

# Mouse TrkA / NTRK1 Protein (His Tag)

Catalog Number: 51103-M08H



Sino Biological  
Biological Solution Specialist

## General Information

### Gene Name Synonym:

C80751; Tkr; trk; TrkA

### Protein Construction:

A DNA sequence encoding the mouse NTRK1 (NP\_001028296.1)(Met1-Gly420) was expressed with a C-terminal polyhistidine tag.

**Source:** Mouse

**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 ED<sub>50</sub> for this effect is typically 0.2-1 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 34

### Molecular Mass:

The recombinant mouse NTRK1 comprises 398 amino acids and has a predicted molecular mass of 43.7 kDa. The apparent molecular mass of the protein is approximately 69 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.

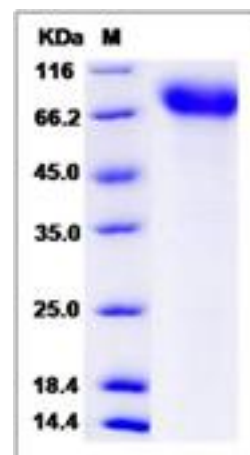
Store it under sterile conditions at -20°C to -80°C upon receiving. Recommend to aliquot the protein into smaller quantities for optimal storage.

**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.