abcam

ab759

Anti-beta 2 Microglobulin antibody [B2M-01]

Key facts

Isotype	IgG2a
Host species	Mouse
Storage buffer	pH: 7.4 Preservative: 0.097% Sodium azide Constituents: PBS
Form	Liquid
Clonality	Monoclonal
Immunogen	Native Full Length Protein corresponding to Human B2M. Database link P61769
Clone number	B2M-01
Purification technique	Proprietary technique
Specificity	This antibody reacts with beta-2-microglobulin, associated with cell-surface MHC Class I molecules and other membrane antigens as well as with soluble forms of beta-2-microglobulin. The antibody detected beta-2-microglobulin in U-937 and RAJI cell lines in WB in non reducing conditions however failed to detect a band in JEG-3 and A431 cell lysates. All lysates gave a signal in direct ELISA.
Concentration	1 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →
Purification notes	Purified by precipitation methods. Purity >95% by SDS-PAGE.

Reactivity data

WB

Tested

Species	Human

Dilution info	2-4 µg/mL
Notes	Use under non reducing conditions. Incubate overnight. Block with 5%milk for 2hrs.

Not recommended

Species	Mouse
Dilution info	-
Notes	Use under non reducing conditions. Incubate overnight. Block with 5%milk for 2hrs.

Species	Pig
Dilution info	-
Notes	Use under non reducing conditions. Incubate overnight. Block with 5%milk for 2hrs.

Species	Chicken
Dilution info	-
Notes	Use under non reducing conditions. Incubate overnight. Block with 5%milk for 2hrs.

Species	Dog
Dilution info	-
Notes	Use under non reducing conditions. Incubate overnight. Block with 5%milk for 2hrs.

Species	Cow
Dilution info	-
Notes	Use under non reducing conditions. Incubate overnight. Block with 5%milk for 2hrs.

Species	Rabbit
Dilution info	-
Notes	Use under non reducing conditions. Incubate overnight. Block with 5%milk for 2hrs.

Flow Cyt

Tested

Species	Human
Dilution info	0.5-4 µg/mL
Notes	-

Not recommended

Species	Mouse, Pig, 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 duration	1-2 weeks
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	-20°C
Aliquoting information	Upon delivery aliquot
Storage information	Avoid freeze / thaw cycle

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

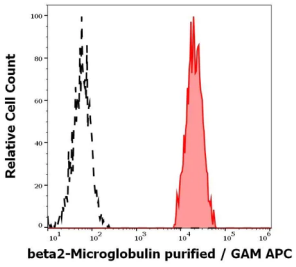
We do not recommend this combination. It is not covered by our product promise.

We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

In the unlikely event of one of our products not working as expected, you are covered by our product promise.

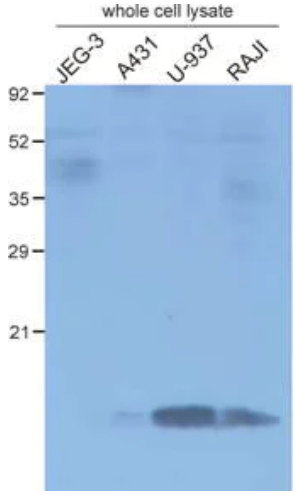
Full details and terms and conditions can be found here:
Terms & Conditions.

2 product images



Flow Cytometry - Anti-beta 2 Microglobulin antibody [B2M-01] (ab759)

Flow cytometric analysis of Human Peripheral Blood cells labelling beta 2 Microglobulin with ab759 at 0.3 ug/ml showing separation of human monocytes (red-filled) from human beta2-Microglobulin negative blood debris (black-dashed).



Western blot - Anti-beta 2 Microglobulin antibody [B2M-01] (ab759)

Lysates were separated on 15% SDS–PAGE gel and electrotransferred to a PVDF membrane. The membrane was blocked in PBS/Tween buffer containing 5% non fat dry milk for 2 hours and probed with ab759 at 4°C overnight.
All lanes:
Western blot - Anti-beta 2 Microglobulin antibody [B2M-01] (ab759) at 2 µg/mL

Lane 1:
JEG-3 cell lysate

Lane 2:
A-431 cell lysate

Lane 3:
U-937 cell lysate

Lane 4:
Raji cell lysate

Developed using the ECL technique.

Performed under non-reducing conditions.

Predicted band size: 14 kDa

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.