

TrkB Protein, Rat, Recombinant (His)

General Information

Synonyms:	neurotrophic tyrosine kinase, receptor, type 2
Protein Construction:	A DNA sequence encoding the rat NTRK2 (Q63604-Isoform T1) (Met1-His429) was expressed with a polyhistidine tag at the C-terminus. Predicted N terminal: Cys 32
Species:	Rat
Expression Host:	HEK293 Cells
Accession:	Q63604
Molecular Weight:	47.1 kDa (predicted); 67 kDa (reducing condition, due to glycosylation)

QC Testing

Biological Activity:	Measured by its binding ability in a functional ELISA. Immobilized rat NTRK2-His at 10 µg/ml (100 µl/well) can bind biotinylated mouse BDNF, The EC50 of biotinylated mouse BDNF is 12.2-28.6 ng/ml.
Purity:	> 95 % as determined by SDS-PAGE
Endotoxin:	< 1.0 EU/µg of the protein as determined by the LAL method.
Formulation:	Lyophilized from a solution filtered through a 0.22 µm filter, containing PBS, pH 7.4. Typically, a mixture containing 5% to 8% trehalose, mannitol, and 0.01% Tween 80 is incorporated as a protective agent before lyophilization.

Preparation and Storage

Reconstitution:
A Certificate of Analysis (CoA) containing reconstitution instructions is included with the products. Please refer to the CoA for detailed information.

Stability & Storage:

It is recommended to store recombinant proteins at -20°C to -80°C for future use. Lyophilized powders can be stably stored for over 12 months, while liquid products can be stored for 6-12 months at -80°C. For reconstituted protein solutions, the solution can be stored at -20°C to -80°C for at least 3 months. Please avoid multiple freeze-thaw cycles and store products in aliquots.

Actual storage temperature shall be subject to the COA.

Shipping:

In general, lyophilized powders are shipped with blue ice, while solutions are shipped with dry ice.

Protein Background

TrkB receptor also known as TrkB tyrosine kinase or BDNF/NT-3 growth factors receptor or neurotrophic tyrosine kinase, receptor, type 2 (NTRK2) is a single transmembrane catalytic receptor with intracellular tyrosine kinase activity. TrkB/NTRK2 is a member of the neurotrophic tyrosine receptor kinase (NTRK) family. TrkB tyrosine kinase (TrkB) or NTRK2 is coupled to the Ras, Cdc42/Rac/RhoG, MAPK, PI3-K, and PLCgamma signaling pathways. There

are four members of the Trk family; TrkA, TrkB, and TrkC and a related p75NTR receptor. Each family member binds different neurotrophins with varying affinities. TrkB/NTRK has the highest affinity for brain-derived neurotrophic factor (BDNF) and is involved in neuronal plasticity, long-term potentiation, and apoptosis of CNS neurons. Other neurotrophins include nerve growth factor (NGF), neurotrophin-3 and neurotrophin-4. TrkB/NTRK is a membrane-bound receptor that, upon neurotrophin binding, phosphorylates itself and members of the MAPK pathway. Signaling through this kinase leads to cell differentiation. Mutations in TrkB/NTRK have been associated with obesity and mood disorders. Cancer Immunotherapy/Immune Checkpoint/Immunotherapy/Targeted Therapy

Reference

- Klein R, et al. (1990) The trkB tyrosine protein kinase gene codes for a second neurogenic receptor that lacks the catalytic kinase domain. *Cell*. 61 (4): 647-56.
- Rose CR, et al. (2003) Truncated TrkB-T1 mediates neurotrophin-evoked calcium signalling in glia cells. *Nature*. 426 (6962): 74-8.
- Yamada K, et al. (2004) Brain-derived neurotrophic factor/TrkB signaling in memory processes. *J Pharmacol Sci*. 91 (4): 267-70.

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