

DESCRIPTION

Source	<i>Spodoptera frugiperda</i> , Sf 21 (baculovirus)-derived human NT-3 protein Tyr139-Thr257 (K196R) Accession # P20783
N-terminal Sequence Analysis	Tyr139
Predicted Molecular Mass	13.7 kDa

SPECIFICATIONS

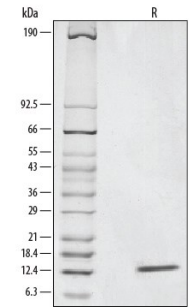
Activity	Measured in a cell proliferation assay using BaF mouse pro-B cells transfected with TrkB. The ED ₅₀ for this effect is 4-40 ng/mL. The specific activity of recombinant human NT-3 is approximately 2082 U/μg, which is calibrated against Recombinant Human NT-3 Standard (NIBSC code: 98/718).
Endotoxin Level	<0.10 EU per 1 μg of the protein by the LAL method.
Purity	>97%, 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. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute 5 μg vials at 50 μg/mL in sterile PBS. Reconstitute 25 μg or larger vials at 100 μg/mL in sterile 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. <ul style="list-style-type: none"> • 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.

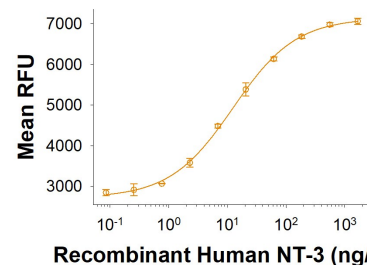
DATA

SDS-PAGE



1 μg/lane of Recombinant Human NT-3 was resolved with SDS-PAGE under reducing (R) conditions and visualized by silver staining, showing a single band at 14 kDa.

Bioactivity



Recombinant Human NT-3 (Catalog # 267-N3/CF) stimulates cell proliferation in the BaF mouse pro-B cell line transfected with TrkB. The ED₅₀ for this effect is 4-40 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.