**Human TrkA / NTRK1 Protein (aa 285-413, His Tag)**

**Catalog Number:** 11073-H07E1

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**General Information**

**Gene Name Synonym:**
MTC; p140-TrkA; TRK; Trk-A; TRK1; TRKA; C80751; Tkr; trk; TrkA

**Protein Construction:**
A DNA sequence encoding the amino acid sequence (Pro 285-Glu 413) of human NTRK1 (NP_002520.2), corresponding to the Ig-like C2-type 2 domain, was expressed and purified, with a N-terminal polyhistidine tag.

**Source:** Human

**Expression Host:** E. coli

**QC Testing**

**Purity:** > 97 % as determined by SDS-PAGE

**Endotoxin:**
Please contact us for more information.

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

**Predicted N terminal:** Met

**Molecular Mass:**
The recombinant human NTRK1 Ig-like C2-type 2 domain (aa 285-413) consists of 136 amino acids and has a predicted molecular mass of 15.1 kDa. It migrates as an approximately 16 kDa band in SDS-PAGE under reducing conditions.

**Formulation:**
Lyophilized from sterile 50mM Tirs, 200mM NaCl, pH 8.0

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.

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**SDS-PAGE:**

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**Protein Description**

TRKA is a member of the neurotrophic tyrosine kinase receptor (NTKR) 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**