Human TMED1 Antibody

Monoclonal Mouse IgG_1 Clone # 1009527

Catalog Number: MAB2243

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human TMED1 in direct ELISAs.
Source	Monoclonal Mouse IgG_1 Clone # 1009527
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	Human embryonic kidney cell, HEK293 derived human TMED1 Met1-Asn194 Accession # Q13445
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.

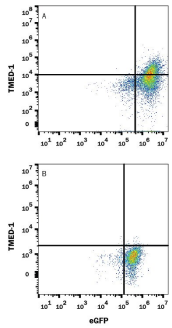
APPLICATIONS

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
Immunocytochemistry	8-25 µg/mL	See Below
CyTOF-ready	Ready to be labeled using established conjugation methods. No BSA or other carrier proteins that could interfere with conjugation.	

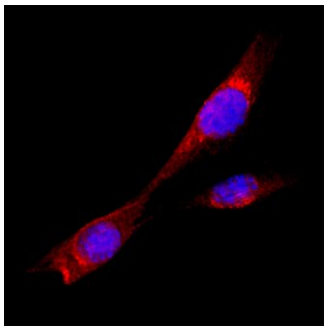
DATA

Flow Cytometry



Detection of TMED-1 in HEK293 Human Cell Line Transfected with Human TMED-1 and eGFP by Flow Cytometry. HEK293 human embryonic kidney cell line transfected with (A) TMED-1 or (B) irrelevant protein, and eGFP were stained with Mouse Anti-Human TMED-1 Monoclonal Antibody (Catalog # MAB2243) followed by Allophycocyanin-conjugated Anti-Mouse IgG Secondary Antibody (Catalog # F0101B). Quadrant markers were set based Mouse IgG1 Isotype Control Antibody staining (Catalog # MAB002, data not shown). View our protocol for Staining Membrane-associated Proteins.

Immunocytochemistry



TMED1 in A549 Human Cell Line. TMED1 was detected in immersion fixed A549 human lung carcinoma cell line using Mouse Anti-Human TMED1 Monoclonal Antibody (Catalog # MAB2243) at 8 µg/mL for 3 hours at room temperature. Cells were stained using the NorthernLights™ 557-conjugated Anti-Mouse IgG Secondary Antibody (red; Catalog # NL007) and counterstained with DAPI (blue). Specific staining was localized to cytoplasm. View our protocol for Fluorescent ICC Staining of Cells on Coverslips.

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

TMED1 (Transmembrane Emp24 domain-containing protein 1) is a member of the TMED family of proteins (gene name TMED1). The TMED family of proteins are localized to membranes of the early secretory pathway, including the endoplasmic reticulum and Golgi, and function in vesicular protein trafficking (1, 2). TMED1 is a 59 kDa monomer and has been reported to exist as homodimer (3). TMED1 is composed of a 23 amino acid (aa) signal sequence, a 171 aa extra cellular domain, a 21 aa transmembrane domain, and a 12 aa cytoplasmic domain. The extracellular domain contains an 83 aa GOLD (Golgi Dynamics) domain, and COPI and COPII binding motifs are found in the cytoplasmic domain (1-3, 5). Human TMED1 shares 97% sequence identity with mouse, bovine, and rat homologs within the 171 aa extracellular domain. The β-strand-rich GOLD domain has been specifically identified to be involved in intracellular protein trafficking (1, 4, 5). TMED1 is important in regulating innate immune signaling through its interaction with ST2L. Specifically, the GOLD domain in TMED1 interacts with the TIR domain of ST2L, a receptor for IL-33 (1). This interaction promotes ST2L association with IL-33, allowing downstream signaling cascade activating MAP kinases, p38, and JNK (1, 6). Studies have shown knockdown of TMED-1 in HUVECs impairs the IL-33 induced response resulting in reduction of IL-6 and IL-8 productions (1).

References:

1. Connolly, D. *et al*. (2013) J Biol Chem. **288**:5616.
2. Gour, N. and Lajoie, S. (2018) Curr Allergy Ashma Rep. **16**:65.
3. Jenne, N. (2002) J Biol Chem. **277**:46504.
4. Anantharaman, V. and Aravind, L. (2002) Genome Biol. **3**:research0023
5. Gomez-Navarro, N. and Miller, E. (2016) J Cell Biol. **215**:769.
6. Hardman, C. and Ogg, G. (2016). Curr Opin Immunol. **42**:16.

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