# TGF-β1/1.2 Antibody

Antigen Affinity-purified Polyclonal Chicken IgY
Catalog Number: AF-101-NA

## DESCRIPTION

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| **Specificity** | Detects TGF-β1/1.2 in direct ELISAs and Western blots. In direct ELISAs, less than 15% cross-reactivity with recombinant amphibian TGF-β5 is observed and less than 2% cross-reactivity with TGF-β2 and TGF-β3 is observed. |
| **Source** | Polyclonal Chicken IgY |
| **Purification** | Antigen Affinity-purified from egg yolks |
| **Immunogen** | Chinese hamster ovary cell line CHO-derived recombinant human TGF-β1 (R&D Systems, Catalog # 240-B)<br>Ala270-Ser390<br>Accession # P01137 |
| **Endotoxin Level** | <0.1 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. |

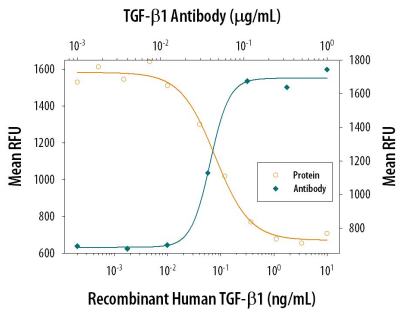
## APPLICATIONS

**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** | 0.1 µg/mL | Recombinant Human TGF-β1 (Catalog # 240-B)<br>Recombinant Human TGF-β1.2 (Catalog # 304-B3) |
| **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 typically 5-30 ng/mL in the presence of 1 ng/mL Recombinant Human TGF-β1 and 7.5 ng/mL Recombinant Mouse IL-4. | |

## DATA

**Neutralization**




**TGF-β1 Inhibition of IL-4-dependent Cell Proliferation and Neutralization by TGF-β1/1.2 Antibody.** Recombinant Human TGF-β1 (Catalog # 240-B) 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-β1 (1 ng/mL) is neutralized (green line) by increasing concentrations of TGF-β1/1.2 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF-101-NA). The $ND_{50}$ is typically 5-30 ng/mL.

## PREPARATION AND STORAGE

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| **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. |
| **Stability & Storage** | **Use a manual defrost freezer and avoid repeated freeze-thaw cycles.**<br>● 12 months from date of receipt, -20 to -70 °C as supplied.<br>● 1 month from date of receipt, 2 to 8 °C, reconstituted.<br>● 6 months from date of receipt, -20 to -70 °C, reconstituted. |

## 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.