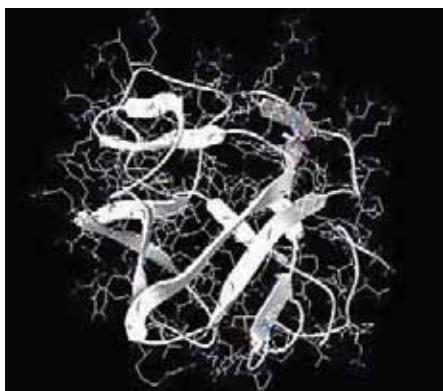


CG-bFGF

(basic Fibroblast Growth Factor)

INCI Name	Effect	Application
sh-Polypeptide-1	Anti-aging / Anti-wrinkle / Hair Growth	Skin Care / Hair Care / Body Care

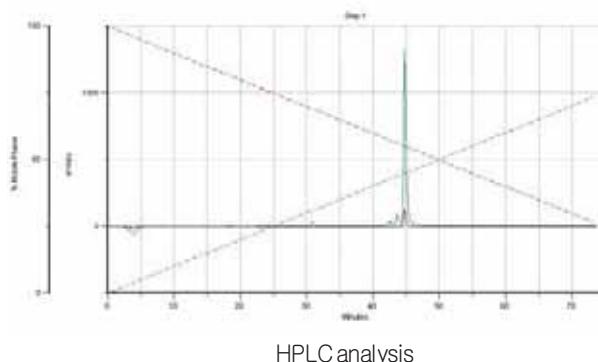


Tertiary structure of bFGF

Function

- Reduce and prevent lines and wrinkles by actively generating new skin cells.
- Involve in normal skin growth, healing and wound repair.
- Strengthen skin elasticity by inducing the synthesis of collagen and elastin.
- Help blood circulation in the scalp and revitalizing hair follicles.

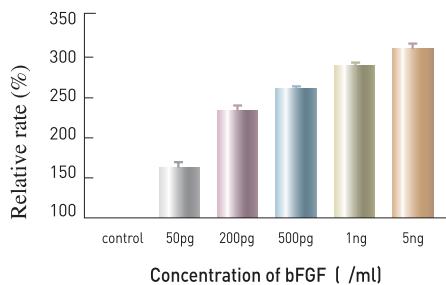
Verified through HPLC and SDS-PAGE



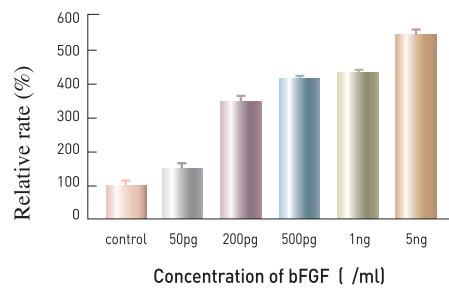
Trade Name	CG-bFGF
Source	<i>E.coli</i>
Appearance	White Milky Solution
Purity	>95± 1% (SDS-PAGE)
Amino Acid	155a.a
Molecular Weight	17.3 kDa
pH	6.5± 1.00
Shape	Nanosome
Preservative	Phenoxyethanol 0.2%
Recommended Dose	0.5ppm ~ 5ppm
Concentration	10ppm

1. CG-bFGF & Anti-aging

a CG-bFGF Modulates the Skin Rejuvenating by Stimulation of Cell Proliferation

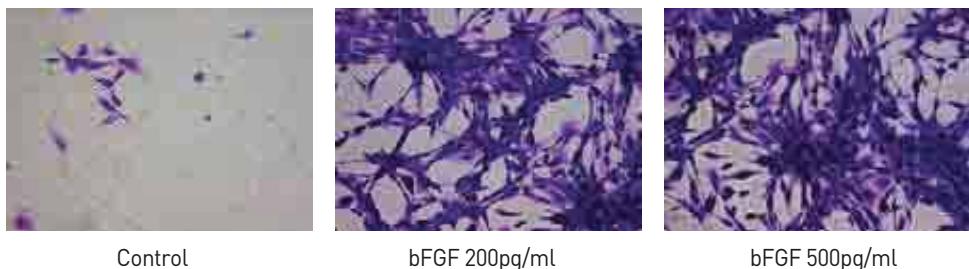


Cell growth assay with HacaT keratinocyte cell line after CG-bFGF treatment for 72hrs. (ED50 is around 50pg/ml)



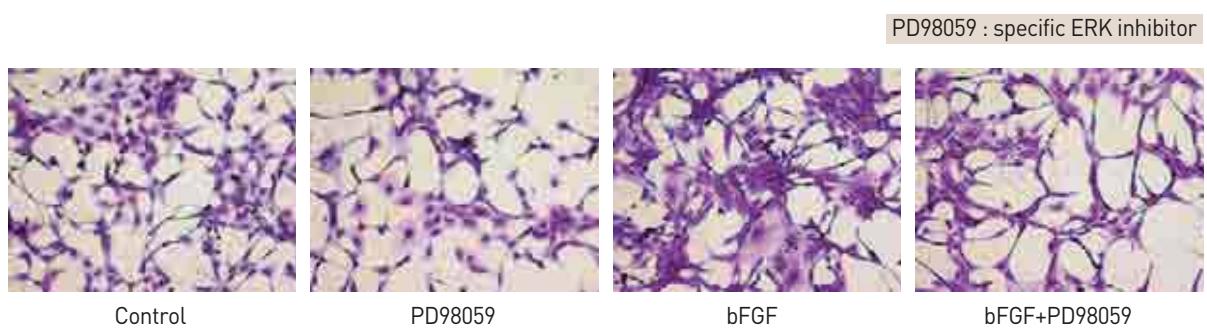
Cell growth assay with fibroblast cell line after CG-bFGF treatment for 72hrs. (ED50 is around 50pg/ml)

b Morphological Change of Fibroblast cell



Cell morphology changed after 72hr incubation with CG-bFGF in the condition of serum free medium.

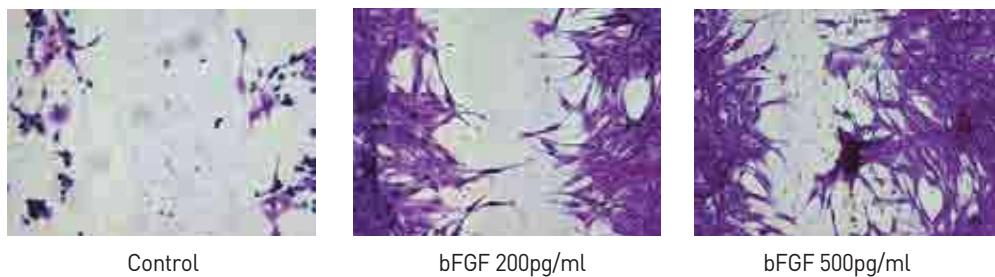
c Cell Proliferation of CG-bFGF on Fibroblast Cell by ERK Signaling Pathway



ERK signaling pathway was mixing up with morphological change and proliferation of cell. When ERK specific inhibitor PD98059 was treated with CG-bFGF, cell proliferation rate was decreasing and morphology was changing.

Growth Factors

a Cell Migration with CG-bFGF



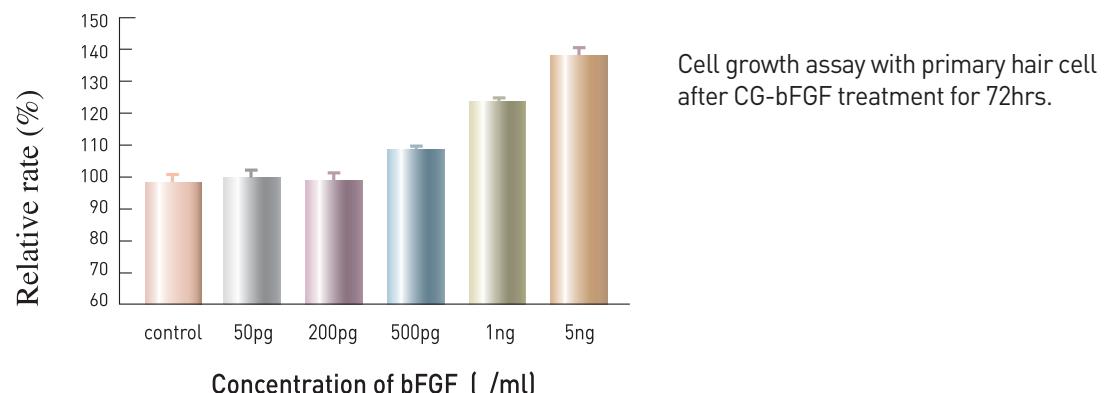
Cell migration was performed with fibroblast cell after treatment of CG-bFGF.

After seeding fibroblast cell in a 60mm culture plate, culturing for 24hrs, scrapping up cells by scraper and then treating bFGF. The state of cell migration was observed in a week.

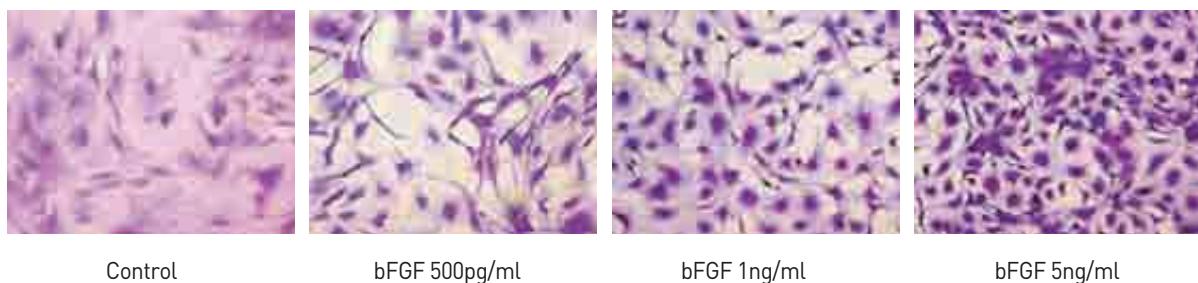
The enhancement of fibroblast cell migration by CG-bFGF was observed under microscope after staining with SRB. bFGF treatment greatly enhanced the migration of fibroblast cell compared to control.

2. CG-bFGF & Hair growth

a Cell Proliferation on Primary Hair Cell



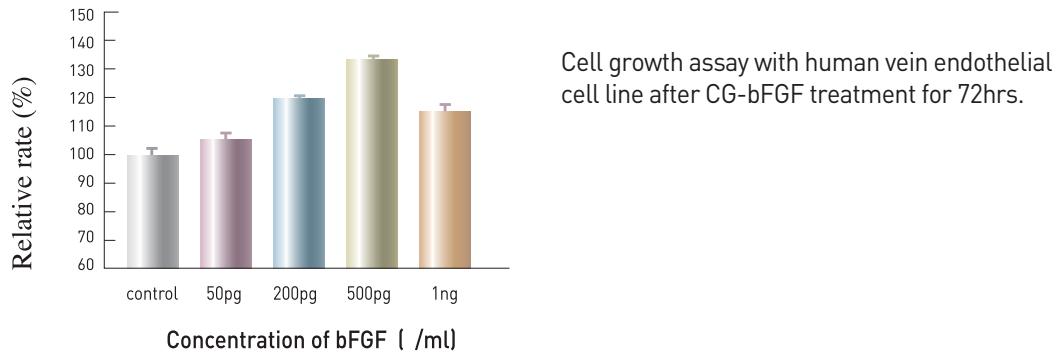
b Morphological Change of Primary Hair Cell



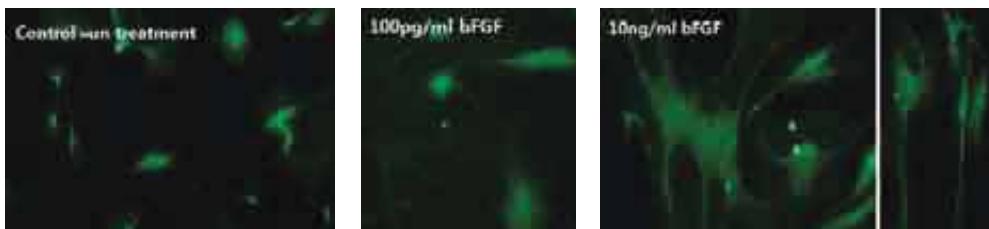
Cell morphology changed after 72hr incubation with CG-bFGF (500pg ~ 5ng/ml) on primary hair cells.

3. CG-bFGF & Angiogenesis & Hair growth

a Cell Proliferation on Human Vein Endothelial Cell Line (HUVEC)



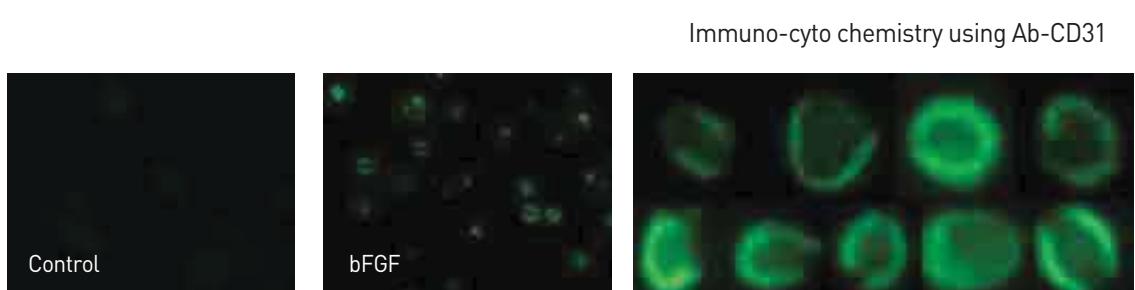
b Morphological Change of HUVEC



Observing CG-bFGF treated in various concentrations on cell morphology, it was shown to have significant changes compared to the control.

Cells have stretched out and transformed into a solid shape.

c Angiogenesis Effect using Ab-CD31



CD31: Specific marker of endothelial cell migration and angiogenesis

CG-bFGF was treated in HUVEC and used CD31 Ab in immuno-cytology to see the revelation of CD 31 Ab.

It shows CG-bFGF is an angiogenic factor.