Human TrkA Antibody

Antigen Affinity-purified Polyclonal Goat IgG
Catalog Number: AF175

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human TrkA in direct ELISAs and Western blots. In direct ELISAs, approximately 50% cross-reactivity with recombinant rat TrkA is observed and 10% cross-reactivity with recombinant human (rh) TrkB and rhTrKC is observed.
Source	Polyclonal Goat IgG
Purification	Antigen Affinity-purified
Immunogen	Mouse myeloma cell line NS0-derived recombinant human TrkA Ala33-Glu407 Accession # AAA36770
Endotoxin Level	<0.10 EU per 1 µg of the antibody by the LAL method.
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details.

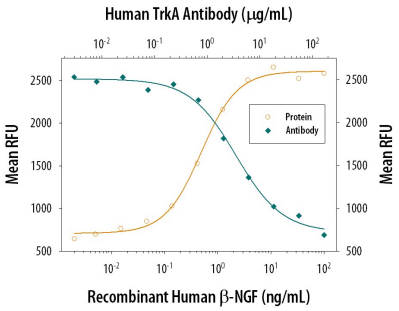
APPLICATIONS

Please Note: *Optimal dilutions should be determined by each laboratory for each application. General Protocols are available in the Technical Information section on our website.*

	Recommended Concentration	Sample
Western Blot	0.1 µg/mL	Recombinant Human TrkA Fc Chimera (Catalog # 175-TK)
Flow Cytometry	2.5 µg/10^6 cells	K562 human chronic myelogenous leukemia cell line
Immunohistochemistry	5-15 µg/mL	Immersion fixed paraffin-embedded sections of human colon cancer tissue subjected to Antigen Retrieval Reagent-Basic (Catalog # CTS013)
Neutralization	Measured by its ability to neutralize β-NGF-induced proliferation in the TF-1 human erythroleukemic cell line. Kitamura, T. *et al.* (1989) J. Cell Physiol. **140**:323. The Neutralization Dose (ND_{50}) is typically 3-12 µg/mL in the presence of 5 ng/mL Recombinant Human β-NGF.	

DATA

Neutralization



Cell Proliferation Induced by β-NGF and Neutralization by Human TrkA Antibody. Recombinant Human β-NGF (Catalog # 256-GF) stimulates proliferation in the TF-1 human erythroleukemic cell line in a dose-dependent manner (orange line). Proliferation elicited by Recombinant Human β-NGF (5 ng/mL) is neutralized (green line) by increasing concentrations of Goat Anti-Human TrkA Antigen Affinity-purified Polyclonal Antibody (Catalog # AF175). The ND_{50} is typically 3-12 µg/mL.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.2 mg/mL in sterile PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	**Use a manual defrost freezer and avoid repeated freeze-thaw cycles.** ● 12 months from date of receipt, -20 to -70 °C as supplied. ● 1 month, 2 to 8 °C under sterile conditions after reconstitution. ● 6 months, -20 to -70 °C under sterile conditions after reconstitution.

BACKGROUND

TrkA, the product of the proto-oncogene *trk,* is a member of the neurotrophic tyrosine kinase receptor family that has three members. TrkA, TrkB and TrkC preferentially bind NGF, NT-4 and BDNF, and NT-3, respectively. All Trk family proteins share a conserved complex subdomain organization consisting of a signal peptide, two cysteine-rich domains, a cluster of three leucine-rich motifs, and two immunoglobulin-like domains in the extracellular region, as well as an intracellular region that contains the tyrosine kinase domain. Two distinct TrkA isoforms that differ by virtue of a 6-amino acid insertion in their extracellular domain have been identified. The longer TrkA isoform is the only isoform expressed within neuronal tissues whereas the shorter TrkA is expressed mainly in non-neuronal tissues. NGF binds to TrkA with low affinity and activates its cytoplasmic kinase, initiating a signaling cascade that mediates neuronal survival and differentiation. Higher affinity binding of NGF requires the coexpression of TrkA with the p75 NGF receptor (NGFR), a member of the tumor necrosis factor receptor superfamily. NGFR binds all neurotrophins with low affinity and modulates Trk activity as well as alters the specificity of Trk receptors for their ligands. NGFR can also mediate cell death when expressed independent of Trk.

References:

1. Esposito, D. *et al.* (2001) J. Biol. Chem. **276**:32687.
2. Sofroniew, M.V. *et al.* (200) Annu. Rev. Neurosci. **24**:1217.