Mouse TGF-β1 Antibody

Monoclonal Rat IgG_{2A} Clone # 860206

Catalog Number: MAB7666

DESCRIPTION

Species Reactivity	Mouse
Specificity	Detects mouse TGF-β1.
Source	Monoclonal Rat IgG_{2A} Clone # 860206
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	Chinese hamster ovary cell line CHO-derived recombinant mouse TGF-β1 Met1-Ser390 Accession # P04202
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 either lyophilized or as a 0.2 μm filtered solution in PBS.

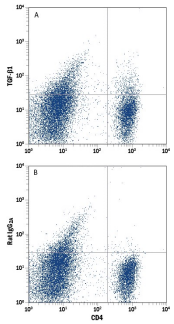
APPLICATIONS

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
Flow Cytometry	0.25 µg/10^6 cells	See Below
CyTOF-ready	Ready to be labeled using established conjugation methods. No BSA or other carrier proteins that could interfere with conjugation.	

DATA

Flow Cytometry



Detection of TGF-β1 in Mouse iTreg cells by Flow Cytometry. Mouse splenocytes treated with 10 µg/mL Anti-CD3, 5 µg/mL Anti-CD28, 10 µg/mL Recombinant Human TGF-β1 (Catalog # 240-B), and 20 µg/mL Recombinant Mouse IL-2 (Catalog # 402-IL) for 24 hours to induce T regulatory cells (iTregs) were stained with Rat Anti-Mouse CD4 PE-conjugated Monoclonal Antibody (Catalog # FAB554P) and either (A) Rat Anti-Mouse TGF-β1 Monoclonal Antibody (Catalog # MAB7666) or (B) Rat IgG_{2A} Isotype Control (Catalog # MAB006) followed by Allophycocyanin-conjugated Anti-Rat IgG Secondary Antibody (Catalog # F0113).

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.

bio-techne®
Global bio-techne.com info@bio-techne.com techsupport@bio-techne.com TEL +1 612 379 2956
USA TEL 800 343 7475 Canada TEL 855 668 8722 China TEL +86 (21) 52380373
Europe | Middle East | Africa TEL +44 (0)1235 529449

Mouse TGF-β1 Antibody

Monoclonal Rat IgG_{2A} Clone # 860206

Catalog Number: MAB7666

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 (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-β1, mice with targeted deletion show defects in hematopoiesis and endothelial differentiation, and die of overwhelming inflammation (2). Human TGF-β1 cDNA encodes a 390 amino acid (aa) precursor that contains a 29 aa signal peptide and a 361 aa proprotein (8). 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 (8, 9). Disulfide-linked homodimers of LAP and TGF-β1 remain non-covalently associated after secretion, forming the small latent TGF-β1 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-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 (1). 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 known as Activin Receptor-Like Kinase 5(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:

1. Derynck, R. and K. Miyazono (2008) Cold Spring Harbor Laboratory Press, 29.
2. Dunker, N. and K. Krieglstein (2000) Eur. J. Biochem. **267**:6982.
3. Wahl, S.M. (2006) Immunol. Rev. **213**:213.
4. Chang, H. *et al.* (2002) Endocr. Rev. **23**:787.
5. Lin, J.S. *et al.* (2006) Reproduction **132**:179.
6. Hinck, A.P. *et al.* (1996) Biochemistry **35**:8517.
7. Mittl, P.R.E. *et al.* (1996) Protein Sci. **5**:1261.
8. Derynck, R. *et al.* (1985) Nature **316**:701.
9. Miyazono, K. *et al.* (1988) J. Biol. Chem. **263**:6407.
10. Oklu, R. and R. Hesketh (2000) Biochem. J. **352**:601.
11. de Caestecker, M. *et al.* (2004) Cytokine Growth Factor Rev. **15**:1.
12. Zuniga, J.E. *et al.* (2005) J. Mol. Biol. **354**:1052.

bio-techne®
Global bio-techne.com info@bio-techne.com techsupport@bio-techne.com TEL +1 612 379 2956
USA TEL 800 343 7475 **Canada** TEL 855 668 8722 **China** TEL +86 (21) 52380373
Europe | Middle East | Africa TEL +44 (0)1235 529449