SANTA CRUZ BIOTECHNOLOGY, INC.

# Trk A (H10): sc-80961

## 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 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

Trk A (H10) is a mouse monoclonal antibody raised against NIH/3T3 cells transfected with full length Trk A of human origin.

## PRODUCT

Each vial contains 100 µg $IgG_{2a}$ in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

Trk A (H10) is recommended for detection of Trk A of human origin by immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) 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 Trk A: 80 kDa.

Molecular Weight of glycosylated Trk A: 140 kDa.

## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 2) Immunofluorescence: use goat anti-mouse IgG-FITC: sc-2010 (dilution range: 1:100-1:400) or goat anti-mouse IgG-TR: sc-2781 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

## 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.