

DESCRIPTION

Source *E. coli*-derived human KGF/FGF-7 protein
Cys32-Thr194, with an N-terminal Met
Accession # P21781

N-terminal Sequence Analysis Met

Predicted Molecular Mass 19 kDa

SPECIFICATIONS

Activity Measured in a cell proliferation assay using 4MBr-5 rhesus monkey epithelial cells. Rubin, J.S. *et al.* (1989) Proc. Natl. Acad. Sci. USA 86:802.
The ED₅₀ for this effect is typically 6-60 ng/mL.
The specific activity of recombinant human KGF/FGF-7 is approximately 1.3 x 10³ U/μg, which is calibrated against recombinant human KGF/FGF-7 WHO Standard (NIBSC code: 03/150).

Endotoxin Level <0.10 EU per 1 μg of the protein by the LAL method.

Purity >97%, by SDS-PAGE visualized with Silver Staining and quantitative densitometry by Coomassie® Blue Staining.

Formulation Lyophilized from a 0.2 μm filtered solution in MOPS, Na₂SO₄ and EDTA with BSA as a carrier protein. See Certificate of Analysis for details.

PREPARATION AND STORAGE

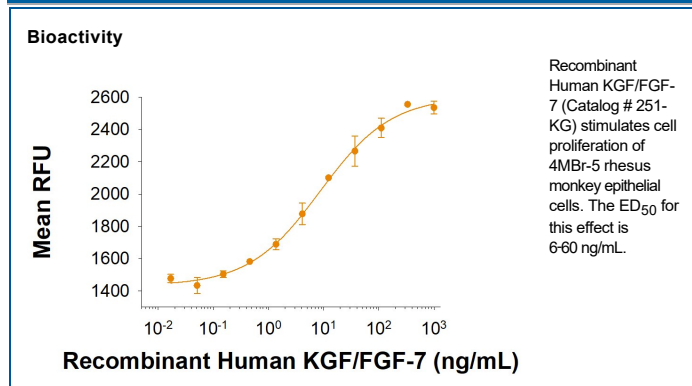
Reconstitution Reconstitute at 100 μg/mL in sterile PBS containing at least 0.1% human or bovine serum albumin.

Shipping The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.

Stability & Storage Use a manual defrost freezer and avoid repeated freeze-thaw cycles.

- 12 months from date of receipt, -20 to -70 °C as supplied.
- 1 month, 2 to 8 °C under sterile conditions after reconstitution.
- 3 months, -20 to -70 °C under sterile conditions after reconstitution.

DATA



BACKGROUND

KGF (keratinocyte growth factor), also known as FGF-7 (fibroblast growth factor-7), is one of 22 known members of the mouse FGF family of secreted proteins that plays a key role in development, morphogenesis, angiogenesis, wound healing, and tumorigenesis (1-4). KGF expression is restricted to cells of mesenchymal origin. When secreted, it acts as a paracrine growth factor for nearby epithelial cells (1). KGF speeds wound healing by being dramatically upregulated in response to damage to skin or internal structures that results in high local concentrations of inflammatory mediators such as IL-1 and TNF- α . (2, 5). KGF promotes cell migration and invasion, and mediates melanocyte transfer to keratinocytes upon UVB radiation (6, 7). It has been used ectopically to avoid chemotherapy-induced oral mucositis in patients with hematological malignancies (1). Deletion of KGF affects kidney development, producing abnormally small ureteric buds and fewer nephrons (8). It also impedes hair follicle differentiation (9). The 194 amino acid (aa) KGF precursor contains a 31 aa signal sequence and, like all other FGFs, an ~120 aa β -trefoil scaffold that includes receptor- and heparin-binding sites. KGF signals only through the IIIb splice form of the tyrosine kinase receptor, FGF R2 (FGF R2-IIIb/KGF R) (10). Receptor dimerization requires an octameric or larger heparin or heparin sulfate proteoglycan (11). FGF-10, also called KGF2, shares 51% aa identity and similar function to KGF, but shows more limited expression than KGF and uses an additional receptor, FGF R2-IIIc (12). Following receptor engagement, KGF is typically degraded, while FGF-10 is recycled (12). Mature human KGF, which is active across species, shares 98% aa sequence identity with bovine, equine, ovine and canine, 96% with mouse and porcine, and 92% with rat KGF, respectively.

References:

1. Finch, P.W. and J.S. Rubin (2006) *J. Natl. Cancer Inst.* **98**:812.
2. Werner, S. *et al.* (2007) *J. Invest. Dermatol.* **127**:998.
3. Werner, S. (1998) *Cytokine Growth Factor Rev.* **9**:153.
4. Mason, I.J. *et al.* (1994) *Mech. Dev.* **45**:15.
5. Geer, D.J. *et al.* (2005) *Am. J. Pathol.* **167**:1575.
6. Niu, J. *et al.* (2007) *J. Biol. Chem.* **282**:6001.
7. Cardinali, G. *et al.* (2005) *J. Invest. Dermatol.* **125**:1190.
8. Qiao, J. *et al.* (1999) *Development* **126**:547.
9. Guo, L. *et al.* (1996) *Genes Dev.* **10**:165.
10. de Georgi, V. *et al.* (2007) *Dermatol. Clin.* **25**:477.
11. Hsu, Y-R. *et al.* (1999) *Biochemistry* **38**:2523.
12. Belleudi, F. *et al.* (2007) *Traffic* **8**:1854.