

PRODUCT DESCRIPTION:

Neurotrophin-3 (NT-3) is a member of the nerve growth factor (NGF) family of neurotrophins that binds various receptors including Trk, TrkB, TrkC and the low affinity NGF receptor. Neurotrophins are key regulators of neural differentiation and survival (for a review, see 1). Together with other NGF family members NT-4 and BDNF, NT-3 has been described as a survival factor for human embryonic stem cells (hESC)². Additionally NT-3 has been used to direct the differentiation of hESC to neural lineages. Bioactive NT-3 is predicted to be a non-covalently linked homodimer. Mature recombinant NT-3 has a predicted molecular mass of approximately 13.6 kDa, with 119 amino acids following cleavage of the signal peptide and proprotein. The amino acid sequence of mature NT-3 is identical in human, mouse and rat.

SOURCE:

The DNA sequence encoding the NT-3 prepropeptide³ was inserted in a baculovirus expression vector and expressed in Sf 21 insect cells.

PURITY:

Greater than 97%, as determined by SDS-PAGE and visualized by silver stain. Endotoxin level is less than 1.0 EU/μg of NT-3, as determined by the LAL method.

FORMULATION:

Lyophilized from a sterile-filtered solution in 30% acetonitrile plus 0.1% TFA containing 50 μg of bovine serum albumin per 1 μg of NT-3.

RECONSTITUTION:

It is recommended that a stock solution at a concentration of no less than 10 μg/mL be prepared in sterile phosphate buffered saline containing at least 0.1% human or bovine serum albumin.

STABILITY AND STORAGE:

The lyophilized sample is stable for up to 1 year at -20°C to -70°C.

Reconstituted NT-3 can be stored under sterile conditions at 2 - 8°C for 1 month or at -20°C to -70°C for 3 months in a **manual defrost freezer** without detectable loss of activity.

Avoid repeated freezing and thawing.

ACTIVITY:

The ED₅₀ of NT-3, as measured by its ability to stimulate proliferation of the TrkB-transfected cell line, BaF-TrkB-BD, is typically 10 - 30 ng/mL.

REFERENCES:


1. Reichardt LF. Neurotrophin-regulated signalling pathways. *Philos Trans R Soc Lond B Biol Sci.* 361(1473):1545-64, 2006
2. Pyle AD, Lock LF, Donovan PJ. Neurotrophins mediate human embryonic stem cell survival. *Nat Biotechnol* 24(3):344-50, 2006
3. Jones KR, Reichardt LF. Molecular cloning of a human gene that is a member of the nerve growth factor family. *Proc Natl Acad Sci USA* 87(20): 8060 - 4, 1990

See Material Safety Data Sheet for more information.

**THIS REAGENT IS FOR RESEARCH ONLY.
IT IS NOT TO BE ADMINISTERED TO HUMANS.**

Product Information Sheet

CYTOKINES



**Recombinant
Human
NEUROTROPHIN-3
(NT-3)**

Catalog #02508 5 μg/vial

Version 1.0.0

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