SANTA CRUZ BIOTECHNOLOGY, INC.

Trk (B-3): sc-7268

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 neurotrophin-3 (NT-3).

SOURCE

Trk (B-3) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 777-796 at the C-terminus of Trk A gp140 of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Trk (B-3) is available conjugated to agarose (sc-7268 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-7268 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-7268 PE), fluorescein (sc-7268 FITC), Alexa Fluor® 488 (sc-7268 AF488), Alexa Fluor® 546 (sc-7268 AF546), Alexa Fluor® 594 (sc-7268 AF594) or Alexa Fluor® 647 (sc-7268 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-7268 AF680) or Alexa Fluor® 790 (sc-7268 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-7268 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

Trk (B-3) is recommended for detection of Trk A, Trk B and Trk C of mouse, rat and 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)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Trk (B-3) is also recommended for detection of Trk A, Trk B and Trk C in additional species, including bovine and porcine.

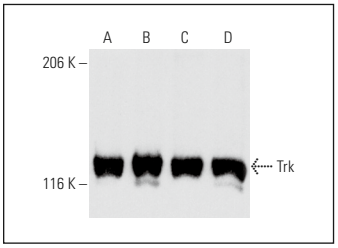
Suitable for use as control antibody for Trk siRNA (h): sc-29511, Trk siRNA (m): sc-29512, Trk shRNA Plasmid (h): sc-29511-SH, Trk shRNA Plasmid (m): sc-29512-SH, Trk shRNA (h) Lentiviral Particles: sc-29511-V and Trk shRNA (m) Lentiviral Particles: sc-29512-V.

Molecular Weight of Trk splice variants: 53-140 kDa.

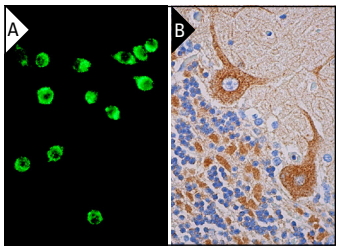
STORAGE

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

DATA



Trk (B-3): sc-7268. Western blot analysis of Trk expression in PC-12 (**A**), H4 (**B**), SK-N-SH (**C**) and U-87 (**D**) whole cell lysates.



Trk (B-3): sc-7268. Immunofluorescence staining of methanol-fixed RAW 264.7 cells showing membrane localization (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human cerebellum tissue showing cytoplasmic staining of Purkinje cells and cells in granular layer (**B**).

SELECT PRODUCT CITATIONS

1. Melck, D., et al. 1999. Involvement of the cAMP/protein kinase A pathway and of mitogen-activated protein kinase in the anti-proliferative effects of anandamide in human breast cancer cells. FEBS Lett. 463: 235-240.
2. Brito, V., et al. 2013. Imbalance of $p75^{NTR}$/Trk B protein expression in Huntington's disease: implication for neuroprotective therapies. Cell Death Dis. 4: e595.
3. Travaglia, A., et al. 2015. A small linear peptide encompassing the NGF N-terminus partly mimics the biological activities of the entire neurotrophin in PC12 cells. ACS Chem. Neurosci. 6: 1379-1392.
4. Triaca, V., et al. 2016. NGF controls APP cleavage by downregulating APP phosphorylation at Thr668: relevance for Alzheimer's disease. Aging Cell 15: 661-672.
5. Yamashita, N., et al. 2017. Phospho-regulation of soma-to-axon transcytosis of neurotrophin receptors. Dev. Cell 42: 626-639.e5.
6. Gharbiya, M., et al. 2018. *In vivo* antivascular endothelial growth factor treatment induces corneal endothelium apoptosis in rabbits through changes in p75NTR-proNGF pathway. J. Cell. Physiol. 233: 8874-8883.
7. Crerar, H., et al. 2019. Regulation of NGF signaling by an axonal untranslated mRNA. Neuron 102: 553-563.e8.
8. Maeshima, R., et al. 2020. MYCN silencing by RNA interference induces neurogenesis and suppresses proliferation in models of neuroblastoma with resistance to retinoic acid. Nucleic Acid Ther. 30: 237-248.
9. Sohn, S.H., et al. 2021. TRK inhibitors block NFKB and induce NRF2 in TRK fusion-positive colon cancer. J. Cancer 12: 6356-6362.

RESEARCH USE

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