3050 Spruce Street
Saint Louis, Missouri 63103 USA
Telephone (800) 325-5832 (314) 771-5765
Fax (314) 286-7828
email: techserv@sial.com
sigma-aldrich.com

ProductInformation

ANTI-FIBROBLAST GROWTH FACTOR 10 (FGF-10)
Developed in Goat, Affinity Isolated Antibody

Product Number **F 9049**

Product Description

Anti-Human Fibroblast Growth Factor (FGF-10) is developed in goat using a purified recombinant human fibroblast growth factor 10 expressed in *E. coli* as immunogen. Affinity isolated antigen specific antibody is obtained from goat anti-FGF-10 antiserum by immunospecific purification which removes essentially all goat serum proteins, including immunoglobulins, which do not specifically bind to the peptide.

Anti-Fibroblast Growth Factor 10 recognizes recombinant human FGF-10 by various immunochemical techniques including immunoblotting and ELISA. Based on ELISA and immunoblotting, this antibody shows approximately 30 % cross-reactivity with recombinant human FGF-7 and 15 % cross-reactivity with recombinant human FGF-5.

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.[1, 2] 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.[3, 4, 5] All FGFs share 30 % to 50 % amino acid sequence identity. FGFs are involved in normal development, wound healing and repair, angiogenesis, 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.[5]

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.[6, 7, 8] 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.[7] Ligand binding specificity, signal transduction, and membrane attachment may be modified by alternative splicings.

Fibroblast Growth Factor 10 was originally identified from rat embryos by homology-based polymerase chain reaction. Subsequently, human and mouse FGF-10 were also cloned. Human FGF-10 cDNA encodes a 208 amino acid residue protein with a hydrophobic amino-terminal signal peptide.[9] Recombinant human FGF-10 migrates as a 19 kDa protein in SDS-PAGE. Human FGF-10 shares approximately 92 % and 95 % amino acid sequence identity with mouse FGF-10 and rat FGF-10, respectively. FGF-10 has unique roles in the brain, in lung development, in wound healing, and limb bud formation.[10, 11, 12] FGF-10 is mitogenic for epithelial and epidermal cells but not fibroblasts.[9] FGF-10 is predominantly expressed in the embryo and adult lung.[13] In the adult, fibroblasts and pre-adipocytes also express FGF-10. In the fetus, posterior limb mesoderm and mesenchyme associated with the development of the seminal vesicle and prostate express FGF-10.

Reagent

Anti-Fibroblast Growth Factor 10 (FGF-10) is supplied as 100 µg of antiserum lyophilized from a 0.2 µm filtered solution of phosphate buffered saline (PBS).

Preparation Instructions

To one vial of lyophilized powder, add 1 ml of sterile phosphate buffered saline (PBS) to produce a 0.1 mg/ml stock solution of antibody.

Storage/Stability

Prior to reconstitution, store at –20 °C. Reconstituted product may be stored at 2 °C to 8 °C for at least one month. For prolonged storage, freeze in working aliquots at –20 °C. Avoid repeated freezing and thawing. Do not store in a frost-free freezer.

Product Profile

For immunoblotting, a working concentration of 0.1 to 0.2 µg/ml antibody is recommended. The detection limit for recombinant human FGF-10 is approximately 50 ng/lane under non-reducing and reducing conditions.

For ELISAs, a working concentration of 0.5 to 1.0 µg/ml antibody is recommended. The detection limit for recombinant human FGF-10 is approximately 6.2 ng/well.

Note: In order to obtain best results in different techniques and preparations we recommend determining optimal working dilutions by titration test.

Endotoxin level is < 10 ng/mg protein as determined by the LAL (Limulus amebocyte lysate) method.

References

1. Givol, D., and Yayon, A., FASEB. J., **6**, 3362 (1992).
2. Baird, A., et al., Curr. Opin. Neurobiol., **4**, 78 (1994).
3. Fernig, F.G., and Gallagher, J.T., Prog. Growth Factor Res., **5**, 353 (1994).
4. Kirkoshi, J., et al., Biochem. Biophys. Res. Commun., **274**, 337 (2000).
5. Nishimura, T., et al., Biochem. Biophys. Acta., **1492** 203 (2000).
6. Bernard, O., and Matthew, P., Guidebook to Cytokines and Their Receptors, Oxford Press (New York, NY, 1994).
7. Galzie, Z., et al., Biochem. Cell Biol., **75**, 669 (1997).
8. Callard, R., and Gearing, A., The Cytokine Facts Book, Academic Press (New York, NY, 1994).
9. Emoto, H., et al., J. Biol. Chem., **272**, 23191 (1997).
10. Bellusci, S., et al., Development, **124**, 4867 (1997).
11. Tagashire, S., et al., Gene, **197**, 399 (1997).
12. Ohuchi, H., et al., Developmemt, **124,** 2235 (1997).
13. Yamasaki, M., et al., J. Biol. Chem., **271**, 15918 (1996).

KAA 05/01