

## Beta-NGF Protein, Human, Recombinant

### General Information

Synonyms:	Beta-NGF; $\beta$ -NGF;NGFB;nerve growth factor ( $\beta$ polypeptide);nerve growth factor (beta polypeptide);HSAN5
Protein Construction:	A DNA sequence encoding the mature form of human $\beta$ -NGF (NP_002497.2) (Ser 122-Arg 239) was expressed. Predicted N terminal: Ser 122
Species:	Human
Expression Host:	CHO Cells
Accession:	P01138
Molecular Weight:	13.2 kDa (predicted)

### QC Testing

Biological Activity:	Measured in a cell proliferation assay using TF-1 human erythroleukemic cells. The ED50 for this effect is typically 0.2-2 ng/ml.
Purity:	> 95 % as determined by SDS-PAGE
Endotoxin:	< 1.0 EU/ $\mu$ g of the protein as determined by the LAL method.
Formulation:	Lyophilized from a solution filtered through a 0.22 $\mu$ m filter, containing 40 mM His, 40 mM Arg, 150 mM NaCl, pH 5.5. Typically, a mixture containing 5% to 8% trehalose, mannitol, and 0.01% Tween 80 is incorporated as a protective agent before lyophilization.

### Preparation and Storage

**Reconstitution:**  
Reconstituted with sterile deionized water to 0.25 mg/mL. Reconstitution conditions may vary depending on the lot.

**Stability & Storage:**

It is recommended to store recombinant proteins at -20°C to -80°C for future use. Lyophilized powders can be stably stored for over 12 months, while liquid products can be stored for 6-12 months at -80°C. For reconstituted protein solutions, the solution can be stored at -20°C to -80°C for at least 3 months. Please avoid multiple freeze-thaw cycles and store products in aliquots.

Actual storage temperature shall be subject to the COA.

**Shipping:**

In general, lyophilized powders are shipped with blue ice, while solutions are shipped with dry ice.

### Protein Background

Nerve growth factor (NGF) is important for the development and maintenance of the sympathetic and sensory nervous systems. NGF protein was identified as a large complex consisting of three non-covalently linked subunits,  $\alpha$ ,  $\beta$ , and  $\gamma$ , among which, the  $\beta$  subunit, called  $\beta$ -NGF (beta-NGF), was demonstrated to exhibit the growth-stimulating activity of NGF protein. NGFB/beta-NGF gene is a member of the NGF-beta family and encodes

a secreted protein that homodimerizes and is incorporated into a larger complex. NGF protein acts via at least two receptors on the surface of cells (TrkA and p75 receptors) to regulate neuronal survival, promote neurite outgrowth, and up-regulate certain neuronal functions such as mediation of pain and inflammation. Also, previous studies indicated that NGF may also have an important role in the regulation of the immune system.

### Reference

- Castellanos MR, et al. (2003) Evaluation of the neurorestorative effects of the murine beta-nerve growth factor infusions in old rat with cognitive deficit. *Biochem Biophys Res Commun.* 312(4): 867-72.
- Wang TH, et al. (2008) Effects of pcDNA3-beta-NGF gene-modified BMSC on the rat model of Parkinson's disease. *J Mol Neurosci.* 35(2): 161-9.
- Perrard MH, et al. (2009) Redundancy of the effect of TGFbeta1 and beta-NGF on the second meiotic division of rat spermatocytes. *Microsc Res Tech.* 72(8): 596-602.

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