SANTA CRUZ BIOTECHNOLOGY, INC.

NGFR p75 (192-IgG): sc-71691

BACKGROUND

The Trk oncogene encodes a membrane-spanning protein tyrosine kinase, gp140Trk, whose expression is restricted *in vivo* to neurons of the sensory spinal and cranial ganglia of neural crest origin. Nerve growth factor (NGF) stimulates tyrosine phosphorylation of Trk A in neural cell lines and in embryonic dorsal root ganglia. Tyrosine phosphorylation of Trk by NGF is rapid, specific and occurs with picomolar quantities of factor, indicating that the response is mediated by physiological amounts of NGF, suggesting that Trk A participates in the primary signal transduction mechanism of NGF. An additional component of the Trk A receptor complex, NGFR p75, binds to the neurotrophic factors with low affinity but is required for efficient signaling. NGFR p75 accelerates Trk A activation and may recruit downstream effector molecules to the liganded complex.

REFERENCES

1. Martin-Zanca, D., et al. 1986. A human oncogene formed by the fusion of truncated tropomyosin and protein tyrosine kinase sequences. Nature 319: 743-748.
2. Reinach, F.C, et al. 1986. Tissue-specific expression of the human tropomyosin gene involved in the generation of the Trk oncogene. Nature 322: 648-650.
3. Martin-Zanca, D., et al. 1989. Molecular and biochemical characterization of the human Trk proto-oncogene. Mol. Cell. Biol. 9: 24-33.
4. 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.
5. Klein, R., et al. 1991. The Trk proto-oncogene encodes a receptor for nerve growth factor. Cell 65: 189-197.
6. 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.
7. McKay, S.E., et al. 1996. The expression of Trk B and p75 and the role of BDNF in the developing neuromuscular system of the chick embryo. Development 122: 715-724.
8. Canossa, M., et al. 1996. NGFR p75 and Trk A receptors collaborate to rapidly activate a NGFR p75-associated protein kinase. EMBO J. 15: 3369-3376.

CHROMOSOMAL LOCATION

Genetic locus: Ngfr (mouse) mapping to 11 D.

SOURCE

NGFR p75 (192-IgG) is a mouse monoclonal antibody raised against PC-12 cells of rat origin.

STORAGE

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

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

NGFR p75 (192-IgG) is available conjugated to either phycoerythrin (sc-71691 PE) or fluorescein (sc-71691 FITC), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM.

APPLICATIONS

NGFR p75 (192-IgG) is recommended for detection of NGFR p75 of mouse and rat 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) and flow cytometry (1 µg per 1 x 10^6 cells).

Suitable for use as control antibody for NGFR p75 siRNA (m): sc-37268, NGFR p75 shRNA Plasmid (m): sc-37268-SH and NGFR p75 shRNA (m) Lentiviral Particles: sc-37268-V.

Molecular Weight of NGFR p75: 75 kDa.

Positive Controls: PC-12 cell lysate: sc-2250.

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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) 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.

SELECT PRODUCT CITATIONS

1. Bao, X., et al. 2020. Sphingosine 1-phosphate promotes the proliferation of olfactory ensheathing cells through YAP signaling and participates in the formation of olfactory nerve layer. Glia 68: 1757-1774.
2. Anacker, A., et al. 2022. Purification of fibroblasts from the spiral ganglion. Front. Neurol. 13: 877342.
3. Goblet, M., et al. 2022. Effect of immunophilin inhibitors on cochlear fibroblasts and spiral ganglion cells. Audiol. Neurootol. E-published.

RESEARCH USE

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