



User Manual

Neurotrophin-4 (NT-4) (Human)

Cat. No. HEOPP-14051

Description:

Neurotrophin-4 (NT-4), also known as NT-5, is a member of the NGF family of neuronal and epithelial growth factors. Neurotrophins have six conserved cysteine residues that are involved in the formation of three disulfide bonds. Human NT-4 shares 48 - 52% aa sequence identity with human beta-NGF, BDNF, and NT-3. It shares 91% and 95% aa sequence identity with mouse and rat NT-4/5, respectively. The mature protein is secreted as a homodimer and can also form heterodimers with BDNF or NT-3. NT-4 binds and induces receptor dimerization and activation of TrkB. NT-4 promotes the development and survival of selected peripheral and CNS neurons. NT-4 induced TrkB signaling augments NMDA receptor activity and increases neuronal sensitivity to excitotoxic cell death. It also promotes the proliferation of keratinocytes and accelerates hair follicle regression during the follicular cycle. NT-4 is secreted by activated T cells and granulocytes at sites of inflammation where it contributes to tissue regeneration.

Source:

Escherichia coli

Unit:

2 µg

Reconstitution:

We recommend that this vial be briefly centrifuged prior to opening to bring the contents to the bottom. Reconstitute in sterile distilled water or aqueous buffer containing 0.1% BSA to a concentration of 0.1-1.0 mg/mL. Stock solutions should be apportioned into working aliquots and stored at < -20°C. Further dilutions should be made in appropriate buffered solutions.

Formulation:

Lyophilized from a 0.2 µm filtered concentrated solution in PBS, pH 5.5.

Storage:

This lyophilized preparation is stable at 2-8°C, but should be kept at -20°C for long term storage, preferably desiccated. Upon reconstitution, the preparation is stable for up to one week at 2-8°C. For maximal stability, apportion the reconstituted preparation into working aliquots and store at -20°C to -70°C. Avoid repeated freeze/thaw cycles.

Molecular Weight:

Approximately 28.0 kDa, a noncovalently linked homodimer of two 14.0 kDa polypeptide monomers (262 total amino acid residues).

Endotoxin:

Less than 1 EU/μg of NT-4 as determined by LAL method.

Usage:

This material is offered by Cyagen Biosciences for research, laboratory or further evaluation purposes. FOR RESEARCH USE ONLY. NOT INTENDED FOR ANY ANIMAL OR HUMAN THERAPEUTIC OR DIAGNOSTIC USE.

Biological Activity:

The ED₅₀ determined by inducing choline acetyl transferase activity of rat basal forebrain primary septal cell cultures is less than 50 ng/mL, corresponding to a specific activity of $> 2.0 \times 10^4$ IU/mg.

Physical Appearance:

Sterile filtered white lyophilized (freeze-dried) powder.

AA Sequence:

MGVSETAPASR RGELAVCDAV SGWVTDRRTA VDLRGREVEV LGEVPAAGGS
PLRQYFFETR CKADNAEEGG PGAGGGGCRG VDRRHVVSEC KAKQSYVRAL
TADAQGRVGW RWIRIDTACV CTLLSRTGRA

Purity:

> 97% by SDS-PAGE and HPLC analyses.

Material Safety Data Sheets (MSDSs) are available upon request.

The Certificate of Analysis (COA), which provides detailed quality control information for each product, is also available at the Cyagen website.

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