SANTA CRUZ BIOTECHNOLOGY, INC.

NGF (E-12): sc-365944

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. Oppenhiem, 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.

CHROMOSOMAL LOCATION

Genetic locus: NGF (human) mapping to 1p13.2; Ngf (mouse) mapping to 3 F2.2.

SOURCE

NGF (E-12) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 122-149 at the N-terminus of mature NGF of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

NGF (E-12) is available conjugated to agarose (sc-365944 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-365944 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-365944 PE), fluorescein (sc-365944 FITC), Alexa Fluor® 488 (sc-365944 AF488), Alexa Fluor® 546 (sc-365944 AF546), Alexa Fluor® 594 (sc-365944 AF594) or Alexa Fluor® 647 (sc-365944 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-365944 AF680) or Alexa Fluor® 790 (sc-365944 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-365944 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

STORAGE

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

APPLICATIONS

NGF (E-12) is recommended for detection of NGF precursor and mature forms 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).

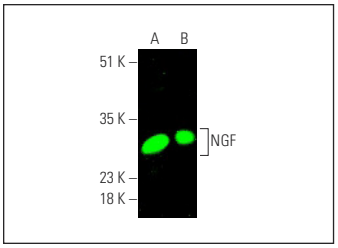
Suitable for use as control antibody for NGF siRNA (h): sc-43970, NGF siRNA (m): sc-45783, NGF shRNA Plasmid (h): sc-43970-SH, NGF shRNA Plasmid (m): sc-45783-SH, NGF shRNA (h) Lentiviral Particles: sc-43970-V and NGF shRNA (m) Lentiviral Particles: sc-45783-V.

Molecular Weight of mature NGF: 13 kDa.

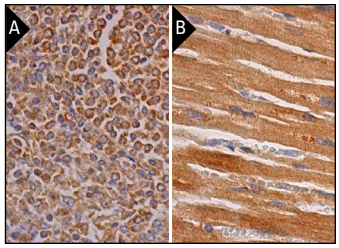
Molecular Weight of NGF precursor: 27 kDa.

Positive Controls: mouse brain extract: sc-2253 or human heart extract: sc-363763.

DATA



NGF (E-12): sc-365944. Near-infrared western blot analysis of NGF expression in mouse brain (**A**) and human heart (**B**) tissue extracts. Blocked with UltraCruz® Blocking Reagent: sc-516214. Detection reagent used: m-IgGκ BP-CFL 680: sc-516180.



NGF (E-12): sc-365944. Immunoperoxidase staining of formalin fixed, paraffin-embedded human spleen tissue showing cytoplasmic staining of cells in white pulp and cells in red pulp (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human heart muscle tissue showing cytoplasmic staining of myocytes (**B**).

SELECT PRODUCT CITATIONS

1. Koo, H.M., et al. 2015. The effect of low-intensity laser therapy (LILT) on cutaneous wound healing and pain relief in rats. J. Phys. Ther. Sci. 27: 3421-3423.
2. Cho, Y.S., et al. 2015. A novel intracerebral hemorrhage-induced rat model of neurogenic voiding dysfunction: analysis of lower urinary tract function. Mol. Med. Rep. 12: 2563-2569.
3. Soligo, M., et al. 2015. The mature/pro nerve growth factor ratio is decreased in the brain of diabetic rats: analysis by ELISA methods. Brain Res. 1624: 455-468.
4. Kucharczyk, M., et al. 2018. The reduced level of growth factors in an animal model of depression is accompanied by regulated necrosis in the frontal cortex but not in the hippocampus. Psychoneuroendocrinology 94: 121-133.

RESEARCH USE

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