

# NT-3 (A-4): sc-518099

## BACKGROUND

Neurotrophins function to regulate naturally occurring cell death of neurons during development. The prototype neurotrophin is nerve growth factor (NGF), originally discovered in the 1950s as a soluble peptide promoting the survival of, and neurite outgrowth from, sympathetic ganglia. Three additional structurally homologous neurotrophic factors have been identified. These include brain-derived neurotrophic factor (BDNF), neurotrophin-3 (NT-3) and neurotrophin-4 (NT-4) (also designated NT-5). These various neurotrophins stimulate the *in vitro* survival of distinct, but partially overlapping, populations of neurons. The cell surface receptors through which neurotrophins mediate their activity have been identified. For instance, the Trk A receptor is the preferential receptor for NGF, but also binds NT-3 and NT-4. The Trk B receptor binds both BDNF and NT-4 equally well, and binds NT-3 to a lesser extent, while the Trk C receptor only binds NT-3.

## REFERENCES

1. Oppenheim, R.W. 1991. Cell death during development of the nervous system. *Annu. Rev. Neurosci.* 14: 453-501.
2. Thoenen, H. 1991. The changing scene of neurotrophic factors. *Trends Neurosci.* 14: 165-170.
3. Chao, K.K., Cheung, E., Armstrong, W.B. and Wong, B.J. 1992. Neurotrophin receptors: a window into neuronal differentiation. *Neuron* 9: 583-593.
4. Korsching, S. 1993. The neurotrophic factor concept: a reexamination. *J. Neurosci.* 13: 2739-2748.
5. Ip, N.Y., Stitt, T.N., Tapley, P., Klein, R., Glass, D.J., Fandl, J., Greene, L.A., Barbacid, M. and Yancopoulos, G.D. 1993. Similarities and differences in the way neurotrophins interact with the Trk receptors in neuronal and nonneuronal cells. *Neuron* 10: 137-149.
6. Klein, R. 1994. Role of neurotrophins in mouse neuronal development. *FASEB J.* 8: 738-744.

## CHROMOSOMAL LOCATION

Genetic locus: NTF3 (human) mapping to 12p13.31.

## SOURCE

NT-3 (A-4) is a mouse monoclonal antibody raised against amino acids 139-257 of NT-3 of human origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

NT-3 (A-4) is available conjugated to agarose (sc-518099 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-518099 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-518099 PE), fluorescein (sc-518099 FITC), Alexa Fluor<sup>®</sup> 488 (sc-518099 AF488), Alexa Fluor<sup>®</sup> 546 (sc-518099 AF546), Alexa Fluor<sup>®</sup> 594 (sc-518099 AF594) or Alexa Fluor<sup>®</sup> 647 (sc-518099 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor<sup>®</sup> 680 (sc-518099 AF680) or Alexa Fluor<sup>®</sup> 790 (sc-518099 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

## APPLICATIONS

NT-3 (A-4) is recommended for detection of NT-3 of human origin by Western Blotting (starting dilution 1:100, 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 solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

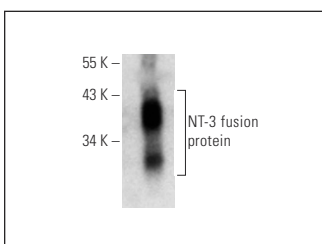
Suitable for use as control antibody for NT-3 siRNA (h): sc-42125, NT-3 shRNA Plasmid (h): sc-42125-SH and NT-3 shRNA (h) Lentiviral Particles: sc-42125-V.

Molecular Weight of NT-3: 35 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<sup>™</sup> Molecular Weight Standards: sc-2035, UltraCruz<sup>®</sup> 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<sup>®</sup> Mounting Medium: sc-24941 or UltraCruz<sup>®</sup> Hard-set Mounting Medium: sc-359850.

## DATA



NT-3 (A-4): sc-518099. Western blot analysis of human recombinant NT-3 fusion protein. Detection reagent used: m-IgGκ BP-HRP (Cruz Marker: sc-516102-CM).

## SELECT PRODUCT CITATIONS

1. Filippone, A., Scuderi, S.A., Basilotta, R., Lanza, M., Casili, G., Bova, V., Paterniti, I. and Esposito, E. 2022. BAY-117082-driven NLRP3 inflammation inhibition resolves nitro-glycerine (NTG) neuronal damage in *in vivo* model of migraine. *Biomed. Pharmacother.* 156: 113851.

## 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.

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