

## DESCRIPTION

<b>Species Reactivity</b>	Human
<b>Specificity</b>	Detects human NT-3 in direct ELISAs and Western blots. In Western blots, approximately 10% cross-reactivity with recombinant human (rh) NT-4 is observed, and less than 1% cross-reactivity with rhBDNF is observed.
<b>Source</b>	Polyclonal Goat IgG
<b>Purification</b>	Antigen Affinity-purified
<b>Immunogen</b>	<i>S. frugiperda</i> insect ovarian cell line Sf21-derived recombinant human NT-3 Tyr139-Thr257 Accession # P20783
<b>Endotoxin Level</b>	<0.10 EU per 1 µg of the antibody by the LAL method.
<b>Formulation</b>	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details.

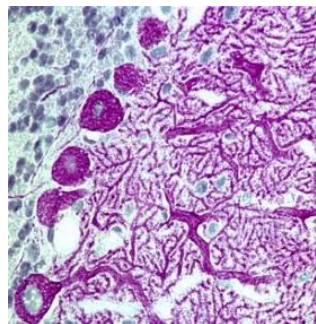
## APPLICATIONS

**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.

	<b>Recommended Concentration</b>	<b>Sample</b>
<b>Western Blot</b>	0.1 µg/mL	Recombinant Human NT-3 (Catalog # 267-N3)
<b>Immunohistochemistry</b>	5-15 µg/mL	See Below
<b>Neutralization</b>	Measured by its ability to neutralize NT-3-induced proliferation in BaF-TrkB-BD mouse pro-B cell line transfected with TrkB. The Neutralization Dose (ND <sub>50</sub> ) is typically 0.1-0.4 µg/mL in the presence of 20 ng/mL Recombinant Human NT-3.	

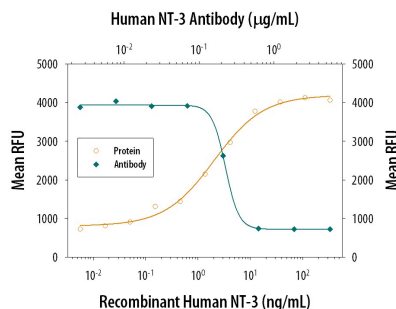
## DATA

### Immunohistochemistry



**NT-3 in Rat Brain.** NT-3 was detected in perfusion fixed frozen sections of rat brain (Purkinje cells in the cerebellum) using 10 µg/mL Human NT-3 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF-267-NA) overnight at 4 °C. Tissue was stained with 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 Paraffin-embedded Tissue Sections](#).

### Neutralization



**Cell Proliferation Induced by NT-3 and Neutralization by Human NT-3 Antibody.** Recombinant Human NT-3 (Catalog # 267-N3) stimulates proliferation in BaF-TrkB-BD mouse pro-B cell line transfected with TrkB in a dose-dependent manner (orange line). Proliferation elicited by Recombinant Human NT-3 (20 ng/mL) is neutralized (green line) by increasing concentrations of Human NT-3 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF-267-NA). The ND<sub>50</sub> is typically 0.1-0.4 µg/mL.

## PREPARATION AND STORAGE

<b>Reconstitution</b>	Reconstitute at 0.2 mg/mL in sterile PBS.
<b>Shipping</b>	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
<b>Stability &amp; Storage</b>	Use a manual defrost freezer and avoid repeated freeze-thaw cycles. <ul style="list-style-type: none"> <li>12 months from date of receipt, -20 to -70 °C as supplied.</li> <li>1 month from date of receipt, 2 to 8 °C, reconstituted.</li> <li>6 months from date of receipt, -20 to -70 °C, reconstituted.</li> </ul>

## BACKGROUND

Neurotrophin-3 (NT-3) is a member of the NGF family of neurotrophic factors (also named neurotrophins) that are required for the differentiation and survival of specific neuronal subpopulations in both the central as well as the peripheral nervous systems. The neurotrophin family is comprised of at least four proteins including NGF, BDNF, NT-3, and NT-4/5. These secreted cytokines are synthesized as prepropeptides that are proteolytically processed to generate the mature proteins. All neurotrophins have six conserved cysteine residues that are involved in the formation of three disulfide bonds and all share approximately 55% sequence identity at the amino acid level. Similarly to NGF, bioactive NT-3 is predicted to be a non-covalently linked homodimer.

The NT-3 cDNA encodes a 257 amino acid residue precursor protein with a signal peptide and a proprotein that are cleaved to yield the 119 amino acid residue mature NT-3. The amino acid sequence of mature NT-3 is identical in human, mouse and rat. NT-3 transcripts have been detected in the cerebellum, hippocampus, placenta, heart, skin, and skeletal muscle. NT-3 primarily activates the TrkC tyrosine kinase receptor. In addition, NT-3 can activate Trk and TrkB kinase receptors in certain cell systems. NT-3 can also bind with low affinity to the low affinity NGF receptor.

## References:

1. Eide, F.F. *et al.* (1993) Exp. Neurol. **121**:200.
2. Snider, W.D. (1994) Cell **77**:627.
3. Barbacid, M. (1994) J. Neurobiol. **25**:1386.