Technical Data Sheet

Recombinant human CNTF protein

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Lot Specific Information

Lot Number: **Lot Specific***

Total Protein: **Lot Specific***

*This information will be noted on the certificate of analysis that ships with this product.

Shelf Life

This product has a guaranteed shelf-life of one year from the date of customer receipt when stored as recommended.

Product Information

Catalog Number:	**RP072**
Protein Identity:	Confirmed identity with expected mass, determined by mass spectrometry
Reported Applications:	Neural stem cell proliferation and neuronal differentiation Differentiation of iPSC derived neural progenitors to neurons Differentiation of iPSC-derived Schwann cells and astrocytes Culture of retinal cells Induction of axonal growth Neural stem cell research
Formulation:	Lyophilized, white powder
Endotoxin:	≤4.4 EU/mg, LAL assay
Purity:	≥95%; SDS-PAGE
Reconstitution:	Resuspend in 10 mM HCl (Reconstitution Buffer A) at >50 µg/ml. Once reconstituted, store in single-use aliquots to avoid freeze-thaw cycles. Store reconstituted protein at -20 °C to -80 °C for a maximum of 12 months or until the expiry date if sooner.
Sterility:	Sterile
Production:	Microbial. Expressed in E. coli
Molecular Weight:	22.8 kDa (monomer)
Bioactivity Assay:	No significant difference between EC50 of reference and test lots
Mycoplasma:	Negative

Description

Recombinant human CNTF protein (ciliary neurotrophic factor) is a member of the IL-6 cytokine family, alongside IL-6, IL-11, LIF and neuropoietin, forming an approximately 22.8 kDa homodimer with a four-helix bundle structure. Expressed by Schwann cells and astrocytes, CNTF binds receptor complexes of CNTF Rα or IL-6 Rα with recruitment of gp130/LIFRβ, activating JAK/STAT3 and PI3K/AKT/mTOR signaling to promote survival, differentiation and regeneration. CNTF is crucial for development and maintenance of the nervous and optic systems, promoting neurogenesis and survival of neural stem cells and sensory, sympathetic and motor neurons, as well as oligodendrocytes, microglia and retinal cells, and it is studied in ALS, Parkinson's and Alzheimer's diseases, retinitis pigmentosa, macular degeneration, multiple sclerosis, nerve injury and metabolic disease. In culture, CNTF initiates neural induction of hiPSCs, supports neural stem cell self-renewal with or without EGF, favors a cholinergic phenotype in sympathetic neurons, activates microglia, and drives astrocyte differentiation with EGF and FGF-2 and Schwann cell derivation with neuregulin 1β, making it a key reagent for neural stem cell and glial research. This protein is optimized for in vivo and functional applications: low-endotoxin, tag-free, and carrier-free, supporting reproducible performance in demanding preclinical and bioactivity studies. A GMP-grade version of this protein is available for cell and gene therapy manufacturing. Contact us at customerservice@bioxcell.com for details. Species reactivity: human. Species similarity: mouse - 81%, rat - 84%, bovine - 73%, porcine - 82%.

Storage

Store at the stock concentration at 4°C . **Do not freeze.**
It is not uncommon for a floccule or precipitate to appear during storage. The floccule is typically buffer salts precipitating out of solution or a small bit of protein aggregation. For information on how to remove floccules or precipitates see our FAQ's at https://bioxcell.com/faqs.

Store lyophilized protein between -20 °C and -80 °C until the date of expiry. Avoid freeze-thaw cycles

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Bio X Cell, LLC
https://bioxcell.com
+1-866-787-3444
customerservice@bioxcell.com

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