Rat β-NGF Antibody

Antigen Affinity-purified Polyclonal Goat IgG
Catalog Number: AF-556-NA

DESCRIPTION

Species Reactivity	Rat
Specificity	Detects rat β-NGF in ELISAs and Western blots. In ELISAs, less than 0.1% cross-reactivity with recombinant human (rh) β-NGF, rhBDNF, recombinant rat (rr) GDNF, rhCNTF, rrGDNF Rα, rrCNTF, rhGDNF, rhNT-3 and rhNT-4 is observed.
Source	Polyclonal Goat IgG
Purification	Antigen Affinity-purified
Immunogen	*S. frugiperda* insect ovarian cell line *Sf* 21-derived recombinant rat β-NGF (R&D Systems, Catalog # 556-NG) Ser122-Gly241 Accession # P25427
Endotoxin Level	<0.10 EU per 1 µg of the antibody by the LAL method.
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details. *Small pack size (-SP) is supplied as a 0.2 µm filtered solution in PBS.

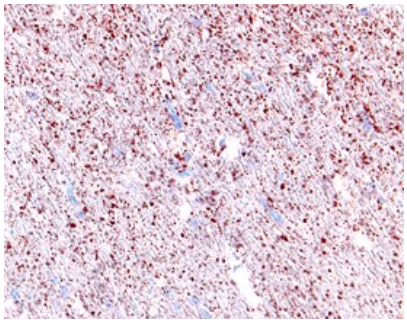
APPLICATIONS

Please Note: *Optimal dilutions should be determined by each laboratory for each application. General Protocols are available in the Technical Information section on our website.*

	Recommended Concentration	Sample
Western Blot	0.1 µg/mL	Recombinant Rat β-NGF (Catalog # 556-NG)
Immunohistochemistry	5-15 µg/mL	See Below
Rat β-NGF Sandwich Immunoassay		**Reagent**
ELISA Capture	0.2-0.8 µg/mL	Rat β–NGF Antibody (Catalog # AF-556-NA)
ELISA Detection	0.1-0.4 µg/mL	Rat β–NGF Biotinylated Antibody (Catalog # BAF556)
Standard		Recombinant Rat β–NGF (Catalog # 556-NG)
Neutralization	Measured by its ability to neutralize β–NGF-induced proliferation in the TF–1 human erythroleukemic cell line [Kitamura, T. *et al*. (1989) J. Cell Physiol. **140**:323]. The Neutralization Dose (ND_{50}) is typically 0.02-0.1 µg/mL in the presence of 10 ng/mL Recombinant Rat β–NGF.	

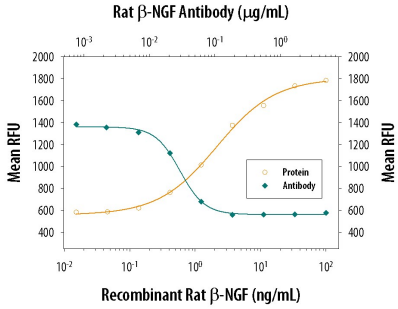
DATA

Immunohistochemistry



β-NGF in Rat Brain. β-NGF was detected in perfusion fixed frozen sections of rat brain using Rat β-NGF Antigen Affinity-purified Polyclonal Antibody (Catalog # AF-556-NA) at 15 µg/mL overnight at 4 °C. Tissue was stained using the Anti-Goat HRP-AEC Cell & Tissue Staining Kit (red; Catalog # CTS009) and counterstained with hematoxylin (blue). View our protocol for Chromogenic IHC Staining of Frozen Tissue Sections.

Neutralization



Cell Proliferation Induced by β-NGF and Neutralization by Rat β-NGF Antibody. Recombinant Rat β-NGF (Catalog # 556-NG) stimulates proliferation in the TF-1 human erythroleukemic cell line in a dose-dependent manner (orange line). Proliferation elicited by Recombinant Rat β-NGF (10 ng/mL) is neutralized (green line) by increasing concentrations of Rat β-NGF Antigen Affinity-purified Polyclonal Antibody (Catalog # AF-556-NA). The ND_{50} is typically 0.02-0.1 µg/mL.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.2 mg/mL in sterile PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below. *Small pack size (-SP) is shipped with polar packs. Upon receipt, store it immediately at -20 to -70 °C
Stability & Storage	**Use a manual defrost freezer and avoid repeated freeze-thaw cycles.** ● 12 months from date of receipt, -20 to -70 °C as supplied. ● 1 month, 2 to 8 °C under sterile conditions after reconstitution. ● 6 months, -20 to -70 °C under sterile conditions after reconstitution.

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BACKGROUND

NGF was initially isolated in the mouse submandibular gland over three decades ago as a 7S complex composed of three non-covalently linked subunits, α, β, and γ. It is now known that both the α and γ subunits of NGF are members of the kallikrein family of serine proteases while the β subunit, called β-NGF or 2.5S NGF, exhibits all the biological activities ascribed to NGF. Recombinant rat β-NGF is a homodimer of two 120-amino acid polypeptides. The human protein shares approximately 90% homology at the amino acid level with both the mouse and rat β-NGF and exhibits cross-species activity.

NGF is a well-characterized neurotrophic protein that plays a critical role in the development of sympathetic and some sensory neurons in the peripheral nervous system. In addition, NGF can also act in the central nervous system as a trophic factor for basal forebrain cholinergic neurons. NGF has also been shown to have biological effects on non-neuronal tissues. NGF is mitogenic for a factor-dependent human erythroleukemic cell line, TF-1. NGF has been found to increase the number of mast cells in neonatal rats and to induce histamine release from peritoneal mast cells. NGF will enhance histamine release and strongly modulate the formation of lipid mediators by basophils in response to various stimuli. NGF will also induce the growth and differentiation of human B lymphocytes as well as suppress apoptosis of murine peritoneal neutrophils. These results, taken together, suggest that NGF is a pleiotropic cytokine which, in addition to its neurotropic activities, may have an important role in the regulation of the immune system.

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