Human/Mouse TREM2 Antibody

Monoclonal Rat IgG_{2B} Clone # 237920

Catalog Number: MAB17291

DESCRIPTION

Species Reactivity	Human/Mouse
Specificity	Detects human and mouse TREM2 in direct ELISAs. Stains TREM2 transfectants but not TREM1 transfectants in flow cytometry. In sandwich ELISAs, detects mouse TREM2 when paired with a mouse TREM2 detection antibody.
Source	Monoclonal Rat IgG_{2B} Clone # 237920
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	Mouse myeloma cell line NS0-derived recombinant mouse TREM2 extracellular domain Accession # Q99NH8
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.

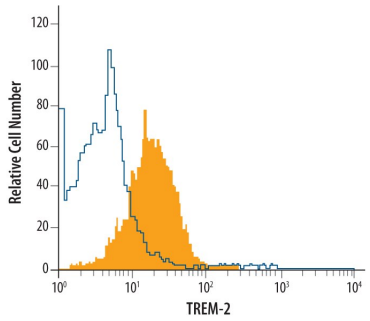
APPLICATIONS

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	2.5 µg/10^6 cells	See Below
Immunocytochemistry	5-25 µg/mL	immersion fixed RAW 264.7 mouse monocyte/macrophage cell line
CyTOF-ready	Ready to be labeled using established conjugation methods. No BSA or other carrier proteins that could interfere with conjugation.	
Knockout Validated	TREM2 was detected in immersion fixed RAW 264.7 mouse cell line but is not detected TREM2 knockout (KO) RAW 264.7 mouse cell line.	
ELISA	This antibody functions as a mouse TREM2 ELISA capture antibody when paired with Sheep Anti-Mouse TREM2 Biotinylated Antigen Affinity-purified Polyclonal Antibody (Catalog # BAF1729). *This product is intended for assay development on various assay platforms requiring antibody pairs.*	

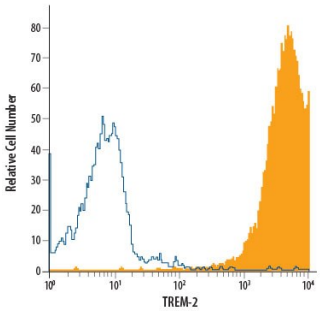
DATA

Flow Cytometry



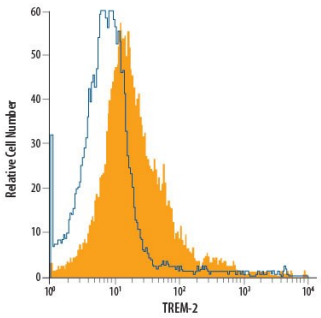
Detection of TREM2 in RAW 264.7 Mouse Cell Line by Flow Cytometry. RAW 264.7 mouse monocyte/macrophage cell line was stained with Rat Anti-Human/Mouse TREM2 Monoclonal Antibody (Catalog # MAB17291, filled histogram) or isotype control antibody (Catalog # Catalog # MAB0061, open histogram), followed by Phycoerythrin-conjugated Anti-Rat IgG $F(ab')_2$ Secondary Antibody (Catalog # Catalog # F0105B).

Flow Cytometry



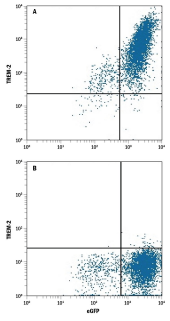
Detection of TREM2 in THP-1 Human Cell Line by Flow Cytometry. THP-1 human acute monocytic leukemia cell line was stained with Rat Anti-Human/Mouse TREM2 Monoclonal Antibody (Catalog # MAB17291, filled histogram) or isotype control antibody (Catalog # Catalog # MAB0061, open histogram), followed by Allophycocyanin-conjugated Anti-Rat IgG Secondary Antibody (Catalog # Catalog # F0113).

Flow Cytometry



Detection of TREM2 in Human Mature Dendritic Cells by Flow Cytometry. Human mature dendritic cells were stained with Rat Anti-Human/Mouse TREM2 Monoclonal Antibody (Catalog # MAB17291, filled histogram) or isotype control antibody (Catalog # Catalog # MAB0061, open histogram), followed by Allophycocyanin-conjugated Anti-Rat IgG Secondary Antibody (Catalog # Catalog # F0113).

Flow Cytometry



Detection of TREM2 in HEK293 Human Cell Line Transfected with eGFP and Either Human TREM2 or Human TREM1 by Flow Cytometry. HEK293 human embryonic kidney cell line transfected with eGFP and either (A) human TREM2 or (B) human TREM1 was stained with Rat Anti-Human/Mouse TREM2 Monoclonal Antibody (Catalog # MAB17291) followed by Allophycocyanin-conjugated Anti-Rat IgG Secondary Antibody (Catalog # Catalog # F0113). Quadrant markers were set based on control antibody staining (Catalog # Catalog # MAB0061).

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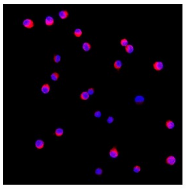
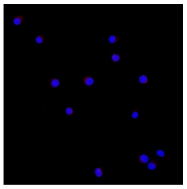
Immunocytochemistry



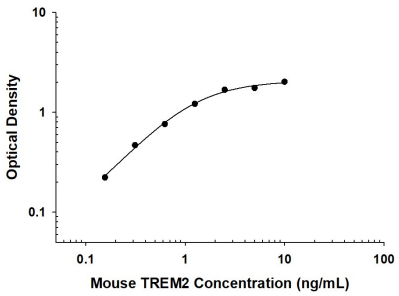
RAW 264.7



RAW 264.7 Trem2 KO

TREM2 Specificity is Shown by Immunocytochemistry in Knockout Cell Line. Triggering Receptor Expressed on Myeloid Cells 2 (TREM2) was detected in immersion fixed RAW 264.7 mouse monocyte/macrophage cell line but is not detected in TREM2 knockout (KO) RAW 264.7 Mouse Cell Line cell line using Rat Anti-Human/Mouse TREM2 Monoclonal Antibody (Catalog # MAB17291) at 5 µg/mL for 3 hours at room temperature. Cells were stained using the NorthernLights™ 557-conjugated Anti-Rat IgG Secondary Antibody (red; Catalog # NL013) and counterstained with DAPI (blue). Specific staining was localized to cytoplasm.Staining was performed using our Fluorescent ICC Staining of Cells on Coverslips.

ELISA



Mouse TREM2 ELISA Standard Curve. Recombinant Mouse TREM2 protein was serially diluted 2-fold and captured by Rat Anti-Human/Mouse TREM2 Monoclonal Antibody (Catalog # MAB17291) coated on a Clear Polystyrene Microplate (Catalog # Catalog # DY990). Sheep Anti-Mouse TREM2 Biotinylated Antigen Affinity-purified Polyclonal Antibody (Catalog # Catalog # BAF1729) was incubated with the protein captured on the plate. Detection of the standard curve was achieved by incubating Streptavidin-HRP (Catalog # Catalog # DY998) followed by Substrate Solution (Catalog # Catalog # DY999) and stopping the enzymatic reaction with Stop Solution (Catalog # Catalog # DY994).

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.

BACKGROUND

TREM2 (Triggering Receptor Expressed on Myeloid cells-2) is a 35 kDa molecular weight type I transmembrane member of the TREM family and Ig superfamily . Mature human TREM2 consists of a 156 amino acid (aa) extracellular domain (ECD) with one V-type Ig-like domain, a 21 aa transmembrane (TM) domain, and a 35 aa cytoplasmic tail. Within the ECD, human TREM2 shares 73% and 74% aa sequence identity with mouse and rat TREM2, respectively. Two closely related transcripts were reported in mouse and designated TREM2a and TREM2b. Soluble forms of the TREM2 ECD are generated by alternative splicing or proteolytic cleavage, and the cytoplasmic domain can be liberated by gamma-Secretase mediated intramembrane cleavage. It is a pattern recognition receptor that binds anionic ligands. A positively charged lysine within the transmembrane segment allows association with the signal adapter protein, DAP12 to deliver an activating signal that plays a role in both innate and adaptive immune responses, including inhibition of macrophage activation. TREM2 is expressed on macrophages, immature myeloid dendritic cells, osteoclasts, microglia, and adipocytes. It promotes the differentiation and function of osteoclasts, the production of inflammatory cytokines by adipocytes, insulin resistance, and the phagocytic clearance of bacteria. In the CNS, TREM2 binds to ApoE, ApoA1, and ApoB and mediates the clearance of apoptotic neurons, amyloid plaques, and cell debris following demyelination. TREM2 also interacts with and modifies signaling through Plexin A1 on dendritic cells and osteoclasts. Mutations in TREM2 or DAP12 are associated with the development of Alzheimer's disease and Nasu-Hakola disease (NHD/PLOSL) which is characterized by presenile dementia and bone cysts. Soluble TREM2 is elevated in cerebrospinal fluid of patients with active multiple sclerosis (MS), and TREM2 blockade exacerbates disease symptoms in the experimental EAE model of MS.

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