohairin-β4 showed positive regulation of collagen and elastin ,fibronectin expression.
Increased expression of collagen (1.4 folds), fibronectin (1.8 folds) and elastin (1.2 fold) were observed with CG-Prohairin-β4 in fibroblast cell.
Expression level was measured with ELISA kit.

D Mouse Hair-growth Test



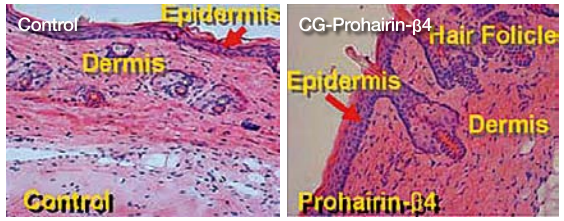
The microscopic image (X100) of mouse skin culture in serum free media for 5days.

Control serum free medium culture
CG-Prohairin-β4 10ug/ml of CG-Prohairin β4 in the condition of serum free culture.

E Mouse Hair-growth Test

Removing the hair of the doral skin of mouse, we treated PBS in control and treated CG-Prohairin β4 for 15 days and observed the hair growth period. It was observed CG-Prohairin-β4 treated mouse saw faster growth in hair compared to control.

F Skin Histology Study of CG-Prohairin-β4



The microscope image (X200) of mouse skin section of histochemical staining (H&E staining) for histology after 7days treatment of CG-Prohairin-β4 (10ppm) containing cream.

Control control cream treatment
CG-Prohairin-β4 cream treatment

CG-Prohairin-β4 treated skin showed increased epidermal thickness with 7days treatment.