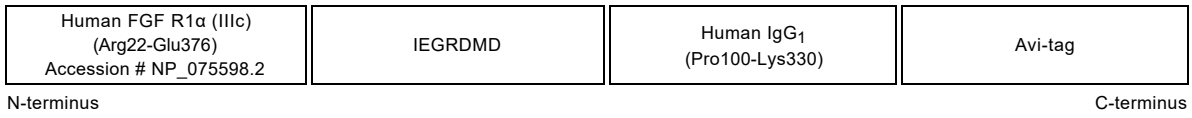
Biotinylated Recombinant Human FGFR1 alpha (IIIc) Fc Chimera Avi-tag

Catalog Number: AVI11031

DESCRIPTION

Source

Chinese Hamster Ovary cell line, CHO-derived human FGFR1 alpha protein



N-terminal Sequence Analysis	Arg22
Structure / Form	Disulfide-linked homodimer Biotinylated via Avi-tag
Predicted Molecular Mass	68 kDa

SPECIFICATIONS

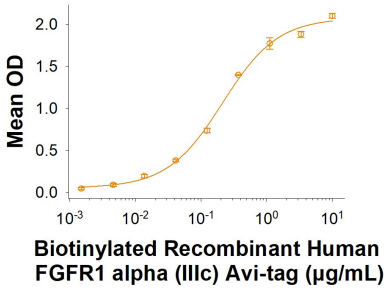
SDS-PAGE	100-120 kDa, under reducing conditions.
Activity	Measured by its binding ability in a functional ELISA. In a Human FGF acidic/FGF1 antibody (Catalog # AF232) coated plate, in the presence of 50.0 ng/mL of Recombinant Human FGF acidic/FGF1, Biotinylated Recombinant Human FGFR1 alpha (IIIc) Fc Chimera Avi-tag Protein binds with an ED_{50} of 0.100-0.600 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	**Use a manual defrost freezer and avoid repeated freeze-thaw cycles.** • 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.

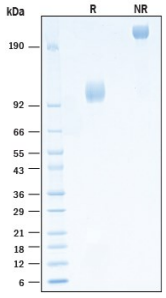
DATA

Bioactivity



Biotinylated Recombinant Human FGFR1 alpha (IIIc) Fc Chimera Avi-tag Protein Bioactivity. In a Human FGFacidic/FGF1 antibody (Catalog # AF232) coated plate, in the presence of 50 ng/mL of Recombinant Human FGFacidic/FGF1 (Catalog # 232-FA), Recombinant Human FGFR1 alpha (IIIc) Fc Avi-tag Protein (Catalog # AVI11031) binds with an ED_{50} of 0.100-0.600 µg/mL.

SDS-PAGE



Biotinylated Recombinant Human FGFR1 alpha (IIIc) Fc Chimera Avi-tag Protein SDS-PAGE. 2 µg/lane of Biotinylated Recombinant Human FGFR1 alpha (IIIc) Fc Chimera Avi-tag Protein (Catalog # AVI11031) was resolved with SDS-PAGE under reducing (R) and non-reducing (NR) conditions and visualized by Coomassie® Blue staining, showing bands at 100-120 kDa and 200-240 kDa, respectively.

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BACKGROUND

Fibroblast growth factor receptor 1 (FGFR1) 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 the split tyrosine-kinase domain (1, 2). The ECD of mature, full-length FGFR1 shares 98% amino acid sequence identity with mouse FGFR1. Alternative splicing generates multiple forms of FGFR1-3, each with unique signaling characteristics (3). For FGFR1, alternative splicing of the ECD generates FGFR1A, FGFR1B, and FGFR1G isoforms of the receptor with the A isoform containing three Ig domains, while the B and G isoforms lack the N-terminal IgI domain (3). Additional splicing of the IgIII domain, results in IIIa, IIIb, or IIIc isoforms (3). Only the alpha isoform has been identified for FGFR3 and FGFR4 and FGFR4 also lacks the IIIb and IIIc splicing events (4). The FGFR splice variants also exhibit distinct and varying binding affinities for different FGF ligands (2). FGFRs mediate the FGF signaling cascade which regulate developmental processes including cellular proliferation, differentiation, and migration, morphogenesis, and patterning (5). FGFRs transduce the signals through three dominant pathways including RAS/MAPK, PI3k/AKT, and PLCγ (6). FGFR1 the most abundant FGFR and is widely expressed in many adult human tissues, but the splice variants display distinct tissue-specific differences with IIIc splice variants expressed in mesenchymal tissue (4, 7, 8). Mutations in FGFR1 or misregulation of FGFR1 mediated signaling is found in multiple diseases, with FGFR1A(IIIc) specifically upregulated, from breast and pancreatic cancer to Pfeiffer syndrome and osteoarthritis (4, 9-11). A soluble version of the FGFR1A(IIIc) splice variant has shown anti- angiogenic and anti-proliferative properties in multiple cancer cell line models (11). Our Avi-tag Biotinylated FGFR1A(IIIc) 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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