

Human TrkA / NTRK1 Protein (His & Fc Tag)

Catalog Number: 11073-H03H



Sino Biological Inc.
Biological Solution Specialist

General Information

Gene Name Synonym:

MTC; p140-TrkA; TRK; Trk-A; TRK1; TRKA; C80751; Tkr; trk; TrkA

Protein Construction:

A DNA sequence encoding the human NTRK1 (NP_002520.2) extracellular domain (Met 1-Pro 382) was fused with the C-terminal polyhistidine-tagged Fc region of human IgG1 at the C-terminus.

Source: Human

Expression Host: Human Cells

QC Testing

Purity: > 98 % as determined by SDS-PAGE

Bio Activity:

Measured by its ability to inhibit NGF-induced proliferation of TF-1 human erythroleukemic cells. The ED₅₀ for this effect is typically 0.04-0.15 µg/ml in the presence of 10 ng/ml of recombinant human NGF.

Endotoxin:

< 1.0 EU per µg of the protein as determined by the LAL method

Stability:

Samples are stable for up to twelve months from date of receipt at -70 °C

Predicted N terminal: Ala 33

Molecular Mass:

The recombinant human NTRK1/Fc is a disulfide-linked homodimer. The reduced monomer consists of 598 amino acids and has a predicted molecular mass of 66 kDa. In SDS-PAGE under reducing conditions, the apparent molecular mass of rh NTRK1/Fc monomer is approximately 85-95 kDa due to glycosylation.

Formulation:

Lyophilized from sterile PBS, pH 7.4

Normally 5 % - 8 % trehalose, mannitol and 0.01% Tween80 are added as protectants before lyophilization. Specific concentrations are included in the hardcopy of COA. Please contact us for any concerns or special requirements.

Usage Guide

Storage:

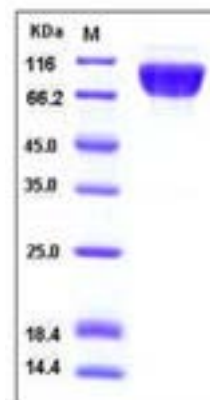
Store it under sterile conditions at -20°C to -80°C upon receiving. Recommend to aliquot the protein into smaller quantities for optimal storage.

Avoid repeated freeze-thaw cycles.

Reconstitution:

Detailed reconstitution instructions are sent along with the products.

SDS-PAGE:



Protein Description

TRKA is a member of the neurotrophic tyrosine kinase receptor (NTRK) family. It is a membrane-bound receptor that, upon neurotrophin binding, phosphorylates itself and members of the MAPK pathway. Isoform TrkA-III promotes angiogenesis and has oncogenic activity when overexpressed. Isoform TrkA-I is found in most non-neuronal tissues. Isoform TrkA-II is primarily expressed in neuronal cells. TrkA-III is specifically expressed by pluripotent neural stem and neural crest progenitors. The presence of NTRK1 leads to cell differentiation and may play a role in specifying sensory neuron subtypes. Mutations in TRKA gene have been associated with congenital insensitivity to pain, anhidrosis, self-mutilating behavior, mental retardation and cancer. It was originally identified as an oncogene as it is commonly mutated in cancers, particularly colon and thyroid carcinomas. TRKA is required for high-affinity binding to nerve growth factor (NGF), neurotrophin-3 and neurotrophin-4/5 but not brain-derived neurotrophic factor (BDNF). Known substrates for the Trk receptors are SHC1, PI 3-kinase, and PLC-gamma-1. NTRK1 has a crucial role in the development and function of the nociceptive reception system as well as establishment of thermal regulation via sweating. It also activates ERK1 by either SHC1- or PLC-gamma-1-dependent signaling pathway. Defects in NTRK1 are a cause of congenital insensitivity to pain with anhidrosis and thyroid papillary carcinoma.

References

1. Lambiase A, *et al.* (2005) Molecular basis for keratoconus: lack of TrkA expression and its transcriptional repression by Sp3. *Natl Acad Sci.* 102 (46):16795-800.
2. Benito-Gutiérrez E, *et al.* (2006) Origin and evolution of the Trk family of neurotrophic receptors. *Mol Cell Neurosci.* 31(2):179-92.
3. Martin-Zanca D, *et al.* (1986) A human oncogene formed by the fusion of truncated tropomyosin and protein tyrosine kinase sequences. *Nature.* 319(6056):743-8.

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