

human cell expressed beta-NGFA

Source	A DNA sequence encoding the human beta-NGF protein sequence (containing the signal peptide, pro-peptide and the mature beta-NGF sequence) was expressed in modified human 293 cells.
Molecular Mass	Symansis beta-NGFB migrates at approximately 12-16 kDa in SDS-PAGE. This compares with the predicted molecular mass of 13.5 kDa.
pI	Symansis beta-NGFB separates into a number of isoforms with a pI between 9 and 10 in 2D PAGE due to post-translational modifications. This compares with the unmodified beta-NGF that has a predicted pI of 9.
Purity	>95%, as determined by SDS-PAGE and visualized by silver stain.
Formulation	When reconstituted in 0.5 ml sterile phosphate-buffered saline, the solution will contain 1% human serum albumin (HSA) and 10% trehalose.
Reconstitution	It is recommended that 0.5 ml of sterile phosphate-buffered saline be added to the vial.
Storage	Lyophilized products should be stored at 2 to 8°C. Following reconstitution short-term storage at 4°C is recommended, and longer-term storage of aliquots at -18 to -20°C. Repeated freeze thawing is not recommended.
Activity	The ED ₅₀ of beta-NGF is typically 0.2-1.0 ng/ml as measured in a cell proliferation assay using the human growth factor dependent TF-1 cell line.
Theoretical Sequence	YAEHKSHRGEYSVCDSESLWVTDKSSAIDIRGHQVTVLGEIKTGNSPVKQYFYETRCKEAR PVKNGCRGIDDKHWNSQCKTSQTYVRALTSENNKLVGWRWIRIDTSCVCALSRKIGRT
Background Information	<p>Beta-NGF, also known as nerve growth factor beta-1, NGF-b1, or NGF-beta, is a neurotrophic factor that influences the growth and differentiation of sympathetic and sensory neurons. Beta-NGF, comprised alpha, beta, and gamma subunits, is a 26 kDa non-covalently associated homodimer with 2 potential N-linked glycosylation sites.</p> <p>Beta-NGF regulates the growth, development, survival and repair of the vertebrate nervous system. Specifically, it is involved in the survival, differentiation and functional activities of sensory and sympathetic neurons in the peripheral nervous system. Beta-NGF is also involved in the developmental and functional activities of cholinergic neurons in the central nervous system and induces the expression of a number of neurotransmitter peptides in sensory neurons such as substance P somatostatin, an inhibitor of growth hormone secretion, and vasoactive intestinal peptide, a potent vasodilator. Beta-NGF is also well documented to be involved in mediating pain perception.</p> <p>In addition to its role in the nervous system, beta-NGF has been implicated in immune responses. For example, beta-NGF is induced by the pro-inflammatory cytokines IL-1, IL-6, TNF-alpha and TGF-beta. Furthermore beta-NGF stimulates chemotaxis of neutrophils and proliferation of B cells, T cells and mast cells. It also is involved in B cell differentiation and inhibits immunoglobulin production from plasma cells.</p> <p>The actions of beta-NGF are exerted through its high affinity receptor, TrkA and its co-receptor p75NTR. For a recent review on neurotrophins, please refer to Pezet, S., McMahon, S.B. (2006) <i>Annual Review Neurosci.</i> 29: 507-538.</p>