

## DESCRIPTION

|                     |                                                                                                                                                                                                                                                                             |
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| <b>Specificity</b>  | 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                       |
| <b>Source</b>       | Monoclonal Mouse IgG <sub>1</sub> Clone # 20724                                                                                                                                                                                                                             |
| <b>Purification</b> | Protein A or G purified from ascites                                                                                                                                                                                                                                        |
| <b>Immunogen</b>    | Spodoptera frugiperda, Sf 21 (baculovirus) derived recombinant human TGF-β3 Ala301-Ser412 (Tyr340Phe)<br>Accession # P10600                                                                                                                                                 |
| <b>Conjugate</b>    | Alexa Fluor 594<br>Excitation Wavelength: 590 nm<br>Emission Wavelength: 617 nm                                                                                                                                                                                             |
| <b>Formulation</b>  | Supplied 0.2mg/ml in 1X PBS with RDF1 and 0.09% Sodium Azide<br><br>*Contains <0.1% Sodium Azide, which is not hazardous at this concentration according to GHS classifications. Refer to the Safety Data Sheet (SDS) for additional information and handling instructions. |

## 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.

|                             |                                                                        |
|-----------------------------|------------------------------------------------------------------------|
| <b>Neutralization</b>       | Optimal dilution of this antibody should be experimentally determined. |
| <b>Western Blot</b>         | Optimal dilution of this antibody should be experimentally determined. |
| <b>Immunohistochemistry</b> | Optimal dilution of this antibody should be experimentally determined. |

## PREPARATION AND STORAGE

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|--------------------------------|-------------------------------------------------------------------------------------------------------------------|
| <b>Shipping</b>                | The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below. |
| <b>Stability &amp; Storage</b> | Protect from light. Do not freeze. 12 months from date of receipt, 2 to 8 °C as supplied                          |

## 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).

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