

NT-3 (E-14): sc-33907

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

- Oppenheim, R.W., et al. 1991. Cell death during development of the nervous system. *Annu. Rev. Neurosci.* 14: 453-501.
- Thoenen, H., et al. 1991. The changing scene of neurotrophic factors. *Trends Neurosci.* 14: 165-170.
- Chao, M.V., et al. 1992. Neurotrophin receptors: a window into neuronal differentiation. *Neuron* 9: 583-593.
- Korsching, S., et al. 1993. The neurotrophic factor concept: a reexamination. *J. Neurosci.* 13: 2739-2748.
- Ip, N.Y., et al. 1993. Similarities and differences in the way neurotrophins interact with the Trk receptors in neuronal and nonneuronal cells. *Neuron* 10: 137-149.
- Klein, R., et al. 1994. Role of neurotrophins in mouse neuronal development. *FASEB J.* 8: 738-744.

CHROMOSOMAL LOCATION

Genetic locus: NGF (human) mapping to 1p 13.1, NTF3 (human) mapping to 12p13.31; Ngf (mouse) mapping to 3F2.2, Ntf3 (mouse) mapping to 6 F3.

SOURCE

NT-3 (E-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of NT-3 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-33907 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

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

APPLICATIONS

NT-3 (E-14) is recommended for detection of NT-3 and, to a lesser extent, NGF 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

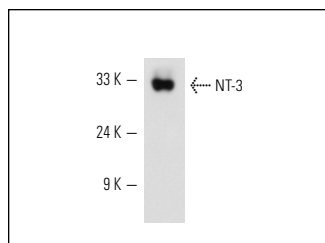
NT-3 (E-14) is also recommended for detection of NT-3 and, to a lesser extent, NGF in additional species, including equine, canine, bovine, porcine, avian and feline.

Molecular Weight of NT-3: 35 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 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 donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



NT-3 (E-14): sc-33907. Western blot analysis of biologically active human NT-3 protein.

SELECT PRODUCT CITATIONS

- Mechsner, S., et al. 2007. Growth-associated protein 43-positive sensory nerve fibers accompanied by immature vessels are located in or near peritoneal endometriotic lesions. *Fertil. Steril.* 88: 581-587.

RESEARCH USE

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



Try **NT-3 (J1407): sc-80250**, our highly recommended monoclonal alternative to NT-3 (E-14).