

p-Trk A (Tyr 676): sc-130222

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. Human Trk A may be phosphorylated at specific amino acid residues, including Tyr 676.

REFERENCES

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2. Klein, R., et al. 1990. Expression of the tyrosine kinase receptor gene Trk B is confined to the murine embryonic and adult nervous system. *Development* 109: 845-850.
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. 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.
5. Klein, R., et al. 1991. The Trk B tyrosine protein kinase is a receptor for brain-derived neurotrophic factor and neurotrophin-3. *Cell* 66: 395-403.
6. Barbacid, M., et al. 1991. The Trk family of tyrosine protein kinase receptors. *Biochim. Biophys. Acta* 1072: 115-127.
7. Lambiase, A., et al. 2005. Molecular basis for keratoconus: lack of TrkA expression and its transcriptional repression by Sp3. *Proc. Natl. Acad. Sci. USA* 102: 16795-16800.
8. Wehrman, T., et al. 2007. Structural and mechanistic insights into nerve growth factor interactions with the TrkA and p75 receptors. *Neuron* 53: 25-38.

CHROMOSOMAL LOCATION

Genetic locus: NTRK1 (human) mapping to 1q23.1.

SOURCE

p-Trk A (Tyr 676) is a rabbit polyclonal antibody raised against a short amino acid sequence containing Tyr 676 phosphorylated Trk A of human origin.

PRODUCT

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

APPLICATIONS

p-Trk A (Tyr 676) is recommended for detection of Tyr 676 phosphorylated Trk A of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for Trk A siRNA (h): sc-36726, Trk A shRNA Plasmid (h): sc-36726-SH and Trk A shRNA (h) Lentiviral Particles: sc-36726-V.

Molecular Weight of p-Trk A: 80 kDa.

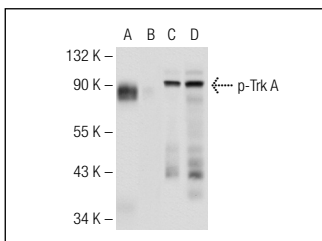
Molecular Weight of glycosylated p-Trk A: 140 kDa.

Positive Controls: Ramos cell lysate: sc-2216.

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 Trk A phosphorylation in untreated (A, C) and lambda protein phosphatase (sc-200312A) treated (B, D) Ramos whole cell lysates. Antibodies tested include p-Trk A (Tyr 676): sc-130222 (A, B) and Trk (C-15): sc-139 (C, D).

STORAGE

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

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.