

DESCRIPTION

Source	Chinese Hamster Ovary cell line, CHO-derived human FGFR2 alpha protein		
	Human FGFR2 alpha (IIIc) (Arg22-Glu377) Accession # P21802.1	6-His tag	Avi-tag
	N-terminus		C-terminus
N-terminal Sequence Analysis	Arg22		
Structure / Form	Biotinylated via Avi-tag		
Predicted Molecular Mass	40 kDa		

SPECIFICATIONS

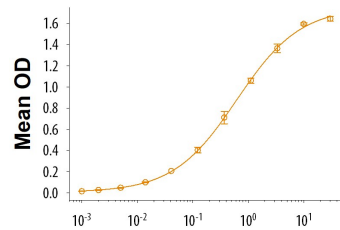
SDS-PAGE	68-78 kDa, under reducing conditions.
Activity	Measured by its binding ability in a functional ELISA. When Recombinant Human FGF acidic/FGF1 (aa 16-155) Protein (Catalog # 232-FA/CF) is in the presence at 50.0 ng/mL (100 µL/well), Biotinylated Recombinant Human FGFR2 alpha (IIIc) His-tag Avi-tag binds with an ED ₅₀ of 0.300-3.00 µg/mL.
Endotoxin Level	<0.10 EU per 1 µg of the protein by the LAL method.
Purity	>95%, by SDS-PAGE visualized with Silver Staining and quantitative densitometry by Coomassie® Blue Staining.
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 500 µg/mL in PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	<p>Use a manual defrost freezer and avoid repeated freeze-thaw cycles.</p> <ul style="list-style-type: none"> • 12 months from date of receipt, -20 to -70 °C as supplied. • 1 month, 2 to 8 °C under sterile conditions after reconstitution. • 3 months, -20 to -70 °C under sterile conditions after reconstitution.

DATA

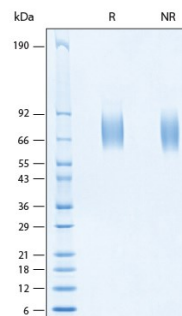
Binding Activity



Biotinylated Recombinant Human FGFR2 alpha (IIIc) Avi-tag (ug/mL)

Recombinant Human FGFR2 alpha (IIIc) His-tag Avi-tag Protein Binding Activity.
Measured by its binding ability in a functional ELISA. When Recombinant Human FGF acidic/FGF1 (aa 16-155) Protein (Catalog # 232-FA) is present at 50.0 ng/mL (100 µL/well), Biotinylated Recombinant Human FGFR2 alpha (IIIc) His-tag Avi-tag binds with an ED₅₀ of 0.300-3.00 µg/mL.

SDS-PAGE



Recombinant Human FGFR2 alpha (IIIc) His Avi-tag Protein SDS-PAGE. 2 µg/lane of Recombinant Human FGFR2 alpha (IIIc) His Avi-tag Protein (Catalog # AV111119) was resolved with SDS-PAGE under reducing (R) and non-reducing (NR) conditions and visualized by Coomassie® Blue staining, showing bands at 68-78 kDa.

BACKGROUND

Fibroblast growth factor receptor 2 (FGFR2) belongs to a family of type I transmembrane tyrosine kinases which mediate the biological functions of FGFs that are involved in a multitude of physiological and pathological cellular processes (1). The FGFR family is comprised of 4 structurally conserved members (FGFR1-4) all possessing an extracellular domain (ECD) with 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 cytoplasmic split tyrosine-kinase domain (1, 2). The ECD of mature, full-length FGFR2 shares 95% amino acid sequence identity with mouse FGFR2. Alternative splicing generates multiple forms of FGFR1-3, each with unique signaling characteristics (1-3). For FGFR2, alternative splicing of the ECD, specifically the IgIII domain, results in IIIb, or IIIc isoforms (4). The FGFR splice variants also exhibit distinct and varying binding affinities for different FGF ligands (2, 4). Specifically, FGFR2A (IIIc) binds most FGF ligands but not the FGF10 subfamily, while FGFR2A (IIIb) binds only members of the FGF10 subfamily (5). FGFRs mediate the FGF signaling cascade which regulate developmental processes including cellular proliferation, differentiation, and migration, morphogenesis, and patterning (6). FGFRs transduce the signals through three dominant pathways including RAS/MAPK, PI3k/AKT, and PLC γ (7). While FGFR2 is widely expressed in many adult human tissues, isoform expression is tissue specific, with IIIb predominantly expressed in epithelial cells, while IIIc is expressed in mesenchymal cells (5). FGFR2 signaling is critical for embryonic development, tissue repair, and regulation of osteoblast function and bone growth (8). Mutations in FGFR2 or misregulation of FGFR2 mediated signaling is found in multiple skeletal dysplasias, with FGFR2A (IIIc) specifically upregulated in several cancers including prostate, breast and pancreatic and is proposed as a novel therapeutic target for colorectal carcinomas (6, 9). Our Avi-tag Biotinylated FGFR2 protein features biotinylation at a single site contained within the Avi-tag, a unique 15 amino acid peptide. Protein orientation will be uniform when bound to streptavidin-coated surface due to the precise control of biotinylation and the rest of the protein is unchanged so there is no interference in the protein's bioactivity.

References:

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3. Ferguson, H.R. *et al.* (2021) Signaling. Cells **10**:1201.
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8. Teven, C.M. *et al.* (2014) Genes Dis. **1**:199.
9. Matsuda, Y. *et al.* (2012) Mol Cancer Ther. **11**:2010.