



## Recombinant Human Soluble FGFR3(IIIa)

20190923BB



**FOR RESEARCH ONLY! NOT FOR HUMAN USE!**

<b>Cat.-no:</b>	<b>S01-020</b>
<b>Size:</b>	20 µg
<b>Lot. No.:</b>	According to product label
<b>Country of origin:</b>	Germany

### Scientific Background

<b>Gene:</b>	<i>FGFR3</i>
<b>Synonyms:</b>	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 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](http://www.ScienceTranslationalMedicine.org), Vol 5, 2013

### Sequence

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ESLIGTEQRVVGRAAEVPGPEPGQQEQLVFGSGDAVELSCPPPGGGPMGPTVW
VKDGTGLVPSERVLVGPQRLQVLNASHEDSGAYSCRQRLTQRVLCHFVSRVT
DAPSSGDDEDEDEAEDTGVDTGAPYWTRPERMDKLLAVPAANTVRFRCPA
AGNPTPSISWLKNGREFRGEHRIGGIKLRHQQWSLVMESVVPDRGNVTCVV
ENKFGSIRQTYTLDVLEERSPHRPILQAGLPANQTAVLGSDFEFHCKVYSDAQ
PHIQWLKHVEVNGSKVGPDGTPTVTLKTR
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### Database References

<b>Protein RefSeq:</b>	NP_075254.1
<b>Uniprot ID:</b>	P22607-3
<b>mRNA RefSeq:</b>	NM_022965.3

### Product Specifications

<b>Expressed in</b>	Insect cells
<b>Purity</b>	> 95% by SDS-PAGE & Coomassie stain
<b>Buffer</b>	PBS
<b>Stabilizer</b>	None
<b>Formulation</b>	lyophilized
<b>Length (aa):</b>	290
<b>MW:</b>	~38.0 kDa (under reduced conditions)
<b>Result by N-terminal sequencing</b>	ESLGT

**Stability:** Lyophilized samples are stable for greater than six months at -20°C to -70°C. Reconstituted human sFGFR3(IIIa) should be stored in working aliquots at -20°C.

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



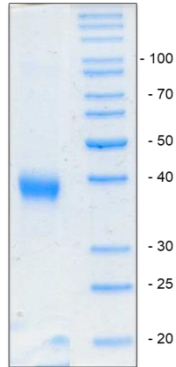
**AVOID REPEATED FREEZE AND THAW CYCLES!**

**Biological Activity:** Measured by its binding ability to several FGF isoforms in a functional ELISA. Recombinant human sFGFR3(IIIa) binds to several immobilized recombinant human FGF isoforms.

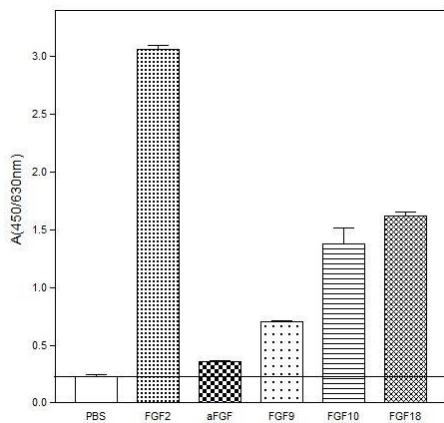


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### Handling/Application



**Fig. 1:** SDS-PAGE analysis of recombinant human soluble FGFR3(IIIa) 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 isoforms were coated with 1µg/ml in PBS and recombinant human sFGFR3(IIIa) was added to the well. Detection was performed using a mouse anti-human FGFR3 antibody (Santa Cruz #sc-13121) and a conjugated goat anti-mouse polyclonal antibody for detection.