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NTRK2 Antibody

Purified Mouse Monoclonal Antibody (Mab)
Catalog # AM8457b

Product Information

Application	WB, FC, IHC-P, E
Primary Accession	Q16620
Reactivity	Human, Mouse
Predicted	Rat, Bovine, Canine, Rabbit
Host	Mouse
Clonality	monoclonal
Isotype	IgG1,k
Clone Names	1446CT494.85.83.49
Calculated MW	91999

Additional Information

Gene ID	4915
Other Names	BDNF/NT-3 growth factors receptor, GP145-TrkB, Trk-B, Neurotrophic tyrosine kinase receptor type 2, TrkB tyrosine kinase, Tropomyosin-related kinase B, NTRK2, TRKB
Target/Specificity	This NTRK2 antibody is generated from a mouse immunized with a recombinant protein.
Dilution	WB~~1:1000 FC~~1:25 IHC-P~~1:100~500 E~~Use at an assay dependent concentration.
Format	Purified monoclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is purified through a protein G column, followed by dialysis against PBS.
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	NTRK2 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

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, PubMed:7574684). Upon ligand- binding, undergoes homodimerization, autophosphorylation and activation (PubMed: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.

Background

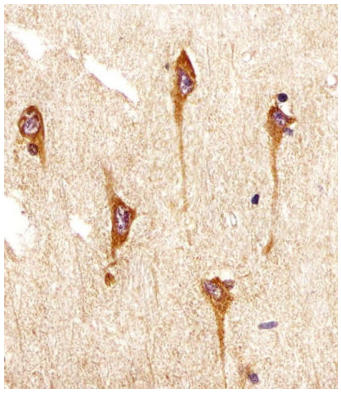
Receptor tyrosine kinase involved in the development and the maturation of the central and the peripheral nervous systems through regulation of neuron survival, proliferation, migration, differentiation, and synapse formation and plasticity. Receptor for BDNF/brain-derived neurotrophic factor and NTF4/neurotrophin- 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 neutrophin- dependent calcium signaling in glial cells and mediate communication between neurons and

glia.

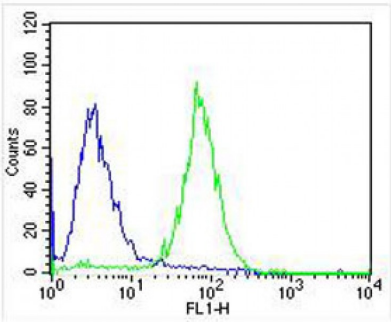
References

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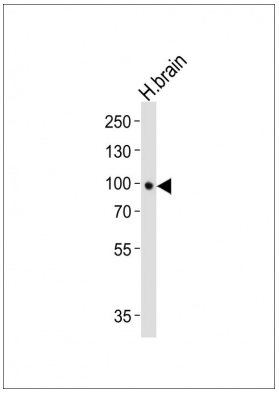
Images



AM8457b staining NTRK2 in human brain sections by Immunohistochemistry (IHC-P - paraformaldehyde-fixed, paraffin-embedded sections). Tissue was fixed with formaldehyde and blocked with 3% BSA for 0. 5 hour at room temperature; antigen retrieval was by heat mediation with a citrate buffer (pH6). Samples were incubated with primary antibody (1/25) for 1 hours at 37°C. A undiluted biotinylated goat polyvalent antibody was used as the secondary antibody.



Overlay histogram showing SH-SY5Y cells stained with AM8457b (green line). The cells were fixed with 2% paraformaldehyde (10 min) and then permeabilized with 90% methanol for 10 min. The cells were then icubated in 2% bovine serum albumin to block non-specific protein-protein interactions followed by the antibody (AM8457b, 1:25 dilution) for 60 min at 37ºC. The secondary antibody used was Goat-Anti-Mouse IgG, DyLight® 488 Conjugated Highly Cross-Adsorbed(NA168821)) at 1/400 dilution for 40 min at 37ºC. Isotype control antibody (blue line) was mouse IgG1 (1µg/1x10^6 cells) used under the same conditions. Acquisition of >10, 000 events was performed.



Western blot analysis of lysate from human brain tissue lysate, using NTRK2 Antibody(Cat. #AM8457b). AM8457b was diluted at 1:1000. A goat anti-mouse IgG H&L(HRP) at 1:10000 dilution was used as the secondary antibody. Lysate at 20µg.

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.