

## DESCRIPTION

|                           |                                                                                                                                                                                                                                                                             |
|---------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Species Reactivity</b> | Mouse                                                                                                                                                                                                                                                                       |
| <b>Specificity</b>        | Detects mouse TGF- $\beta$ 2 in direct ELISAs. In direct ELISAs, approximately 50% cross-reactivity with recombinant human (rh) TGF- $\beta$ 2 and rhTGF- $\beta$ 3 is observed.                                                                                            |
| <b>Source</b>             | Monoclonal Rat IgG <sub>2B</sub> Clone # 771213                                                                                                                                                                                                                             |
| <b>Purification</b>       | Protein A or G purified from hybridoma culture supernatant                                                                                                                                                                                                                  |
| <b>Immunogen</b>          | Chinese hamster ovary cell line CHO-derived recombinant mouse TGF- $\beta$ 2 Ala303-Ser414<br>Accession # P27090                                                                                                                                                            |
| <b>Conjugate</b>          | Alexa Fluor 700<br>Excitation Wavelength: 675-700 nm<br>Emission Wavelength: 723 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.

**Neutralization** Optimal dilution of this antibody should be experimentally determined.

## PREPARATION AND STORAGE

**Shipping** The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below.

**Stability & Storage** Protect from light. Do not freeze. 12 months from date of receipt, 2 to 8 °C as supplied

## BACKGROUND

TGF- $\beta$ 2 (transforming growth factor beta 2) is one of three closely related mammalian members of the large TGF- $\beta$  superfamily that share a characteristic cysteine knot structure. TGF- $\beta$ 1, -2 and -3 are highly pleiotropic cytokines proposed to act as cellular switches that regulate processes such as immune function, proliferation and epithelial-mesenchymal transition. Each TGF- $\beta$  isoform has some non-redundant functions; for TGF- $\beta$ 2, mice with targeted deletion show defects in development of cardiac, lung, craniofacial, limb, eye, ear and urogenital systems. Mouse TGF- $\beta$ 2 cDNA encodes a 414 amino acid (aa) precursor that contains a 19 aa signal peptide and a 395 aa proprotein. A furin-like convertase processes the proprotein to generate an N-terminal 283 aa latency-associated peptide (LAP) and a C-terminal 112 aa mature TGF- $\beta$ 2. Disulfide-linked homodimers of LAP and TGF- $\beta$ 2 remain non-covalently associated after secretion, forming the small latent TGF- $\beta$ 2 complex. Covalent linkage of LAP to one of three latent TGF- $\beta$  binding proteins (LTBPs) creates a large latent complex that may interact with the extracellular matrix. TGF- $\beta$  is activated from latency by pathways that include actions of the protease plasmin, matrix metalloproteinases, thrombospondin 1 and a subset of integrins. Mature mouse TGF- $\beta$ 2 shares 100% aa identity with rat TGF- $\beta$ 2, and 97% aa identity with human, porcine, canine, equine and bovine TGF- $\beta$ 2. It demonstrates cross-species activity. In most cells, TGF- $\beta$ 2 signaling begins with binding to a complex of the accessory receptor betaglycan (also known as TGF- $\beta$  RIII) and a type II ser/thr kinase receptor termed TGF- $\beta$  RII, which then phosphorylates and activates another ser/thr kinase receptor, TGF- $\beta$  RI (also called activin receptor-like kinase (ALK) -5), or alternatively, ALK-1. The whole complex phosphorylates and activates Smad proteins that regulate transcription. In bone-related cells, however, TGF- $\beta$ 2 also signals through TGF- $\beta$  RIIB (a splice variant of TGF- $\beta$  RII), independently of TGF- $\beta$  RIII. Use of other signaling pathways that are Smad-independent allows for disparate actions observed in response to TGF- $\beta$  in different contexts.

## PRODUCT SPECIFIC NOTICES

This product is provided under an agreement between Life Technologies Corporation and R&D Systems, Inc, and the manufacture, use, sale or import of this product is subject to one or more US patents and corresponding non-US equivalents, owned by Life Technologies Corporation and its affiliates. The purchase of this product conveys to the buyer the non-transferable right to use the purchased amount of the product and components of the product only in research conducted by the buyer (whether the buyer is an academic or for-profit entity). The sale of this product is expressly conditioned on the buyer not using the product or its components (1) in manufacturing; (2) to provide a service, information, or data to an unaffiliated third party for payment; (3) for therapeutic, diagnostic or prophylactic purposes; (4) to resell, sell, or otherwise transfer this product or its components to any third party, or for any other commercial purpose. Life Technologies Corporation will not assert a claim against the buyer of the infringement of the above patents based on the manufacture, use or sale of a commercial product developed in research by the buyer in which this product or its components was employed, provided that neither this product nor any of its components was used in the manufacture of such product. For information on purchasing a license to this product for purposes other than research, contact Life Technologies Corporation, Cell Analysis Business Unit, Business Development, 29851 Willow Creek Road, Eugene, OR 97402, Tel: (541) 465-8300. Fax: (541) 335-0354.