

CSF2RA Human

GM-CSF Receptor Alpha Human Recombinant

GRF0015

Product Overview

Name	CSF2RA Human
Accession(Primary)	P15509
Description	GM-CSF Receptor Alpha Human Recombinant

Target information (P15509)

Gene Name

About Gene Symbol

Background

Unlocking the Potential of Human Recombinant Ciliary Neurotrophic Factor Receptor: Implications and Applications Abstract: The Ciliary Neurotrophic Factor Receptor (CNTFR) plays a pivotal role in mediating the effects of ciliary neurotrophic factor (CNTF) on neuronal survival and growth. This paper examines the significance of Human Recombinant CNTFR, its production techniques, and its potential applications in neurobiology and therapeutic interventions. The review underscores CNTFR's crucial role in advancing neuroprotection and neuroregeneration research. Introduction: CNTFR, a transmembrane protein, is central to transducing the signals initiated by CNTF. Availability of Human Recombinant CNTFR enables researchers to dissect its contribution to neuronal function and develop targeted therapies for neurodegenerative disorders. CNTFR's role in modulating neuronal health and promoting regeneration makes it a cornerstone in neurobiology. Role in CNTF Signaling: CNTFR forms a receptor complex with other proteins, including gp130 and LIFR β , to bind CNTF and trigger downstream signaling pathways. Activation of intracellular cascades, such as JAK/STAT and MAPK, is instrumental in driving the neuroprotective and growth-promoting effects of CNTF. Production Methods: Human Recombinant CNTFR is generated through gene expression in suitable host cells, often utilizing

bacterial or mammalian systems. Ensuring accurate folding and post-translational modifications is crucial to preserve its functionality and affinity for CNTF. Therapeutic Applications: Human Recombinant CNTFR holds promise for therapeutic applications in neurodegenerative diseases, including amyotrophic lateral sclerosis (ALS), multiple sclerosis, and retinal degeneration. Manipulating CNTFR-associated signaling presents opportunities to bolster neuronal survival and regeneration, potentially revolutionizing patient care. Challenges and Future Directions: While the potential is significant, challenges encompass optimizing CNTFR-CNTF interactions, effective tissue delivery, and understanding potential off-target effects. Ongoing research is paramount to unravel the complete mechanisms of CNTFR-mediated signaling and its therapeutic implications. Conclusion: Human Recombinant Ciliary Neurotrophic Factor Receptor emerges as a vital tool in advancing our grasp of neuroprotection and regeneration. Its capacity to modulate CNTF effects opens doors to innovative therapeutic strategies for addressing neurodegenerative disorders, embodying the intersection of molecular insights and clinical progress.

References for protein:

Bibliography: Ip NY, Yancopoulos GD. The neurotrophins and CNTF: 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.