

Anti-Human CD366/Tim-3 (F38-2E2)-159Tb

Catalog number, package size: 3159037B, 100 tests
3159037C, 25 tests

Clone: F38-2E2

Other Names: T cell immunoglobulin and mucin domain-containing protein 3, hepatitis virus cellular receptor 2 (HAVCR2)

Isotype: Mouse IgG1, κ

Reactivity: Human

Tag: 159Tb

Formulation: Antibody stabilizer with 0.05% sodium azide

Storage: Store at 2–8 °C. Do not freeze.

Application: CyTOF® suspension mass cytometry

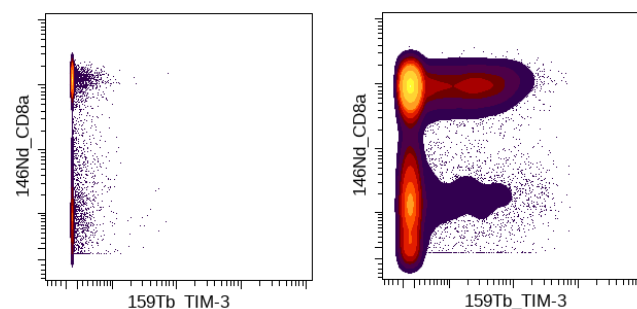
Technical Information

Description: T cell immunoglobulin and mucin domain-containing molecule 3 (Tim-3) is a type I transmembrane receptor that is constitutively expressed at high levels on NK cells, and also expressed on specific subsets of CD4+ and CD8+ T cells, on subpopulations of macrophages and DCs, and on monocytes, although to a lesser extent than on NK cells. Tim-3 was originally identified as a marker of terminally differentiated CD4+ Th1 cells, and subsequently associated with T cell exhaustion and impaired virus-specific T cell responses in HIV-1, hepatitis C virus (HCV), and hepatitis B virus (HBV) infection. To date, three ligands have been described for Tim-3, including galectin-9 (Gal-9), cell-surface phosphatidylserine, and the high-mobility group box 1 (HMGB1) protein. Gal-9 is highly expressed in immune tissues, and engagement of Tim-3 by Gal-9 triggers apoptosis in CD4+ Th1 cells, T cells, and thymocytes. Tim-3 signaling on immune cells can trigger either inhibitory or activating signals.

Application: The metal-tagged antibody is designed and formulated for the application of suspension mass cytometry using the Fluidigm CyTOF suspension systems on healthy human PBMC.

Validation: Each lot of conjugated antibody is quality control-tested by CyTOF suspension mass cytometry analysis of stained cells using appropriate positive and negative cell staining and/or activation controls.

Recommended use: Use 1 µL for up to 3×10^6 live cells in 100 µL staining volume. We recommend titrating the antibody for optimal performance for each of the desired applications. Centrifuge the stock antibody at $12,000 \times g$ for 5 min to sediment antibody aggregates. Fixation is typically used in intracellular staining protocols or in barcoding with the Cell-ID™ 20-Plex Pd Barcoding Kit (PN 201060). However, fixing before antibody staining can affect epitope structure and antibody binding, with the impact varying on the type and concentration of fixative and the protocol used. It is therefore important to perform a small, preliminary antibody staining experiment, with and without fixation, using non-critical samples.



Three-day rested (left) or PHA-stimulated human PBMC were stained with anti-CD8 (RPA-T8)-146Nd and anti-Tim-3 (F38-2E2)-159Tb antibodies. Cells shown are gated on total T cells (CD45+CD20-CD14-CD3+).

Applicable Protocols

Before using this product, refer to the instructions in the Maxpar® Cell Surface Staining with Fresh Fix Protocol (400276).

References

Bandura, D.R. et al. "Mass cytometry: technique for real time single cell multitarget immunoassay based on inductively coupled plasma time-of-flight mass spectrometry." *Analytical Chemistry* 81 (2009): 6,813–22.

Ornatsky, O.I. et al. "Highly multiparametric analysis by mass cytometry." *Journal of Immunological Methods* 361 (2010): 1–20.

Hartmann, F.J. et al. "Comprehensive immune monitoring of clinical trials to advance human immunotherapy." *Cell Reports*. 28 (2019):819–31.

Bengsch, B. et al. "Epigenomic-guided mass cytometry profiling reveals disease-specific features of exhausted CD8 T cells." *Immunity* 48 (2018): 1,029–45.

Gadalla, R. et al. "Validation of CyTOF against flow cytometry for immunological studies and monitoring of human cancer clinical trials." *Frontiers in Oncology* 9 (2019): 415.

Safety

Use standard laboratory safety protocols. Read and understand the safety data sheets (SDSs) before handling chemicals. To obtain SDSs, go to fluidigm.com and search for 3000000X.

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