Recombinant Human KGF/FGF-7

Catalog Number: 251-KG

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

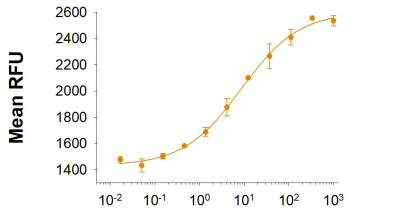
Activity	Measured in a cell proliferation assay using 4MBr-5 rhesus monkey epithelial cells. Rubin, J.S. *et al.* (1989) Proc. Natl. Acad. Sci. USA **86**:802. The ED_{50} for this effect is typically 6-60 ng/mL. The specific activity of recombinant human KGF/FGF-7 is approximately 1.3 x 10^3 U/µg, which is calibrated against recombinant human KGF/FGF-7 WHO Standard (NIBSC code: 03/150). Specific activity is for reference purposes only and is not routinely tested.
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, Na_2SO_4 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

Bioactivity



Recombinant Human KGF/FGF-7 Protein Bioactivity
Recombinant Human KGF/FGF-7 (Catalog # 251-KG) stimulates cell proliferation of 4MBr-5 rhesus monkey epithelial cells. The ED_{50} for this effect is 6-60 ng/mL.

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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:

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