Recombinant Human Soluble FGFR3(IIIa)/Fc Chimera

20210614BB

FOR RESEARCH ONLY! NOT FOR HUMAN USE!

Cat.-no:	**SFC-023**
Size:	5 µg
Lot. No.:	According to product label
Country of origin:	Germany

Scientific Background

Gene:	*FGFR3*
Synonyms:	Fibroblast growth factor receptor 3, FGFR-3, CD333

The Fibroblast growth factor receptors (FGFRs) are a family of receptor tyrosine kinases that play key roles in proliferation, differentiation, and tumorigenesis. The FGFR3(IIIb) isoform was identified as the major family member expressed in normal human urothelium. Already in 2005 a splice variant, FGFR3(IIIa), also named FGFR3ΔTM, lacking exons encoding the COOH-terminal half of immunoglobulin-like domain III and the transmembrane domain was described. Previous reports had assumed that this is would be a cancer-specific splice variant but in 2005 it was shown that FGFR3(IIIa) is a normal transcript in NHU cells and is translated, N-glycosylated, and secreted. Primary urothelium expressed high levels of FGFR3(IIIa) transcripts. In culture, levels were reduced in actively proliferating cells but increased at confluence and as cells approached senescence. Cells overexpressing FGFR3(IIIb) showed FGF1-induced proliferation, which was inhibited by the addition of FGFR3(IIIa). In bladder tumor cell lines derived from aggressive carcinomas, there were significant alterations in the relative expression of isoforms including an overall decrease in the proportion of FGFR3(IIIa) and predominant expression of FGFR3 IIIc in some cases. In summary, alternative splicing of FGFR3(IIIb) in NHU cells represents a normal mechanism to generate a transcript that regulates proliferation and in bladder cancer, the ratio of FGFR3 isoforms is significantly altered.

References

1. Darren C et al, Cancer Res 65:(22), 2005
2. Stéphanie Garcia et al, www.ScienceTranslationalMedicine.org, Vol 5, 2013

Sequence

ESLGTEQRVVGRAAEVPGPEPGQQEQLVFGSGDAVELSCPPPGGGPMGPTVW
VKDGTGLVPSERVLVGPQRLQVLNASHEDSGAYSCRQRLTQRVLCHFSVRVT
DAPSSGDDEDGEDEAEDTGVDTGAPYWTRPERMDKKLLAVPAANTVRFRCPA
AGNPTPSISWLKNGREFRGEHRIGGIKLRHQQWSLVMESVVPSDRGNYTCVV
ENKFGSIRQTYTLDVLERSPHRPILQAGLPANQTAVLGSDVEFHCKVYSDAQ
PHIQWLKHVEVNGSKVGPDGTPYVTVLKTRSDKTHTCPPCPAPELLGGPSVF
LFPPKPKDTLMISRTPEVTCVVVDVSHEDPEVKFNWYVDGVEVHNAKTKPRE
EQYNSTYRVVSVLTVLHQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQPRE
PQVYTLPPSREEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTPPM
LDSDGSFFLYSKLTVDKSRWQQGNVFSCSVMHEALHNHYTQKSLSLSPGK

Database References

Protein RefSeq:	NP_075254.1
Uniprot ID:	P22607-3
mRNA RefSeq:	NM_022965.3

Product Specifications

Expressed in	Insect cells
Purity	> 80% by SDS-PAGE & Coomassie stain
Buffer	PBS
Stabilizer	None
Formulation	lyophilized
Length (aa):	518
MW:	65 kDa
Result by N-terminal sequencing	ESLGT

Stability: Lyophilized samples are stable for greater than six months at –20°C to –70°C. Reconstituted human soluble FGFR3(IIIa)/Fc should be stored in working aliquots at -20°C.

Reconstitution: The lyophilized soluble sFGFR3(IIIa)/Fc is soluble in water and most aqueous buffers and should be reconstituted in PBS or medium to a concentration not lower than 50µg/ml.

AVOID REPEATED FREEZE AND THAW CYCLES!

Biological Activity: Measured by its binding ability to FGF-2 in a functional ELISA. Recombinant human soluble FGFR3(IIIa)/Fc Chimera binds to immobilized recombinant human FGF-2 (Cat #300-001).

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Recombinant Human Soluble FGFR3(IIIa)/Fc Chimera

Handling/Application

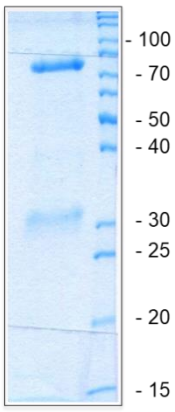

Fig. 1: SDS-PAGE analysis of recombinant human soluble FGFR3(IIIa)/Fc produced in insect cells. Sample was loaded in 12.5% SDS-polyacrylamide gel under reducing condition and stained with Coomassie blue.

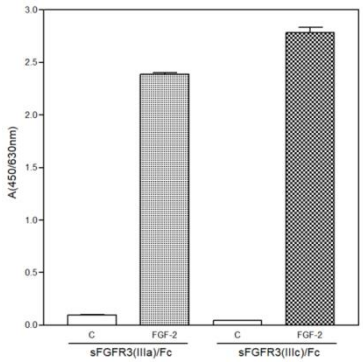

Fig. 2: Functional ELISA: Recombinant human FGF-2 [Cat# 300-001] was coated with 1µg/ml in PBS and recombinant human soluble FGFR3(IIIa)/Fc and sFGFR3(IIIc)/Fc was added to the well. Detection was performed using a Biotin-conjugated goat anti FC antibody.

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