Human NT-4 Antibody

Antigen Affinity-purified Polyclonal Goat IgG
Catalog Number: AF-268-NA

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human NT-4 in direct ELISAs and Western blots. In direct ELISAs, less than 1% cross-reactivity with recombinant human (rh) NT-3 and rhBDNF is observed.
Source	Polyclonal Goat IgG
Purification	Antigen Affinity-purified
Immunogen	*S. frugiperda* insect ovarian cell line *Sf* 21-derived recombinant human NT-4 Gly81-Ala210 Accession # P34130
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.

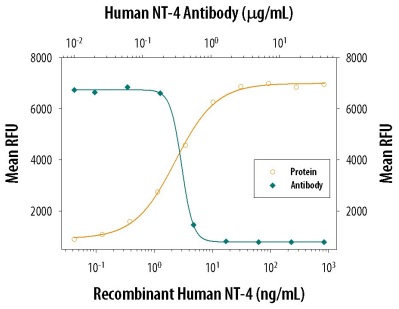
APPLICATIONS

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 Human NT-4 (Catalog # 268-N4)
Immunohistochemistry	5-15 µg/mL	Immersion fixed paraffin-embedded sections of human brain (cortex)
Neutralization	Measured by its ability to neutralize NT-4-induced proliferation in BaF-TrKB-BD mouse pro-B cell line transfected with TrkB. The Neutralization Dose (ND_{50}) is typically 0.4-2 µg/mL in the presence of 40 ng/mL Recombinant Human NT-4.	

DATA

Neutralization



Cell Proliferation Induced by NT-4 and Neutralization by Human NT-4 Antibody. Recombinant Human NT-4 (Catalog # 268-N4) 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-4 (40 ng/mL) is neutralized (green line) by increasing concentrations of Goat Anti-Human NT-4 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF-268-NA). The ND_{50} is typically 0.4-2 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

Neurotrophin-4 (NT-4), also known as NT-5, is a member of the NGF family of neuronal and epithelial growth factors. Neurotrophins have six conserved cysteine residues that are involved in the formation of three disulfide bonds (1-3). The human NT-4 cDNA encodes a 210 amino acid (aa) precursor that includes a 24 aa signal sequence, a 56 aa propeptide, and a 130 aa mature protein (4, 5). NT-4 is synthesized as a 28 kDa prepropeptide that is proteolytically processed to generate the mature protein. Mature human NT-4 shares 48-52% aa sequence identity with human beta-NGF, BDNF, and NT-3. It shares 91% and 95% aa sequence identity with mouse and rat NT-4/5, respectively. The mature protein is secreted as a homodimer and can also form heterodimers with BDNF or NT-3 (6). NT-4 binds and induces receptor dimerization and activation of TrkB (4, 7). NT-4 promotes the development and survival of selected peripheral and CNS neurons (8-10). BDNF, which also activates TrkB, overlaps with many but not all NT-4 functions, a distinction that is likely due to differences in expression patterns (8-10). NT-4 induced TrkB signaling augments NMDA receptor activity and increases neuronal sensitivity to excitotoxic cell death (11). It also promotes the proliferation of keratinocytes and accelerates hair follicle regression during the follicular cycle (12, 13). NT-4 is secreted by activated T cells and granulocytes at sites of inflammation where it contributes to tissue regeneration (14-16).

References:

1. Lessmann, V. *et al.* (2003) Prog. Neurobiol. **69**:341.
2. Tabakman, R. *et al.* (2004) Prog. Brain Res. **146**:387.
3. Botchkarev, V.A. *et al.* (2004) Prog. Brain Res. **146**:493.
4. Ip, N.Y. *et al.* (1992) Proc. Natl. Acad. Sci. **89**:3060.
5. Berkemeier, L.R. *et al.* (1991) Neuron **7**:857.
6. Radziejewski, C. and R.C. Robinson (1993) Biochemistry **32**:13350.
7. Vesa, J. *et al.* (2000) J. Biol. Chem. **275**:24414.
8. Davies, A.M. *et al.* (1993) J. Neurosci. **13**:4961.
9. Stucky, C.L. *et al.* (1998) J. Neurosci. **18**:7040.
10. Fan, G. *et al.* (2000) Nat. Neurosci. **3**:350.
11. Choi, S.Y. *et al.* (2004) J. Neurochem. **88**:708.
12. Botchkarev, V.A. *et al.* (1999) Lab. Invest. **79**:557.
13. Botchkarev, V.A. *et al.* (1999) FASEB J. **13**:395.
14. Laurenzi, M.A. *et al.* (1998) J. Leukoc. Biol. **64**:228.
15. Moalem, G. *et al.* (2000) J. Autoimmun. **15**:331.
16. Nassenstein, C. *et al.* (2003) J. Exp. Med. **198**:455.

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