

Human TrkA / NTRK1 Protein (aa 194-413, His Tag)

Catalog Number: 11073-H07H2



Sino Biological
Biological Solution Specialist

General Information

Gene Name Synonym:

MTC; p140-TrkA; TRK; Trk-A; TRK1; TRKA

Protein Construction:

A DNA sequence encoding the amino acid sequence (Pro 194-Glu 413) of human NTRK1 (NP_002520.2), corresponding to the Ig-like C2-type 1 & 2 domains, was expressed and purified, with a N-terminal polyhistidine tag.

Source: Human

Expression Host: HEK293 Cells

QC Testing

Purity: > 95 % as determined by SDS-PAGE

Bio Activity:

Measured by its ability to inhibit NGF-induced proliferation of TF1 human erythroleukemic cells. The ED_{50} for this effect is typically 0.5-4 μ g/ml in the presence of 10 ng/mL of human NGF.

Endotoxin:

< 1.0 EU per μ g 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: His

Molecular Mass:

The recombinant human NTRK1 Ig-like C2-type 1 & 2 domains (aa 194-413) consists of 239 amino acids and has a predicted molecular mass of 26 kDa. As a result of glycosylation, it migrates as an approximately 45-50 kDa band in SDS-PAGE under reducing conditions.

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:

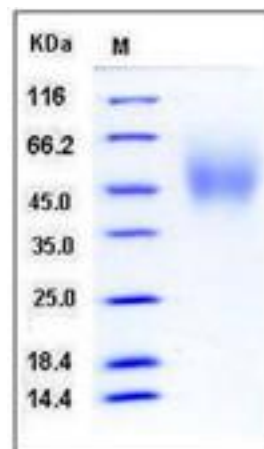
Store it under sterile conditions at -20°C to -80°C upon receiving. Recommend to aliquot the protein into smaller quantities for optimal storage.

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 , 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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