



Recombinant Human FGF-4

20160420BB



FOR RESEARCH ONLY! NOT FOR HUMAN USE!

Cat.-no:	300-130
Size:	5 µg
Lot. No.:	According to product label
Country of origin:	Germany

Scientific Background

Gene:	<i>fgf4</i>
Synonyms:	HBGF-4, Heparin-binding growth factor 4, Kfgf

FGF-4 (fibroblast growth factor 4), also known as K-FGF (Kaposi's sarcoma associated FGF), is a 25 kDa secreted, heparin binding member of the FGF family. The human FGF-4 cDNA encodes 206 amino acids (aa) with a 33 aa signal sequence and a 173 aa mature protein with an FGF homology domain that contains a heparin binding region near the C terminus. Mature human FGF-4 shares a high aa identity with mouse, rat, canine and bovine FGF-4, respectively. The expression of FGF-4 and its receptors, FGF-R1c, -R2c, -R3c and R4, is spatially and temporally regulated during embryonic development. Its expression in the mouse trophoblast inner cell mass promotes expression of FGF-R2, and is required for maintenance of the trophoblast and primitive endoderm. FGF-4 is proposed to play a physiologically relevant role in human embryonic stem cell self-renewal. It promotes stem cell proliferation, but may also aid differentiation depending on context and concentration, and is often included in embryonic stem cell media in-vitro. FGF-4 is mitogenic for fibroblasts and endothelial cells in-vitro and has autocrine transforming potential. It is a potent angiogenesis promoter in-vivo and has been investigated as therapy for coronary artery disease.

References

1. Feldman B et al, Science 267:246, 1995
2. Sun X et al, Nature 418:501, 2002
3. Mariani FV et al, Nature 453:401, 2008
4. Johannesson M et al, PLoS ONE 4:e4794, 2009
5. Kunath T et al, Development 134:2895, 2007
6. Mayshar Y et al, Stem Cells 26:767, 2008
7. Hajitou A et al, Oncogene 17:2059, 1998.

Sequence

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MAPTAPNGTLEAELEERRWESLVALSLARLPVAAQPKAAVQSGAGDYLLGI
KRLRRLYCNVIGIFHLQALPDGRIGGAHADTRDSLLELSPVERGVVSI FGV
ASRFFVAMSSKGLYGS PFFTDECTFKEILLPNNYNAYESYKY PGMFI ALS
KNGKTKKGNRVSP TMKVTHFLPRL
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Database references

Protein RefSeq:	NP_001998.1
Uniprot ID:	P08620
mRNA RefSeq:	NM_002007

Product Specifications

Expressed in	E.coli
Purity	> 95% by SDS-PAGE & silver stain
Buffer	PBS
Stabilizer	None
Formulation	lyophilized
Length (aa):	177
MW:	19,7 kDa
Result by N-terminal sequencing	MAPTAPNGTL

Stability: The lyophilized protein is stable for a few weeks at room temperature, but best stored at -20°C. Reconstituted FGF-4 should be stored in working aliquots at -20°C. Avoid repeated freeze-thaw cycles.

Reconstitution: We recommend a quick spin followed by reconstitution in water to a concentration of 0.1-1.0mg/ml. This solution can then be diluted into other aqueous buffers and stored at 4°C for 1 week or -20°C for future use.

Biological Activity: The biological activity was determined by the induction of proliferation in NHDF cells (Normal Human Dermal Fibroblasts).



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Handling/Applications

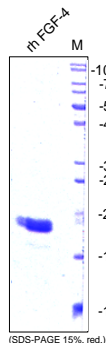


Fig. 1: SDS-PAGE analysis of recombinant human FGF-4. Sample was loaded in 15% SDS-polyacrylamide gel under reducing conditions and stained with Coomassie blue.

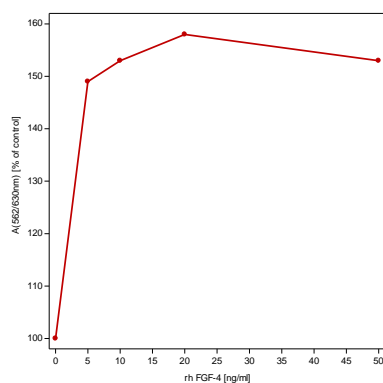


Fig. 2: Dose-dependent stimulation of cell proliferation in NHDF cells by recombinant human FGF-4.