

Trk C (WW6): sc-80403

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, is mainly expressed in nervous tissue, and is a functional receptor for NT-3. Four forms of Trk C are produced by alternative splicing. Isoform A is full length Trk C, isoform B differs from A between amino acids 529 to 612 and is missing amino acids 613 to 839. Trk C, isoform C is missing amino acids 712 to 725 and isoform D is missing amino acids 402 to 410.

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. 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.
7. 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.
8. SWISS-PROT/TrEMBL (Q16288). World Wide Web URL: <http://www.expasy.ch/sprot/sprot-top.html>

CHROMOSOMAL LOCATION

Genetic locus: NTRK3 (human) mapping to 15q25.3.

SOURCE

Trk C (WW6) is a mouse monoclonal antibody raised against an extracellular domain of Trk C of human origin.

PRODUCT

Each vial contains 100 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and protein stabilizer.

APPLICATIONS

Trk C (WW6) is recommended for detection of Trk C of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500); non cross-reactive with Trk B.

Suitable for use as control antibody for Trk C siRNA (h): sc-36730, Trk C shRNA Plasmid (h): sc-36730-SH, and Trk C shRNA (h) Lentiviral Particles: sc-36730-V.

Molecular Weight of Trk C splice variants: 50-145 kDa.

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. 2) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850. 3) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

SELECT PRODUCT CITATIONS

1. Sasahira, T., et al. 2013. Trks are novel oncogenes involved in the induction of neovascularization, tumor progression, and nodal metastasis in oral squamous cell carcinoma. *Clin. Exp. Metastasis* 30: 165-176.
2. Luzuriaga, J., Pineda, J.R., Irastorza, I., Uribe-Etxebarria, V., García-Gallastegui, P., Encinas, J.M., et al. 2019. BDNF and NT3 reprogram human ectomesenchymal dental pulp stem cells to neurogenic and gliogenic neural crest progenitors cultured in serum-free medium. *Cell. Physiol. Biochem.* 52: 1361-1380.
3. Dionisi, C., et al. 2020. Primary proprioceptive neurons from human induced pluripotent stem cells: a cell model for afferent ataxias. *Sci. Rep.* 10: 7752.

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.



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.