Cytokines

Human Recombinant NT-4

Neurotrophin 4

Catalog #	78093	10 µg
	78093.1	100 µg

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Product Description

Neurotrophin-4 (NT-4) is a member of the nerve growth factor family which includes neurotrophin-3 (NT-3), brain-derived neurotrophic factor (BDNF), and nerve growth factor (NGF), all of which promote the differentiation, growth, and survival of peripheral and central nervous system neurons (Eide et al.). NT-4 binds and activates tropomyosin receptor kinase B (TrkB) at the cell surface; in doing so, it acts as a survival factor for certain populations of sensory neurons (Berkemeier et al.; Skaper). It has been shown that NT-4, together with BDNF, promotes neurite extension and maturation, as well as maintenance of differentiated cerebellar granule cells (Gao et al.).

Product Information

Alternative Names:	GLC10, GLC1O, Neutrophic factor 4, Neutrophic factor 5, Neurotrophin-5, NT-4/5, NT-5, NTF4, NTF5
Accession Number:	P34130
Amino Acid Sequence:	MGVSETAPAS RRGELAVCDA VSGWVTDRRT AVDLRGREVE VLGEVPAAGG SPLRQYFFET RCKADNAEEG GPGAGGGGCR GVDRRHWVSE CKAKQSYVRA LTADAQGRVG WRWIRIDTAC VCTLLSRTGR A
Predicted Molecular Mass:	14.0 kDa monomer; 28.1 kDa dimer
Species:	Human
Formulation:	Lyophilized from a sterile-filtered aqueous solution containing 0.1% trifluoroacetic acid.
Source:	*E. coli*

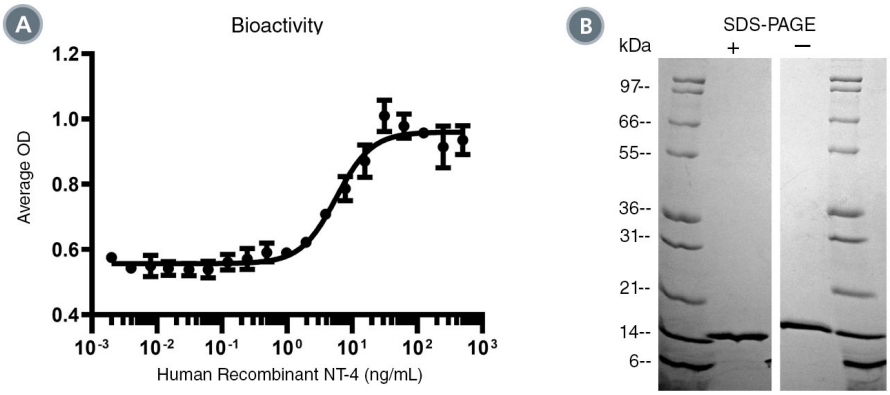
Specifications

Activity:	Lot #1000039464 or higher: The specific activity is ≥ 5.0 x 10^4 units/mg (EC50 ≤ 20 ng/mL) as determined by a cell proliferation assay using a neuroblastoma cell line stably expressing TrkB (BR6). All other lots: The specific activity is ≥ 3.3 x 10^2 units/mg (EC50 ≤ 3.0 µg/mL) as determined by a cell proliferation assay using C6 cells.
Purity:	≥ 95%
Endotoxin Level:	Measured by kinetic Limulus amebocyte lysate (LAL) analysis and is ≤ 1 EU/µg protein.

Preparation and Storage

Storage:	Store at -20°C to -80°C.
Stability:	Stable as supplied for 12 months from date of receipt.
Preparation:	Centrifuge vial before opening. Reconstitute the product in sterile water to at least 0.1 mg/mL by pipetting the solution down the sides of the vial. Do not vortex. OPTIONAL: After reconstitution, if product will not be used immediately, dilute with concentrated bovine serum albumin (BSA) to a final BSA concentration of 0.1%. The effect of storage of stock solution on product performance should be tested for each application. As a general guide, do not store at 2 - 8°C for more than 1 month or at -80°C for more than 3 months. Avoid repeated freeze-thaw cycles.

Data



(A) The biological activity of Human Recombinant NT-4 was tested by its ability to promote the proliferation of a neuroblastoma cell line stably expressing TrkB (BR6). Cell proliferation was measured using a colorimetric assay method. The EC50 is defined as the effective concentration of the growth factor at which cell proliferation is at 50% of maximum. The EC50 in the above example is 5.6 ng/mL. For a representative bioactivity plot of C6 cell proliferation, contact us at techsupport@stemcell.com.
(B) 1 µg of Human Recombinant NT-4 was resolved with SDS-PAGE under reducing (+) and non-reducing (-) conditions and visualized by Coomassie Blue staining. Human Recombinant NT-4 is a homodimer of 14 kDa subunits with a predicted total molecular mass of 28.1 kDa.

Related Products

For a complete list of cytokines, as well as related products available from STEMCELL Technologies, visit www.stemcell.com/cytokines or contact us at techsupport@stemcell.com.

References

Berkemeier LR et al. (1991) Neurotrophin-5: a novel neurotrophic factor that activates trk and trkB. Neuron 7(5): 857–66.
Eide FF et al. (1993) Neurotrophins and their receptors--current concepts and implications for neurologic disease. Exp Neurol 121(2): 200–14.
Gao WQ et al. (1995) Neurotrophin-4/5 (NT-4/5) and brain-derived neurotrophic factor (BDNF) act at later stages of cerebellar granule cell differentiation. J Neurosci 15(4): 2656–67.
Skaper SD. (2008) The biology of neurotrophins, signalling pathways, and functional peptide mimetics of neurotrophins and their receptors. CNS Neurol Disord Drug Targets 7(1): 46–62.