TrkA Antibody – Rabbit Polyclonal

PRODUCT OVERVIEW

Product Name	TrkA, Polyclonal Antibody
Full Product Name	Phospho-TrkA (Tyr701) Antibody
Product Gene Name	anti-TrkA antibody
Product Synonym Gene Name	NTRK1
Product Synonym Names	gp140trk; High affinity nerve growth factor receptor; High affinity nerve growth factor receptor precursor; MTC; Neurotrophic tyrosine kinase receptor type 1; NTRK1; NTRK1_HUMAN; Oncogene TRK; p14-TrkA; p140 TrkA; p140-TrkA; Slow nerve growth; Trk A; TRK; Trk-A; TRK1; TRK1-transforming tyrosine kinase protein; Tropomyosin-related kinase A; Tyrosine kinase receptor A; Tyrosine kinase receptor
Clonality	Polyclonal
Isotype	Rabbit IgG
Host	Rabbit
Species Reactivity	Human, Mouse, Rat
Form/Format	Liquid. Rabbit IgG in phosphate buffered saline, pH7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol.
Purity/Purification	The antibody is from purified rabbit serum by affinity purification via sequential chromatography on phospho-peptide and non-phospho-peptide affinity columns.
Concentration	1mg/ml (lot specific)
Specificity	Phospho-TrkA (Tyr701) Antibody detects endogenous levels of TrkA only when phosphorylated at Tyr701. Tissue Specificity: 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.
Preparation and Storage	Store at -20 degree C. Stable for 12 months from date of receipt.
Antibody/Peptide Pairs	TrkA (Tyr701) peptide (MBS9616309) is used for blocking the activity of TrkA (Tyr701) antibody (MBS9613028)
Molecular Weight	87,497 Da
Chromosome Location	Chromosome: 1; NC_000001.10 (156785542..156851642). Location: 1q21-q22
OMIM	164970
3D Structure	ModBase 3D Structure for P04629
Supply Chain Verification	Manufactured in a lab with traceable raw materials manufactured on site. Coordinated product portfolio of antibodies, pairs, conjugates, recombinant proteins, and immunoassay materials available, please inquire.
Immunogen	A synthesized peptide derived from human TrkA around the phosphorylation site of Tyr701.
Conjugation	Unconjugated
Fragment	Fab fragment
Post Translational Modifications	Ligand-mediated autophosphorylation. Interaction with SQSTM1 is phosphotyrosine-dependent. Autophosphorylation at Tyr-496 mediates interaction and phosphorylation of SHC1.N-glycosylated. Isoform TrkA-I and isoform TrkA-II are N-glycosylated.Ubiquitinated. Undergoes polyubiquitination upon activation; regulated by NGFR. Ubiquitination by NEDD4L leads to degradation. Ubiquitination regulates the internalization of the receptor (By similarity).

Subunit Structure	Exists in a dynamic equilibrium between monomeric (low affinity) and dimeric (high affinity) structures. Homodimerization is induced by binding of a NGF dimer. Interacts with SQSTM1; bridges NTRK1 to NGFR. Forms a ternary complex with NGFR and KIDINS220; this complex is affected by the expression levels of KIDINS220 and an increase in KIDINS220 expression leads to a decreased association of NGFR and NTRK1 (By similarity). Interacts with SH2D1A; regulates NTRK1 (By similarity). Interacts (phosphorylated upon activation by NGF) with SHC1; mediates SHC1 phosphorylation and activation. Interacts (phosphorylated upon activation by NGF) with PLCG1; mediates PLCG1 phosphorylation and activation. Interacts (phosphorylated) with SH2B1 and SH2B2 (By similarity). Interacts with GRB2. Interacts with PIK3R1. Interacts with FRS2. Interacts with SORT1; may regulate NTRK1 anterograde axonal transport. Interacts with RAB7A (By similarity). Found in a complex, at least composed of KIDINS220, MAGI2, NTRK1 and RAPGEF2; the complex is mainly formed at late endosomes in a nerve growth factor (NGF)-dependent manner (By similarity). Interacts with RAPGEF2; the interaction is strengthened after NGF stimulation (By similarity). Interacts with PTPRS (By similarity). Interacts with USP36; USP36 does not deubiquitinate NTRK1. Interacts with GGA3.
Similarity	The transmembrane domain mediates interaction with KIDINS220.The extracellular domain mediates interaction with NGFR.Belongs to the protein kinase superfamily. Tyr protein kinase family. Insulin receptor subfamily.
Subcellular Location	Cell membrane>Single-pass type I membrane protein. Early endosome membrane>Single-pass type I membrane protein. Late endosome membrane>Single-pass type I membrane protein. Recycling endosome membrane>Single-pass type I membrane protein. 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.
ISO Certification	Manufactured in an ISO 9001:2015 Certified Laboratory.
Applications Tested/Suitable for anti-TrkA antibody	Peptide ELISA (EIA)
Application Notes for anti-TrkA antibody	Peptide ELISA: 1:20,000-1:40,000
Related Product Information for anti-TrkA antibody	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. 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. 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.Resistant to NGF, it constitutively activates AKT1 and NF-kappa-B and is unable to activate the Ras-MAPK signaling cascade. Antagonizes the anti-proliferative NGF-NTRK1 signaling that promotes neuronal precursors differentiation. Isoform TrkA-III promotes angiogenesis and has oncogenic activity when overexpressed.
Other Notes	Small volumes of anti-TrkA antibody vial(s) may occasionally become entrapped in the seal of the product vial during shipment and storage. If necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the container`s cap. Certain products may require to ship with dry ice and additional dry ice fee may apply.
Searchable Terms for TrkA purchase	MBS9613028 is an antibody targeting TrkA. Also known as Phospho-TrkA (Tyr701) Antibody. Reactive in Human, Mouse, Rat. Host: Rabbit.

ADDITIONAL DETAILS

NCBI/Uniprot data below describe general gene information for TrkA. It may not necessarily be applicable to this product.

NCBI GI #	56118210
NCBI GeneID	4914
NCBI Accession #	NP_001007793.1
UniProt Primary Accession #	P04629

UniProt Secondary Accession #	P08119; Q15655; Q15656; Q5D056; Q5VZS2; Q7Z5C3; Q9UIU7; B2R6T5; B7ZM34
UniProt Related Accession #	P04629
GenBank Nucleotide #	NM_001007792.1
NCBI Official Full Name	high affinity nerve growth factor receptor isoform 3
NCBI Official Synonym Full Names	neurotrophic tyrosine kinase, receptor, type 1
NCBI Official Symbol	NTRK1
NCBI Official Synonym Symbols	MTC; TRK; TRK1; TRKA; Trk-A; p140-TrkA
UniProt Protein Name	High affinity nerve growth factor receptor
UniProt Synonym Protein Names	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
Protein Family	Trk system potassium uptake protein
UniProt Gene Name	NTRK1
UniProt Synonym Gene Names	MTC; TRK; TRKA; Trk-A
UniProt Entry Name	NTRK1_HUMAN
NCBI Protein Information	high affinity nerve growth factor receptor; gp140trk; Oncogene TRK; tyrosine kinase receptor A; tropomyosin-related kinase A; TRK1-transforming tyrosine kinase protein
NCBI Summary for TrkA	This gene encodes a member of the neurotrophic tyrosine kinase receptor (NTKR) 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. [provided by RefSeq, Jul 2008]

UniProt Comments for TrkA	TrkA: a receptor tyrosine kinase of the Trk family. High affinity receptor for nerve growth factor, neurotrophin-3 and neurotrophin-4/5 but not brain- derived neurotrophic factor. Known substrates include Shc, PI-3K, and PLC-gamma-1. Has a crucial role in the development and function of the nociceptive reception system. Two splice variant isoforms have been described. Protein type: Protein kinase, TK; Oncoprotein; EC 2.7.10.1; Membrane protein, integral; Protein kinase, tyrosine (receptor); Kinase, protein; TK group; Trk family Chromosomal Location of Human Ortholog: 1q21-q22 Cellular Component: protein complex; cell surface; integral to plasma membrane; late endosome membrane; dendrite; early endosome; cell soma; early endosome membrane; axon; late endosome; plasma membrane; cytoplasmic vesicle; receptor complex; endosome Molecular Function: neurotrophin p75 receptor binding; neurotrophin binding; protein binding; nerve growth factor receptor activity; protein homodimerization activity; ephrin receptor binding; nerve growth factor binding; transmembrane receptor protein tyrosine kinase activity; ATP binding Biological Process: circadian rhythm; axon guidance; mechanoreceptor differentiation; peptidyl-tyrosine phosphorylation; activation of MAPKK activity; nerve growth factor receptor signaling pathway; protein amino acid autophosphorylation; positive regulation of synaptic transmission, glutamatergic; protein amino acid phosphorylation; olfactory nerve development; activation of NF-kappaB transcription factor; negative regulation of cell proliferation; sympathetic nervous system development; response to radiation; learning and/or memory; small GTPase mediated signal transduction; response to axon injury; negative regulation of neuron apoptosis; response to electrical stimulus; detection of temperature stimulus involved in sensory perception of pain; response to hydrostatic pressure; aging; response to drug; response to nutrient levels; phosphoinositide-mediated signaling; adenylate cyclase activation; Sertoli cell development; detection of mechanical stimulus involved in sensory perception of pain; positive regulation of programmed cell death; positive regulation of angiogenesis; response to ethanol; phospholipase C activation; B cell differentiation; Ras protein signal transduction; response to activity; positive regulation of Ras protein signal transduction; transmembrane receptor protein tyrosine kinase signaling pathway Disease: Thyroid Carcinoma, Familial Medullary; Insensitivity To Pain, Congenital, With Anhidrosis
Research Articles on TrkA	**1.** the juxtamembrane region of p75(ICD) acts to cause a conformational change within the extracellular domain of TrkA.
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