SANTA CRUZ BIOTECHNOLOGY, INC.

NT-4 (hBA-130): sc-4943

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

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3. Chao, K.K., Cheung, E., Armstrong, W.B. and Wong, B.J. 1992. Neurotrophin receptors: a window into neuronal differentiation. Neuron 9: 583-593.
4. Korsching, S. 1993. The neurotrophic factor concept: a reexamination. J. Neurosci. 13: 2739-2748.
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6. Klein, R. 1994. Role of neurotrophins in mouse neuronal development. FASEB J. 8: 738-744.
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CHROMOSOMAL LOCATION

Genetic locus: NTF5 (human) mapping to 19q13.3; Ntf5 (mouse) mapping to 7 B4.

SOURCE

NT-4 (hBA-130) is produced in *E. coli* as 28.1 kDa biologically active protein corresponding to 260 amino acids of NT-1 of human origin (homodimer of two 130 amino acid monomers).

PRODUCT

NT-4 (hBA-130) is purified from bacterial lysates (>98%); supplied as 10 µg purified protein.

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.

BIOLOGICAL ACTIVITY

NT-4 (hBA-130) is biologically active as determined by the dose-dependent induction of choline acetyl transferase activity in rat basal forebrain primary septal cell cultures in the range of 20–50 ng/ml.

RECONSTITUTION

In order to avoid freeze/thaw damaging of the active protein, dilute protein when first used to desired working concentration. Either a sterile filtered standard buffer (such as 50mM TRIS or 1X PBS) or water can be used for the dilution. Store any thawed aliquot in refrigeration at 2° C to 8° C for up to four weeks, and any frozen aliquot at -20° C to -80° C for up to one year. It is recommended that frozen aliquots be given an amount of standard cryopreservative (such as Ethylene Glycol or Glycerol 5-20% v/v), and refrigerated samples be given an amount of carrier protein (such as heat inactivated FBS or BSA to 0.1% v/v) or non-ionic detergent (such as Triton X-100 or Tween 20 to 0.005% v/v), to aid stability during storage.

STORAGE

Store desiccated at -20° C; stable for one year from the date of shipment.

RESEARCH USE

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