

pro-Beta-NGF Protein, Human (223a.a)

Cat. No.:	HY-P72488
Synonyms:	Beta-Nerve Growth Factor; Beta-NGF; NGF; NGFB
Species:	Human
Source:	E. coli
Accession:	P01138 (E19-A241)
Gene ID:	4803
Molecular Weight:	Approximately 30 kDa

PROPERTIES

AA Sequence	<p> E P H S E S N V P A G H T I P Q A H W T K L Q H S L D T A L R R A R S A P A A A I A A R V A G Q T R N I T V D P R L F K K R R L R S P R V L F S T Q P P R E A A D T Q D L D F E V G G A A P F N R T H R S K R S S S H P I F H R G E F S V C D S V S V W V G D K T T A T D I K G K E V M V L G E V N I N N S V F K Q Y F F E T K C R D P N P V D S G C R G I D S K H W N S Y C T T T H T F V K A L T M D G K Q A A W R F I R I D T A C V C V L S R K A V R R A </p>
Appearance	Lyophilized powder.
Formulation	Lyophilized from a 0.2 µm filtered solution of 20 mM PB, 250 mM NaCl, pH 7.2.
Endotoxin Level	<1 EU/µg, determined by LAL method.
Reconstitution	It is not recommended to reconstitute to a concentration less than 100 µg/mL in ddH ₂ O. For long term storage it is recommended to add a carrier protein (0.1% BSA, 5% HSA, 10% FBS or 5% Trehalose).
Storage & Stability	Stored at -20°C for 2 years. After reconstitution, it is stable at 4°C for 1 week or -20°C for longer (with carrier protein). It is recommended to freeze aliquots at -20°C or -80°C for extended storage.
Shipping	Room temperature in continental US; may vary elsewhere.

DESCRIPTION

Background	<p>The pro-Beta-NGF protein plays a crucial role in the development and maintenance of the sympathetic and sensory nervous systems. As an extracellular ligand, it engages with the NTRK1 and NGFR receptors, initiating signaling cascades that regulate neuronal proliferation, differentiation, and survival. Notably, the immature NGF precursor (proNGF) functions as a ligand for the SORCS2-NGFR heterodimeric receptor complex, activating signaling pathways that result in the inactivation of RAC1 and/or RAC2, reorganization of the actin cytoskeleton, and neuronal growth cone collapse. In contrast to mature NGF, proNGF promotes neuronal apoptosis in vitro. Furthermore, pro-Beta-NGF exhibits inhibitory effects on metalloproteinase-</p>
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dependent proteolysis of platelet glycoprotein VI. The protein's interaction with lysophosphatidylinositol and lysophosphatidylserine, both lipid-bound and lipid-free, contributes to mast cell histamine release. The homodimeric structure of pro-Beta-NGF interacts with NTRK1, NGFR, and SORCS2, mediating various downstream effects on cellular processes. Additionally, pro-Beta-NGF binds to a receptor complex formed by SORT1 and NGFR, leading to NGF endocytosis. These intricate interactions highlight the multifaceted roles of pro-Beta-NGF in orchestrating neuronal functions and cellular responses.

Caution: Product has not been fully validated for medical applications. For research use only.

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