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.

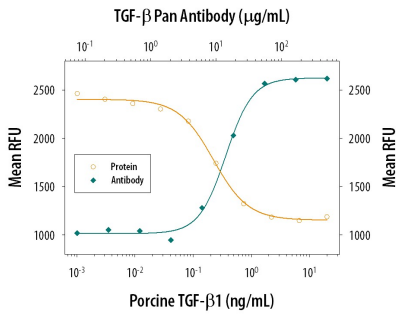
APPLICATIONS

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
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

Neutralization



TGF-β1 Inhibition of IL-4-dependent Cell Proliferation and Neutralization by TGF-β Antibody. Porcine TGF-β1 (Catalog # 101-B1) 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 Porcine TGF-β1 (1 ng/mL) is neutralized (green line) by increasing concentrations of TGF-β 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.

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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