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phospho-TrkB (Tyr515) Rabbit pAb

Catalog # AP97790

Product Information

Application	IHC-P, IHC-F, IF
Primary Accession	Q63604
Other Accession	Q63604
Reactivity	Rat, Mouse
Predicted	Pig, Human, Rabbit, Chicken, Dog, Horse
Host	Rabbit
Clonality	Polyclonal
Calculated MW	92186
Physical State	Liquid
Immunogen	KLH conjugated Synthesised phosphopeptide derived from rat NTRK2 around the phosphorylation site of Tyr515
Epitope Specificity	PQ(p-Y)FG
Isotype	IgG
Purity	affinity purified by Protein A
Buffer	0.01M TBS (pH7.4) with 1% BSA, 0.02% Proclin300 and 50% Glycerol.
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 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.
Post-translational modifications	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.
DISEASE	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.
Important Note	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].

Additional Information

Gene ID	25054
Other Names	DEE58; EIEE58; GP145-TrkB; OBHD; TRKB; trk-B; GP145-TrkB/GP95-TrkB; Tkrb; RATTRKB1; TRKB1; NTRK2_HUMAN; NTRK2; GP145-TrkB (Trk-B); Neurotrophic tyrosine kinase receptor type 2; TrkB tyrosine kinase; Tropomyosin-related kinase B; 2.7.10.1; NTRK2_MOUSE; GP145-TrkB/GP95-TrkB (Trk-B); NTRK2_RAT; TrkB tyrosine kinase (Trk-B); neurotrophic receptor tyrosine kinase 2; neurotrophic tyrosine kinase, receptor, type 2; BDNF/NT-3 growth factors receptor; NTRK2 | TrkB (phospho-Y515); p-TrkB; phospho-TrkB; p-NTRK2; NTRK2 | TrkB (phospho-Tyr515)
Dilution	IHC-P=1:100-500,IHC-F=1:100-500,IF=1:100-500
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.

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. 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 neutrophin-dependent calcium signaling in glial cells.
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. Cell projection, dendrite. Cytoplasm, perinuclear region. Postsynaptic density {ECO:0000250|UniProtKB:P15209}. Note=Internalized to endosomes upon

ligand-binding. {ECO:0000250|UniProtKB:P15209}

Tissue Location Widely expressed in the central and peripheral nervous system. The different forms are differentially expressed in various cell types. Isoform T2 is primarily expressed in neurons

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