

Product Information

FIBROBLAST GROWTH FACTOR 8c (FGF-8c)

Mouse, Recombinant

Expressed in *E. coli*

Product Number **F 1802**

Product Description

Recombinant Mouse Fibroblast Growth Factor 8c (FGF-8c) is produced from a DNA sequence encoding the mature mouse isoform FGF-8c.¹ Recombinant FGF-8c (247 amino acids) has a predicted molecular mass of approximately 28 kDa. In SDS-PAGE under non-reducing and reducing conditions, this protein migrates with an apparent molecular mass of 31 kDa.

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 8 was originally identified as an androgen-dependent growth of mouse mammary carcinoma cells.¹⁰ The primary transcript of mouse FGF-8 is alternatively spliced to generate at least 8 secreted isoforms that differ at their amino terminus. The differences between the isoforms exist in the number of potential N-linked glycosylation sites.^{1,11} In mouse, the eight isoforms are labeled as 8a through 8h. Human FGF-8 is limited to only four isoforms. Only isoforms 8a, 8b, 8e, and 8f are synthesized in humans. Mouse and human 8a and 8b isoforms are 100% identical, while the 8e and 8f isoforms are 98% identical.^{1,11} The FGF-8 isoforms differentially activate the various alternatively spliced forms of the FGF receptors 1 - 3, and FGF receptor 4. The isoform FGF-8c activates FGF R3c and FGF R4.¹²

Expression of FGF-8 is restricted to embryonic days 9 through 13 in the mouse. During mouse development, the expression pattern suggests a role for FGF-8 in ectodermal differentiation of the post-gastrulation mouse embryo that includes a role in outgrowth and patterning of the face, limbs, and central nervous system of the vertebrate. In the adult, FGF-8 is found in prespermatogonia and antral follicles of the ovary.¹³

The gene for mouse FGF-8 has been mapped chromosome 19.

Reagent

Recombinant Mouse Fibroblast Growth Factor 8c (FGF-8c) is supplied as approximately 25 µg of protein lyophilized from a 0.2 µm filtered solution in 20% acetonitrile and 0.1% trifluoroacetic acid (TFA) 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 Mouse Fibroblast Growth Factor 8c (FGF-8c) is measured by its ability to stimulate ³H-thymidine incorporation in a confluent quiescent culture of NR6R-3T3 fibroblasts.^{14, 15}

The ED₅₀ for this effect is approximately 10 to 50 ng/ml in the presence of 0.1 µg/ml heparin.

The ED₅₀ is defined as the effective concentration of growth factor that elicits a 50% increase in cell growth in a cell based bioassay.

Purity: > 97% as determined by SDS-PAGE, visualized by silver stain.

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

References

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