

## DESCRIPTION

|                                                                                                                                                                                                         |                                                                                                |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|
| <b>Species Reactivity</b>                                                                                                                                                                               | Mouse                                                                                          |
| <b>Specificity</b>                                                                                                                                                                                      | Detects mouse $\beta$ -NGF in direct ELISAs.                                                   |
| <b>Source</b>                                                                                                                                                                                           | Monoclonal Rabbit IgG Clone # 2529F                                                            |
| <b>Purification</b>                                                                                                                                                                                     | Protein A or G purified from cell culture supernatant                                          |
| <b>Immunogen</b>                                                                                                                                                                                        | Mouse myeloma cell line, NS0-derived mouse $\beta$ -NGF<br>Ser122-Gly241<br>Accession # Q6LDU8 |
| <b>Conjugate</b>                                                                                                                                                                                        | Alexa Fluor 405<br>Excitation Wavelength: 405 nm<br>Emission Wavelength: 421 nm                |
| <b>Formulation</b>                                                                                                                                                                                      | Supplied 0.2mg/ml in 1X PBS with RDF1 and 0.09% Sodium Azide                                   |
| *Contains <0.1% Sodium Azide, which is not hazardous at this concentration according to GHS classifications. Refer to the Safety Data Sheet (SDS) for additional information and handling instructions. |                                                                                                |

## 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.

**ELISA** Optimal dilution of this antibody should be experimentally determined.

## PREPARATION AND STORAGE

|                                |                                                                                                                   |
|--------------------------------|-------------------------------------------------------------------------------------------------------------------|
| <b>Shipping</b>                | The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below. |
| <b>Stability &amp; Storage</b> | Protect from light. Do not freeze. 12 months from date of receipt, 2 to 8 °C as supplied                          |

## BACKGROUND

NGF was discovered as a molecule that promoted the survival and differentiation of sympathetic and sensory neurons in the peripheral nervous system (1). In addition,  $\beta$ -NGF can act in the central nervous system as a trophic factor for basal forebrain cholinergic neurons (2).  $\beta$ -NGF has also been shown to have biological effects on a variety of neurons, glia, and nonneural cells (3). NGF was initially isolated from the mouse submandibular gland as a 7S complex composed of three non-covalently linked subunits,  $\alpha$ ,  $\beta$ , and  $\gamma$ . It is now known that both the  $\alpha$  and  $\gamma$  subunits of NGF are members of the kallikrein family of serine proteases while the  $\beta$  subunit, called  $\beta$ -NGF, exhibits all the biological activities ascribed to NGF (4 - 5). Recombinant mouse  $\beta$ -NGF is a homodimer of two 120 amino acid polypeptides. It shares approximately 90% homology at the amino acid level with human  $\beta$ -NGF and 95.8% with rat  $\beta$ -NGF (6).

NGF is the first member discovered in the Neurotrophin family, which includes brain-derived neurotrophic factor (BDNF), neurotrophin-3 (NT-3), and neurotrophin-4 (NT-4). NT-6 and NT-7 were also identified in fish (7, 8). Biological activities of the NGF family are mediated through binding and activation of two types of receptors, TrKs (TrKA, TrKB, and TrKC) and NGF receptor. TrKs are single-pass membrane proteins belonging to the receptor tyrosine kinase family. The neurotrophins bind to TrKs specifically. NGF is specific for TrKA, BDNF and NT-4 for TrKB, and NT-3 mostly for TrKC. NGF receptor is a TNF receptor superfamily protein that binds to all the neurotrophins with similar affinity (9). TrKA is often referred to as the high-affinity receptor. However, most high affinity binding is mediated by the interaction of NGF receptor with TrKA. Both NGF and its receptors are expressed during development, adult life and aging in many cell types in CNS and PNS, immune and inflammatory systems. NGF signaling has been shown to play an important role in neuroprotection and repair (3, 10).

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