

mAbMods™ Anti-Mouse TREM2

Fc Muted™

Recombinant Monoclonal Antibody

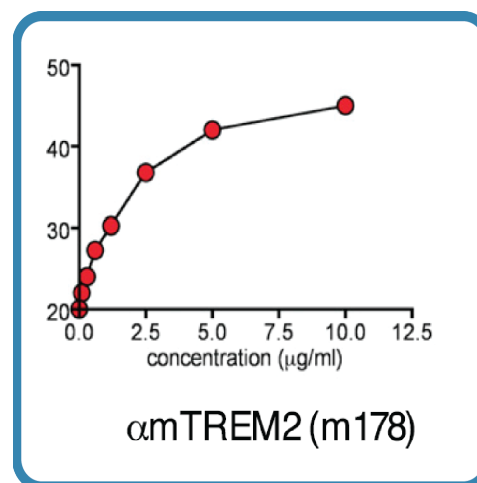
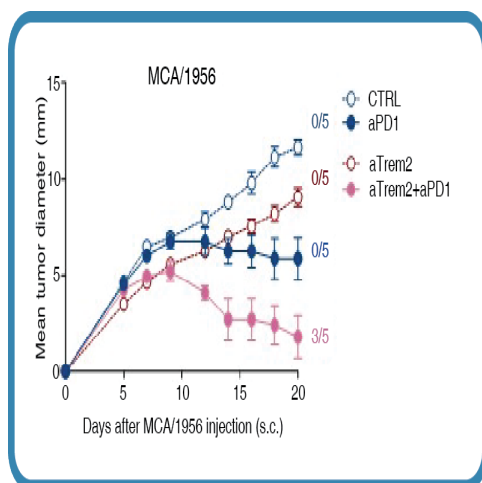
Product Information

Product No.: T721

Clone: 178 (LALAPG)

Isotype: Mouse IgG2a

Storage: 2° to 8°C



Product Description

Specificity:

178 (LALAPG) activity is directed against mouse TREM2.

Antigen Distribution:

In healthy tissues, TREM2 is expressed on myeloid cells (microglia and osteoclasts), infiltrating macrophages, and a small set of tissue-specific macrophages in the brain, adipose, adrenal gland, skin, alveola, endometrium, and placenta. TREM2 is also expressed by tumor-infiltrating macrophages.

Background:

TREM2 is a transmembrane receptor in the immunoglobulin superfamily which has a short cytosolic tail that lacks signal transduction and trafficking motifs¹. TREM2 initiates intracellular signaling by interacting with the adaptor proteins DNAX activation protein 12 (DAP12) and DAP10, which are phosphorylated to recruit signal transduction machinery when ligands bind. TREM2 interacts with a wide array of anionic ligands, including bacterial products such as lipopolysaccharide and dextran sulfates, DNA, lipoproteins, apolipoproteins, phospholipids¹ and amyloid-β oligomers².

In healthy tissues, TREM2 is involved in tissue development and maintenance, synaptic pruning¹, central nervous system homeostasis², the hair follicle stem cell niche¹, and activates immune remodeling when tissue damage is detected¹. When dysregulated, TREM2 affects a variety of pathologies including neurodegeneration, fatty liver disease, obesity, atherosclerosis, and tumor microenvironment and development. In Alzheimer's Disease, TREM2 activation initiates a signaling loop that promotes its own ligand production, sustains microglial responses, and leads to disease progression^{1, 2, 3}. Defects in TREM2 also cause polycystic lipomembranous osteodysplasia with sclerosing leukoencephalopathy (PLOS), a fatal disease of pre-senile dementia¹. Additionally, TREM2 knockout mice are more resistant to cancer growth and are more responsive to anti-PD1 immunotherapy than wild-type mice³. Given its broad role in pathology, TREM2 is a target of immunotherapy.

Products are for research use only. Not for use in diagnostic or therapeutic procedures.

410 Axminster Dr, St. Louis, MO 63026

(800) 538-1145

leincoglobal@leinco.com

Clone 178 was generated by immunizing a Wister rat with a recombinant protein consisting of the ectodomain of TREM2 fused to the human Ig constant domain⁴. Spleen cells were harvested, fused with Sp2/0 myeloma cells, and the resulting hybridomas screened against Jurkat cells transiently infected with TREM2. A recombinant form of 178 was then generated, in which the variable region of the heavy chain was grafted onto a mouse IgG2a constant region backbone containing a mutated Fc domain (LALAPG)³. The LALAPG mutation prevents recognition by Fc receptors and complement, thereby minimizing antibody-dependent cellular cytotoxicity and antibody-dependent phagocytosis.

Clone 178 blocks ligand binding to TREM2³ and does not cross-react with TREM1⁴.

Known Reactivity Species:

Mouse

Expression Host:

HEK-293 Cells

Format:

Purified in vivo GOLD™ Functional Grade

Immunogen:

ectodomain of TREM2

Formulation

This monoclonal antibody is aseptically packaged and formulated in 0.01 M phosphate buffered saline (150 mM NaCl) PBS pH 7.2 - 7.4 with no carrier protein, potassium, calcium or preservatives added. Due to inherent biochemical properties of antibodies, certain products may be prone to precipitation over time. Precipitation may be removed by aseptic centrifugation and/or filtration.

Purity

≥95% monomer by analytical SEC, >95% by SDS Page

Endotoxin

<0.5 EU/mg as determined by the LAL method

Storage and Stability

Functional grade preclinical antibodies may be stored sterile as received at 2 to 8°C for up to one month. For longer term storage, aseptically aliquot in working volumes without diluting and store at ≤ -70°C.

Avoid Repeated Freeze Thaw Cycles

Product Preparation

Functional grade preclinical antibodies are manufactured in an animal free facility using only in vitro protein free cell culture techniques and are purified by a multi-step process including the use of protein A or G to assure extremely low levels of endotoxins, leachable protein A or aggregates.

Other Applications Reported in Literature:

FA,
B,
ELISA,
FC

Country of Origin

USA

References

- 1) Deczkowska A, Weiner A, Amit I. Cell. 181(6):1207-1217. 2020.
- 2) Zhao P, Xu Y, Fan X, et al. MAbs. 14(1):2107971. 2022.
- 3) Molgora M, Esaulova E, Vermi W, et al. Cell. 182(4):886-900.e17. 2020.
- 4) Turnbull IR, Gilfillan S, Cella M, et al. J Immunol. 177(6):3520-3524. 2006.
- 5) Keshari, S, et al. Cell Reports, Volume 43, Issue 11, 114875. 2024.