

NT-4 (C-1): sc-365444

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., et al. 1992. Neurotrophin receptors: a window into neuronal differentiation. *Neuron* 9: 583-593.

CHROMOSOMAL LOCATION

Genetic locus: NTF4 (human) mapping to 19q13.33; Ntf5 (mouse) mapping to 7 B4.

SOURCE

NT-4 (C-1) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 77-103 within an internal region of NT-4 of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

NT-4 (C-1) is available conjugated to agarose (sc-365444 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-365444 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-365444 PE), fluorescein (sc-365444 FITC), Alexa Fluor® 488 (sc-365444 AF488), Alexa Fluor® 546 (sc-365444 AF546), Alexa Fluor® 594 (sc-365444 AF594) or Alexa Fluor® 647 (sc-365444 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-365444 AF680) or Alexa Fluor® 790 (sc-365444 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-365444 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

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RESEARCH USE

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

APPLICATIONS

NT-4 (C-1) is recommended for detection of NT-4 of mouse, rat and 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), 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).

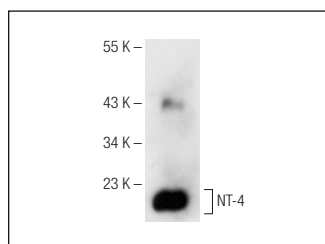
NT-4 (C-1) is also recommended for detection of NT-4 in additional species, including canine, bovine and porcine.

Suitable for use as control antibody for NT-4 siRNA (h): sc-42127, NT-4 siRNA (m): sc-42128, NT-4 shRNA Plasmid (h): sc-42127-SH, NT-4 shRNA Plasmid (m): sc-42128-SH, NT-4 shRNA (h) Lentiviral Particles: sc-42127-V and NT-4 shRNA (m) Lentiviral Particles: sc-42128-V.

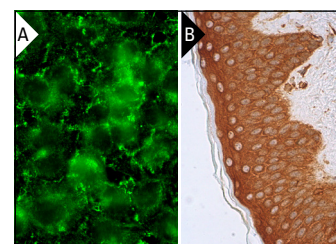
Molecular Weight of NT-4: 14 kDa.

Positive Controls: mouse skin extract: sc-364251 or human colon extract: sc-363757.

DATA



NT-4 (C-1): sc-365444. Western blot analysis of human recombinant NT-4.



NT-4 (C-1): sc-365444. Immunofluorescence staining of methanol-fixed HeLa cells showing membrane localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human skin tissue showing cytoplasmic staining of keratinocytes, fibroblasts, Langerhans cells and melanocytes (B).

SELECT PRODUCT CITATIONS

1. Patel, K.R., et al. 2016. Mast cell-derived neurotrophin 4 mediates allergen-induced airway hyperinnervation in early life. *Mucosal Immunol.* 9: 1466-1476.
2. Ranuh, R., et al. 2019. Effect of the probiotic *Lactobacillus plantarum* IS-10506 on BDNF and 5HT stimulation: role of intestinal microbiota on the gut-brain axis. *Iran. J. Microbiol.* 11: 145-150.
3. Sun, R., et al. 2023. NTF4 plays a dual role in breast cancer in mammary tumorigenesis and metastatic progression. *Int. J. Biol. Sci.* 19: 641-657.

STORAGE

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