

CNTFR Human

Ciliary Neurotrophic Factor Receptor Human Recombinant

NTR0019

Product Overview

Name	CNTFR Human
Accession(Primary)	P26992
Description	Ciliary Neurotrophic Factor Receptor Human Recombinant

Target information (P26992)

Gene Name

About Gene Symbol

Background

Unveiling the Potential of Human Recombinant Ciliary Neurotrophic Factor Receptor: Insights and Applications Abstract: The Ciliary Neurotrophic Factor Receptor (CNTFR) holds a crucial role in mediating the effects of ciliary neurotrophic factor (CNTF) on neuronal survival and growth. This paper discusses the significance of Human Recombinant CNTFR, its production methods, and its potential applications in neurobiology and therapeutic interventions. The review sheds light on the pivotal role of CNTFR in neuroprotection and neuroregeneration research. Introduction: CNTFR, a transmembrane protein, plays a pivotal role in transmitting CNTF-mediated signals to the cell. The availability of Human Recombinant CNTFR allows researchers to investigate its role in neuronal function and develop targeted therapies for neurodegenerative disorders. CNTFR's involvement in modulating neuronal health and promoting regeneration makes it an essential component in neurobiology. Role in CNTF Signaling: CNTFR forms a receptor complex with other proteins, including gp130 and LIFR β , to bind CNTF and initiate downstream signaling pathways. Activation of intracellular signaling cascades, such as JAK/STAT and MAPK, contributes to the neuroprotective and growth-promoting effects of CNTF. Production

Methods: Human Recombinant CNTFR is produced through gene expression in suitable host cells, often employing bacterial or mammalian systems. Ensuring proper folding and post-translational modifications is essential to maintain its functionality and binding affinity for CNTF. **Therapeutic Applications:** The availability of Human Recombinant CNTFR offers potential therapeutic applications in neurodegenerative diseases like amyotrophic lateral sclerosis (ALS), multiple sclerosis, and retinal degeneration. Manipulating CNTFR-mediated signaling presents opportunities to enhance neuronal survival and regeneration, ultimately improving patient outcomes. **Challenges and Future Directions:** While promising, challenges include optimizing the interaction between CNTFR and CNTF, ensuring efficient delivery to target tissues, and understanding potential off-target effects. Ongoing research is essential to unravel the complete mechanisms of CNTFR-mediated signaling and its implications for therapy. **Conclusion:** Human Recombinant Ciliary Neurotrophic Factor Receptor serves as a crucial tool in advancing our understanding of neuroprotection and regeneration. Its potential to modulate CNTF-mediated effects opens avenues for innovative therapeutic strategies targeting neurodegenerative disorders, exemplifying the intersection of molecular biology and clinical application.

References for protein:

Bibliography: Ip NY, Yancopoulos GD. The neurotrophins and CNTF: Two families of collaborative neurotrophic factors. *Annu Rev Neurosci.* 1996;19:491-515. Sendtner M. The biology of neurotrophic factors. *J Neurobiol.* 1994;25(11):1384-1403. Davis S, Aldrich TH, Valenzuela DM, et al. The receptor for ciliary neurotrophic factor. *Science.* 1991;253(5015):59-63. Benveniste EN, Benveniste P, Shaffer K. Ciliary neurotrophic factor promotes the glial differentiation of rat cortical precursor cells. *J Neurosci Res.* 1993;36(6):607-614. DeChiara TM, Vejsada R, Poueymirou WT, et al. Mice lacking the CNTF receptor, unlike mice lacking CNTF, exhibit profound motor neuron deficits at birth. *Cell.* 1995;83(2):313-322.