PRODUCT INFORMATION

FGF7 (human, recombinant)

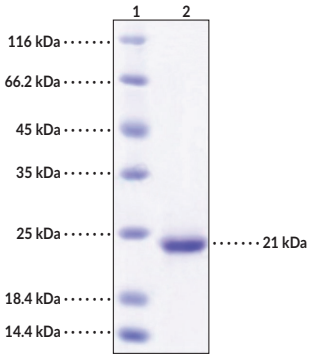
Item No. 42756

Overview and Properties

Synonyms:	Fibroblast Growth Factor 7, HBGF-7, Heparin-binding Growth Factor 7, Keratinocyte Growth Factor
Source:	Active recombinant human N-terminal His-tagged FGF7 expressed in *E. coli*
Amino Acids:	32-194
Uniprot No.:	P21781
Molecular Weight:	21 kDa
Storage:	-80°C (as supplied)
Stability:	≥1 year
Purity:	≥95% estimated by SDS-PAGE
Supplied in:	Lyophilized from sterile 50 mM Tris, pH 7.5, with 250 mM sodium chloride, 5% trehalose, 5% mannitol, and 0.01% polysorbate 80
Endotoxin Testing:	< 1.0 EU/µg, determined by the LAL endotoxin assay

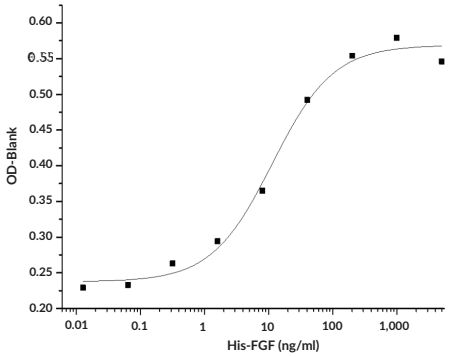
Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Images



Lane 1: MW Markers
Lane 2: FGF7

SDS-PAGE Analysis of FGF7. This protein has a calculated molecular weight of 21 kDa.



Cell proliferation assay using using BaF3 mouse pro-B cells transfected with human FGFR2b. The EC_{50} value for this effect is typically 3-20 ng/ml.

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Description

Fibroblast growth factor 7 (FGF7), also known as keratinocyte growth factor (KGF), is a member of the FGF7 subfamily.[1,2] It is composed of an N-terminal signaling region, which is cleaved prior to secretion, a Cα backbone, a heparin-binding domain, and a receptor-binding domain.[2,3] FGF7 is secreted by stromal fibroblasts and forms a quaternary complex with FGFR2b dimers, and to a lesser extent FGFR1b dimers, with heparan sulfate proteoglycans to induce ERK- or MAPK-induced proliferation in epithelial cells.[1,3,4] It is also necessary for proper nephron and hippocampal development and post-radiation thymic regeneration in mice.[4] Knockout of *Fgf7* decreases cartilage erosion, osteophyte formation, bone density, and subchondral bone plate thickness in a mouse model of osteoarthritis induced by destabilization of the medial meniscus (DMM).[5] Increased levels of FGF7 in cancer-associated fibroblasts are correlated with increased arterial and lymphatic metastasis, increased amount of residual tumor following surgery, and advanced cancer staging in patients with ovarian cancer.[6] Cayman's FGF7 (human, recombinant) protein can be used for cell-based assays. This protein consists of 162 amino acids and has a calculated molecular weight of 21 kDa.

References

1. Mason, I. Initiation to end point: The multiple roles of fibroblast growth factors in neural development. *Nat. Rev. Neurosci.* **8(8),** 583-596 (2007).
2. Ye, S., Luo, Y., Lu, W., *et al.* Structural basis for interaction of FGF-1, FGF-2, and FGF-7 with different heparan sulfate motifs. *Biochemistry* **40(48),** 14429-14439 (2001).
3. Finch, P.W., Rubin, J.S., Miki, T., *et al.* Human KGF is FGF-related with properties of a paracrine effector of epithelial cell growth. *Science* **245(4919),** 752-755 (1989).
4. Zinkle, A. and Mohammadi, M. Structural biology of the FGF7 subfamily. *Front. Genet.* **10,** 102 (2019).
5. Shin, Y., Kwak, J.-S., Kim, S.K., *et al.* Fibroblast growth factor 7 (FGF7) causes cartilage destruction, subchondral bone remodeling, and the premature growth plate closure in mice. *Osteoarthritis Cartilage* (2024).
6. Feng, S., Ding, B., Dai, Z., *et al.* Cancer-associated fibroblast-secreted FGF7 as an ovarian cancer progression promoter. *J. Transl. Med.* **22(1),** 280 (2024).

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