Beta-NGF Protein, Mouse (110a.a, His)

Cat. No.:	HY-P70530A
Synonyms:	Beta-Nerve Growth Factor; Beta-NGF; NGF; NGFB
Species:	Mouse
Source:	E. coli
Accession:	P01139 (M130-R239)
Gene ID:	18049
Molecular Weight:	Approximately 12.0 kDa

PROPERTIES

AA Sequence	M 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 T V L A E V N I N N S V F R Q Y F F E T K C R A S N P V E 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 T D E K Q A A W R F I R I D T A C V C V L S R K A T R
Biological Activity	The cell proliferation assay using TF-1 human erythroleukemic cells wirh an ED50 value of 0.5-9.2 ng/mL.
Appearance	Lyophilized powder
Formulation	Lyophilized from a 0.2 μm filtered solution of 20 mM PB, 200 mM NaCl, pH 8.0.
Endotoxin Level	<1 EU/μg, determined by LAL method.
Reconsititution	It is not recommended to reconstitute to a concentration less than 100 μg/mL in ddH_2O. 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	Beta-NGF, a pivotal factor in the development and maintenance of the sympathetic and sensory nervous systems, acts as an extracellular ligand for the NTRK1 and NGFR receptors, triggering cellular signaling cascades that regulate neuronal proliferation, differentiation, and survival. The immature NGF precursor (proNGF) serves as a ligand for the heterodimeric receptor formed by SORCS2 and NGFR, inducing signaling cascades that result in the inactivation of RAC1 and/or RAC2, along with the reorganization of the actin cytoskeleton and subsequent neuronal growth cone collapse. In contrast to mature NGF, proNGF has been identified to promote neuronal apoptosis in vitro. Additionally, Beta-NGF inhibits metalloproteinase-dependent proteolysis of platelet glycoprotein VI. Binding to lysophosphatidylinositol and

lysophosphatidylserine within its homodimeric structure, Beta-NGF exhibits diverse functions in cellular responses, including promoting histamine release from mast cells when in its lipid-bound form. The homodimeric structure of Beta-NGF interacts with NTRK1, NGFR, and SORCS2, while the NGF precursor (proNGF) binds to a receptor complex formed by SORT1 and NGFR, leading to NGF endocytosis. These intricate interactions underscore the multifaceted roles of Beta-NGF in orchestrating neuronal functions and cellular responses.

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