Technical Data Sheet

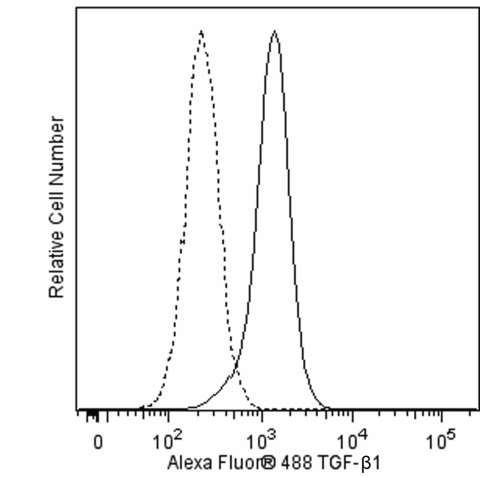
Alexa Fluor® 488 Mouse Anti-Human TGF-β1

Product Information

Material Number:	**562545**
Alternate Name:	TGFB1; TGFbeta1; TGF-beta-1; Transforming growth factor, beta 1; CED; LAP
Size:	50 tests
Vol. per Test:	5 µl
Clone:	TW4-9E7
Immunogen:	Human TGF-β1 Transfected Cell Line
Isotype:	Mouse (BALB/c) IgG1, κ
Reactivity:	QC Testing: Human
Storage Buffer:	Aqueous buffered solution containing BSA and ≤0.09% sodium azide.

Description

The TW4-9E7 monoclonal antibody specifically binds to Human Transforming Growth Factor beta-1 (TGF-β1). TGF-β1 is a potent multifunctional cytokine that positively or negatively regulates numerous processes including development, hematopoiesis, tissue remodeling, wound repair, innate and adaptive immunity as well as cancer and autoimmune diseases. TGF-β1 is formed by the enzymatic cleavage of the TGF-β1 propeptide that is encoded by the *TGFB1* gene and comprised of the Latency Associated Peptide (LAP) and TGF-β1. Prior to secretion, the dimeric LAP-TGF-β1 propeptide is cleaved resulting in a biologically inactive form of dimeric TGF-β1 that is noncovalently associated with dimeric LAP (latent TGF-β1). This complex may be expressed on the surface of TGF-β1-producing cells or be further processed by proteolytic removal of LAP to release the biologically active mature form of the soluble TGF-β1 homodimer. Many different cell types synthesize TGF-β1 and express specific receptors for it. The TW4-9E7 antibody recognizes both the intracellular latent bound form of TGF-β1 along with the membrane bound form of TGF-β1.



Flow cytometric analysis of human TGF-β1 expressed by TGF-β1-transfected P3UI cells. *Untransfected mouse P3UI myeloma cells (dashed line histogram) and human TGF-β1-transfected P3UI cells (solid line histogram) were fixed and permeabilized for 30 minutes with BD Cytofix/Cytoperm™ Fixation and Permeabilization Solution (Cat. No. 554722) and washed with BD Perm/Wash™ Perm/Wash Buffer (Cat. No. 554723). The cells were then stained with Alexa Fluor® 488 Mouse Anti-Human TGF-β1 antibody (Cat. No. 562545). The flow cytometric fluorescence histograms were derived from gated events with the forward- and side light-scattering characteristics of intact cells. Flow cytometry was performed using a BD™ LSR II Flow Cytometer System.*

Preparation and Storage

Store undiluted at 4°C and protected from prolonged exposure to light. Do not freeze.

The monoclonal antibody was purified from tissue culture supernatant or ascites by affinity chromatography.

The antibody was conjugated to Alexa Fluor® 488 under optimum conditions, and unreacted Alexa Fluor® 488 was removed.

Application Notes

Application

Intracellular staining (flow cytometry)	Routinely Tested

Suggested Companion Products

Catalog Number	Name	Size	Clone
554656	Stain Buffer (FBS)	500 ml	(none)
554722	Fixation and Permeabilization Solution	125 ml	(none)
554723	Perm/Wash Buffer	100 ml	(none)

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Product Notices

1. This reagent has been pre-diluted for use at the recommended Volume per Test. We typically use 1 × 10^6 cells in a 100-µl experimental sample (a test).
2. Source of all serum proteins is from USDA inspected abattoirs located in the United States.
3. Please refer to www.bdbiosciences.com/pharmingen/protocols for technical protocols.
4. The Alexa Fluor®, Pacific Blue™, and Cascade Blue® dye antibody conjugates in this product are sold under license from Molecular Probes, Inc. for research use only, excluding use in combination with microarrays, or as analyte specific reagents. The Alexa Fluor® dyes (except for Alexa Fluor® 430), Pacific Blue™ dye, and Cascade Blue® dye are covered by pending and issued patents.
5. Alexa Fluor® 488 fluorochrome emission is collected at the same instrument settings as for fluorescein isothiocyanate (FITC).
6. Alexa Fluor® is a registered trademark of Molecular Probes, Inc., Eugene, OR.
7. Caution: Sodium azide yields highly toxic hydrazoic acid under acidic conditions. Dilute azide compounds in running water before discarding to avoid accumulation of potentially explosive deposits in plumbing.
8. For fluorochrome spectra and suitable instrument settings, please refer to our Multicolor Flow Cytometry web page at www.bdbiosciences.com/colors.

References

Derynck R, Akhurst RJ. Differentiation plasticity regulated by TGF-beta family proteins in development and disease. *Nat Cell Biol.* 2007; 9(9):1000-1004. (Biology)

Derynck R, Jarrett JA, Chen EY, et al. Human transforming growth factor-beta complementary DNA sequence and expression in normal and transformed cells. *Nature.* 1985; 316(6030):701-705. (Biology)

Dünker N, Krieglstein K. Targeted mutations of transforming growth factor-beta genes reveal important roles in mouse development and adult homeostasis. *Eur J Biochem.* 2000; 267(24):6982-6988. (Biology)

Miyazono K, Hellman U, Wernstedt C, Heldin CH. Latent high molecular weight complex of transforming growth factor beta 1. Purification from human platelets and structural characterization. *J Biol Chem.* 1988; 263(13):6407-6415. (Biology)

Oida T, Weiner HL. Overexpression of TGF-β1 gene induces cell surface localized glucose-regulated protein 78-associated latency-associated peptide/TGF-β. *J Immunol.* 2010; 185(6):3529-3535. (Immunogen: Flow cytometry)

Rubtsov YP, Rudensky AY. TGFbeta signalling in control of T-cell-mediated self-reactivity. *Nat Rev Immunol.* 2007; 7(6):443-453. (Biology)

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