Biotinylated Recombinant Human TrkA Fc Chimera Avi-tag

Catalog Number: AVI11378

DESCRIPTION

Source

Chinese Hamster Ovary cell line, CHO-derived human TrkA protein

Human TrkA (Ala34-Gly423) Accession # P04629.4	IEGRMD	Human IgG_1 (Pro100-Lys330)	Avi-tag

N-terminus C-terminus

N-terminal Sequence Analysis	Ala34
Structure / Form	Disulfide-linked homodimer Biotinylated via Avi-tag
Predicted Molecular Mass	71 kDa

SPECIFICATIONS

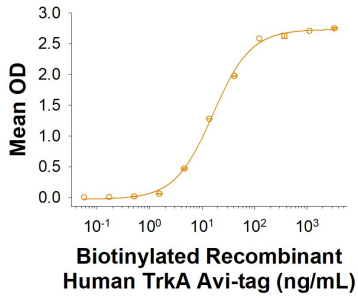
SDS-PAGE	105-120 kDa, under reducing conditions.
Activity	Measured by its binding ability in a functional ELISA. When Recombinant Human β-NGF (Catalog # 256-GF) is immobilized at 0.5 µg/mL (100 µL/well), Biotinylated Recombinant Human TrkA Fc Chimera Avi-tag (Catalog # AVI11378) binds with an ED_{50} of 7.00-70.0 ng/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, -70 °C under sterile conditions after reconstitution.

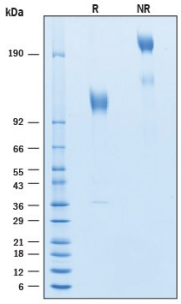
DATA

Binding Activity



Biotinylated Recombinant Human TrkA Fc Chimera Avi-tag Protein Binding Activity. Measured by its binding ability in a functional ELISA. When Recombinant Human β-NGF (Catalog # 256-GF) is immobilized at 0.5 µg/mL (100 µL/well), Biotinylated Recombinant Human TrkA Fc Chimera Avi-tag Protein (Catalog # AVI11378) binds with an ED_{50} of 7.00-70.0 ng/mL.

SDS-PAGE



Biotinylated Recombinant Human TrkA Fc Chimera Avi-tag Protein SDS-PAGE. 2 µg/lane of Biotinylated Recombinant Human TrkA Fc Chimera Avi-tag Protein (Catalog # AVI11378) was resolved with SDS-PAGE under reducing (R) and non-reducing (NR) conditions and visualized by Coomassie® Blue staining, showing bands at 105-120 kDa and 210-240 kDa, respectively.

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BACKGROUND

TrkA (Tyrosine kinase receptor A), also known as High affinity NGF receptor, is a member of the neurotrophic tyrosine kinase receptor family that has three members, TrkA, Trk B and Trk C, which preferentially bind NGF, NT-4 and BDNF, and NT-3, respectively (1). All Trk family proteins share a conserved complex subdomain organization consisting of a signal peptide, two cysteine-rich domains, a cluster of three leucine-rich motifs, and two immunoglobulin-like domains in the extracellular region, as well as an intracellular region that contains the tyrosine kinase domain. Two distinct TrkA isoforms that differ by virtue of a 6-amino acid insertion in their extracellular domain have been identified. The longer TrkA isoform is the only isoform expressed within neuronal tissues whereas the shorter TrkA is expressed mainly in non-neuronal tissues (1). NGF binds to TrkA with low affinity and activates its cytoplasmic kinase, initiating a signaling cascade that mediates neuronal survival and differentiation. Higher affinity binding of NGF requires the coexpression of TrkA with the p75 NGF receptor (NGFR), a member of the tumor necrosis factor receptor superfamily (2). NGFR binds all neurotrophins with low affinity and modulates Trk activity as well as alters the specificity of Trk receptors for their ligands. NGFR can also mediate cell death when being expressed independent of Trk (3). Our Avi-tag Biotinylated human TrkA Fc Chimeria 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:

1. Shelton D.L. et al. (1995) J. Neurosci. **15**:477.
2. Esposito, D. *et al.* (2001) J. Biol. Chem. **276**:32687.
3. Sofroniew, M.V. *et al.* (2001) Annu. Rev. Neurosci. **24**:1217.

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