abcam

ab657

Anti-CD18 antibody [MEM-48]

Key facts

Isotype	IgG1
Host species	Mouse
Storage buffer	pH: 7.4 Preservative: 0.097% Sodium azide Constituents: PBS
Form	Liquid
Clonality	Monoclonal
Immunogen	Cell preparation containing ITGB2 protein. The exact immunogen used to generate this antibody is proprietary information. Database link P05107
Clone number	MEM-48
Purification technique	Multi-step chromatography
Specificity	Human CD18 antigen. This antibody recognizes all three leucocyte integrins.
Concentration	1 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →
Purification notes	Purified from TCS. Purity >95% by SDS-PAGE.

Reactivity data

WB

Tested

Species	Human
Dilution info	1-2 µg/mL

Notes	-

Flow Cyt

Tested

Species	Human
Dilution info	2 µg/mL for 10^6 Cells
Notes	ab170190 - Mouse monoclonal IgG1, is suitable for use as an isotype control with this antibody.

Target data

See full target information ITGB2

Function	Integrin ITGAL:ITGB2 is a receptor for ICAM1, ICAM2 and ICAM3 (PubMed:1676048, PubMed:23775590, PubMed:38195629). Integrin ITGAL:ITGB2 is also a receptor for the secreted form of ubiquitin-like protein ISG15; the interaction is mediated by ITGAL (PubMed:29100055). Integrins ITGAM:ITGB2 and ITGAX:ITGB2 are receptors for the iC3b fragment of the third complement component and for fibrinogen. Integrin ITGAX:ITGB2 recognizes the sequence G-P-R in fibrinogen alpha-chain. Integrin ITGAM:ITGB2 recognizes P1 and P2 peptides of fibrinogen gamma chain. Integrin ITGAM:ITGB2 is also a receptor for factor X. Integrin ITGAD:ITGB2 is a receptor for ICAM3 and VCAM1 (PubMed:10438935, PubMed:8777714, PubMed:9841932). Contributes to natural killer cell cytotoxicity (PubMed:15356110). Involved in leukocyte adhesion and transmigration of leukocytes including T-cells and neutrophils (PubMed:11812992, PubMed:28807980). Triggers neutrophil transmigration during lung injury through PTK2B/PYK2-mediated activation (PubMed:18587400). Integrin ITGAL:ITGB2 in association with ICAM3, contributes to apoptotic neutrophil phagocytosis by macrophages (PubMed:23775590). In association with alpha subunit ITGAM/CD11b, required for CD177-PRTN3-mediated activation of TNF primed neutrophils (PubMed:21193407). Integrins ITGAX:ITGB2 functions as a receptor of the erythrocyte-specific adhesion molecule ICAM4 and mediates erythrophagocytosis (PubMed:16985175). Integrins ITGAX:ITGB2 functions as a receptor of the neuron-specific adhesion molecule ICAM5 ensuring neuron cell-leukocyte adhesion (PubMed:10741396). Integrin ITGAL:ITGB2 functions as a receptor of ICAM1 by acting as a platform at the immunological synapse to translate TCR engagement and density of the ITGAL ligand ICAM1 into graded adhesion (PubMed:38195629). Integrin ITGAM:ITGB2/MAC-1 complex functions as a signaling receptor for the ligand receptor ICAM1, ensuring adhesion between stimulated neutrophils and stimulated endothelial cells (PubMed:1980124). Integrin ITGAL/ITGB2 that functions as a signaling receptor of ICAM2, ensuring leukocyte cell-cell adhesion on resting cells (PubMed:1676048).

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

Notes

This product was changed from ascites to tissue culture supernatant on 24th January 2018. Please note that the dilutions may need to be adjusted accordingly. If you have any questions, please do not hesitate to contact our scientific support team.

Supplementary info

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

Activity summary	CD18 also known as ITGB2 is a protein with a molecular weight of approximately 95 kDa. It is part of the beta-2 integrin family and partners with different alpha subunits to form heterodimers. CD18 is primarily expressed on leukocytes including neutrophils monocytes macrophages and lymphocytes. As a surface marker CD18 plays a significant role in immune cell adhesion and migration enabling cells to respond to inflammation signals effectively.
Biological function summary	The CD18 protein functions in conjunction with associated alpha subunit partners forming a part of the wider integrin family complex. ItgB2 as it is sometimes referred to is essential for cell adhesion processes. These heterodimers facilitate binding between leukocytes and various ligands on endothelial cells which subsequently controls leukocyte transmigration through vascular walls. CD18's activities are critical in immune system responses making it a prominent focus in immunological research.
Pathways	The role of CD18 extends into inflammatory and immune response signaling pathways. It contributes critically to the leukocyte adhesion cascade. This cascade engagement involves interaction with other proteins such as ICAM-1 on endothelial surfaces. CD18 through its association in integrin-mediated signaling influences processes like phagocytosis and lymphocyte activation giving it a central place in cellular immunity.
Associated diseases and disorders	Deficiencies or mutations affecting CD18 function correlate with disorders such as Leukocyte Adhesion Deficiency type I (LAD-I). This condition results from impaired

leukocyte function due to defective integrin expression. The role of CD18 in arthritis is also significant primarily by mediating leukocyte infiltration into inflamed tissues. Its interaction with proteins like ICAM-1 becomes exceptionally relevant in these disease dynamics indicating potential therapeutic targets for modulating immune responses.

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

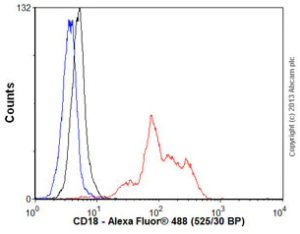
We do not recommend this combination. It is not covered by our product promise.

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:
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4 product images

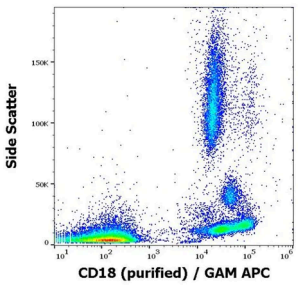


Flow Cytometry - Anti-CD18 antibody [MEM-48] (ab657)

CD18 Flow Cytometry staining using mouse Anti-CD18 antibody

Human peripheral blood lymphocytes stained with ab657 (red line). Human whole blood was processed using a modified protocol based on Chow *et al*, 2005 (PMID: 16080188). In brief, human whole blood was fixed in 4% formaldehyde (methanol-free) for 10 min at 22°C. Red blood cells were then lyzed by the addition of Triton X-100 (final concentration - 0.1%) for 15 min at 37°C. For experimentation, cells were treated with 50% methanol (-20°C) for 15 min at 4°C. Cells were then incubated with the antibody (ab657, 1µg/1x10^6 cells) for 30 min at 4°C. The secondary antibody used was Alexa Fluor® 488 goat anti-mouse IgG (H&L) (ab150113) at 1/2000 dilution for 30 min at 4°C. Isotype control antibody (black line) was mouse IgG1 [ICIGG1] (ab91353, 1µg/1x10^6 cells) used under the same conditions. Unlabelled sample (blue line) was also used as a control. Acquisition

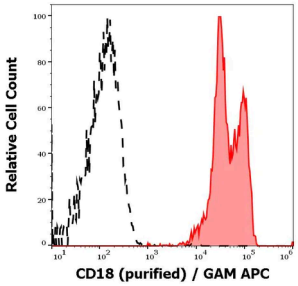
of >30,000 total events were collected using a 20mW Argon ion laser (488nm) and 525/30 bandpass filter. Gating strategy - peripheral blood lymphocytes.



Flow Cytometry - Anti-CD18 antibody [MEM-48] (ab657)

CD18 Flow Cytometry staining using mouse Anti-CD18 antibody

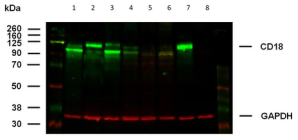
Flow cytometry surface staining pattern of human peripheral whole blood stained using ab657 purified antibody.



Flow Cytometry - Anti-CD18 antibody [MEM-48] (ab657)

CD18 Flow Cytometry staining using mouse Anti-CD18 antibody

Separation of human leukocytes (red-filled) from CD18 negative blood debris (black-dashed) in flow cytometry analysis (surface staining) of human peripheral whole blood stained using ab657 purified antibody.



Western blot - Anti-CD18 antibody [MEM-48] (ab657)

CD18 Western blot staining using mouse Anti-CD18 antibody

The reactivity of MEM-48 antibody was assessed by comparing binding signals in a panel of various human cell samples. Western blotting analysis was performed on RIPA buffer extracts of THP-1, Kg1a, U937, HPB-ALL, Raji, Jurkat, leukocytes, and HeLa cells, mixed and heated (100°C, 5 min) with reducing (2-mercaptoethanol) SDS-loading buffer. Samples were resolved using 10% SDS-PAGE gel.
Nitrocellulose membrane blot was probed with ab657 (2 µg/ml), followed by IRDye 800CW Goat-anti-Mouse IgG (green). For multiplex fluorescent Western blot detection, mouse anti-GAPDH monoclonal antibody FF26A conjugated with DyLight 680 (0.1 µg/ml) was used as the loading control (red).

CD18 was detected at ~90-100 kDa in the respective cell lines.

All lanes:
Western blot - Anti-CD18 antibody [MEM-48] (ab657) at 2 µg/mL

Lane 1:
THP-1

Lane 2:
Kg1a

Lane 3:
U937

Lane 4:
HPB-ALL

Lane 5:
Raji

Lane 6:

Jurkat

Lane 7:
Leukocytes

Lane 8:
HeLa

Secondary

All lanes:
IRDye 800CW Goat-anti-Mouse IgG (green)

Observed band size: 90-100 kDa

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