**Overview**

**Product name**  
Anti-TrkA antibody

**Description**  
Rabbit polyclonal to TrkA

**Host species**  
Rabbit

**Specificity**  
When used for immunohistochemistry in Rat dorsal root ganglia, staining is restricted to the known distribution of TrkA, that is, in small, nociceptive neurons. From experiments using similar antisera, it is anticipated that the reagent will block TrkA receptor binding of corresponding Nerve Growth factor ligand.

**Tested applications**  
Suitable for: ELISA, IHC-Fr, Dot blot  
**Unsuitable for:** WB

**Species reactivity**  
Reacts with: Mouse, Rat, Human

**Immunogen**  
Extracellular domain of Mouse TrkA.

**Positive control**  
Rat dorsal root ganglia.

**Properties**

**Form**  
Liquid

**Storage instructions**  
Shipped at 4°C. Upon delivery aliquot and store at -20°C. Avoid freeze / thaw cycles.

**Purity**  
Whole antiserum

**Clonality**  
Polyclonal

**Isotype**  
IgG

**Applications**

Our **Abpromise guarantee** covers the use of **ab36961** in the following tested applications.

The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

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<td>1/5000.</td>
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<tr>
<td>IHC-Fr</td>
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### Target

**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, it 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. 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-P13 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. Isoform TrkA-III is resistant to NGF, 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.

**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.

**Involvement in disease**
Congenital insensitivity to pain with anhidrosis
Chromosomal aberrations involving NTRK1 are found in papillary thyroid carcinomas (PTCs) (PubMed:2869410, PubMed:7565764, PubMed:1532241). Translocation t(1;3)(q21;q11) with TFG generates the TRKT3 (TRK-T3) transcript by fusing TFG to the 3'-end of NTRK1 (PubMed:7565764). A rearrangement with TPM3 generates the TRK transcript by fusing TPM3 to the 3'-end of NTRK1 (PubMed:2869410). An intrachromosomal rearrangement that links the protein kinase domain of NTRK1 to the 5'-end of the TPR gene forms the fusion protein TRK-T1. TRK-T1 is a 55 kDa protein reacting with antibodies against the C-terminus of the NTRK1 protein (PubMed:1532241).

**Sequence similarities**

**Domain**
The transmembrane domain mediates interaction with KIDINS220.
The extracellular domain mediates interaction with NGFR.

**Post-translational modifications**

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### Application notes
Is unsuitable for WB.
regulates the internalization of the receptor.

**Cellular localization**

Cell membrane. Early endosome membrane. Late endosome membrane. 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 (By similarity).

**Images**

ab36961 staining Rat TrkA in dorsal root ganglia by immunohistochemistry (Frozen sections) at 1/2000 dilution. Staining is restricted to the known distribution of TrkA, that is in small, nociceptive neurons. The cryostat section of the rat spinal cord was incubated in rabbit polyclonal antibodies to the extracellular domain of mouse Trk A overnight followed with a biotinylated secondary antibodies and ABC kit. The section was developed in diaminobenzidine solution and enhanced in the presence of nickel sulphate. Nerve fibres in the dorsal horn are stained.

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