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Recombinant human FGFbasic Protein

Catalog Number:	632301, 632302
Size:	20 μg, 100 μg
Target Name:	FGFbasic, Fibroblast Growth Factor-basic, FGF2
Regulatory Status:	RUO

PRODUCT DETAILS

Application:	Bioassay
Format:	Lyophilized from sterile PBS, pH 7.4.
Expression Host:	E.coli
Species:	Human
accession number:	NP_001997.5
Sources:	A DNA sequence encoding the mature form of human bFGF (NP_001997.5) (Pro143-Ser288) was expressed with an additional Met at the N-terminus.
Molecular Weight:	The recombinant human bFGF consists of 147 amino acids and predicts a molecular mass of 16.5 kDa.
Affinity Tag:	None
Purity:	≥ 95 % as determined by SDS-PAGE
Endotoxin level:	< 0.1 EU per μg protein
Protein Concentration:	Lyophilized
Storage and Handling:	Samples are stable for up to twelve months from date of receipt at -20℃ to -80℃. Store it under sterile conditions at -20℃ to -80℃. It is recommended that the protein be aliquoted for optimal storage. Avoid repeated freeze-thaw cycles.

BACKGROUND INFORMATION

Human FGF-basic (FGF2), also known as basic fibroblast growth factor (bFGF), is a multifunctional growth factor that regulates cell proliferation, survival, migration, differentiation, angiogenesis, wound healing, and tissue repair. FGF2 exerts its effects primarily by binding to fibroblast growth factor receptors (FGFR1–FGFR4), which are receptor tyrosine kinases. Heparan sulfate proteoglycans on the cell surface and extracellular matrix facilitate FGF2–FGFR binding and receptor activation, leading to downstream signaling pathways including MAPK/ERK, PI3K/AKT, and related pathways.

Structurally, human FGF2 is a small, highly conserved protein characterized by a 12-stranded β-trefoil fold. Its positively charged regions, particularly around the β1–β2 loop and β10–β12 region, form an important binding site for heparin and heparan sulfate. Unlike many secreted growth factors, FGF2 lacks a conventional N-terminal signal peptide and can reach the extracellular environment through unconventional secretion mechanisms.

FGF2 is itself a ligand for FGFR1, FGFR2, FGFR3, and FGFR4, although receptor interactions can vary according to receptor isoform

and cellular context. Dysregulated FGF2 signaling has been associated with pathological angiogenesis, fibrosis, inflammation, abnormal bone remodeling, and cancer. Increased FGF2 activity can promote tumor-associated blood-vessel formation and support tumor-cell proliferation and survival.

Because FGF2 signaling can be either beneficial or harmful depending on context, it represents a potential therapeutic target as well as a therapeutic molecule. Recombinant FGF2 has been investigated for tissue regeneration and wound healing, whereas strategies that inhibit FGF2 or FGFR signaling—including neutralizing molecules and receptor kinase inhibitors—are being investigated for cancer, bone disease, and other disorders involving excessive FGF signaling.

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