

Anti-Tim-1 [RMT1-10] Standard Size Ab02187-3.3

This antibody was created using our proprietary Fc Silent™ engineered Fc domain containing key point mutations that abrogate binding to Fc gamma receptors.

This chimeric mouse antibody was made using the variable domain sequences of the original Rat IgG2a format, for improved compatibility with existing reagents, assays and techniques.

Isotype and Format: Mouse IgG2b, Fc Silent™, Kappa

Clone Number: RMT1-10

Alternative Name(s) of Target: CD365; HAVcr-1; HAVCR1; Hepatitis A virus cellular receptor 1 homolog; Kidney injury molecule 1; KIM-1; T cell immunoglobulin and mucin domain-containing protein 1; T cell membrane protein 1; T-cell immunoglobulin and mucin domain containing 1; T-cell immunoglobulin mucin receptor 1; TIM-1; TIM1; TIMD-1

UniProt Accession Number of Target Protein: Q5QNS5

Published Application(s): Inhibiting, ELISA, FC, IF

Published Species Reactivity: Mouse

Immunogen: The original rat IgG2a version of this antibody was raised by immunizing SD rats with full-length Tim-1-Ig that contained both IgV and mucin domains of Tim-1. Lymph node cells were then fused with P3U1 myeloma cells and cloned creating hybridomas.

Specificity: This antibody is specific for murine TIM-1, a member of the T cell immunoglobulin domain, mucin-like domain (TIM) gene family. IgV domain of Tim-1 was proposed as the epitope of RMT1-10 (Xiao et al., 2007; pmid: 17606630). RMT1-10 did not cross-react with Tim-4-Ig fusion proteins. 3B3 - an anti-Tim-1 antibody with opposite, T-cell activatory effects blocked binding of RMT1-10 suggesting the same or very similar epitope (Xiao et al., 2007; pmid: 17606630). Different functional activity between RMT1-10 and 3B3 might stem from the fact that they exhibited different binding avidity to Tim-1 (Xiao et al., 2007; pmid: 17606630). TIM-1 has been found on CD4+ T cells, mast cells, and a subset of B cells. TIM-1 is involved in renal injury, tissue homeostasis, and T cell costimulation (positive and negative). TIM-1 can bind several ligands, including Hepatitis A virus, phosphatidylserine, TIM4, IgA, as well as itself.

Application Notes: This anti-Tim-1 antibody inhibits the generation of antigen-specific T cells, production of IFN-γ and IL-17, and development of autoimmunity, and it caused a strong Th2 response (Xiao et al., 2007; pmid: 17606630). RMT1-10 gives then rise to opposite effects than those brought about by another anti-Tim1 clone - 3B3 (Ab01032) which activates T-cells. The use of RMT1-10 demonstrated that binding Tim-1 can not only lead to activation of T-cells (as it had been known before) but that it can also cause the

aforementioned inhibition (Xiao et al., 2007; pmid: 17606630). Consequently, the opposite antibodies RMT1-10 and 3B3 (Ab01032) can be utilized together to study various aspects of Tim-1 costimulation and its consequences. This antibody was used in multiple flow cytometry (FC/FACS) experiments, such as identifying Tim-1-expressing EL-4 cells to determine the antibody's epitope (Xiao et al., 2007; pmid: 17606630). Furthermore, Tim-1 activation was suggested as an important factor in certain pathologies, and thus this inhibitory antibody can be useful for research on the potential treatment options. For instance, RMT1-10 was utilized in a research model of glomerular disease. It was demonstrated that crescentic glomerulonephritis, proliferative injury, and leukocyte accumulation were attenuated following treatment with RMT1-10, but interstitial foxp3+ cell accumulation and interleukin-10 mRNA were increased. Apoptosis and T-cell proliferation as well as Th1 and Th17 responses decreased both in the whole model organism as well as in kidney (Nozaki et al., 2012; pmid: 22205357). Another study showed that RMT1-10 attenuates atherosclerosis by expanding IgM-producing B1a cells (Hosseini et al, 2018; pmid: 29936416). Finally, another group demonstrated that this clone promotes the survival corneal allografts in mice what is associated with the increase in T regulatory cells (Tan et al., 2014; pmid: 24613782).

Antibody First Published in: Xiao et al. Differential engagement of Tim-1 during activation can positively or negatively costimulate T cell expansion and effector function J Exp Med. 2007 Jul 9;204(7):1691-702. doi: 10.1084/jem.20062498. Epub 2007 Jul 2. [PMID:17606630](https://pubmed.ncbi.nlm.nih.gov/17606630/)

Note on publication: Describes the generation and characterization of the antibody RMT1-10.

Product Form

Size: 200 µg Purified antibody.

Purification: Protein A affinity purified

Supplied In: PBS with 0.02% Proclin 300.

Storage Recommendation: Store at 4°C for up to 3 months. For longer storage, aliquot and store at -20°C.

Concentration: 1 mg/ml.

Important note – This product is for research use only. It is not intended for use in therapeutic or diagnostic procedures for humans or animals.