

Recombinant Rat Ciliary Neurotrophic Factor (rr CNTF)

Synonyms: HCNTF, CNTF, Ciliary Neurotrophic Factor.

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, which results 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 and seems to prevent the degeneration of motor axons after axotomy.

Description: Recombinant rat CNTF produced in E.Coli is a single, non-glycosylated polypeptide chain containing 200 amino acids and having a molecular mass of 22834 Dalton. The CNTF is purified by proprietary chromatographic techniques.

Source: *Escherichia Coli*

Physical Appearance: Sterile Filtered White lyophilized (freeze-dried) powder.

Formulation: Lyophilized from a concentrated (1mg/ml) solution in water containing 0.025% NaHCO₃.

Solubility: It is recommended to reconstitute the lyophilized CNTF in sterile water or 0.4% NaHCO₃ adjusted to pH 8-9, not less than 100µg/ml which can then be further diluted to other aqueous solutions, preferably in presence of carrier protein.

Stability: Lyophilized rat CNTF although stable at room temperature for 3 weeks, should be stored desiccated below -18°C. Upon reconstitution rat 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 99.0% as determined by:

- (a) Analysis by Gel Filtration.
- (b) Analysis by SDS-PAGE.

Amino Acid: AFAEQTPLTL HRRDLSSRSIWLARKIRSDLTALMESYVKHQGLNKNI
 NLDSVDGVPVASTDRWSEMTEAERLQENLQAYRTFQGMLTKLLEDQRV
 HFTPTGDFHQAIHTLMLQVSAFAYQLEELMVLEEQKIPENEADGMPA
 TVGDGGLFEKKLWGLKVLQELSQWTVRSIHDLRVISSHQMGISALESH
 YGAKDKQM

Biological Activity : Fully biologically active by its ability to phosphorylate STAT3 in several cells lines.

Protein content: CNTF quantitation was carried out by two independent methods:

1. UV spectroscopy at 280 nm using the absorbency value of 1.22 as the extinction coefficient for a 0.1% (1mg/ml) solution. This value is calculated by the PC GENE computer analysis program of protein sequences (IntelliGenetics).
2. Analysis by RP-HPLC, using a standard solution of rec. CNTF as a Reference Standard.

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<i>small</i>	5 µg	Cat.N°	13343420
<i>medium</i>	25 µg	Cat.N°	13343424

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