TGF-β Pan Specific Antibody

Polyclonal Rabbit IgG
Catalog Number: AB-100-NA

DESCRIPTION

Specificity	Detects TGF-β1, TGF-β1.2, TGF-β2, TGF-β3, and TGF-β5 in direct ELISAs and Western blots.
Source	Polyclonal Rabbit IgG
Purification	Protein A or G purified
Immunogen	Recombinant human TGF-β1, porcine platelet-derived TGF-β1.2, porcine platelet-derived TGF-β2, and recombinant amphibian TGF-β5
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.

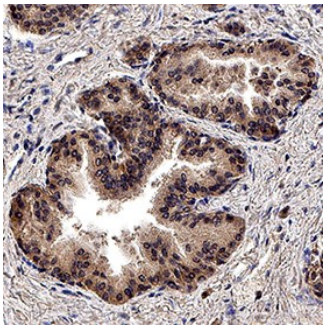
APPLICATIONS

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	1 µg/mL	Recombinant Human TGF-β1 (Catalog # 240-B) Recombinant Human TGF-β2 (Catalog # 302-B2) Recombinant Human TGF-β1.2 (Catalog # 304-B3) Recombinant Human TGF-β3 (Catalog # 243-B3) Recombinant Amphibian TGF-β5 (Catalog # 245-B5) under non-reducing conditions only
Immunohistochemistry	3-15 µg/mL	See Below
Neutralization	Measured by its ability to neutralize TGF-β1 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 approximately 1 µg/mL, 15 µg/mL, 4 µg/mL, and 1 µg/mL for Porcine TGF-β1.2, Porcine TGF-β2, Recombinant Chicken TGF-β3, and Recombinant Amphibian TGF-β5, respectively. The ND_{50} range for Porcine TGF-β1 is 5-30 µg/mL.	

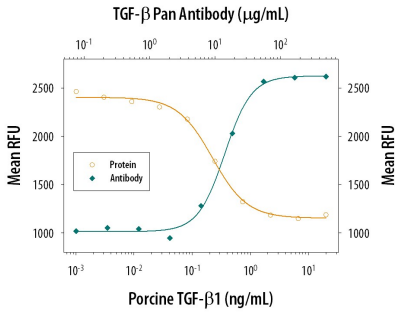
DATA

Immunohistochemistry



TGF-beta Pan Specific in Human Prostate Tissue. TGF-ß was detected in immersion fixed paraffin-embedded sections of human prostate tissue using Rabbit Anti-TGF-ß Pan Specific Polyclonal Antibody (Catalog # AB-100-NA) at 3 µg/mL for 1 hour at room temperature followed by incubation with the Anti-Rabbit IgG VisUCyte™ HRP Polymer Antibody (Catalog # Catalog # VC003). Before incubation with the primary antibody, tissue was subjected to heat-induced epitope retrieval using Antigen Retrieval Reagent-Basic (Catalog # Catalog # CTS013). Tissue was stained using DAB (brown) and counterstained with hematoxylin (blue). Specific staining was localized to cytoplasm in epitjhelial cells. View our protocol for IHC Staining with VisUCyte HRP Polymer Detection Reagents.

Neutralization



TGF-β1 Inhibition of IL-4-dependent Cell Proliferation and Neutralization by TGF-β Antibody. Porcine TGF-ß1 (Catalog # Catalog # 101-B1) inhibits Recombinant Mouse IL-4 (Catalog # 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 Porcine TGF-ß1 (1 ng/mL) is neutralized (green line) by increasing concentrations of TGF-ß Pan Specific Polyclonal Antibody (Catalog # AB-100-NA). The ND_{50} range is 5-30 µg/mL.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 1 mg/mL in sterile PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
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-β1 (transforming growth factor beta 1) is one of three closely related mammalian members of the large TGF-β superfamily that share a characteristic cystine knot structure. 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. Each TGF-β isoform has some non-redundant functions; for TGF-β1, mice with targeted deletion show defects in hematopoiesis and endothelial differentiation, and die of overwhelming inflammation. Human TGF-β1 cDNA encodes a 390 amino acid (aa) precursor that contains a 29 aa signal peptide and a 361 aa proprotein. A furin-like convertase processes the proprotein to generate an N-terminal 249 aa latency-associated peptide (LAP) and a C-terminal 112 aa mature TGF- β1. Disulfide-linked homodimers of LAP and TGF-β1 remain non-covalently associated after secretion, forming the small latent TGF-β1 complex. 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. TGF-β is activated from latency by pathways that include actions of the protease plasmin, matrix metalloproteases, thrombospondin 1 and a subset of integrins. Mature human TGF-β1 shares 100% aa identity with pig, dog and cow TGF-β1, and 99% aa identity with mouse, rat and horse TGF-β1. It demonstrates cross-species activity. TGF-β1 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. 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.

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