9051 Mira Mesa Blvd, #910094
San Diego, CA 92191
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ProNGF Human

Pro-Nerve Growth Factor Human Recombinant
NTR0073

Product Overview

Name	ProNGF Human
Description	
Pro-Nerve Growth Factor Human Recombinant	
Accession (Primary)	P01138
Synonyms	
Human Pro-NGF, ProNGF, NGFB.	
Source	
Escherichia Coli.	
Physical Appearance	
Sterile Filtered White lyophilized (freeze-dried) powder.	
Formulation	
ProNGF was lyophilized from a 0.2 µM filtered solution of 20m Tris-HCL, 0.5M NaCl, 5% Trehalose, 5% Mannitol. 0.01% Tween-80 and 1mM EDTA pH-8.	
Stability	
Lyophilized ProNGF although stable at room temperature for 3 weeks, should be stored desiccated below -18°C. Upon reconstitution ProNGF should be stored at 4°C between 2-7 days and for future use below -18°C. Please prevent freeze-thaw cycles.	
Purity	
Greater than 95.0% as determined by SDS-PAGE.	
Amino acid sequence	
MEPHSESNVPAGHTIPQAHWTKLQHSLDTALRRARSAPAAAIAARVAGQTRNI TVDPRLFKKRRLRSPRVLFSTQPPREAADTQDLDFEVGGAAPFNRTHRSKRS SSHPIFHRGEFSVCDSVSVWVGDKTTATDIKGKEVMVLGEVNINNSVFKQYFFET KCRDPNPVDSGCRGIDSKHWNSYCTTTHTFVKALTMDGKQAAWRFIRIDTAC VCVLSRKAVRRA.	
Solubility	
It is recommended to reconstitute the lyophilized ProNGF in distilled water to a concentration no less than 100 µg/ml, which can then be further diluted to other aqueous solutions.	
Background	

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Pro-Nerve Growth Factor Human Recombinant: Unveiling its Potential in Neuroregulation and Disease Pathogenesis Abstract: Pro-Nerve Growth Factor (Pro-NGF) human recombinant is a crucial precursor protein involved in neuronal development, survival, and degenerative processes. This research paper aims to provide a comprehensive analysis of Pro-NGF, including its characteristics, processing mechanisms, and implications in neuroregulation and disease pathogenesis. Additionally, innovative methodologies for the production and manipulation of Pro-NGF human recombinant are proposed, highlighting its potential as a therapeutic target for neurological disorders and neurodegenerative diseases. Introduction: Neuroregulation and maintenance of neuronal health are intricate processes governed by a network of signaling molecules. Pro-NGF, the precursor form of Nerve Growth Factor (NGF), acts as a key player in neuronal development, synaptic plasticity, and cell survival. This paper delves into the distinctive features of Pro-NGF and presents novel approaches for the production and manipulation of Pro-NGF human recombinant, aiming to unravel its role in neuroregulation and disease pathogenesis. Characteristics and Processing Mechanisms: Pro-NGF is initially synthesized as an inactive precursor, requiring proteolytic cleavage for conversion into mature NGF. The processing of Pro-NGF involves the action of proteases, such as furin, and the formation of distinct protein complexes. The balance between Pro-NGF and mature NGF levels plays a critical role in modulating neuronal function and fate, influencing processes such as neuronal survival, axonal growth, and synaptic plasticity. Production and Manipulation of Pro-NGF Human Recombinant: Efficient production methodologies and manipulation strategies are crucial for studying the role of Pro-NGF in neuroregulation and disease pathogenesis. Recombinant protein expression systems, including mammalian cell culture and bacterial expression systems, have been employed to produce functional Pro-NGF human recombinant. Techniques such as mutagenesis, protein purification, and specific inhibitors targeting Pro-NGF processing pathways enable the manipulation of Pro-NGF levels and investigation of its downstream effects. Implications in Neuroregulation and Disease Pathogenesis: Pro-NGF human recombinant holds significant potential in understanding the intricate mechanisms underlying neuroregulation and disease pathogenesis. Dysregulation of Pro-NGF processing and altered Pro-NGF/mature NGF ratios have been implicated in various neurological disorders, including Alzheimer's disease, Parkinson's disease, and ischemic stroke. Manipulating Pro-NGF levels and the balance between its mature form may offer therapeutic strategies for modulating neurotrophic signaling and promoting neuronal health in these conditions. Conclusion: Pro-NGF human recombinant emerges as a key regulator in neuroregulation and disease pathogenesis, offering promising avenues for therapeutic intervention. Enhancing our understanding of Pro-NGF processing mechanisms and its downstream signaling cascades will provide valuable insights into neurodevelopment, neurodegeneration, and potential therapeutic strategies. Targeting Pro-NGF as a therapeutic intervention may hold immense promise in treating neurological disorders and promoting neuronal health.

References

Bibliography: Fahnestock M, Michalski B, Xu B. Coughlin MD. The precursor pro-nerve growth factor is the predominant form of nerve growth factor in brain and is increased in Alzheimer's disease. Mol Cell Neurosci. 2001;18(2):210-220. Hempstead BL. The many faces of p75NTR. Curr Opin Neurobiol. 2002;12(3):260-267. Lee R, Kermani P, Teng KK, Hempstead BL. Regulation of cell survival by secreted proneurotrophins. Science.

2001;294(5548):1945-1948. Massa SM, Xie Y, Yang T, et al. Small, nonpeptide p75NTR ligands induce survival signaling and inhibit proNGF-induced death. J Neurosci. 2006;26(21):5288-5300. Volosin M, Song W, Almeida RD, et al. Interaction of survival and death signaling in basal forebrain neurons: Roles of neurotrophins and proneurotrophins. J Neurosci. 2006;26(29):7756-7766.

Precautions

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

Target Information: (P01138)

Background

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References for protein:

Bibliography: Fahnestock M, Michalski B, Xu B. Coughlin MD. The precursor pro-nerve growth factor is the predominant form of nerve growth factor in brain and is increased in Alzheimer's disease. Mol Cell Neurosci. 2001;18(2):210-220. Hempstead BL. The many faces of p75NTR. Curr Opin Neurobiol. 2002;12(3):260-267. Lee R, Kermani P, Teng KK, Hempstead BL. Regulation of cell survival by secreted proneurotrophins. Science. 2001;294(5548):1945-1948. Massa SM, Xie Y, Yang T, et al. Small, nonpeptide p75NTR ligands induce survival signaling and inhibit proNGF-induced death. J Neurosci. 2006;26(21):5288-5300. Volosin M, Song W, Almeida RD, et al. Interaction of survival and death signaling in basal forebrain neurons: Roles of neurotrophins and proneurotrophins. J Neurosci. 2006;26(29):7756-7766.