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ProductInformation

FIBROBLAST GROWTH FACTOR 17 (FGF-17)
Human, Recombinant
Expressed in *E. coli*

Product Number **F 7176**

Product Description

Recombinant Human Fibroblast Growth Factor 17 (FGF-17) is produced from a DNA sequence encoding mature human FGF-17.[1] Recombinant human FGF-17 is a mixture of the 194 amino acid residue mature FGF-17 and the 195 amino acid residue methionyl form of recombinant human FGF-17. This protein has a calculated molecular mass of approximately 22.6 kDa. Human FGF-17 and mouse FGF-17 share 98.6% amino acid sequence identity. Mouse and rat FGF-17 are 100% identical.[1]

Fibroblast growth factors (FGFs) are members of a large family of structurally related polypeptides (17 kDa to 38 kDa) that exert biological activities toward cells of mesenchymal, neuronal, and epithelial origin.[2, 3] All members of the FGF superfamily have two conserved cysteine residues and a conserved 120 amino acid core region that contains six identical, interspersed amino acids.[4, 5, 6] All FGFs share 30% to 50% amino acid sequence identity. FGFs are involved in normal development, wound healing and repair, angiogenesis, and a variety of neurotrophic activities. They are also involved in hematopoiesis as well as in tissue remodeling and maintenance. FGFs are potent physiological regulators of growth and differentiation for a variety of cells of mesodermal, ectodermal, and endodermal origin. They have been implicated in pathological conditions such as tumorigenesis and metastasis. To date, the FGF family consists of 23 members designated FGF-1 through FGF-23.[6]

Four distinct tyrosine kinase FGF receptors (FGFRs) from four separate genes have been identified: FGFR-1 (flg, cek-1), FGFR-2 (bek, cek-3), FGFR-3 (cek-2), and FGFR-4.[7, 8, 9] The high affinity cell surface FGF receptors have an extracellular region containing three immunoglobulin-like domains, a transmembrane region, and a cytosolic tyrosine kinase domain activated by ligand binding. Multiple additional variants (isoforms) arising from alternative splicing have also been reported.[8] Ligand binding specificity, signal transduction, and membrane attachment may be modified by alternative splicings.

Fibroblast Growth Factor 17 (FGF-17) is a heparin binding growth factor. It is a conserved molecule with a series of mini-exons substituting for the standard FGF family exon 1. This creates the potential for a number of different isoforms varying within the N-terminus.[10] In humans, the only isoform to date is known as FGF-17B.[10, 11] In mouse, there are three isoforms: A, B, and C.[10] FGF-17 is most similar to FGF-8 (60% sequence identity) and FGF-18 (50% sequence identity).

FGF-17 is preferentially expressed in embryonic brain. It is found in the embryo at the midbrain-hindbrain junction, in the telencephalon-diencephalon transition, in the smooth muscle of major artery walls, in chondrocytes osteoblast precursors, and in mesenchymal cells.[10] FGF-17 may be important for CNS development. It appears to function through binding to the "c" splice form of either FGF R1 or FGF R2.[10]

Reagent

Recombinant Human Fibroblast Growth Factor 17 (FGF-17) is supplied as approximately 25 µg of protein lyophilized from a 0.2 µm filtered solution in phosphate buffered saline (PBS) containing 1.25 mg of bovine serum albumin.

Preparation Instructions

Reconstitute the contents of the vial using sterile phosphate buffered saline (PBS) containing at least 0.1% bovine serum albumin. Prepare a stock solution of no less than 25 µg/ml.

Storage/Stability

Store at –20 °C. Upon reconstitution, store at 2 °C to 8 °C for one month. For extended storage, freeze in working aliquots. Repeated freezing and thawing is not recommended. Do not store in a frost-free freezer.

Product Profile

Recombinant Human Fibroblast Growth Factor 17 (FGF-17) is measured by its ability to stimulate ^{3}H-thymidine incorporation by NR6R-3T3 fibroblasts.

The ED_{50} for this effect is approximately 10 to 30 ng/ml.

The ED_{50} is defined as the effective concentration of growth factor that elicits a 50% increase in cell growth in a cell based bioassay.

Purity: > 95% as determined by SDS-PAGE, visualized by silver stain.

Endotoxin level is < 0.1 ng/µg protein as determined by the LAL (Limulus amebocyte lysate) method.

References

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