

Recombinant Human Ciliary Neurotrophic Factor (rh CNTF)

Synonyms: HCNTF

Introduction: CNTF is a polypeptide hormone whose actions appear to be restricted to the nervous system where it promotes neurotransmitter synthesis and neurite outgrowth in certain neuronal populations. The protein is a potent survival factor for neurons and oligodendrocytes and may be relevant in reducing tissue destruction during inflammatory attacks. A mutation in this gene resulting in aberrant splicing leads to ciliary neurotrophic factor deficiency, but this phenotype is not causally related to neurologic disease. In addition to the predominant monocistronic transcript originating from this locus the gene is also co-transcribed with the upstream ZFP91 gene. Co-transcription from the two loci results in a transcript that contains a complete coding region for the zinc finger protein but lacks a complete coding region for ciliary neurotrophic factor. CNTF is a survival factor for various neuronal cell types. Seems to prevent the degeneration of motor axons after axotomy.

Description: Recombinant human CNTF produced in E.Coli is a single, non-glycosylated polypeptide chain containing 199 amino acids and having a molecular mass of 22.7 kDa. The rh CNTF is purified by proprietary chromatographic techniques.

Source: *Escherichia Coli*.

Physical Appearance: Sterile filtered white lyophilized (freeze-dried) powder.

Formulation: Lyophilized from a 0.2µm filtered concentrated solution in 25 mM sodium phosphate, 250 mM NaCl, pH6.5. The samples of 1µg contain Trehalose 5% (w/vol) for better recovery

Solubility: It is recommended to reconstitute the lyophilized rh CNTF in sterile H₂O not less than 100 µg/ml, which can then be further diluted to other aqueous solutions.

Stability: Lyophilized rh CNTF although stable at room temperature for 3 weeks, should be stored desiccated below -18° C. Upon reconstitution rh CNTF should be stored at 4° C between 2-7 days and for future use below -18° C. For long term storage it is recommended to add a carrier protein (0.1% HSA or BSA). Please prevent freeze-thaw cycles.

Purity: Greater than 95.0% as determined by Analysis by SDS-PAGE.

Endotoxicity: The endotoxin level is less than 1 EU / µg determined by LAL method.

Amino acid sequence:

MAFTEHSPLTPHRRDLCSRSIWLARKIRSDLTALTESYVKHQGLNKNINLDSADGMPVASTDQWSELTEAERLQ
ENLQAYRTFHVLLARLLEDQVHFTPTGDFHQAIHTLLLQVAAFAYQIEELMILLEYKIPRNEADGMPINVGDDG
LFEKKLWGLKVLQELSQWTVRSIHDLRFISSHQTGIPARGSHYIANNKKM

Biological Activity: The ED₅₀ as determined by the dose-dependant stimulation of TF-1 cells is < 2 ng/ml, corresponding to a specific activity of 5 x 10⁵ IU/mg.

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| <i>small</i> | 5 µg | Cat.N° | 11343420 |
| <i>medium</i> | 20 µg | Cat.N° | 11343424 |
| <i>large</i> | 100 µg | Cat.N° | 11343426 |
| <i>x-large</i> | 500 µg | Cat.N° | 11343427 |

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