abcam

ab49424

PE Anti-beta 2 Microglobulin antibody [B2M-01]

Anti-beta 2 Microglobulin antibody [B2M-01] conjugated to PE - suitable for flow cytometry, and reacts with human samples. Clone [B2M-01] is a mouse monoclonal antibody.

Design your panel with our interactive flow cytometry panel builder. Click here.

Key facts

Isotype	IgG2a
Host species	Mouse
Conjugation	PE
Excitation/Emission	Ex: 480;565nm, Em: 578nm
Storage buffer	pH: 7.4 Preservative: 0.097% Sodium azide Constituents: PBS, 0.2% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	Native Full Length Protein corresponding to Human B2M. Database link P61769
Clone number	B2M-01
Purification technique	Size-exclusion chromatography
Specificity	This antibody reacts with beta 2 microglobulin (b2M) associated with cell-surface MHC Class I molecules and other membrane antigens as well as with soluble beta 2 microglobulin. Beta 2 mircoglobulin is a 12 kDa Ig like glycoprotein expressed on lymphocytes, thymocytes, monocytes, granulocytes, platelets, endothelial cells and epithelial cells. It is absent on erythrocytes.
Concentration	0.1 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

Flow Cyt

Tested

Species	Human
Dilution info	1-2 µg/mL
Notes	-

Not recommended

Species	Mouse, Chicken, Dog, Cow, Rabbit
Dilution info	-
Notes	-

Target data

See full target information B2M

Function	Component of the class I major histocompatibility complex (MHC). Involved in the presentation of peptide antigens to the immune system. Exogenously applied M.tuberculosis EsxA or EsxA-EsxB (or EsxA expressed in host) binds B2M and decreases its export to the cell surface (total protein levels do not change), probably leading to defects in class I antigen presentation (PubMed:25356553).

Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	+4°C

Notes

The purified antibody is conjugated with R-Phycoerythrin (PE) under optimum conditions. The conjugate is purified by size-exclusion chromatography.

Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

Activity summary	Beta-2-Microglobulin (B2M) is a component of the class I major histocompatibility complex (MHC I) and plays an important role in presenting peptides to the immune system. B2M weighs approximately 11.8 kDa and is found abundantly in all nucleated cells. It has alternate names such as B2 microglobulin or beta-2-microglobulin. This protein is present in the cell membrane as a part of the MHC I which is important for immune surveillance. Additionally B2M is detectable in various biological fluids including serum and its levels can reflect physiological and pathological states.
Biological function summary	Beta-2-microglobulin is important for the stability and transport of MHC class I molecules to the cell surface. As part of the MHC class I complex B2M assists in binding peptides allowing immune cells to identify and target pathogen-infected cells. Without B2M the MHC class I molecules are not properly expressed on the cell surface disrupting immune recognition. In laboratory settings researchers often use anti-beta-2-microglobulin antibodies to investigate its role in MHC class I function.
Pathways	Beta-2-microglobulin interacts significantly with the immune system most notably in the antigen processing and presentation pathway. It works alongside proteins such as the heavy chain of MHC class I. B2M is important in the pathway that involves the transport of antigens to the endoplasmic reticulum where they are loaded onto MHC class I molecules for inspection by cytotoxic T cells. Another related pathway is the tapasin-mediated processing of antigen peptides highlighting the indispensable role of B2M in immune response regulation.
Associated diseases and disorders	Beta-2-microglobulin is associated with conditions such as beta-2-microglobulin amyloidosis and certain lymphoproliferative disorders. Elevated levels of B2M in serum serve as a marker for diseases like multiple myeloma where the protein level correlates with disease severity. B2M-related amyloidosis frequently occurs in patients undergoing long-term dialysis where amyloid deposits accumulate in tissues. Linking B2M to immune system dysfunction studies have shown interactions with other proteins including components of the immune system like HLA-A and HLA-B highlighting B2M's relevance in diagnosing and understanding these conditions.

Product promise

Tested

We have tested this species and application combination and it works. It is covered by our product promise.

Expected

We have not tested this specific species and application combination in-house, but expect it will work. It is covered by our product promise.

Predicted

This species and application combination has not been tested, but we predict it will work based on strong homology. However, this combination is not covered by our product promise.

Not recommended

We do not recommend this combination. It is not covered by our product promise.

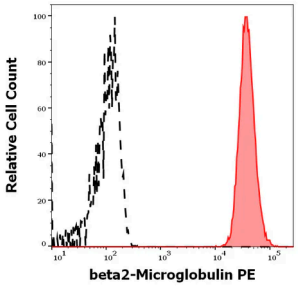
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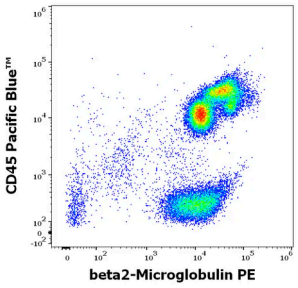
4 product images



Flow Cytometry - PE Anti-beta 2 Microglobulin antibody [B2M-01] (ab49424)

Beta 2 Microglobulin Flow Cytometry staining using mouse Anti-beta 2 Microglobulin antibody

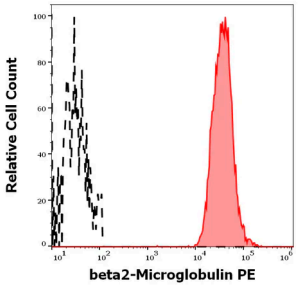
Separation of MOLT-4 cells stained using anti-human beta2-Microglobulin (B2M-01) PE antibody (concentration in sample 4 µg/m, red-filled) from MOLT-4 cells stained using mouse IgG1 isotype control (MOPC-21) PE antibody (concentration in sample 4 µg/ml, same as beta2-Microglobulin PE concentration, black-dashed) in flow cytometry analysis (surface staining).



Flow Cytometry - PE Anti-beta 2 Microglobulin antibody [B2M-01] (ab49424)

Beta 2 Microglobulin Flow Cytometry staining using mouse Anti-beta 2 Microglobulin antibody

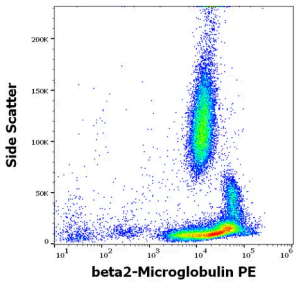
Flow cytometry multicolor surface staining pattern of human leukocytes stained using anti-human CD45 (MEM-28) Pacific Blue™ antibody (4 µl reagent / 100 µl of peripheral whole blood) and anti-human beta2-Microglobulin (B2M-01) PE antibody (concentration in sample 1.67 µg/m).



Flow Cytometry - PE Anti-beta 2 Microglobulin antibody [B2M-01] (ab49424)

Beta 2 Microglobulin Flow Cytometry staining of Human peripheral whole blood using mouse Anti-beta 2 Microglobulin antibody

Separation of human lymphocytes (red-filled) from CD45 negative beta2-Microglobulin negative blood debris (black-dashed) in flow cytometry analysis (surface staining) of human peripheral whole blood stained using anti-human beta2-Microglobulin (B2M-01) PE antibody (concentration in sample 1.67 µg/m).



Flow Cytometry - PE Anti-beta 2 Microglobulin antibody [B2M-01] (ab49424)

Beta 2 Microglobulin Flow Cytometry staining of Human peripheral whole blood using mouse Anti-beta 2 Microglobulin antibody

Flow cytometry surface staining pattern of human peripheral whole blood stained using anti-human beta2-Microglobulin (B2M-01) PE antibody (concentration in sample 1.67 µg/m).

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