Recombinant Human Soluble FGFR-3(IIIb)/Fc Chimera

20201215BB

FOR RESEARCH ONLY! NOT FOR HUMAN USE!

Cat.-no:	**SFC-025**
Size:	50 µg
Lot. No.:	According to product label
Country of origin:	Germany

Scientific Background

Gene:	*FGFR3*
Synonyms:	Fibroblast growth factor receptor 3, Fms-like tyrosine kinase 3, CD331

Fibroblast growth factors (FGFs) comprise a family of at least 23 structurally related proteins that are involved in a multitude of physiological and pathological cellular processes, including cell growth, differentiation, angiogenesis, wound healing and tumorgenesis. The biological activities of the FGFs are mediated by a family of type I transmembrane tyrosine kinases which undergo dimerization and autophosphorylation after ligand binding. Four distinct genes encoding closely related FGF receptors, FGFR1-4, are known. All four genes for FGFRs encode proteins with an N-terminal signal peptide, three immunoglobulin (Ig)-like domains, an acid-box region containing a run of acidic residues between the IgI and IgII domains, a transmembrane domain and the split tyrosine-kinase domain. Multiple forms of FGFR1-3 are generated by alternative splicing of the mRNAs. A frequent splicing event involving FGFR1 and 2 results in receptors containing all three Ig domains, referred to as the alpha isoform, or only IgII and IgIII, referred to as the beta isoform. Only the alpha isoform has been identified for FGFR3 and FGFR4. Additional splicing events for FGF R1-3, involving the C-terminal half of the IgIII domain encoded by two mutually exclusive alternative exons, generate FGF receptors with alternative IgIII domains (IIIb and IIIc). A IIIa isoform which is a secreted FGF binding protein containing only the N-terminal half of the IgIII domain plus some intron sequences has also been reported for FGFR1. Mutations in FGFR1-3 have been found in patients with birth defects involving craniosynostosis. The complex patterns of expression of these receptors as well as the specificity of their interactions with the various FGF ligand family members are under investigation.

References

1. Galzie, Z. *et al*. (1997) Biochem. Cell Biol. **75**:669
2. Burke, D. *et al*. (1998) Trends Biochem. Sci. **23**:59

Sequence

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ESLGTEQRVVGRAAEVPGPEPGQQEQLVFGSGDAVELSCPPPGGGPMGPTVW
VKDGTGLVPSERVLVGPQRLQVLNASHEDSGAYSCRQRLTQRVLCHFSVRVT
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AGNPTPSISWLKNGREFRGEHRIGGIKLRHQQWSLVMESVVPSDRGNYTCVV
ENKFGSIRQTYTLDVLERSPHRPILQAGLPANQTAVLGSDVEFHCKVYSDAQ
PHIQWLKHVEVNGSKVGPDGTPYVTVLKSWISESVEADVRLRLANVSERDGG
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PPCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTCVVVDVSHEDPEVKFNWY
VDGVEVHNAKTKPREEQYNSTYRVVSVLTVLHQDWLNGKEYKCKVSNKALPA
PIEKTISKAKGQPREPQVYTLPPSREEMTKNQVSLTCLVKGFYPSDIAVEWE
SNGQPENNYKTTPPMLDSDGSFFLYSKLTVDKSRWQQGNVFSCSVMHEALHN
HYTQKSLSLSPGK
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Database References

Protein RefSeq:	NP_001156685.1
Uniprot ID:	P22607-2
mRNA RefSeq:	NM_001163213.1

Product Specifications

Expressed in	Insect cells
Purity	> 95% by SDS-PAGE & Coomassie stain
Buffer	PBS
Stabilizer	None
Formulation	lyophilized
Length (aa):	585
MW:	90 kDa (Monomer) in SDS-PAGE
Result by N-terminal sequencing	ESLGT

Stability: Lyophilized samples are stable for greater than six months at –20°C to –70°C. Reconstituted sFGFR-3(IIIb)/Fc should be stored in working aliquots at -20°C.

Reconstitution: The lyophilized sFGFR-3(IIIb)/Fc is soluble in water and PBS and should be reconstituted to a concentration not lower than 50µg/ml.

AVOID REPEATED FREEZE AND THAW CYCLES!

Biological Activity: Measured by its binding ability to aFGF and FGF2 in a functional ELISA. In addition recombinant human soluble FGFR-3(IIIb)/Fc Chimera also binds to immobilized recombinant human FGF9 and FGF18.

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Recombinant Human Soluble FGFR-3(IIIb)/Fc Chimera

Handling/Application

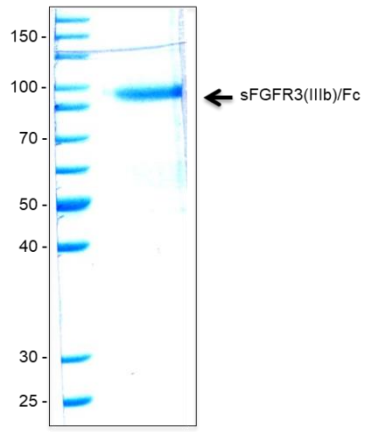

Fig. 1: SDS-PAGE analysis of recombinant human soluble FGFR-3(IIIb)/Fc produced in insect cells. Sample was loaded in 12.5% SDS-polyacrylamide gel under reducing condition and stained with Coomassie blue.

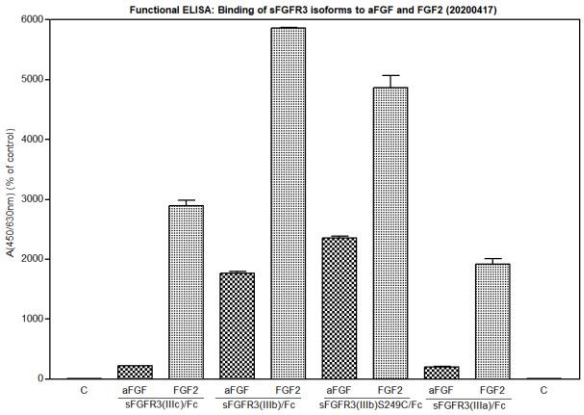

Fig. 2: Functional ELISA: Recombinant human aFGF and FGF2 were coated with 1µg/ml in PBS and recombinant human sFGFR3(IIIc/Fc), sFGFR3(IIIb)/Fc, sFGFR3(IIIb)S249C/Fc and sFGFR3(IIIa)/Fc were added to the well (1µg/ml). Detection was performed using a mouse anti-human FGFR3 antibody (Santa Cruz #sc-13121) and a conjugated goat anti-mouse polyclonal antibody for detection.

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