

Recombinant Human FGF-basic (146 aa) (Animal-Free)

Catalog# / Size	713304 / 50 µg
Regulatory Status	RUO
Other Names	Fibroblast growth factor 2 (Fgf-2), Fgfb, bFGF
Description	FGF-basic, also known as FGFb and FGF-2, is a member of the fibroblast growth factor (FGF) family which includes 23 members. FGFb is expressed in almost all tissues and plays an important role in a variety of normal and pathological processes, including development, wound healing, and neoplastic transformation. FGFb is mitogenic for many cell types, both epithelial and mesenchymal. FGFb shows potent angiogenic activity and has been implicated in tumor angiogenesis. In prostate, bladder, and renal cancers, FGFb regulates the induction of metalloproteinases (MMP) that degrade extracellular matrix proteins, thus facilitating tumor metastasis. FGFb binds to a family of four distinct, high affinity tyrosine kinase receptors, designated FGFR-1 to -4. In addition, FGFb binds to the ECM, and heparan sulfate (HS) is an essential and dynamic regulator of fibroblast growth factor (FGF) signaling. Two fundamentally different crystallographic models have been proposed to explain, at the molecular level, how HS/heparin enables FGF and FGF receptor (FGFR) to assemble into a functional dimer on the cell surface, although there is controversy regarding the exact manner by which this occurs.

Product Details

Source	Human FGF-basic, amino acids Pro143-Ser288 (Accession# NM_002006) was expressed in <i>E. coli</i> .
Molecular Mass	The 146 amino acid recombinant protein has a predicted molecular mass of approximately 16.4 kD. The predicted N-terminal amino acid is Pro.
Purity	>98%, as determined by Coomassie stained SDS-PAGE and HPLC analysis.
Formulation	Lyophilized, carrier-free.
Endotoxin Level	Less than 0.1 ng per µg of protein.
Storage & Handling	Unopened vial can be stored at -20°C or -70°C. For maximum results, quick spin vial prior to opening. Reconstitute in water to a concentration of 0.1-1.0 mg/ml. Do not vortex. It is recommended to further dilute in a buffer, such as 5% Trehalose, and store working aliquots at -20°C to -80°C. Avoid repeated freeze/thaw cycles.
Activity	ED ₅₀ ≤ 0.05 ng/ml, corresponding to a specific activity of ≥ 2 x 10 ⁷ units/mg as determined by a cell proliferation assay using BALB/c 3T3 cells.
Application	Bioassay
Application Notes	This product is reactive with human and mouse.

Antigen Details

Distribution	Brain, retina, pituitary, kidney, placenta, testis, corpus luteum, adrenal glands, monocytes, prostate, bone, liver, cartilage, endothelial cells, and epithelial cells
Function	FGFb is a potent angiogenic factor, and plays a key role in various physiological and pathological conditions, including embryonic development, wound repair, inflammation, and tumor growth.
Interaction	Fibroblasts, myoblasts, osteoblasts, neuronal cells, endothelial cells, keratinocytes, chondrocytes, astrocytes, oligodendrocytes, and smooth muscle cells.
Ligand/Receptor	FGFR-1 (flg), FGFR-2 (bek, K-sam), FGFR3, and FGFR-4 (flg-2); low affinity coreceptor heparin sulfate and heparin sulfate proteoglycans required for full activity.
Bioactivity	Stimulation of 3T3 cell proliferation.
Cell Type	Neural Stem Cells, Mesenchymal Stem Cells, Hematopoietic stem and progenitors, Embryonic

Stem Cells

Biology Area

Cell Biology, Neuroscience, Stem Cells, Synaptic Biology

Molecular Family

Growth Factors, Cytokines/Chemokines

Antigen References

1. Rusnati M and Presta M. 2007. *Current Pharm. Des.* 13:2025.
2. Chaffer CL, *et al.* 2007. *Differentiation* 75:831.
3. Cronauer NV, *et al.* 2003. *Eur. Urol.* 43:309.
4. Shimizu A, *et al.* 2001. *J. Biol. Chem.* 276:11031.
5. Mohammadi M, *et al.* 2005. *Curr. Opin. Struct. Biol.* 15:506.
6. Chiou M and Xu Y. 2006. *Longaker MT Biochem. Biophys. Res. Commun.* 343:644.

Gene ID

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BioLegend Inc., 8999 BioLegend Way, San Diego, CA 92121 www.biolegend.com
Toll-Free Phone: 1-877-Bio-Legend (246-5343) Phone: (858) 768-5800 Fax: (877) 455-9587