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CNTF Human

Ciliary-Neurotrophic Factor Human Recombinant

NTR0013

Product Overview

Name	CNTF Human
Catalog #	NTR0013
Accession(Primary)	P26441
Description	Ciliary-Neurotrophic Factor Human Recombinant
Precautions	

Target information(P26441)

Synonyms

Gene ID

Other Names

Function

Cellular location

Note

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

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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.