



Recombinant Human Soluble FGFR-2(IIIb)/Fc Chimera

20150108BB



FOR RESEARCH ONLY! NOT FOR HUMAN USE!

Cat.-no:	SFC-041
Size:	50 µg
Lot. No.:	According to product label
Country of origin:	Germany

Scientific Background

Gene:	<i>FGFR2, bek, KGFR, KSAM</i>
Synonyms:	Fibroblast growth factor receptor 2, BFR-1, FGFR2IIIb, KGFR

Recombinant human soluble FGFR-2 (IIIb) was fused via a Xa cleavage site with the Fc part of human IgG₁. Human recombinant soluble FGFR-2 (IIIb) is a disulfide-linked homodimeric protein. In the reduced form the glycosylated subunits of sFGFR-2 (IIIb)/human Fc chimera display a molecular mass of about 90 kDa. Fibroblast Growth Factors (FGFs) comprise a family of at least eighteen structurally related proteins that are involved in a multitude of physiological and pathological cellular processes, including cell growth, differentiation, angiogenesis, wound healing and tumorigenesis. 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, FGFR-1 to -4 are known. Multiple forms of FGFR-1 to -3 are generated by alternative splicing of the mRNAs. A frequent splicing event involving FGFR-1 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 FGFR-3 and FGFR-4. Additional splicing events for FGFR-1 to -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 FGFR-1. Mutations in FGFR-1 to -3 have been found in patients with birth defects involving craniosynostosis.

References

1. Eisemann et al, Oncogene 6:1195, 1991
2. Givol et al., FASEB J 6:3362, 1992
3. Galzie Z et al, Biochem Cell Biol 75:669, 1997.
4. Burke D et al, Trends Biochem Sci 23:59, 1198

Sequence

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RPSFSLVEDTTLEPEEPPTKYQISQPEVYVAAPGESLEVRCLLKDAAVISWT  
KDGVHLGPNRNTVLIGEYLQIKGATPRDSGLYACTASRTVDSETWYFMVNV  
DAISSGDEDDTDGAEDFVSENSNNKRAPYWTNTEKMEKRLHAVPAANTVKF  
RCPAGGNPMTMRWLKNGKEFKQEHRIGGYKVRNQHWSLIMESVVPSSDKNY  
TCVVENEYGSINHTYHLDVVERSPHRPILQAGLPANASTVVGGDVEFVCKVY  
SDAQPHIQWIKHVEKNGSKYGPDLPLYLKVLLKHSGINSNAEVLALFNVTEA  
DAGEYICKVSNYIGQANQSAWLTVLPKQAPGREKEITASPDYLEDPRRASI  
EGRGDPEEPKSCDKTHTCPPEPAPELLLGGPSVFLFPPKPKDTLMSRTPVET  
CVVVDVSHEDPEVKFNWYVDGVEVHNAKTKPREEQYNSTYRVVSVLTVLHQD  
WLNKKEYKCKVSNKALPAPIEKTISKAKGQPREPQVYTLPPSRDELTKNQVS  
LTCLVKGFYPSDIAVEWESNGQPENNYKTTTPVLDSDGSFFLYSKLTVDKSR  
WQQGNVFSCSVMEALHNHYTQKLSLSLSPGK
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Database References

Protein RefSeq:	NP_075259.4
Uniprot ID:	P21802-3
mRNA RefSeq:	NM_022970.3

Product Specifications

Expressed in	Insect cells
Purity	> 90% by SDS-PAGE & silver stain
Buffer	PBS
Stabilizer	None
Formulation	lyophilized
Length (aa):	603
MW:	~90 kDa

Stability: Lyophilized samples are stable for greater than six months at -20°C to -70°C. Reconstituted sFGFR-2(IIIb)/Fc should be stored in working aliquots at -20°C.

Reconstitution: The lyophilized sFGFR-2(IIIb)/Fc is soluble in water and most aqueous buffers and should be reconstituted to a concentration not lower than 50µg/ml.



AVOID REPEATED FREEZE AND THAW CYCLES!

Biological Activity: (1) The activity of sFGFR-2(IIIb)/Fc was determined by its ability to inhibit the FGF10-induced proliferation of 4MBr-5 cells. (2) Measured by its binding ability in a functional ELISA. Recombinant human soluble FGFR-2(IIIb)/Fc Chimera bind to immobilized recombinant human FGF-10 (Catalog #100-022).



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Handling/Application

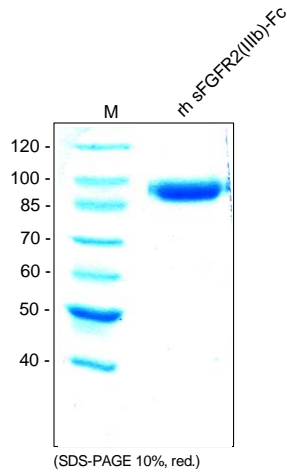


Fig. 1: SDS-PAGE analysis of recombinant human soluble FGFR-2(IIIb)/Fc produced in insect cells. Sample was loaded in 10% SDS-polyacrylamide gel under reducing condition and stained with Coomassie blue.

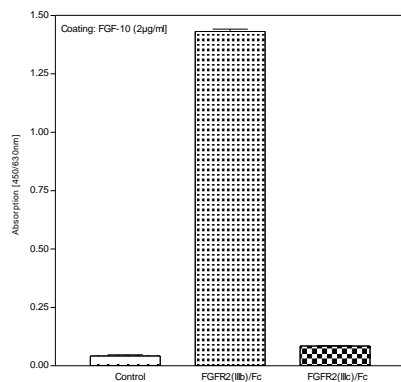


Fig. 2: Functional ELISA with recombinant human sFGFR-2(IIIb)/Fc Chimera. Recombinant human FGF-10 (Catalog #100-022) was coated at 2µg/ml and sFGFR2(IIIb)/Fc and sFGFR2(IIIc)/Fc were added [1µg/ml each]. FGF-10 binds only to FGFR2(IIIb) and not to FGFR2(IIIc).

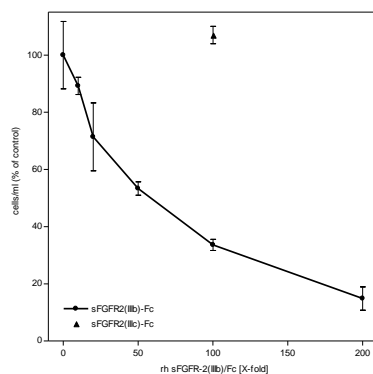


Fig. 3: Inhibition of FGF10-induced proliferation of 4MBr-5 cells by recombinant human soluble FGFR-2(IIIb)/Fc. sFGFR-2(IIIc)/Fc which do not bind FGF10 show no effect.