TGF-β3 Antibody

Monoclonal Mouse IgG_1 Clone # 20724

Catalog Number: MAB243

DESCRIPTION

Specificity	Detects TGF-β3 from multiple species in direct ELISAs and Western blots. In Western blots, less than 25% cross-reactivity with recombinant human (rh) TGF-β1.2 and rhTGF-β2 is observed, and less than 2% cross-reactivity with recombinant amphibian TGF-β5 and recombinant human TGF-β1 is observed. Neutralizes the biological activity of TGF-β3 but not TGF-β1, TGF-β2, or TGF-β5.
Source	Monoclonal Mouse IgG_1 Clone # 20724
Purification	Protein A or G purified from ascites
Immunogen	Spodoptera frugiperda, Sf 21 (baculovirus) derived recombinant human 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 as a 0.2 µm filtered solution in PBS.

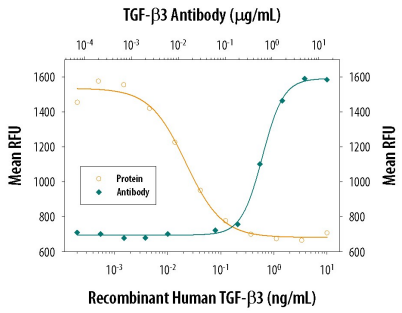
APPLICATIONS

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
Western Blot	1 µg/mL	Recombinant Human TGF-β3 (Catalog # 243-B3) under non-reducing conditions only
Immunohistochemistry	8-25 µg/mL	See Below
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 0.1-0.3 µg/mL in the presence of 0.1 ng/mL Recombinant Human TGF−β3 and 7.5 ng/mL Recombinant Mouse IL−4.	

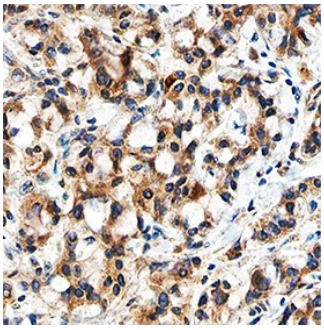
DATA

Neutralization



TGF-β3 Inhibition of IL-4-dependent Cell Proliferation and Neutralization by TGF-β3 Antibody. Recombinant Human TGF-β3 (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-β3 (0.1 ng/mL) is neutralized (green line) by increasing concentrations of Mouse Anti-TGF-β3 Monoclonal Antibody (Catalog # MAB243). The ND_{50} is typically 0.1-0.3 µg/mL.

Immunohistochemistry



TGF-β3 in Human Breast Cancer Tissue. TGF-β3 was detected in immersion fixed paraffin-embedded sections of human breast cancer tissue using Mouse Anti-TGF-β3 Monoclonal Antibody (Catalog # MAB243) at 5 µg/mL overnight at 4 °C. Tissue was stained using the Anti-Mouse HRP-DAB Cell & Tissue Staining Kit (brown; Catalog # CTS002) and counterstained with hematoxylin (blue). Specific staining was localized to cytoplasm in cancer cells. View our protocol for Chromogenic IHC Staining of Paraffin-embedded Tissue Sections.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.5 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:

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