

Rat TrkA / NTRK1 Protein (His Tag)

Catalog Number: 80404-R08H



Sino Biological
Biological Solution Specialist

General Information

Gene Name Synonym:

NTRK1

Protein Construction:

A DNA sequence encoding the rat NTRK1 (NP_067600.1)(Met1-Pro418) was expressed with a polyhistidine tag at the C-terminus.

Source: Rat

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 TF-1 human erythroleukemic cells.
The ED₅₀ for this effect is typically 0.2-0.8 µg/mL in the presence of 10 ng/mL of recombinant mouse NGF.

Endotoxin:

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

Predicted N terminal: Ala 33

Molecular Mass:

The recombinant rat NTRK1 comprises 397 amino acids and predicts a molecular mass of 43.7 kDa. The apparent molecular mass of the recombinant protein is approximately 67-77 kDa in SDS-PAGE under reducing conditions 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

Stability & Storage:

Samples are stable for twelve months from date of receipt at -20°C to -80°C.

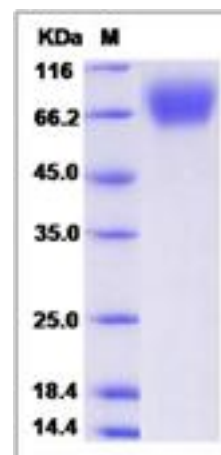
Store it under sterile conditions at -20°C to -80°C upon receiving. Recommend to aliquot the protein into smaller quantities for optimal storage.

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.