

TrkA Antibody

Purified Mouse Monoclonal Antibody

Catalog # AO1278a

Product Information

Application	WB, ICC, E
Primary Accession	P04629
Reactivity	Human
Host	Mouse
Clonality	Monoclonal
Clone Names	6B2
Isotype	IgG1
Calculated MW	87497
Description	TrkA, also known as NTRK1, MTC, TRK, TRK1. It is a member of the neurotrophic tyrosine kinase receptor (NTRK) family. This kinase is a membrane-bound receptor that, upon neurotrophin binding, phosphorylates itself and members of the MAPK pathway. The presence of this kinase leads to cell differentiation and may play a role in specifying sensory neuron subtypes. Mutations in this gene have been associated with congenital insensitivity to pain, anhidrosis, self-mutilating behavior, mental retardation and cancer. Alternate transcriptional splice variants of this gene have been found, but only three have been characterized to date.
Immunogen	Purified recombinant extracellular fragment of human TrkA (aa33-423) fused with hIgGFc tag expressed in HEK293 cell line.
Formulation	Ascitic fluid containing 0.03% sodium azide.

Additional Information

Gene ID	4914
Other Names	High affinity nerve growth factor receptor, 2.7.10.1, Neurotrophic tyrosine kinase receptor type 1, TRK1-transforming tyrosine kinase protein, Tropomyosin-related kinase A, Tyrosine kinase receptor, Tyrosine kinase receptor A, Trk-A, gp140trk, p140-TrkA, NTRK1, MTC, TRK, TRKA
Dilution	WB~~1/500 - 1/2000 ICC~~N/A E~~N/A
Storage	Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	TrkA Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	NTRK1
Function	<p>Receptor tyrosine kinase involved in the development and the maturation of the central and peripheral nervous systems through regulation of proliferation, differentiation and survival of sympathetic and nervous neurons. High affinity receptor for NGF which is its primary ligand (PubMed:1281417, PubMed:15488758, PubMed:17196528, PubMed:1849459, PubMed:1850821, PubMed:22649032, PubMed:27445338, PubMed:8325889). Can also bind and be activated by NTF3/neurotrophin-3. However, NTF3 only supports axonal extension through NTRK1 but has no effect on neuron survival (By similarity). Upon dimeric NGF ligand-binding, undergoes homodimerization, autophosphorylation and activation (PubMed:1281417). Recruits, phosphorylates and/or activates several downstream effectors including SHC1, FRS2, SH2B1, SH2B2 and PLCG1 that regulate distinct overlapping signaling cascades driving cell survival and differentiation. Through SHC1 and FRS2 activates a GRB2-Ras-MAPK cascade that regulates cell differentiation and survival. Through PLCG1 controls NF-Kappa-B activation and the transcription of genes involved in cell survival. Through SHC1 and SH2B1 controls a Ras-PI3 kinase-AKT1 signaling cascade that is also regulating survival. In absence of ligand and activation, may promote cell death, making the survival of neurons dependent on trophic factors.</p>
Cellular Location	<p>Cell membrane; Single-pass type I membrane protein. Early endosome membrane {ECO:0000250 UniProtKB:P35739}; Single-pass type I membrane protein {ECO:0000250 UniProtKB:P35739}. Late endosome membrane {ECO:0000250 UniProtKB:P35739}; Single-pass type I membrane protein {ECO:0000250 UniProtKB:P35739}. Recycling endosome membrane {ECO:0000250 UniProtKB:P35739}; Single-pass type I membrane protein {ECO:0000250 UniProtKB:P35739}. Note=Rapidly internalized after NGF binding (PubMed:1281417). Internalized to endosomes upon binding of NGF or NTF3 and further transported to the cell body via a retrograde axonal transport. Localized at cell membrane and early endosomes before nerve growth factor (NGF) stimulation. Recruited to late endosomes after NGF stimulation. Colocalized with RAPGEF2 at late endosomes {ECO:0000250 UniProtKB:P35739, ECO:0000269 PubMed:1281417}</p>
Tissue Location	<p>Isoform TrkA-I is found in most non-neuronal tissues. Isoform TrkA-II is primarily expressed in neuronal cells TrkA-III is specifically expressed by pluripotent neural stem and neural crest progenitors.</p>

References

1. DNA Repair (Amst). 2008 Oct 1;7(10):1757-64.
2. Traffic. 2008 Jul;9(7):1146-56.

Images

Figure 1: Western blot analysis using TrkA mouse mAb against extracellular domain of human TrkA(aa33-423).

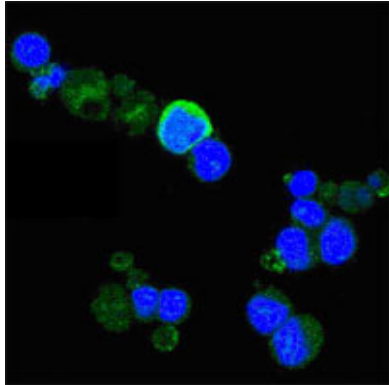
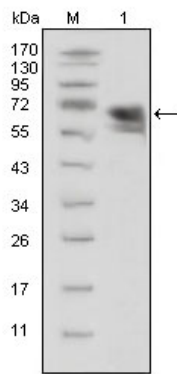


Figure 2: Confocal immunofluorescence analysis of PC-12 cells using TrkA mouse mAb (green), showing membrane and cytoplasmic localization. Blue: DRAQ5 fluorescent DNA dye.

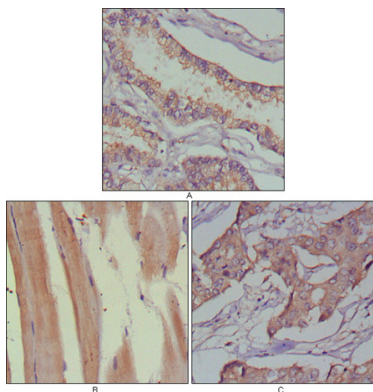


Figure 1: Immunohistochemical analysis of paraffin-embedded human lung cancer (A), muscles (B) and breast cancer (C) using MUSK mouse mAb with DAB staining.

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