TGF-β3 Antibody

Antigen Affinity-purified Polyclonal Goat IgG
Catalog Number: AF-243-NA

DESCRIPTION

Specificity	Detects TGF-β3 in direct ELISAs.
Source	Polyclonal Goat IgG
Purification	Antigen Affinity-purified
Immunogen	*S. frugiperda* insect ovarian cell line *Sf* 21-derived recombinant chicken TGF-β3 Ala301-Ser412 (Tyr340Phe) Accession # P10600
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 either lyophilized or as a 0.2 µm filtered solution in PBS.

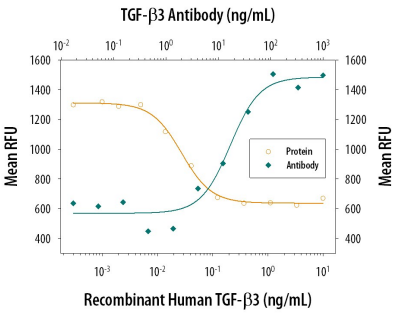
APPLICATIONS

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
Immunohistochemistry	5-15 µg/mL	Immersion fixed paraffin-embedded sections of human brain
Neutralization	Measured by its ability to neutralize TGF-β3 inhibition of IL-4-dependent proliferation in the HT-2 mouse T cell line. Tsang, M. *et al.* (1995) Cytokine **7**:389. The Neutralization Dose (ND_{50}) is typically 0.01-0.05 µg/mL in the presence of 0.1 ng/mL Recombinant Human TGF-β3 and 7.5 ng/mL Recombinant Mouse IL-4.	

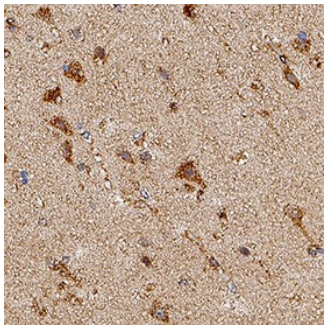
DATA

Neutralization



TGF-β3 Inhibition of IL-4-dependent Cell Proliferation and Neutralization by TGF-β3 Antibody. Recombinant Human TGF-ß3 (Catalog # 243-B3) inhibits Recombinant Mouse IL-4 (Catalog # 404-ML) induced proliferation in the HT-2 mouse T cell line in a dose-dependent manner (orange line). Inhibition of Recombinant Mouse IL-4 (7.5 ng/mL) activity elicited by Recombinant Human TGF-ß3 (0.1 ng/mL) is neutralized (green line) by increasing concentrations of TGF-ß3 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF-243-NA). The ND_{50} is typically 0.01-0.05 µg/mL.

Immunohistochemistry



TGF-β3 in Human Brain. TGF-β3 was detected in immersion fixed paraffin-embedded sections of human brain using Goat Anti-TGF-β3 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF-243-NA) at 5 µg/mL for 1 hour at room temperature followed by incubation with the Anti-Goat IgG VisUCyte™ HRP Polymer Antibody (Catalog # VC004). Before incubation with the primary antibody, tissue was subjected to heat-induced epitope retrieval using Antigen Retrieval Reagent-Basic (Catalog # CTS013). Tissue was stained using DAB (brown) and counterstained with hematoxylin (blue). Specific staining was localized to neuronal cell bodies. Staining was performed using our protocol for IHC Staining with VisUCyte HRP Polymer Detection Reagents.

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

TGF-β3 (transforming growth factor beta 3) is one of three closely related mammalian members of the large TGF-β superfamily that share a characteristic cystine knot structure (1-7). TGF-β1, -2 and -3 are highly pleiotropic cytokines that are proposed to act as cellular switches that regulate processes such as immune function, proliferation and epithelial-mesenchymal transition (1-4). Each TGF-β isoform has some non-redundant functions; for TGF-β3, mice with targeted deletion show defects palatogenesis and pulmonary development (2). Human TGF-β3 cDNA encodes a 412 amino acid (aa) precursor that contains a 20 aa signal peptide and a 392 aa proprotein (8). A furin-like convertase processes the proprotein to generate an N-terminal 220 aa latency-associated peptide (LAP) and a C-terminal 112 aa mature TGF- β3 (8, 9). Disulfide-linked homodimers of LAP and TGF-β3 remain non-covalently associated after secretion, forming the small latent TGF-β3 complex (8-10). Covalent linkage of LAP to one of three latent TGF-β binding proteins (LTBPs) creates a large latent complex that may interact with the extracellular matrix (9, 10). TGF-β is activated from latency by pathways that include actions of the protease plasmin, matrix metalloproteases, thrombospondin 1 and a subset of integrins (10). Mature human TGF-β3 shows 100%, 99% and 98% aa identity with mouse/dog/horse, rat and pig TGF-β3, respectively. It demonstrates cross-species activity (1). TGF-β3 signaling begins with high-affinity binding to a type II ser/thr kinase receptor termed TGF-β RII. This receptor then phosphorylates and activates a second ser/thr kinase receptor, TGF-β RI (also called activin receptor-like kinase (ALK) -5), or alternatively, ALK-1.This complex phosphorylates and activates Smad proteins that regulate transcription (3, 11, 12). Contributions of the accessory receptors betaglycan (also known as TGF-β RIII) and endoglin, or use of Smad-independent signaling pathways, allow for disparate actions observed in response to TGF-β in different contexts (11).

References:

1. Sporn, M.B. (2006) Cytokine Growth Factor Rev. **17**:3.
2. Dunker, N. and K. Krieglstein (2000) Eur. J. Biochem. **267**:6982.
3. Wahl, S.M. (2006) Immunol. Rev. **213**:213.
4. Chang, H. *et al.* (2002) Endocr. Rev. **23**:787.
5. Lin, J.S. *et al.* (2006) Reproduction **132**:179.
6. Hinck, A.P. *et al.* (1996) Biochemistry **35**:8517.
7. Mittl, P.R.E. *et al.* (1996) Protein Sci. **5**:1261.
8. Derynck, R. *et al.* (1988) EMBO J. **7**:3737.
9. Miyazono, K. *et al.* (1988) J. Biol. Chem. **263**:6407.
10. Oklu, R. and R. Hesketh (2000) Biochem. J. **352**:601.
11. de Caestecker, M. *et al.* (2004) Cytokine Growth Factor Rev. **15**:1.
12. Zuniga, J.E. *et al.* (2005) J. Mol. Biol. **354**:1052.

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