

## Anti-Tim-4 [5G3] VivopureX 1 mg Ab01058-2.3-VXS

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 IgG1 format, for improved compatibility with existing reagents, assays and techniques.

**Isotype and Format:** Mouse IgG2a, [Fc Silent™](#), Kappa

**Clone Number:** 5G3

**Alternative Name(s) of Target:** TIMD4; SMUCKLER; SMUCKLER, TIM4; Spleen, mucin-containing, knockout of lymphotoxin protein; T-cell immunoglobulin and mucin domain containing 4; T-cell immunoglobulin and mucin domain-containing protein 4; T-cell immunoglobulin mucin receptor 4; T-cell membrane protein 4; TIM-4; TIMD-4

**UniProt Accession Number of Target Protein:** Q6U7R4

**Published Application(s):** FACS, in vivo, IP, ELISA, FC

**Published Species Reactivity:** Mouse

**Immunogen:** This antibody was generated by immunizing a female Lewis rat with Tim-4-Ig fusion protein.

**Specificity:** This antibody is specific for murine TIM-4. TIM-4, unlike other TIM family members, is not expressed on T lymphocytes but rather found on antigen-presenting cells such as lymphoid and myeloid dendritic cells and macrophages. TIM-4 has been shown to interact with TIM-1, thereby suggesting a role of TIM-4 in the balance of Th1/Th2 regulation. Additionally, TIM-4 has been shown to be a receptor for phosphatidylserine and may play a role in the engulfment of apoptotic cells.

**Application Notes:** The original version of this antibody (rat IgG1) specifically bound murine Tim-4 protein, as shown in ELISA and FC assays. The antibody was also used to immunoprecipitate Tim-4 protein from lysates of CHO-Tim-4 as part of WB assays (Rodriguez-Manzanet et al., 2008; PMID: 18354194). This antibody can block apoptotic body (AB) recognition by CD11b<sup>+</sup> peritoneal macrophages and partially inhibit AB uptake by peritoneal B-1 cells (Rodriguez-Manzanet et al., 2010; PMID: 20368430). treatment with this antibody alone did not significantly affect tumor burden or survival, but it enhanced the protective effect of anti-PD-1 blockade. The combined treatment resulted in an increase in total CD8<sup>+</sup> and CD8<sup>+</sup> CD39<sup>+</sup> T cells in the peritoneal cavity. RNA sequencing of sorted Tim-4<sup>+</sup> macrophages revealed genes differentially expressed between animals treated with anti-PD-1 alone and those treated with both anti-PD-1 and this antibody, indicating that it alters the gene expression profile of Tim-4<sup>+</sup> macrophages. Notably, it reduced the expression of genes associated with immunosuppression (Ptgs2, Tgfb2, and Tdo2) while

increasing the expression of genes associated with macrophage activation (Stab1 and Mrc1). This antibody was used as part of single-cell RNA sequencing and T-cell receptor sequencing analyses. This antibody was used for FC staining in the form of flow sorting, co-culture experiments, and flow cytometric analysis to investigate various aspects of Tim-4 function, including its role in the sequestration of cytotoxic CD8<sup>+</sup> T cells, the impairment of CD8<sup>+</sup> T cell proliferation by cavity-resident macrophages, and the assessment of Tim-4-mediated suppression of CD8<sup>+</sup> T cells both *in vitro* and *in vivo*. For example, it was used for FC staining in the form of annexin V staining to detect phosphatidylserine (PS) exposure on the surface of CD8<sup>+</sup> T cells (Chow et al., 2021; PMID: 34115989).

**Antibody First Published in:** Rodriguez-Manzanet et al., TIM-4 expressed on APCs induces T cell expansion and survival J Immunol. 2008 Apr 1;180(7):4706-13. [PMID:18354194](https://pubmed.ncbi.nlm.nih.gov/18354194/)

**Note on publication:** The original publication characterizes monoclonal antibodies generated to study how TIM-4 induces T-cell expansion and survival.

## Product Form

**Size:** 1 mg VivopureX products are produced at high purity (>98%), low endotoxin (<0.5 EU/mg) and are formulated without preservatives. These antibodies are chimerized to have an Fc domain matching their target species to reduce immunogenicity and give you the optimal effector function for your experiment. As a result VivopureX products are the ideal choice for in vivo research applications.

**Purification:** Protein A affinity purified

**Supplied In:** PBS only.

**Storage Recommendation:** All VivopureX products are formulated in PBS only without addition of preservatives. To ensure optimal storage and prevent microbial contamination, only open and dispense under sterile conditions. Store at 4°C for up to 3 months. For longer storage, aliquot and store at -20°C.

**Concentration:** ≥1mg (see vial label for exact conc)

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