

NT-4 (N-20): sc-545

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.

CHROMOSOMAL LOCATION

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

SOURCE

NT-4 (N-20) is an affinity purified rabbit polyclonal antibody raised against a peptide mapping within an internal region of NT-4 of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-545 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

NT-4 (N-20) is recommended for detection of NT-4 and, to a lesser extent, NT-6 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).

NT-4 (N-20) is also recommended for detection of NT-4 and, to a lesser extent, NT-6 in additional species, including equine, canine, bovine and porcine.

Molecular Weight of NT-4: 14 kDa.

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

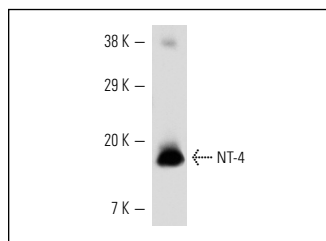
STORAGE

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

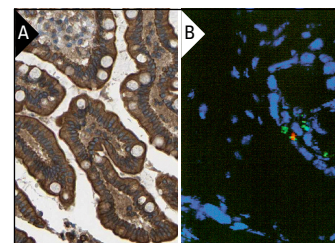
RESEARCH USE

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

DATA



NT-4 (N-20): sc-545. Western blot analysis of human recombinant NT-4.



NT-4 (N-20): sc-545. Immunoperoxidase staining of formalin fixed, paraffin-embedded human colon tissue showing cytoplasmic and membrane staining of glandular cells. Kindly provided by The Swedish Human Protein Atlas (HPA) program (A). Cryostat sections of mouse skin showing hair follicle staining. Note red immunofluorescence staining, green TUNEL fluorescence staining marking apoptotic cells, and blue HOECHST 33342 nuclear counterstain. Kindly provided by Hair Research Group, Humboldt University, Berlin (B).

SELECT PRODUCT CITATIONS

- Schober, A., et al. 1998. Distinct populations of macrophages in the adult rat adrenal gland: a subpopulation with neurotrophin-4-like immunoreactivity. *Cell Tissue Res.* 291: 365-373.
- Schober, A., et al. 1998. TrkB and neurotrophin-4 are important for development and maintenance of sympathetic preganglionic neurons innervating the adrenal medulla. *J. Neurosci.* 18: 7272-7284.
- Pedersen, M.O., et al. 2010. Bio-released gold ions modulate expression of neuroprotective and hematopoietic factors after brain injury. *Brain Res.* 1307: 1-13.
- Alboni, S., et al. 2010. Time-dependent effects of escitalopram on brain derived neurotrophic factor (BDNF) and neuroplasticity related targets in the central nervous system of rats. *Eur. J. Pharmacol.* 643: 180-187.
- Wang, H.Y., et al. 2011. Repetitive transcranial magnetic stimulation enhances BDNF-TrkB signaling in both brain and lymphocyte. *J. Neurosci.* 31: 11044-11054.
- Alboni, S., et al. 2011. Stress induces altered CRE/CREB pathway activity and BDNF expression in the hippocampus of glucocorticoid receptor-impaired mice. *Neuropharmacology* 60: 1337-1346.
- Hill, R.A. and van den Buuse, M. 2011. Sex-dependent and region-specific changes in TrkB signaling in BDNF heterozygous mice. *Brain Res.* 1384: 51-60.

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Try **NT-4 (C-1): sc-365444**, our highly recommended monoclonal alternative to NT-4 (N-20).