Recombinant Human NT-3

Catalog Number: 11346-N3

DESCRIPTION

Source	Human embryonic kidney cell, HEK293-derived human NT-3 protein Tyr139-Thr257 Accession # P20783.1
N-terminal Sequence Analysis	Tyr139
Predicted Molecular Mass	14 kDa

SPECIFICATIONS

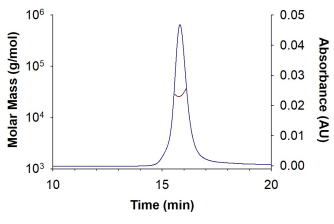
SDS-PAGE	12-15 kDa, under reducing conditions.
Activity	Measured in a cell proliferation assay using BaF mouse pro-B cells transfected with TrkB. The ED_{50} for this effect is 5.00-60.0 ng/mL.
Endotoxin Level	<0.10 EU per 1 µg of the protein by the LAL method.
Purity	>95%, by SDS-PAGE visualized with Silver Staining and quantitative densitometry by Coomassie® Blue Staining.
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute the 10 µg size at 100 µg/mL in PBS. Reconstitute all other sizes at 200 µg/mL in PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	**Use a manual defrost freezer and avoid repeated freeze-thaw cycles.** • 12 months from date of receipt, -20 to -70 °C as supplied. • 1 month, 2 to 8 °C under sterile conditions after reconstitution. • 3 months, -20 to -70 °C under sterile conditions after reconstitution.

DATA

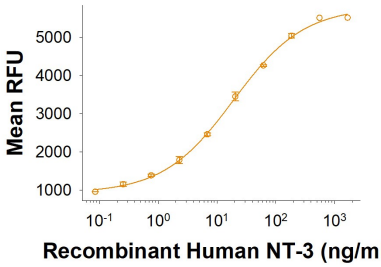
SEC-MALS



SEC-MALS Data	Result
Retention Time	15.6 - 16.1
MW - Predicted (Monomer)	14.0 kDa
MW - MALS	28.1 kDa
Polydispersity	1.009
System Suitability: BSA Monomer 66.4 ± 3.32 kDa	Pass

Recombinant Human NT-3 Protein SEC-MALS. Recombinant Human NT-3 Protein (Catalog # 11346-N3) has a molecular weight (MW) of 28.1 kDa as analyzed by SEC-MALS, suggesting that this protein is a homodimer. MW may differ from predicted MW due to post-translational modifications (PTMs) present (i.e. Glycosylation).

Bioactivity



Recombinant Human NT-3 Protein Bioactivity. Recombinant Human NT-3 (Catalog # 11346-N3) stimulates cell proliferation in the BaF mouse pro-B cell line transfected with TrkB. The ED_{50} for this effect is 5.00-60.0 ng/mL.

BACKGROUND

Neurotrophin-3 (NT-3) is a member of the NGF family of neurotrophic factors (also named neurotrophins) that are required for the differentiation and survival of specific neuronal subpopulations in both the central as well as the peripheral nervous systems. The neurotrophin family is comprised of at least four proteins including NGF, BDNF, NT-3, and NT-4/5. These secreted cytokines are synthesized as prepropeptides that are proteolytically processed to generate the mature proteins. All neurotrophins have six conserved cysteine residues that are involved in the formation of three disulfide bonds and all share approximately 55% sequence identity at the amino acid level. Similarly to NGF, bioactive NT-3 is predicted to be a non-covalently linked homodimer.

The NT-3 cDNA encodes a 257 amino acid residue precursor protein with a signal peptide and a proprotein that are cleaved to yield the 119 amino acid residue mature NT-3. The amino acid sequence of mature NT-3 is identical in human, mouse and rat. NT-3 transcripts have been detected in the cerebellum, hippocampus, placenta, heart, skin, and skeletal muscle. NT-3 primarily activates the TrkC tyrosine kinase receptor. In addition, NT-3 can activate Trk and TrkB kinase receptors in certain cell systems. NT-3 can also bind with low affinity to the low affinity NGF receptor.

References:

1. Eide, F.F. *et al.* (1993) Exp. Neurol. **121**:200.
2. Snider, W.D. (1994) Cell **77**:627.
3. Barbacid, M. (1994) J. Neurobiol. **25**:1386.

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