

BDNF (N-20): sc-546

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 1,950s 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: BDNF (human) mapping to 11p14.1, NGF (human) mapping to 1p13.2; Bdnf (mouse) mapping to 2 E3, Ngf (mouse) mapping to 3 F2.2.

SOURCE

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

PRODUCT

Each vial contains 100 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-546 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

BDNF (N-20) is recommended for detection of precursor and mature BDNF, 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), 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).

BDNF (N-20) is also recommended for detection of precursor and mature BDNF, and to a lesser extent, NGF in additional species, including equine, canine, bovine, porcine, avian and feline.

Molecular Weight of BDNF precursor: 32 kDa.

Molecular Weight of mature BDNF: 14 kDa.

Positive Controls: SH-SY5Y cell lysate: sc-3812, U-87 MG cell lysate: sc-2411 or human platelet whole cell lysate: sc-363773.

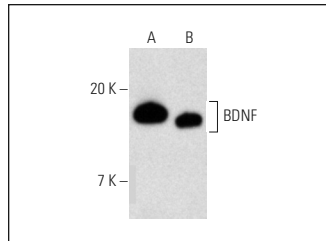
STORAGE

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

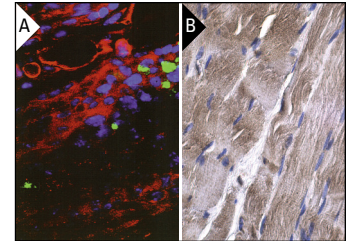
RESEARCH USE

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

DATA



BDNF (N-20): sc-546. Western blot analysis of BDNF expression in human platelet extract (A) and U-87 MG (B) whole cell lysates.



BDNF (N-20): sc-546. 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 (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human skeletal muscle tissue showing cytoplasmic staining of myocyte cells (B).

SELECT PRODUCT CITATIONS

- Seidah, N.G., et al. 1999. Mammalian subtilisin/kexin isozyme SKI-1: A widely expressed proprotein convertase with a unique cleavage specificity and cellular localization. *Proc. Natl. Acad. Sci. USA* 96: 1321-1326.
- Mooney, S.M. and Miller, M.W. 2011. Role of neurotrophins on postnatal neurogenesis in the thalamus: prenatal exposure to ethanol. *Neuroscience* 179: 256-266.
- Jiao, Y., et al. 2011. A key mechanism underlying sensory experience-dependent maturation of neocortical GABAergic circuits *in vivo*. *Proc. Natl. Acad. Sci. USA* 108: 12131-12136.
- Merlo, S., et al. 2011. Distinct effects of pramipexole on the proliferation of adult mouse sub-ventricular zone-derived cells and the appearance of a neuronal phenotype. *Neuropharmacology* 60: 892-900.
- Boneva, N.B. and Yamashima, T. 2012. New insights into "GPR40-CREB interaction in adult neurogenesis" specific for primates. *Hippocampus* 22: 896-905.
- Sui, L., et al. 2012. Epigenetic regulation of reelin and brain-derived neurotrophic factor genes in long-term potentiation in rat medial prefrontal cortex. *Neurobiol. Learn. Mem.* 97: 425-440.
- Rocha, S.M., et al. 2012. Astrocyte-derived GDNF is a potent inhibitor of microglial activation. *Neurobiol. Dis.* 47: 407-415.



Try **pro BDNF (5H8): sc-65514** or **pro BDNF (9C1): sc-65513**, our highly recommended monoclonal alternatives to BDNF (N-20). Also, for AC, HRP, FITC, PE, Alexa Fluor® 488 and Alexa Fluor® 647 conjugates, see **pro BDNF (5H8): sc-65514**.