

DESCRIPTION	
Species Reactivity	Mouse
Specificity	Detects mouse TrkB in direct ELISAs and Western blots. In direct ELISAs and Western blots, approximately 25% cross-reactivity with recombinant human (rh) TrkB is observed, and less than 2% cross-reactivity with rhTrkA, recombinant rat TrkA, and recombinant mouse TrkB is observed.
Source	Polyclonal Goat IgG
Purification	Antigen Affinity-purified
Immunogen	Mouse myeloma cell line NS0-derived recombinant mouse TrkB Cys32-His429 Accession # P15209
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. *Small pack size (-SP) is supplied as a 0.2 µm filtered solution in PBS.

APPLICATIONS		
Please Note: Optimal dilutions should be determined by each laboratory for each application. <i>General Protocols</i> are available in the <i>Technical Information</i> section on our website.		
	Recommended Concentration	Sample
Western Blot	0.5 µg/mL	See Below
Immunohistochemistry	5-15 µg/mL	See Below
Simple Western	10 µg/mL	See Below
Blockade of Receptor-ligand Interaction	In a functional ELISA, 0.5-2 µg/mL of this antibody will block 50% of the binding of 5 ng/mL of biotinylated recombinant Human BDNF to immobilized Recombinant Mouse TrkB (Catalog # 1494-TB) coated at 2 µg/mL (100 µL/well). At 50 µg/mL, this antibody will block >90% of the binding.	

DATA

Western Blot

Detection of Mouse TrkB by Western Blot. Western blot shows lysates of mouse brain (cerebellum) tissue and mouse brain (cortex) tissue. PVDF membrane was probed with 0.5 µg/mL of Goat Anti-Mouse TrkB Antigen Affinity-purified Polyclonal Antibody (Catalog # AF1494) followed by HRP-conjugated Anti-Goat IgG Secondary Antibody (Catalog # HAF017). Specific bands were detected for TrkB at approximately 90-100 and 140 kDa (as indicated). This experiment was conducted under reducing conditions and using Immunoblot Buffer Group 1.

Immunohistochemistry

TrkB in Mouse Spinal Cord. TrkB was detected in perfusion fixed frozen sections of mouse spinal cord using Goat Anti-Mouse TrkB Antigen Affinity-purified Polyclonal Antibody (Catalog # AF1494) at 1.7 µg/mL overnight at 4 °C. Tissue was stained using the NorthernLights™ 557-conjugated Anti-Goat IgG Secondary Antibody (red; Catalog # NL001) and counterstained with DAPI (blue). Specific staining was localized to neuronal processes and cell bodies. View our protocol for [Fluorescent IHC Staining of Frozen Tissue Sections](#).

Simple Western

Detection of Mouse TrkB by Simple Western™. Simple Western lane view shows lysates of mouse brain (cortex) tissue, loaded at 0.2 mg/mL. A specific band was detected for TrkB at approximately 154 kDa (as indicated) using 10 µg/mL of Goat Anti-Mouse TrkB Antigen Affinity-purified Polyclonal Antibody (Catalog # AF1494) followed by 1:50 dilution of HRP-conjugated Anti-Goat IgG Secondary Antibody (Catalog # HAF109). This experiment was conducted under reducing conditions and using the 12-230 kDa separation system.

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. *Small pack size (-SP) is shipped with polar packs. Upon receipt, store it immediately at -20 to -70 °C
Stability & Storage	<p>Use a manual defrost freezer and avoid repeated freeze-thaw cycles.</p> <ul style="list-style-type: none"> ● 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

The neurotrophins, including NGF, BDNF, NT-3, and NT-4/5, constitute a group of structurally related, secreted proteins that play an important role in the development and function of the nervous system. The biological activities of the neurotrophins are mediated by binding to and activating two unrelated receptor types: the p75 neurotrophin receptor (p75NTR) and the Trk family of receptor tyrosine kinases (1, 2). p75NTR is a member of the tumor necrosis factor receptor superfamily (TNFRSF) and has been designated TNFRSF16. It binds all neurotrophins with low affinity to transduce cellular signaling pathways that synergize with or antagonize those activated by the Trk receptors. Three Trk family proteins, TrkA, TrkB, and TrkC, exhibiting different ligand specificities, have been identified. TrkA binds NGF and NT-3, TrkB binds BDNF, NT-3, and NT-4/5, and TrkC only binds NT-3 (1-2). 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 (3). Natural splice variants of the different Trks, lacking the first cysteine-rich domain, the first and second or all three of the leucine-rich motifs, or the tyrosine kinase domain, have been described (4). At the protein sequence level, human and mouse TrkB show 94% amino acid sequence identity (5-6). The proteins also exhibit cross-species activity. The primary location of TrkB expression is in the central and peripheral nervous systems. Low level TrkB expression has also been observed in a wide variety of tissues outside the nervous system (6).

References:

1. Huang, E.J. and L.F. Reichardt (2003) *Annu. Rev. Biochem.* **72**:609.
2. Dechant, G. (2001) *Cell Tissue Res.* **305**:229.
3. Schneider, R. and M. Schweiger (1991) *Oncogene* **6**:1807.
4. Ninkina, N. *et al.* (1997) *J. Biol. Chem.* **272**:13019.
5. Nakagawara A. *et al.* (1995) *Genomics.* **25**:538.
6. Klein, R. *et al.* (1989) *EMBO J.* **8**:3701.