

DESCRIPTION

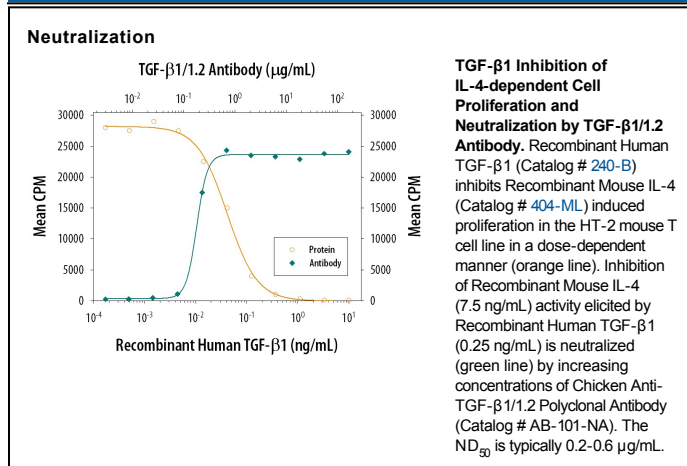
Specificity	Detects TGF- β 1/1.2 in direct ELISAs and Western blots. In direct ELISAs and Western blots, less than 10% cross-reactivity with recombinant amphibian TGF- β 5 is observed and less than 2% cross-reactivity with recombinant human TGF- β 3, recombinant chicken TGF- β 3, and porcine TGF- β 2 is observed.
Source	Polyclonal Chicken IgY
Purification	Ion exchange-purified from egg yolks
Immunogen	Chinese hamster ovary cell line CHO-derived recombinant human TGF- β 1 (R&D Systems, Catalog # 240-B) Ala279-Ser390 Accession # P01137
Endotoxin Level	<0.10 EU per 1 μ g of the antibody by the LAL method.
Formulation	Lyophilized from a 0.2 μ m 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 μ g/mL	Recombinant Human TGF- β 1 (Catalog # 240-B) Recombinant Human TGF- β 1.2 (Catalog # 304-B3)
Neutralization		Measured by its ability to neutralize TGF- β 1 inhibition of IL-4-dependent proliferation in the HT-2 mouse T cell line [Tsang, M. <i>et al.</i> (1995) Cytokine 7:389]. The Neutralization Dose (ND ₅₀) is typically 0.2-0.6 μ g/mL in the presence of 0.25 ng/mL Recombinant Human TGF- β 1 and 7.5 ng/mL Recombinant Mouse IL-4.

DATA



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. <ul style="list-style-type: none"> • 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- β 1 (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- β 1, -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- β 1, mice with targeted deletion show defects in hematopoiesis and endothelial differentiation, and die of overwhelming inflammation. Human TGF- β 1 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- β 1. Disulfide-linked homodimers of LAP and TGF- β 1 remain non-covalently associated after secretion, forming the small latent TGF- β 1 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- β 1 shares 100% aa identity with pig, dog and cow TGF- β 1, and 99% aa identity with mouse, rat and horse TGF- β 1. It demonstrates cross-species activity. TGF- β 1 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.