

# p-Trk B (Tyr 706): sc-135645

## BACKGROUND

The Trk proto-oncogene encodes a tyrosine protein kinase, Trk A, also designated Trk gp140, that serves as a receptor for certain neurotrophic factors including nerve growth factor (NGF) and neurotrophin-3 (NT-3). Trk B is a tyrosine kinase gene highly related to Trk A. Trk B expression is confined to tissues within the central and peripheral nervous systems. The brain-derived neurotrophic factor (BDNF) and NT-3, but not NGF, can induce rapid phosphorylation on tyrosine of Trk B gp145, one of the receptors encoded by Trk B, although BDNF elicits a response at least two orders of magnitude greater than NT-3. Thus it appears that Trk B gp145 may represent a neurotrophic receptor for BDNF and NT-3. The third member of the Trk family of tyrosine kinases, Trk C, encodes a protein designated Trk C gp145 that is preferentially expressed in brain tissue, is equally related to Trk A and Trk B, and is a functional receptor for NT-3. Mouse, rat and human Trk B can be phosphorylated on five tyrosine residues, including Tyr 706, which allow substrate binding.

## REFERENCES

1. Klein, R., et al. 1989. Trk B, a novel tyrosine protein kinase receptor expressed during mouse neural development. *EMBO J.* 8: 3701-3709.
2. Klein, R., et al. 1990. The Trk B tyrosine protein kinase gene codes for a second neurogenic receptor that lacks the catalytic kinase domain. *Cell* 61: 647-656.
3. Kaplan, D.R., et al. 1991. Tyrosine phosphorylation and tyrosine kinase activity of the Trk proto-oncogene product induced by NGF. *Nature* 350: 158-160.
4. Hempstead, B.L., et al. 1991. High-affinity NGF binding requires coexpression of the Trk proto-oncogene and the low-affinity NGF receptor. *Nature* 350: 678-683.
5. Klein, R., et al. 1991. The Trk proto-oncogene encodes a receptor for nerve growth factor. *Cell* 65: 189-197.
6. Cordon-Cardo, C., et al. 1991. The Trk tyrosine protein kinase mediates the mitogenic properties of nerve growth factor and neurotrophin-3. *Cell* 66: 173-183.

## CHROMOSOMAL LOCATION

Genetic locus: NTRK2 (human) mapping to 9q21.33; Ntrk2 (mouse) mapping to 13 B1.

## SOURCE

p-Trk B (Tyr 706) is a rabbit polyclonal antibody raised against a short amino acid sequence containing Tyr 706 phosphorylated Trk B of human origin.

## PRODUCT

Each vial contains 100 µg IgG in 1.0 ml PBS with < 0.1% sodium azide and 0.1% gelatin.

## RESEARCH USE

For research use only, not for use in diagnostic procedures.

## APPLICATIONS

p-Trk B (Tyr 706) is recommended for detection of Tyr 706 phosphorylated Trk B of human origin and correspondingly phosphorylated Tyr 705 of mouse and rat origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)].

Suitable for use as control antibody for Trk B siRNA (h): sc-36728, Trk B siRNA (m): sc-36729, Trk B shRNA Plasmid (h): sc-36728-SH, Trk B shRNA Plasmid (m): sc-36729-SH, Trk B shRNA (h) Lentiviral Particles: sc-36728-V and Trk B shRNA (m) Lentiviral Particles: sc-36729-V.

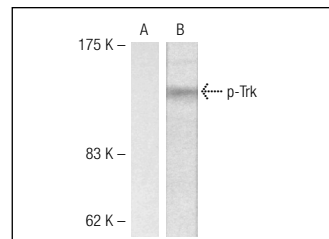
Molecular Weight of p-Trk B splice variants: 95-145 kDa.

Positive Controls: mouse brain extract: sc-2253.

## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto B Blocking Reagent: sc-2335 (use 50 mM NaF, sc-24988, as diluent), Western Blotting Luminol Reagent: sc-2048 and Lambda Phosphatase: sc-200312A. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

## DATA



Western blot analysis of phosphorylated Trk B expression in mouse brain tissue extracts. Blots were probed with p-Trk B (Tyr 706): sc-135645 preincubated with cognate phosphorylated peptide (A) and p-Trk B (Tyr 706): sc-135645 (B).

## SELECT PRODUCT CITATIONS

1. Trejo, J.I., et al. 2007. Central actions of liver-derived Insulin-like growth factor I underlying its pro-cognitive effects. *Mol. Psychiatry* 12: 1118-1128.
2. Camer, D., et al. 2015. Bardoxolone methyl prevents high-fat diet-induced alterations in prefrontal cortex signalling molecules involved in recognition memory. *Prog. Neuropsychopharmacol. Biol. Psychiatry* 59: 68-75.
3. Lin, X.B., et al. 2015. Anti-tumor activity of phenoxybenzamine hydrochloride on malignant glioma cells. *Tumour Biol.* E-published.

## STORAGE

Store at 4° C, \*\*DO NOT FREEZE\*\*. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.