Recombinant Equine FGF basic/FGF2/bFGF

Catalog Number: 8577-FB/CF

DESCRIPTION

Source	*E. coli*-derived equine FGF basic/FGF2/bFGF protein Pro10-Ser155 Accession # E0AEV7
N-terminal Sequence Analysis	Pro10 & Ala11
Predicted Molecular Mass	16 kDa

SPECIFICATIONS

SDS-PAGE	18 kDa, reducing conditions
Activity	Measured in a cell proliferation assay using NR6R-3T3 mouse fibroblast cells. Raines, E.W. *et al.* (1985) Methods Enzymol. **109**:749. The ED_{50} for this effect is 0.2-1 ng/mL.
Endotoxin Level	<0.10 EU per 1 µg of the protein by the LAL method.
Purity	>95%, by SDS-PAGE with silver staining.
Formulation	Lyophilized from a 0.2 µm filtered solution in MOPS, Na_2SO_4, TCEP and EDTA. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 250 µg/mL in water.
Shipping	The product is shipped with polar packs. 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.

BACKGROUND

FGF basic, also known as FGF-2 or HBGF-2, is a widely expressed member of the fibroblast growth factor family (1-3). FGF basic functions in angiogenesis, wound healing, tissue repair, learning and memory, and the morphogenesis of heart, bone, and brain (2, 4-6). It is up-regulated in response to inflammatory stimuli such as TNF-α, IL-1β, IL-2, PDGF, and nitric oxide (2). The up-regulation of FGF basic in many human tumors is associated with tumor vascularity (2, 3). Among FGF family members, only FGF acidic and FGF basic lack signal peptides and are secreted by an alternative pathway. FGF basic is additionally localized in the nucleus where it regulates gene expression (2, 7). In humans, the use of alternative start sites can produce 21-23 kDa isoforms found only in the nucleus, and these isoforms target the expression of distinct genes (7). FGF family proteins share 35-60% amino acid (aa) identity. The 18 kDa equine FGF basic shares 97-99% amino acid identity with bovine, canine, human, mouse, and rat FGF basic (8). FGF basic binds with picomolar affinity to FGF R1c and 2c (1, 2). Its bioactivity is modulated by a number of other binding partners including heparin, Integrin αvβ3, soluble FGF R1, FGF-BP, free gangliosides, Thrombospondin, Pentraxin 3/TSG-14, Fibrinogen, α2-Macroglobulin, PDGF, and CXCL4/PF4 (2). These molecules act as cellular coreceptors or adhesion partners, extracellular matrix decoys or reservoirs, and soluble scavengers or chaperones (2). In particular, the interaction of FGF basic with cell surface heparan sulfate proteoglycans (HSPG) is required for the binding and activation of FGF receptors (1, 2).

References:

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4. Rosenblatt-Velin, N. *et al.* (2005) J. Clin. Invest. **115**:1724.
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7. Claus, P. *et al.* (2003) J. Biol. Chem. **278**:479.
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