Technical Data Sheet

PerCP-Cy™5.5 Mouse Anti-Human CD39

Product Information

Material Number: 564899
Alternate Name: ENTPD1; NTPDase-1; Ecto-ATPase 1; Ecto-ATPDase 1
Size: 100 Tests
Vol. per Test: 5 µl
Clone: TU66 (also known as Tü 66, Tü66)
Isotype: Mouse IgG2b, κ
Reactivity: QC Testing: Human
Workshop: IV A54
Storage Buffer: Aqueous buffered solution containing BSA and ≤0.09% sodium azide.

Description

The TU66 monoclonal antibody reacts with human CD39, also known as ectonucleoside triphosphate diphosphohydrolase 1 (ENTPD1), an ectoenzyme that degrades ATP to AMP. It is a member of the ectonucleoside triphosphate dihydrolases (E-NTPDases) family involved in the regulation of extracellular nucleotide catabolism by controlling the extracellular nucleoside triphosphate pool (NTP). CD39 is expressed on a subset of T cells, B cells and dendritic cells, with weak staining of monocytes and granulocytes. Recently, CD39 has been found to be expressed primarily by immune-suppressive Foxp3(+) regulatory T (Treg) cells in both human and mice. In humans, CD39 is restricted to a subset of Foxp3+ regulatory effector/memory-like T cells. In mice, the enzyme is present on most, if not all, CD4+CD25+ cells. CD39 expression is driven by Foxp3 and it is thought that CD39 allows Treg cells to enter inflamed areas where high levels of ATP are present.

Flow cytometric analysis of CD39 expression on human peripheral blood lymphocytes. Human peripheral blood mononuclear cells were stained with FITC Anti-Human CD4 (Cat. No. 555346/561005/561842), BD Horizon™ PE-CF594 Mouse Anti-Human CD25 (Cat. No. 562403), and BD Horizon™ BV421 Mouse Anti-Human CD127 (Cat No. 562436/562437) antibodies and with either PerCP-Cy™5.5 Mouse IgG2b, κ Isotype Control (Cat. No. 558304; dashed line histogram) or PerCP-Cy™5.5 Mouse Anti-Human CD39 antibody (Cat. No. 564899; solid line histogram). The fluorescence histogram showing CD39 expression (or Ig Isotype control staining) was derived from CD4+CD25+CD127low-gated events (ie, cells with a Regulatory T cell immunophenotype; Left Panel) with the forward and side light-scatter characteristics of intact lymphocytes. Flow cytometric analysis was performed using a BD LSRFortessa™ Cell Analyzer System.

Preparation and Storage

Store undiluted at 4°C and protected from prolonged exposure to light. Do not freeze.

Preparation of the monoclonal antibody was purified from tissue culture supernatant or ascites by affinity chromatography.

The antibody was conjugated with PerCP-Cy5.5 under optimum conditions, and unconjugated antibody and free PerCP-Cy5.5 were removed. Storage of PerCP-Cy5.5 conjugates in unoptimized diluent is not recommended and may result in loss of signal intensity.

Application Notes

Application

| Flow cytometry | Routinely Tested |

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564899 Rev. 2
Suggested Companion Products

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Product Notices

1. This reagent has been pre-diluted for use at the recommended Volume per Test. We typically use 1 × 10^6 cells in a 100-µl experimental sample (a test).
2. An isotype control should be used at the same concentration as the antibody of interest.
3. Caution: Sodium azide yields highly toxic hydrazoic acid under acidic conditions. Dilute azide compounds in running water before discarding to avoid accumulation of potentially explosive deposits in plumbing.
4. Source of all serum proteins is from USDA inspected abattoirs located in the United States.
5. Please observe the following precautions: Absorption of visible light can significantly alter the energy transfer occurring in any tandem fluorochrome conjugate; therefore, we recommend that special precautions be taken (such as wrapping vials, tubes, or racks in aluminum foil) to prevent exposure of conjugated reagents, including cells stained with those reagents, to room illumination.
6. PerCP-Cy5.5–labelled antibodies can be used with FITC- and R-PE–labelled reagents in single-laser flow cytometers with no significant spectral overlap of PerCP-Cy5.5, FITC, and R-PE fluorescence.
7. PerCP-Cy5.5 is optimized for use with a single argon ion laser emitting 488-nm light. Because of the broad absorption spectrum of the tandem fluorochrome, extra care must be taken when using dual-laser cytometers, which may directly excite both PerCP and Cy5.5. We recommend the use of cross-beam compensation during data acquisition or software compensation during data analysis.
8. CF™ is a trademark of Biotium, Inc.
9. For fluorochrome spectra and suitable instrument settings, please refer to our Multicolor Flow Cytometry web page at www.bdbiosciences.com/colors.
10. Cy is a trademark of GE Healthcare.

References

Schlossman SF, Stuart F, Schlossman ... et al., ed. Leucocyte typing V : white cell differentiation antigens : proceedings of the fifth international workshop and conference held in Boston, USA, 3-7 November, 1993. Oxford: Oxford University Press; 1995(Biology)