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CNTF Human

Ciliary-Neurotrophic Factor Human Recombinant
NTR0013

Product Overview

Name	CNTF Human
Description	
Ciliary-Neurotrophic Factor Human Recombinant	
Accession (Primary)	P26441
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. Seems to prevent the degeneration of motor axons after axotomy.	
Source	
Escherichia Coli.	
Physical Appearance	
Sterile Filtered colorless clear solution.	
Formulation	
CNTF protein solution (1mg/ml) contains 20mM Tris-HCl buffer pH-8 and 1mM DTT.	
Stability	
Store at 4°C if entire vial will be used within 2-4 weeks. Store, frozen at -20°C for longer periods of time. For long term storage it is recommended to add a carrier protein (0.1% HSA or BSA). Avoid multiple freeze-thaw cycles.	
Purity	
Greater than 95.0% as determined by SDS-PAGE.	
Amino acid sequence	

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MGSSHHHHHH SSGLVPRGSH MAFTEHSPLT PHRRDLCSRS IWLARKIRSDLTALTESYVK HQGLNKNINL DSADGMPVAS TDQWSELTEA ERLQENLQAY RTFHVLLARL LEDQQVHFTP TEGDFHQAIH TLLLQVAAFA YQIEELMILL EYKIPRNEAD GMPINVGDGG LFEKKLWGLK VLQELSQWTV RSIHDLRFIS SHQTGIPARG SHYIANNKKM.

Precautions

CNTF Human is for research use only and not for use in diagnostic or therapeutic procedures.

Target Information: (P26441)

Background

Exploring the Potential of Human Recombinant Ciliary-Neurotrophic Factor: Implications and Applications Abstract: Ciliary-Neurotrophic Factor (CNTF) holds remarkable promise in neurobiology and therapeutic development due to its neuroprotective and regenerative properties. This paper delves into the significance of Human Recombinant CNTF, its production methodologies, and its potential applications in treating neurodegenerative disorders. The review sheds light on the therapeutic potential of CNTF and its role in advancing neuroregeneration research. Introduction: CNTF, a neurotrophic cytokine, is known for its pivotal role in neuronal survival and growth. The availability of Human Recombinant CNTF allows researchers to investigate its therapeutic potential and explore avenues for developing novel treatments for neurodegenerative diseases. CNTF's ability to support neuronal health and promote regeneration makes it a promising candidate for medical interventions. Mechanisms of Action: CNTF interacts with specific receptor complexes, activating various downstream signaling pathways, including Janus kinase (JAK) and Signal Transducer and Activator of Transcription (STAT) pathways. These pathways contribute to cell survival, differentiation, and axonal growth, forming the foundation for CNTF's neuroprotective effects. Production Methods: Human Recombinant CNTF is produced by introducing the CNTF gene into suitable expression systems, often employing bacterial or mammalian cells. Ensuring proper post-translational modifications is essential for maintaining the protein's biological activity and therapeutic potential. Therapeutic Applications: CNTF's neuroprotective and regenerative effects offer potential therapeutic applications in neurodegenerative disorders, such as amyotrophic lateral sclerosis (ALS), retinal degeneration, and Parkinson's disease. It holds promise for preserving and restoring neuronal function, thereby improving the quality of life for affected individuals. Challenges and Future Directions: While Human Recombinant CNTF shows great potential, challenges include precise dosing, delivery methods, and potential side effects. Further research is needed to optimize CNTF-based therapies and assess their long-term safety and efficacy in clinical settings. Conclusion: Human Recombinant Ciliary-Neurotrophic Factor

emerges as a critical tool in advancing our understanding of neuroprotection and neuroregeneration. Its potential in treating neurodegenerative disorders highlights the ongoing quest for innovative therapeutic approaches that harness the body's inherent ability to heal and regenerate.

References for protein:

Bibliography: Sendtner M, Schmalbruch H, Stöckli KA, et al. Ciliary neurotrophic factor prevents degeneration of motor neurons in mouse mutant progressive motor neuronopathy. Nature. 1992;358(6386):502-504. Lambiase A, Aloe L, Centofanti M, et al. Experimental and clinical evidence of neuroprotection by nerve growth factor eye drops: Implications for glaucoma. Proc Natl Acad Sci U S A. 2009;106(32):13469-13474. Sendtner M, Carroll P, Holtmann B, et al. Ciliary neurotrophic factor. J Neurobiol. 1994;25(11):1436-1453. Masu Y, Wolf E, Holtmann B, et al. Disruption of the CNTF gene results in motor neuron degeneration. Nature. 1993;365(6441):27-32. Davis S, Aldrich TH, Valenzuela DM, et al. The receptor for ciliary neurotrophic factor. Science. 1991;253(5015):59-63.