

# Trk A (Y32Ex): sc-80398

## 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.

## 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. 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 Trk A 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 Trk A and p75 receptors. *Neuron* 53: 25-38.

## CHROMOSOMAL LOCATION

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

## SOURCE

Trk A (Y32Ex) is a mouse monoclonal antibody raised against an extracellular domain of Trk A of human origin.

## PRODUCT

Each vial contains 100 µg IgG<sub>2a</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and protein stabilizer.

## APPLICATIONS

Trk A (Y32Ex) is recommended for detection of Trk A of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000); non cross-reactive with Trk B or Trk C.

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 Trk A: 80 kDa.

Molecular Weight of glycosylated Trk A: 140 kDa.

Positive Controls: H4 cell lysate: sc-2408, SK-N-SH cell lysate: sc-2410 or HeLa whole cell lysate: sc-2200.

## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended:  
 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048.

## SELECT PRODUCT CITATIONS

1. Aragona, M., et al. 2021. Localization of neurotrophin specific Trk receptors in mechanosensory systems of killifish (*Nothobranchius guentheri*). *Int. J. Mol. Sci.* 22: 10411.

## 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](http://www.scbt.com) for detailed protocols and support products.

## CONJUGATES

See **Trk (B-3): sc-7268** for Trk antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.