

DESCRIPTION

Source	<i>E. coli</i> -derived human KGF/FGF-7 protein Cys32-Thr194, with an N-terminal Met Accession # P21781 Manufactured and tested under cGMP guidelines.
N-terminal Sequence Analysis	Met-(Cys) ₃₂ -Asn-Asp-Met-Thr-Pro-Glu-Gln-Met (Cys) ₃₂ -Asn-Asp-Met-Thr-Pro-Glu-Gln-Met-Ala
Predicted Molecular Mass	19 kDa

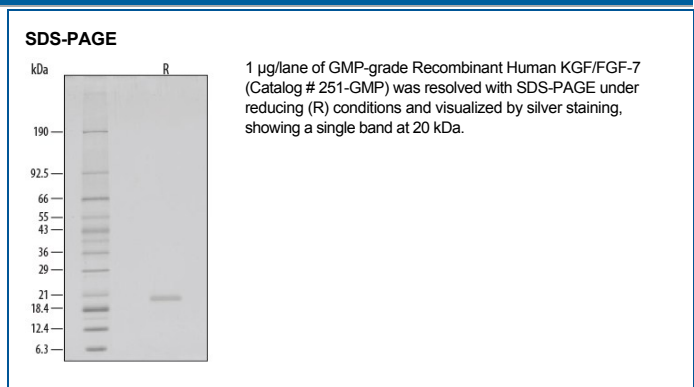
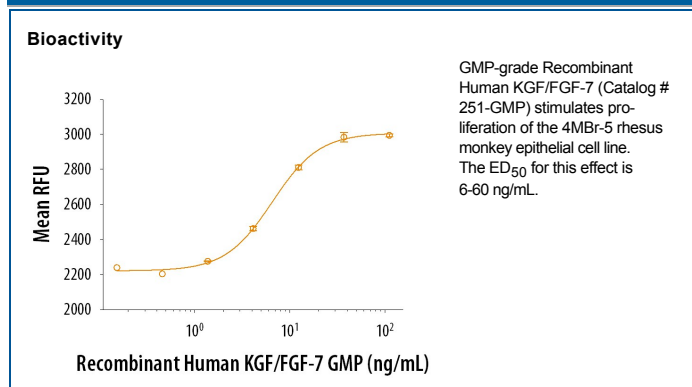
SPECIFICATIONS

SDS-PAGE	20 kDa, reducing conditions
Activity	Measured in a cell proliferation assay using 4MBr-5 rhesus monkey epithelial cells. Rubin, J.S. <i>et al.</i> (1989) Proc. Natl. Acad. Sci. USA 86:802. The ED ₅₀ for this effect is 6-60 ng/mL. The specific activity of recombinant human KGF/FGF-7 is approximately 1.3 x 10 ³ 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 with silver staining, under reducing conditions.
Host Cell Protein	<0.5 ng per μg of protein when tested by ELISA.
Mycoplasma	Negative when tested in a ribosomal RNA hybridization assay.
Host Cell DNA	<0.0015 ng per μg of protein when tested by PCR.
Formulation	Lyophilized from a 0.2 μm filtered solution in PBS. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 100 μg/mL in PBS.
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. <ul style="list-style-type: none"> A minimum of 12 months when stored at ≤ -20 °C as supplied. Refer to lot specific COA for the Use by Date. 1 month, 2 to 8 °C under sterile conditions after reconstitution. 3 months, ≤ -20 °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.

MANUFACTURING SPECIFICATIONS

GMP Proteins

R&D Systems, a Bio-Techne Brand's GMP proteins are produced according to relevant sections of the following documents: WHO TRS, No. 822, 1992 Annex 1, Good Manufacturing Practices for Biological Products; USP Chapter 1043, Ancillary Materials for Cell, Gene and Tissue-Engineered Products and USP Chapter 92, Growth Factors and Cytokines Used in Cell Therapy Manufacturing.

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R&D Systems strives to provide our customers with the analytical characteristics of each product so that customers may determine whether our products are appropriate for their research. The Certificate of Analysis provided contains the following lot specific information:

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- Post-bottling lot-specific bioassay results (compliance with an established range) and results of microbial bioburden testing (using broth culture, Sabourand's dextrose and blood agar plates with results reported at 3 days and at 7 days)
- Host Cell Protein testing performed by ELISA
- Mycoplasma testing by ribosomal RNA hybridization assay

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