Recombinant Human FGF-3
Catalog Number: 1206-F3

DESCRIPTION

Source: E. coli-derived
Asp28-Arg212, with an N-terminal Met
Accession # NP_005238

N-terminal Sequence
Analysis: Met

Predicted Molecular Mass: 21.1 kDa

SPECIFICATIONS

The ED_{50} for this effect is 0.02-0.1 μg/mL in the presence of 1 μg/mL of heparin.

Endotoxin Level: <0.10 EU per 1 μg of the protein by the LAL method.
Purity: >97%, by SDS-PAGE under reducing conditions and visualized by silver stain.

Formulation: Lyophilized from a 0.2 mg/mL filtered solution in MOPS, Na_2SO_4 and EDTA with BSA as a carrier protein. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution: Reconstitute at 100 μg/mL in sterile PBS containing at least 0.1% human or bovine serum albumin.

Shipping: The product is shipped at ambient temperature. 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

Fibroblast Growth Factor 3 (FGF-3) belongs to the large FGF family which has at least 23 members (1, 2). All FGF family members are heparin-binding growth factors with a core 120 amino acid (aa) FGF domain that allows for a common tertiary structure. FGFs are expressed during embryonic development and in restricted adult tissues. They act on cells of mesodermal and neuroectodermal origin to regulate diverse physiologic functions including angiogenesis, cell growth, pattern formation, embryonic development, metabolic regulation, cell migration, neurotrophic effects, and tissue repair (3, 4). Signaling receptors for FGFs are type I transmembrane receptor tyrosine kinases belonging to the Ig superfamily. Four distinct but related classes of FGF receptors, FGF R1, 2, 3, and 4, exist. Through alternative splicing, multiple isoforms for FGF R1, 2, and 3, with distinct ligand recognition profiles, are also generated (4).

The FGF-3 gene, originally designated int-2, was first identified as a proto-oncogene activated in mouse mammary tumors by proviral integration (2). Amplification of this gene has also been found frequently in human tumors. Human FGF-3 cDNA predicts a 239 aa precursor protein with a 17 aa signal peptide and a 222 aa secreted mature protein with one potential N-linked glycosylation site (1). Human and mouse FGF-3 share 88% aa sequence identity. The Xenopus and mammalian secreted FGF-3 are processed proteolytically at both the N- and C-terminus (5). FGF-3 binds with high-affinity to the IIIb isoforms of FGF R1 and FGF R2. FGF-3 also binds the IIIc isoform of FGF R2, but with lower affinity (6). FGF-3 has been implicated in the induction of inner ear development (7). Studies have suggested that FGF-3 and FGF-8 function synergistically in otic placode induction and during neuronal development to regulate dorsoventral axis formation (8 - 10). During development, the activities of FGF-3 and FGF-8 are regulated negatively by the sprouty family proteins and by Sef (similar expression to FGF genes), a transmembrane protein that shares intracellular sequence similarities with the IL-17 receptor (10).

References: