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Product Data Sheet

CNTF Protein, Mouse (His)

Cat. No.:	HY-P74242
Synonyms:	Ciliary neurotrophic factor; CNTF
Species:	Mouse
Source:	E. coli
Accession:	Q544D1 (A2-M198)
Gene ID:	12803
Molecular Weight:	Approximately 25 kDa

DDODEDTIEC	
PROPERTIES	
AA Sequence	AFAEQSPLTL HRRDLCSRSI WLARKIRSDL TALMESYVKH QGLNKNISLD SVDGVPVAST DRWSEMTEAE RLQENLQAYR TFQGMLTKLL EDQRVHFTPT EGDFHQAIHT LTLQVSAFAY QLEELMALLE QKVPEKEADG MPVTIGDGGL FEKKLWGLKV LQELSQWTVR SIHDLRVISS HHMGISAHES HYGAKQM
Biological Activity	Measured by its binding ability in a cell proliferation assay using TF-1 human erythroleukemic cells. The ED ₅₀ is 5.575 ng/mL.
Appearance	Lyophilized powder.
Formulation	Lyophilized from a 0.2 μm filtered solution of sterile 50 mM Tris-HCL, 300 mM NaCl, pH 7.4, 5% trehalose, 5% mannitol and 0.01% Tween 80.
Endotoxin Level	<1 EU/µg, determined by LAL method.
Reconsititution	It is not recommended to reconstitute to a concentration less than 100 $\mu\text{g}/\text{mL}$ in ddH_2O.
Storage & Stability	Stored at -20°C for 2 years. After reconstitution, it is stable at 4°C for 1 week or -20°C for longer (with carrier protein). It is recommended to freeze aliquots at -20°C or -80°C for extended storage.
Shipping	Room temperature in continental US; may vary elsewhere.

DESCRIPTION

Background

Ciliary Neurotrophic Factor (CNTF) belongs to the IL-6 cytokine family. IL-6, IL-11 and CNTF are associated with cytokine trans signaling. CNTF shows a low affinity interaction with IL-6 receptor subunit alpha (IL-6R α), leading to the formation and activation of the IL-6R β /gp130/LIFR signaling receptor complex^[1]. CNTF is also an extracellular signaling protein in the neuroretinal and the interphotoreceptor matrix, which is associated with the membranes of the RPE, Muller and photoreceptor cells^[2]. CNTF has neuroprotective effects on a variety of central and also peripheral nervous system neurons.

Because it promotes differentiation and maturation of oligodendrocyte precursor cells to oligodendrocytes under in vitro conditions and thus improves remyelination. Importantly, it also increases the survival of mature oligodendrocytes^[3]. The similarity of human CNTF protein sequences to mice and rats was 81.82% and 84.0%, respectively.

REFERENCES

[1]. Jones SA, et al. Recent insights into targeting the IL-6 cytokine family in inflammatory diseases and cancer. Nat Rev Immunol. 2018 Dec;18(12):773-789.

[2]. Li S, et al. Ciliary neurotrophic factor (CNTF) protects retinal cone and rod photoreceptors by suppressing excessive formation of the visual pigments. J Biol Chem. 2018 Sep 28;293(39):15256-15268.

[3]. Abbaszadeh HA, et al. Human ciliary neurotrophic factor-overexpressing stable bone marrow stromal cells in the treatment of a rat model of traumatic spinal cord injury. Cytotherapy. 2015 Jul;17(7):912-21.

[4]. Holm NR, et al. CNTF inhibits high voltage activated Ca2+ currents in fetal mouse cortical neurones. J Neurochem. 2002 Aug;82(3):495-503.

[5]. Watt MJ, et al. CNTF reverses obesity-induced insulin resistance by activating skeletal muscle AMPK. Nat Med. 2006 May;12(5):541-8.

Caution: Product has not been fully validated for medical applications. For research use only.

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