

PRODUCT INFORMATION



β -NGF (mouse, recombinant)

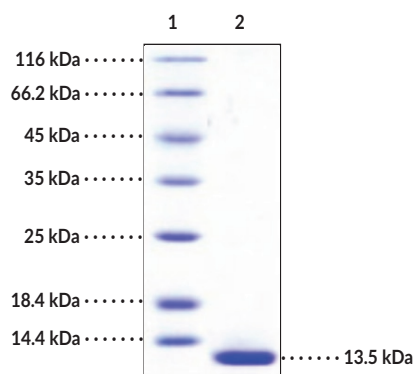
Item No. 32076

Overview and Properties

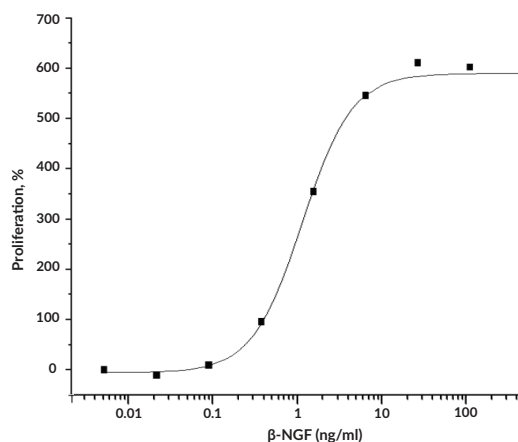
Synonyms:	β -Nerve Growth Factor, NGF β
Source:	Active recombinant mouse β -NGF expressed in CHO cells
Amino Acids:	122-241
Uniprot No.:	P01139
Molecular Weight:	13.5 kDa
Storage:	-80°C (as supplied)
Stability:	≥ 1 year
Purity:	$\geq 96\%$ as determined by SDS-PAGE
Supplied in:	Lyophilized from sterile 20 mM NaAc, 150 mM sodium chloride, pH 5.5
Endotoxin Testing:	< 1.0 EU/ μ g, determined by the LAL endotoxin assay
Bioactivity:	See figures for details

Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Images



SDS-PAGE Analysis of β -NGF.



Cell proliferation assay using TF-1 human erythroleukemic cells. The EC_{50} for this effect is 1-8 ng/ml .

WARNING
THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA
This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

WARRANTY AND LIMITATION OF REMEDY
Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

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Description

β -Nerve growth factor (β -NGF) is a neurotrophin that is involved in the regulation of growth, proliferation, and survival of sympathetic and sensory neurons.¹ *Ngf* encodes pro-NGF, a 27 kDa protein that is composed of an N-terminal signal peptide and α -, γ -, and β -NGF domains. β -NGF, also known as mature or functional NGF, is produced after degradation of the signaling peptide and proteolytic cleavage.^{2,3} β -NGF homodimerizes and induces neurotropic signaling through tropomyosin-related kinase A (TrkA) and the p75 neurotrophin receptor (p75^{NTR}).⁴ β -NGF is produced by neurons in the cortex, pituitary gland, hippocampus, basal ganglia, thalamus, spinal cord, and retina, as well as in non-neuronal target cells of sympathetic and sensory neurons such as keratinocytes, vascular smooth muscle cells, exocrine salivary glands, and endocrine tissues.^{4,5} Exogenous administration of β -NGF improves neurological deficits in murine models of traumatic brain injury (TBI).⁴ Exogenous administration of β -NGF also accelerates the rate of skin excision wound healing in rats. Cayman's β -NGF (mouse, recombinant) protein can be used for cell-based assay applications. This protein consists of 121 amino acids and has a calculated molecular weight of 13.5 kDa.

References

1. Bothwell, M. NGF, BDNF, NT3, and NT4. *Neurotrophic Factors. Handbook of Experimental Pharmacology*. Lewin, G. and Carter, B., editors, Springer (2014).
2. Ullrich, A., Gray, A., Berman, C., et al. Human β -nerve growth factor gene sequence highly homologous to that of mouse. *Nature* **303**(5920), 821-825 (1983).
3. Bax, B., Blundell, T.L., Murray-Rust, J., et al. Structure of mouse 7S NGF: a complex of nerve growth factor with four binding proteins. *Structure* **5**(10), 1275-1285 (1997).
4. Rocco, M.L., Soligo, M., Manni, L., et al. Nerve growth factor: Early studies and recent clinical trials. *Curr. Neuropharmacol.* **16**(10), 1455-1465 (2018).
5. Sofroniew, M.V., Howe, C.L., and Mobley, W.C. Nerve growth factor signaling, neuroprotection, and neural repair. *Annu. Rev. Neurosci.* **24**, 1217-1281 (2001).

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