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Mouse Ntrk2 Antibody (Center)

Affinity Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP13930c

Product Information

Application	IHC-P, WB, E
Primary Accession	P15209
Other Accession	Q63604, NP_001020245.1, NP_032771.1
Reactivity	Mouse
Predicted	Rat
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Clone Names	RB34655
Calculated MW	92133
Antigen Region	343-372

Additional Information

Gene ID	18212
Other Names	BDNF/NT-3 growth factors receptor, GP145-TrkB/GP95-TrkB, Trk-B, Neurotrophic tyrosine kinase receptor type 2, TrkB tyrosine kinase, Ntrk2, Trkb
Target/Specificity	This Mouse Ntrk2 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 343-372 amino acids from the Central region of mouse Ntrk2.
Dilution	IHC-P~~1:100~500 WB~~1:1000 E~~Use at an assay dependent concentration.
Format	Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is purified through a protein A column, followed by peptide affinity purification.
Storage	Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	Mouse Ntrk2 Antibody (Center) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	Ntrk2 {ECO:0000312|MGI:MGI:97384}
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. Isoform GP95-TRKB 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; Single-pass type I membrane protein. Early endosome membrane. Cell projection, axon {ECO:0000250|UniProtKB:Q63604}. Cell projection, dendrite {ECO:0000250|UniProtKB:Q63604}. Cytoplasm, perinuclear region {ECO:0000250|UniProtKB:Q63604}. Postsynaptic density. Note=Internalized to endosomes upon ligand-binding.
Tissue Location	Expressed in the brain, in neurons (at protein level) (PubMed:23977241). Detected in hippocampus (at protein level) (PubMed:27457814). Widely expressed in the central and peripheral nervous system. The different forms are differentially expressed in various cell types. Isoform GP95-TRKB is specifically expressed in glial cells.

Background

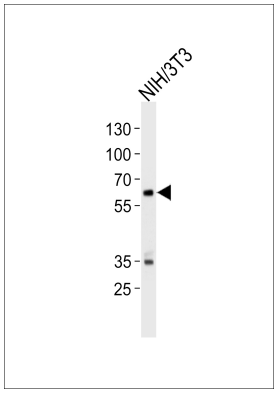
Receptor for brain-derived neurotrophic factor (BDNF), neurotrophin-3 and neurotrophin-4/5 but not nerve growth factor (NGF). Involved in the development and/or maintenance of the nervous system. This is a tyrosine-protein kinase receptor. Known substrates for the TRK receptors are SHC1, PI-3 kinase, and PLC-gamma-1.

References

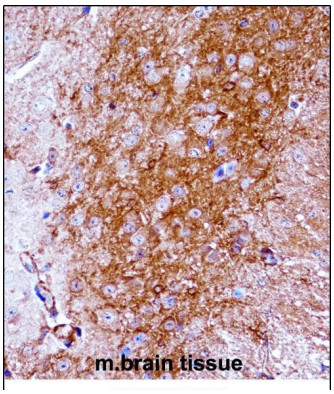
Xu, X., et al. Proc. Natl. Acad. Sci. U.S.A. 107(44):19126-19131(2010)
Lobo, M.K., et al. Science 330(6002):385-390(2010)
Gascon, E., et al. J. Neurosci. 30(37):12414-12423(2010)
Nikoletopoulou, V., et al. Nature 467(7311):59-63(2010)
Ohnishi, H., et al. J. Neurosci. 30(31):10472-10483(2010)

Images

Western blot analysis of lysate from mouse NIH/3T3 cell line, using Mouse Ntrk2 Antibody (Center)(Cat. #AP13930c). AP13930c was diluted at 1:1000 at each lane. A goat anti-rabbit IgG H&L(HRP) at 1:5000 dilution



was used as the secondary antibody. Lysate at 35ug per lane.



Mouse Ntrk2 Antibody (Center) (AP13930c)immunohistochemistry analysis in formalin fixed and paraffin embedded mouse brain tissue followed by peroxidase conjugation of the secondary antibody and DAB staining.This data demonstrates the use of Mouse Ntrk2 Antibody (Center) for immunohistochemistry. Clinical relevance has not been evaluated.