

TrkA Antibody
Purified Mouse Monoclonal Antibody
Catalog # AO1278a

Specification

TrkA Antibody - Product Information

Application	WB, IF, IHC
Primary Accession	P04629
Reactivity	Human
Host	Mouse
Clonality	Monoclonal
Isotype	IgG1
Calculated MW	87.4kDa KDa

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 hlgGfc tag expressed in HEK293 cell line.

Formulation

Ascitic fluid containing 0.03% sodium azide.

TrkA Antibody - 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

IF~~1/200 - 1/1000

IHC~~1:200~~1000

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.

TrkA Antibody - Protein Information

Name NTRK1

Function

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](http://www.uniprot.org/citations/1281417)), PubMed: [15488758](http://www.uniprot.org/citations/15488758), PubMed: [17196528](http://www.uniprot.org/citations/17196528), PubMed: [1849459](http://www.uniprot.org/citations/1849459), PubMed: [1850821](http://www.uniprot.org/citations/1850821), PubMed: [22649032](http://www.uniprot.org/citations/22649032), PubMed: [27445338](http://www.uniprot.org/citations/27445338), PubMed: [8325889](http://www.uniprot.org/citations/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](http://www.uniprot.org/citations/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.

Cellular Location

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}

Tissue Location

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.

TrkA 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](#)

TrkA Antibody - Images

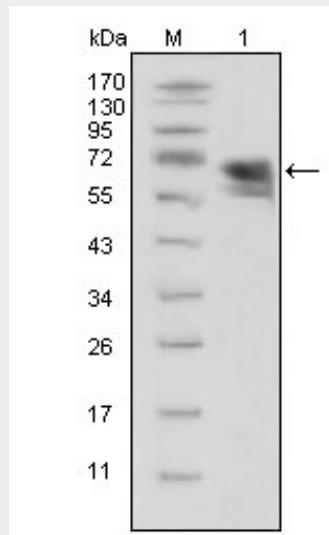


Figure 1: Western blot analysis using TrkA mouse mAb against extracellular domain of human TrkA(aa33-423).

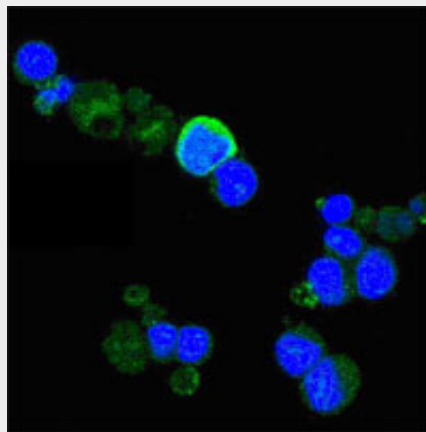


Figure 2: Confocal immunofluorescence analysis of PC-12 cells using TrkA mouse mAb (green), showing membrane and cytoplasmic localization. Blue: DRAQ5 fluorescent DNA dye.

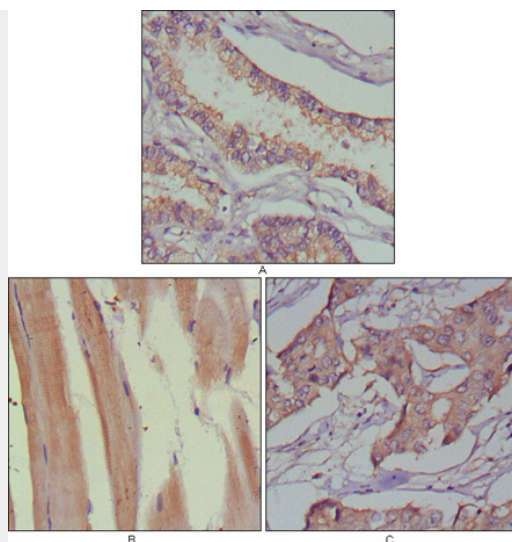


Figure 1: Immunohistochemical analysis of paraffin-embedded human lung cancer (A), muscles (B) and breast cancer (C) using MUSK mouse mAb with DAB staining.

TrkA Antibody - References

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