

Product No. F-2278
Fibroblast Growth Factor-4
(FGF-4)
Human, Recombinant
Expressed in *E. coli*

Description

Fibroblast Growth Factor-4 (FGF-4), of the fibroblast growth factor family, is encoded by the K-fgf/hst oncogene. FGF-4 is also known as hst-1 (from human stomach tumor), and K-FGF (from Kaposi's sarcoma). The K-fgf/hst oncogene was originally identified by transfection into NIH3T3 cells with DNA from stomach and colon cancer,^{1,2,3} Kaposi's sarcoma^{4,5} and hepatocellular carcinoma⁶. The activation of the K-fgf oncogene results from unregulated expression of a normal gene product⁷. Unlike the two prototypes of the FGF family, FGF basic (FGF-2) and FGF acidic (FGF-1), FGF-4 is glycosylated and secreted by cells into culture medium.⁵

Fibroblast cell lines expressing FGF-4 acquire a transformed phenotype *in vitro* and are highly tumorigenic *in vivo*.⁸ FGF-4 is a potent mitogen for fibroblasts in culture and has features of a transforming growth factor.⁸ In addition, FGF-4 is mitogenic for endothelial cells and will cause morphological transformation of NIH3T3 cells.^{4,5,7} FGF-4 shares 42% sequence identity with FGF-basic (FGF-2)⁹, and both FGF-basic and FGF-4 bind to the same receptors.^{10,11} FGF-4 has a molecular weight of 22 kD.

Performance Characteristics

The biological activity of human recombinant FGF-4 is determined in a mitogenic assay by measuring ³H-thymidine incorporation in NR6-3T3 fibroblasts.¹² The EC₅₀ is defined as the effective concentration of growth factor that elicits a 50% increase in cell growth in a cell based bioassay.

Product Information

Expressed in *E. coli*

Molecular Weight: 22 kD

Purity: ≥ 97% as determined by SDS-PAGE

EC₅₀: 0.05 - 0.3 ng/ml

Package size: 25 µg

Lyophilization Buffer: Lyophilized from a 0.2 µm-filtered solution of 20 mM sodium phosphate buffer, pH 7.0.

Carrier Protein: 1.25 mg human serum albumin (HSA).

Sterility: 0.2 µm-filtered, aseptic fill

Endotoxin: ≤ 0.1 ng/µg FGF-4

Reconstitution

Reconstitute the contents of the vial using sterile-filtered PBS containing 0.1% HSA or BSA to a concentration not less than 1 µg/ml.

Storage

Prior to reconstitution, store at -20°C. After reconstitution, store at 2-8°C for a maximum of 3 months. For extended storage, freeze in working aliquots at -70°C or -20°C. Repeated freezing and thawing is not recommended.

References

1. Sakamoto, H., et al., Proc. Natl. Acad. Sci. USA, **83**, 3997 (1986).
2. Koda, T., et al., Jpn. J. Cancer Research, **78**, 325 (1987).
3. Taria, M., et al., Proc. Natl. Acad. Sci. USA, **84**, 2980 (1987).
4. Delli-Bovi, P., et al., Proc. Natl. Acad. Sci. USA, **84**, 5660 (1987).
5. Delli-Bovi, P., et al., Cell, **50**, 729 (1987).
6. Nakagama, H., et al., Jpn. J. Cancer Research, **78**, 651 (1987).
7. Delli-Bovi, P., et al., Mol. Cell. Biol., **8**, 2933 (1988).
8. Talarico, D., et al., Molecular and Cellular Biology, **11**, 1138 (1991).
9. Bernharroch, D., et al., Isr. J. Med. Sci., **26**, 212 (1990).
10. Moscatelli, H., et al., J. Cell Biol., **109**, 2519 (1989).
11. Mansukhani, A., et al., Proc. Natl. Acad. Sci. USA, **87**, 4378 (1990).
12. Thomas, K., Methods in Enzymology, **147**, 120 (1987).

BIOHAZARD: Handle as if capable of transmitting infectious agents. Refer to MSDS.

Source material tested and found negative for antibody to HIV and HBsAG.

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