



Keratinocyte Growth Factor (KGF)

Keratinocyte Growth Factor is a highly specialized protein that, when applied to the scalp, binds with KGF receptors to stimulate hair growth and increase the health of the skin. This behavior is especially beneficial to those experiencing hair loss due to the effects of aging or the side effects of chemotherapy. At Skin Actives we produce near-pharmaceutical quality KGF, which is suited specifically for skin care applications. This means that we can offer excellent quality at reasonable prices.

Applications

- Stimulates hair growth
- Helps prevent hair loss during chemotherapy for cancer and other cytotoxic insults
- Helps slow down skin thinning which occurs as we age

Function

This growth factor has been proven to stimulate hair growth in laboratory studies^{1,2}. It also accelerates healing³ and increases skin volume⁴. It may also help prevent hair loss during radiation therapy during cancer treatment^{5,6}. Keratinocyte Growth Factor (KGF) binds to the KGF receptor on the cell surface, acting as both a growth and survival factor by stimulating epithelial cell proliferation, differentiation, and migration and promoting a number of cell protective mechanisms.



Figure 1: Human KGF-1

Use

- Avoid extremes of pH and alcohols, and add KGF at the final stage, when the product is cool.
- Can be used in treatment serums, gels or tonics.
- Consistent application is necessary for optimal results.

KGF is also known as FGF-7 and heparin-binding growth factor-7 (HBGF-7). KGF is a member of the fibroblast growth factor family and has been found to stimulate hair growth. Cells that respond to KGF do so because they have receptors on the cell membrane that recognize the growth factor, normally produced by cells near or far from the target cell. The binding of the Growth Factor to the receptor initiates a cascade of molecular events that will eventually lead, among other effects, to cell division. Keratinocyte growth factor has been shown to regulate proliferation and differentiation in epithelial tissues and may regulate the stem cells of the hair follicle.

Technical Information

INCI:	rh-Polypeptide-3 (Skin Conditioning Agent, Miscellaneous).
Other names:	FGF-7, KGF-1, heparin-binding growth factor-7 (HBGF-7).
Molecular Weight:	19,500, with 167 amino acid residues.
Purity:	Purity is greater than 95% as determined by analysis using SDS-PAGE.
Formulation:	Suspension in ammonium sulfate (80% saturation).
Production:	Produced in <i>E. coli</i> and purified using proprietary chromatographic techniques.
Optimal Concentration:	Should be determined for each specific application.
Storage:	This suspension is stable at 2-8°C. Do not freeze.
Reconstitution:	Add buffered (pH 7.5) saline solution (about 1:5 to 1:10) to the suspension to redissolve the KGF.

References

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