

**Rabbit Anti-TrkB Polyclonal Antibody**  
**Purified Rabbit Polyclonal Antibody (Pab)**  
**Catalog # AP52272****Specification**

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**Rabbit Anti-TrkB Polyclonal Antibody - Product Information**

Application	WB, IHC-P, IHC-F, IF, E
Primary Accession	<a href="#">Q16620</a>
Reactivity	Human, Mouse, Rat
Host	Rabbit
Clonality	Polyclonal
Calculated MW	90-92 KDa
Physical State	Liquid
Immunogen	KLH conjugated synthetic peptide derived from human NTRK2
Epitope Specificity	401-500/822
Isotype	IgG
<b>Purity</b>	
affinity purified by Protein A	
Buffer	0.01M TBS (pH7.4) with 1% BSA, 0.02% Proclin300 and 50% Glycerol.
SUBCELLULAR LOCATION	Isoform TrkB is expressed in the central and peripheral nervous system. In the central nervous system (CNS), expression is observed in the cerebral cortex, hippocampus, thalamus, choroid plexus, granular layer of the cerebellum, brain stem, and spinal cord. In the peripheral nervous system, it is expressed in many cranial ganglia, the ophtalmic nerve, the vestibular system, multiple facial structures, the submaxillary glands, and dorsal root ganglia. Isoform TrkB-T1 is mainly expressed in the brain but also detected in other tissues including pancreas, kidney and heart. Isoform TrkB-T-Shc is predominantly expressed in the brain.
SIMILARITY	Belongs to the protein kinase superfamily. Tyr protein kinase family. Insulin receptor subfamily. Contains 2 Ig-like C2-type (immunoglobulin-like) domains. Contains 2 LRR (leucine-rich) repeats. Contains 1 LRRCT domain. Contains 1 LRRNT domain. Contains 1 protein kinase domain.
SUBUNIT	Exists in a dynamic equilibrium between monomeric (low affinity) and dimeric (high affinity) structures. Interacts (phosphorylated upon activation by BDNF) with SHC1; mediates SHC1 phosphorylation

## Post-translational modifications

and activation. Interacts (phosphorylated upon activation by BDNF) with PLCG1 and/or PLCG2; mediates PLCG1 phosphorylation and activation. Interacts with SH2B1 and SH2B2. Interacts with NGFR; may regulate the ligand specificity of the receptor. Interacts (phosphorylated upon ligand-binding) with SH2D1A; regulates NTRK2. Interacts with SQSTM1 and KIDINS220. Interacts (phosphorylated upon ligand-binding) with FRS2; activates the MAPK signaling pathway.

## DISEASE

Phosphorylated. Undergoes ligand-mediated autophosphorylation that is required for interaction with SHC1 and PLCG1 and other downstream effectors. Isoform TrkB-T-Shc is not phosphorylated. Ubiquitinated. Undergoes polyubiquitination upon activation; regulated by NGFR. Ubiquitination regulates the internalization of the receptor.

## Important Note

Defects in NTRK2 are the cause of obesity hyperphagia and developmental delay (OHPDD) [MIM:613886]. OHPDD is a disorder characterized by early-onset obesity, hyperphagia, and severe developmental delay in motor function, speech, and language.

This product as supplied is intended for research use only, not for use in human, therapeutic or diagnostic applications.

## Background Descriptions

This gene encodes a member of the neurotrophic tyrosine receptor kinase (NTRK) family. This kinase is a membrane-bound receptor that, upon neurotrophin binding, phosphorylates itself and members of the MAPK pathway. Signalling through this kinase leads to cell differentiation. Mutations in this gene have been associated with obesity and mood disorders. Alternate transcriptional splice variants encoding different isoforms have been found for this gene. [provided by RefSeq, Jul 2008].

## Rabbit Anti-TrkB Polyclonal Antibody - Additional Information

### Gene ID 4915

### Other Names

TRKB; trk-B; GP145-TrkB; BDNF/NT-3 growth factors receptor; Neurotrophic tyrosine kinase receptor type 2; TrkB tyrosine kinase; Tropomyosin-related kinase B; NTRK2

### Target/Specificity

TrkB-T1 is mainly expressed in the brain but also detected in other tissues including pancreas, kidney and heart. Isoform TrkB-T-Shc is predominantly expressed in the brain.

### Dilution

<span class = "dilution\_WB">WB~~1:100~1:500</span><br \><span class = "dilution\_IHC-P">IHC-P~~1:100~1:500</span><br \><span class

=["dilution\\_IHC-F">IHC-F~N/A](#)  
=["dilution\\_IF">IF~1:50~200](#)  
=["dilution\\_E">E~N/A](#)

**Format**

0.01M TBS(pH7.4), 0.09% (W/V) sodium azide and 50% Glyce

**Storage**

Store at -20 °C for one year. Avoid repeated freeze/thaw cycles. When reconstituted in sterile pH 7.4 0.01M PBS or diluent of antibody the antibody is stable for at least two weeks at 2-4 °C.

**Rabbit Anti-TrkB Polyclonal Antibody - Protein Information**

**Name** NTRK2

**Synonyms** TRKB

**Function**

Receptor tyrosine kinase involved in the development and the maturation of the central and the peripheral nervous systems through regulation of neuron survival, proliferation, migration, differentiation, and synapse formation and plasticity (By similarity). Receptor for BDNF/brain-derived neurotrophic factor and NTF4/neurotrophin-4. Alternatively can also bind NTF3/neurotrophin-3 which is less efficient in activating the receptor but regulates neuron survival through NTRK2 (PubMed:[15494731](http://www.uniprot.org/citations/15494731), PubMed:[7574684](http://www.uniprot.org/citations/7574684)). Upon ligand- binding, undergoes homodimerization, autophosphorylation and activation (PubMed:[15494731](http://www.uniprot.org/citations/15494731)). Recruits, phosphorylates and/or activates several downstream effectors including SHC1, FRS2, SH2B1, SH2B2 and PLCG1 that regulate distinct overlapping signaling cascades. Through SHC1, FRS2, SH2B1, SH2B2 activates the GRB2-Ras-MAPK cascade that regulates for instance neuronal differentiation including neurite outgrowth. Through the same effectors controls the Ras-PI3 kinase-AKT1 signaling cascade that mainly regulates growth and survival. Through PLCG1 and the downstream protein kinase C-regulated pathways controls synaptic plasticity. Thereby, plays a role in learning and memory by regulating both short term synaptic function and long-term potentiation. PLCG1 also leads to NF-Kappa-B activation and the transcription of genes involved in cell survival. Hence, it is able to suppress anoikis, the apoptosis resulting from loss of cell-matrix interactions. May also play a role in neutrophin-dependent calcium signaling in glial cells and mediate communication between neurons and glia.

**Cellular Location**

Cell membrane; Single-pass type I membrane protein. Endosome membrane {ECO:0000250|UniProtKB:P15209}; Single-pass type I membrane protein {ECO:0000250|UniProtKB:P15209}. Early endosome membrane {ECO:0000250|UniProtKB:P15209}. Cell projection, axon {ECO:0000250|UniProtKB:Q63604}. Cell projection, dendrite {ECO:0000250|UniProtKB:Q63604}. Cytoplasm, perinuclear region {ECO:0000250|UniProtKB:Q63604}. Postsynaptic density {ECO:0000250|UniProtKB:P15209}. Note=Internalized to endosomes upon ligand-binding. {ECO:0000250|UniProtKB:P15209}

**Tissue Location**

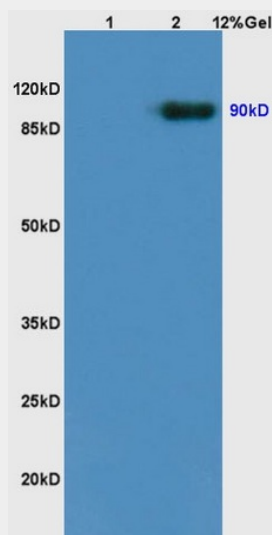
Isoform TrkB is expressed in the central and peripheral nervous system. In the central nervous system (CNS), expression is observed in the cerebral cortex, hippocampus, thalamus, choroid plexus, granular layer of the cerebellum, brain stem, and spinal cord. In the peripheral nervous system, it is expressed in many cranial ganglia, the ophthalmic nerve, the vestibular system, multiple facial structures, the submaxillary glands, and dorsal root ganglia Isoform TrkB-T1 is mainly expressed in the brain but also detected in other tissues including pancreas, kidney and heart. Isoform TrkB-T-Shc is predominantly expressed in the brain.

## Rabbit Anti-TrkB Polyclonal Antibody - Protocols

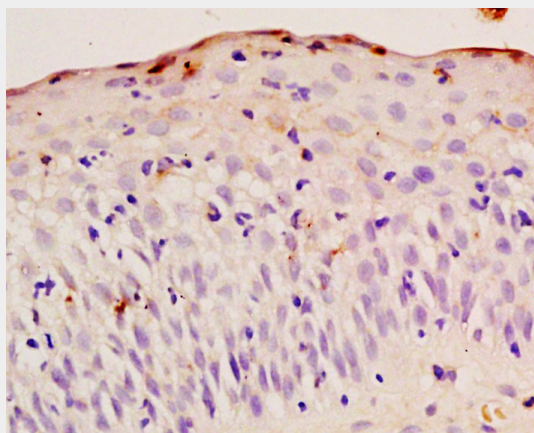
Provided below are standard protocols that you may find useful for product applications.

- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

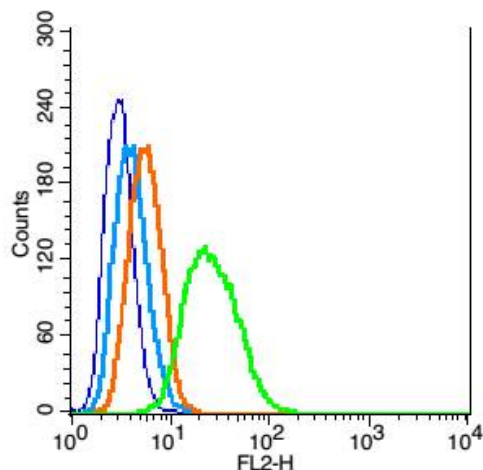
## Rabbit Anti-TrkB Polyclonal Antibody - Images



L1 rat brain lysates L2 rat kidney lysates probed with Anti Trk B/NTRK2 Polyclonal Antibody, Unconjugated (AP52272) at 1:200 overnight at 4°C. Followed by conjugation to secondary antibody at 1:3000 for 90 min at 37°C. Predicted band 90kD. Observed band size:90kD.



Formalin-fixed and paraffin embedded: human nasopharyngeal carcinoma labeled with Anti-Trk-B Polyclonal Antibody AP52272, Unconjugated at 1:200 followed by conjugation to the secondary antibody and DAB staining



RSC96 cells probed with TrkB Polyclonal Antibody, Unconjugated (AP52272) at [CNC.] for 30 minutes followed by incubation with a conjugated secondary (PE Conjugated) (green) for 30 minutes compared to control cells (blue), secondary only (light blue) and isotype control (orange).

#### **Rabbit Anti-TrkB Polyclonal Antibody - Background**

Receptor tyrosine kinase involved in the development and the maturation of the central and the peripheral nervous systems through regulation of neuron survival, proliferation, migration, differentiation, and synapse formation and plasticity. Receptor for BDNF/brain-derived neurotrophic factor and NTF4/neurotrophin-4. Alternatively can also bind NTF3/neurotrophin-3 which is less efficient in activating the receptor but regulates neuron survival through NTRK2. Upon ligand-binding, undergoes homodimerization, autophosphorylation and activation. Recruits, phosphorylates and/or activates several downstream effectors including SHC1, FRS2, SH2B1, SH2B2 and PLCG1 that regulate distinct overlapping signaling cascades. Through SHC1, FRS2, SH2B1, SH2B2 activates the GRB2-Ras-MAPK cascade that regulates for instance neuronal differentiation including neurite outgrowth. Through the same effectors controls the Ras-PI3 kinase-AKT1 signaling cascade that mainly regulates growth and survival. Through PLCG1 and the downstream protein kinase C-regulated pathways controls synaptic plasticity. Thereby, plays a role in learning and memory by regulating both short term synaptic function and long-term potentiation. PLCG1 also leads to NF-Kappa-B activation and the transcription of genes involved in cell survival. Hence, it is able to suppress anoikis, the apoptosis resulting from loss of cell-matrix interactions. May also play a role in neurotrophin-dependent calcium signaling in glial cells and mediate communication between neurons and glia.