

Human β -Nerve Growth Factor (h β -NGF)



Orders: 877-616-CELL (2355)
orders@cellsignal.com

Support: 877-678-TECH (8324)

Web: info@cellsignal.com
cellsignal.com

3 Trask Lane | Danvers | Massachusetts | 01923 | USA

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MW (kDa):
13

UniProt ID:
#P01138

Entrez-Gene Id:
4803

Background

β -NGF is the prototypical member of the neurotrophin family of growth factors (1). β -NGF is involved in neuronal survival, differentiation and growth (1,2). Outside of the nervous system, NGF is produced by a variety of immune cells, including B cells, T cells, monocytes and mast cells (3,4). β -NGF binds to and signals through two distinct receptors, TrkA and p75NTR (1,2). Cellular responses induced by NGF are modulated by receptor expression. For example, TrkA leads to the inhibition of apoptosis and neuronal differentiation. In contrast, signaling through p75NTR in the absence of TrkA induces cell death. (1,2). NGF signaling via TrkA is characterized by activation of the PI3K/AKT and PLC γ pathways (1,2). NGF signaling via p75^{NTR} induces JNK and NF κ B activation (1,2). Aberrant NGF signaling may be linked to the onset of Alzheimer's disease (5,6).

Endotoxin

Less than 0.01 ng endotoxin/1 μ g h β -NGF.

Purity

>98% as determined by SDS-PAGE of 6 μ g reduced (+) and non-reduced (-) recombinant h β -NGF. All lots are greater than 98% pure.

Source / Purification

Recombinant human β -NGF (h β -NGF) Ser122-Ala241 (Accession #NP_002497) was expressed in human 293 cells at Cell Signaling Technology.

Bioactivity

The bioactivity of recombinant h β -NGF was determined in a TF-1 cell proliferation assay. The ED₅₀ of each lot is between 0.5-1.5 ng/ml.

Background References

1. Bibel, M. and Barde, Y.A. (2000) *Genes Dev* 14, 2919-37.
2. Huang, E.J. and Reichardt, L.F. (2003) *Annu Rev Biochem* 72, 609-42.
3. Frossard, N. et al. (2004) *Eur J Pharmacol* 500, 453-65.
4. Jiang, Y. et al. (2007) *J Immunol* 179, 6297-304.
5. Matrone, C. et al. (2009) *Proc Natl Acad Sci USA* 106, 11358-63.
6. Matrone, C. et al. (2008) *Proc Natl Acad Sci USA* 105, 13139-44.

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