

Cytokines

Human Recombinant CNTF



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TOLL FREE PHONE 1 800 667 0322 • PHONE +1 604 877 0713

INFO@STEMCELL.COM • TECHSUPPORT@STEMCELL.COM

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Ciliary neurotrophic factor

Catalog #	78010	10 µg
	78010.1	50 µg

Product Description

Ciliary neurotrophic factor (CNTF) is a neurotrophic factor that belongs to the four-helix bundle cytokine family and is structurally related to interleukin 6 (IL-6), interleukin 11 (IL-11), leukemia inhibitory factor (LIF), and oncostatin M (OSM). CNTF binds to its receptor CNFTR α and induces formation of a heterodimer of the signal transducing IL-6 receptor gp130 and LIF receptor (LIFR)- β , which triggers JAK/STAT, ERK, and the PI3K signaling cascades (Schuster et al.). CNTF plays an important role in neurogenesis and the differentiation of neural stem cells and has been suggested to possess a therapeutic role in treating neurological disorders (Ding et al.; Oppenheim et al.). CNTF has also been shown to protect rod photoreceptors from light induced damage and have therapeutic effects on retinal degenerative diseases caused by genetic defect or damage induced by toxins, autoantibodies, or strong light (Pernet et al.; Rhee et al.). Another therapeutic role of CNTF has been reported in protecting oligodendrocytes from death induced by apoptosis (Louis et al.). Additionally, CNTF is commonly used to differentiate human pluripotent stem cell (hPSC)-derived neural progenitor cells into astrocytes (Krencik & Zhang).

Product Information

Alternative Names:	Ciliary neurotrophic factor
Accession Number:	P26441
Amino Acid Sequence:	AFTEHSPLTP HRRDLCSRSI WLARKIRSDL TALTESYVKH QGLNKNINLD SADGMPVAST DQWSELTEAE RLQENLQAYR TFHVLLARLL EDQQVHFTPT EGDHFQAIHT LLLQVAAFAY QIEELMILLE YKIPRNEADG MPINVGDGGL FEKKLWGLKV LQELSQWTVR SIHDLRFISS HQTGIPARGS HYIANNKKM
Predicted Molecular Mass:	22.8 kDa
Species:	Human
Cross Reactivity:	Rat
Formulation:	Lyophilized after dialysis against phosphate-buffered saline.
Source:	E. coli

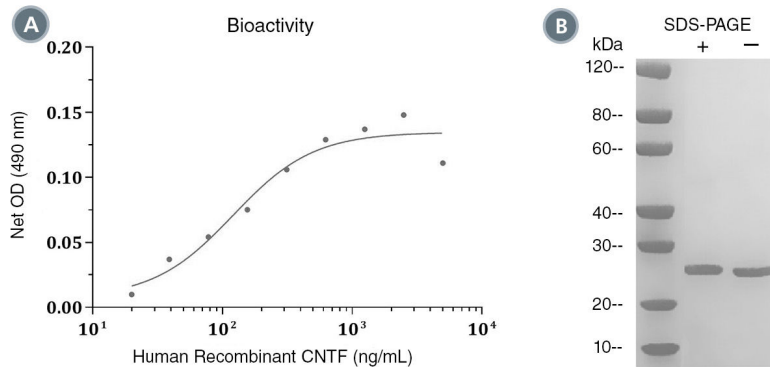
Specifications

Activity:	The specific activity is $\geq 5 \times 10^3$ units/mg ($EC_{50} \leq 200$ ng/mL) as determined by a cell proliferation assay of TF-1 cells.
Purity:	$\geq 95\%$
Endotoxin Level:	Measured by kinetic limulus amoebocyte lysate (LAL) analysis and is ≤ 0.2 EU/µg protein.

Preparation and Storage

Storage:	Store at -80°C.
Stability:	Stable as supplied for 12 months from date of receipt.
Preparation:	Centrifuge vial before opening. Resuspend the product in sterile water or phosphate-buffered saline to at least 0.1 mg/mL by pipetting the solution down the sides of the vial. Do not vortex. Store at 2 - 8°C for up to 2 weeks or at -20°C to -80°C for up to 3 months. Avoid repeated freeze-thaw cycles.

Data



(A) The biological activity of Human Recombinant CNTF was tested by its ability to promote the proliferation of TF-1 cells. Cell proliferation was measured using a fluorometric assay method. The EC₅₀ is defined as the effective concentration of the growth factor at which cell proliferation is at 50% of maximum. The EC₅₀ in the example above is less than 200 ng/mL.

(B) 2 µg of Human Recombinant CNTF was resolved with SDS-PAGE under reducing (+) and non-reducing (-) conditions and visualized by Coomassie Blue staining. Human Recombinant CNTF has a predicted molecular mass of 22.8 kDa.

Related Products

For a complete list of cytokines, as well as related products available from STEMCELL Technologies, please visit our website at www.stemcell.com/cytokines or contact us at techsupport@stemcell.com.

References

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- Pernet V et al. (2013) Long-distance axonal regeneration induced by CNTF gene transfer is impaired by axonal misguidance in the injured adult optic nerve. *Neurobiol Dis* 51: 202–13.
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