abcam

ab2216

Anti-HLA E antibody [MEM-E/02]

Anti-HLA E antibody [MEM-E/02] (ab2216) is a mouse monoclonal antibody detecting HLA E in **Western Blot, Flow Cytometry, IHC-P**. Suitable for **Human**.

- KO validated for confirmed specificity
- Over 20 publications
- Trusted since 2002

KO Validated

Key facts

Isotype	IgG1
Host species	Mouse
Storage buffer	pH: 7.4 Preservative: 0.097% Sodium azide Constituents: PBS
Form	Liquid
Clonality	Monoclonal
Immunogen	Recombinant Full Length Protein corresponding to Human HLA-E. Database link P13747
Clone number	MEM-E/02
Purification technique	Affinity purification Protein A
Specificity	This antibody reacts with the denaturated heavy chain of human HLA-E. It does not cross-react with HLA-A, -B, -C or -G. Specifity of the antibody was confirmed on HLA-G/HLA-E Workshop(Victoria 2002).
Light chain type	unknown
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

Flow Cyt

Tested

Species	Human
Dilution info	1 µg for 10^6 Cells
Notes	ab170190 - Mouse monoclonal IgG1, is suitable for use as an isotype control with this antibody.

WB

Tested

Species	Human
Dilution info	-
Notes	-

IHC-P

Tested

Species	Human
Dilution info	5-10 µg/mL
Notes	-

Target data

See full target information HLA-E

Function	Non-classical major histocompatibility class Ib molecule involved in immune self-nonself discrimination. In complex with B2M/beta-2-microglobulin binds nonamer self-peptides derived from the signal sequence of classical MHC class Ia molecules (VL9 peptides - VMAPRT[V/L][L/V/I/F]L) (PubMed:18083576, PubMed:18339401, PubMed:35705051, PubMed:37264229, PubMed:9754572). Peptide-bound HLA-E-B2M heterotrimeric complex primarily functions as a ligand for natural killer (NK) cell inhibitory receptor KLRD1-KLRC1, enabling NK cells to monitor the expression of other MHC class I molecules in healthy cells and to tolerate self

(PubMed:17179229, PubMed:18083576, PubMed:37264229, PubMed:9486650, PubMed:9754572). Upon cellular stress, preferentially binds signal sequence-derived peptides from stress-induced chaperones and is no longer recognized by NK cell inhibitory receptor KLRD1-KLRC1, resulting in impaired protection from NK cells (PubMed:12461076). Binds signal sequence-derived peptides from non-classical MHC class Ib HLA-G molecules and acts as a ligand for NK cell activating receptor KLRD1-KLRC2, likely playing a role in the generation and effector functions of adaptive NK cells and in maternal-fetal tolerance during pregnancy (PubMed:30134159, PubMed:37264229, PubMed:9754572). Besides self-peptides, can also bind and present pathogen-derived peptides conformationally similar to VL9 peptides to alpha-beta T cell receptor (TCR) on unconventional CD8-positive cytotoxic T cells, ultimately triggering antimicrobial immune response (PubMed:16474394, PubMed:20195504, PubMed:30087334, PubMed:34228645). Presents HIV gag peptides (immunodominant KAFSPEVIPMF and subdominant KALGPAATL epitopes) predominantly to CD8-positive T cell clones expressing a TRAV17-containing TCR, triggering HLA-E-restricted T cell responses (PubMed:34228645). Presents mycobacterial peptides to HLA-E-restricted CD8-positive T cells eliciting both cytotoxic and immunoregulatory functions (PubMed:20195504, PubMed:35705051). (Microbial infection) Viruses like human cytomegalovirus have evolved an escape mechanism whereby virus-induced down-regulation of host MHC class I molecules is coupled to the binding of viral peptides to HLA-E, restoring HLA-E expression and inducing HLA-E-dependent NK cell immune tolerance to infected cells. (Microbial infection) May bind HIV-1 gag/Capsid protein p24-derived peptide (AISPRTLNA) on infected cells and may inhibit NK cell cytotoxicity, a mechanism that allows HIV-1 to escape immune recognition. (Microbial infection) Upon SARS-CoV-2 infection, may contribute to functional exhaustion of cytotoxic NK cells and CD8-positive T cells (PubMed:32859121). Binds SARS-CoV-2 S/Spike protein S1-derived peptide (LQPRTFLL) expressed on the surface of lung epithelial cells, inducing NK cell exhaustion and dampening of antiviral immune surveillance (PubMed:32859121).

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

What is this antibody validated in?
Anti-HLA E antibody [MEM-E/02] (ab2216) is a mouse monoclonal antibody and is validated for use in Western Blot (WB), Flow Cytometry (Flow Cyt), Immunohistochemistry (IHC-P) in Human samples.

What is the molecular weight of HLA E?
Anti-HLA E [MEM-E/02] (ab2216) specifically detects a band for HLA E (UniProt: P13747) at a molecular weight of 40kDa.

Trusted by the scientific community
Anti-HLA E [MEM-E/02] (ab2216) was first used in a scientific publication in 2002 and has been cited over 20 times in peer-reviewed journals.

Reviewed by scientists
Anti-HLA E [MEM-E/02] (ab2216) has over 5 independent reviews from customers.

Specificity confirmed
The specificity of Anti-HLA E antibody [MEM-E/02] (ab2216) has been confirmed by Western blot testing in HLA-E Knockout A549 cell line, ab267231.

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

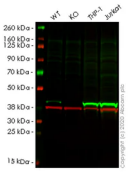
We do not recommend this combination. It is not covered by our product promise.

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.

5 product images



Western blot - Anti-HLA E antibody [MEM-E/02] (ab2216)

HLA E Western blot staining using mouse Anti-HLA E antibody

Lanes 1-4: Merged signal (red and green). Green - ab2216 observed at 40 kDa. Red - loading control ab181602 observed at 36 kDa.
ab2216 Anti-HLA E antibody [MEM-E/02] was shown to specifically react with HLA E in wild-type A549 cells. Loss of signal was observed when knockout cell line ab267080 (knockout cell lysate ab258452) was used. Wild-type and HLA E knockout samples were subjected to SDS-PAGE. ab2216 and Anti-GAPDH antibody[EPR16891] - Loading Control (ab181602) were incubated at room temperature for 2.5 hours at 1 in 500 dilution and 1 in 20000 dilution respectively. Blots were developed with Goat anti-Rabbit IgG H&L (IRDye® 680RD) preadsorbed (ab216777) and Goat anti-Mouse IgG H&L (IRDye® 800CW) preadsorbed (ab216772) secondary antibodies at 1 in 20000 dilution for 1 hour at room temperature before imaging.

All lanes:
Western blot - Anti-HLA E antibody [MEM-E/02] (ab2216) at 1/500 dilution

Lane 1:
Wild-type A549 cell lysate at 20 µg

Lane 2:
HLA-E knockout A549 cell lysate at 20 µg

Lane 3:
THP-1 cell lysate at 20 µg

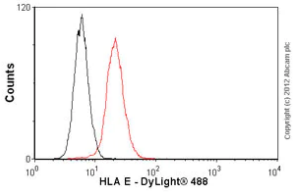
Lane 4:
Jurkat cell lysate at 20 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (IRDye® 680RD) preadsorbed (ab216777) at 1/10000 dilution

Predicted band size: 40 kDa

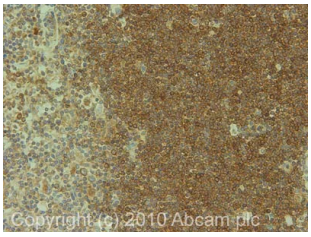
Observed band size: 40 kDa



Flow Cytometry - Anti-HLA E antibody [MEM-E/02] (ab2216)

HLA E Flow Cytometry staining using mouse Anti-HLA E antibody

Overlay histogram showing HL60 cells stained with ab2216 (red line). The cells were fixed with 80% methanol (5 min) and then permeabilized with 0.1% PBS-Tween for 20 min. The cells were then incubated in 1x PBS / 10% normal goat serum / 0.3M glycine to block non-specific protein-protein interactions followed by the antibody (ab2216, 1 µg/1x10^6 cells for 30 min at 22°C. The secondary antibody used was DyLight® 488 goat anti-mouse IgG (H+L) (ab96879) at 1/500 dilution for 30 min at 22°C. Isotype control antibody (black line) was Mouse IgG1 [ICIGG1] (ab91353, 2 µg/1x10^6 cells) used under the same conditions. Acquisition of >5,000 events was performed.

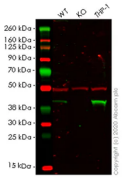


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-HLA E antibody [MEM-E/02] (ab2216)

HLA E Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using mouse Anti-HLA E antibody

IHC image of ab2216 staining in human tonsil formalin fixed paraffin embedded tissue section, performed on a Leica Bond™ system using the standard protocol F. The section was pre-treated using heat mediated antigen retrieval with sodium citrate buffer (pH6, epitope retrieval solution 1) for 20 mins. The section was then incubated with ab2216, 1µg/ml, for 15 mins at room temperature and detected using an HRP conjugated compact polymer system. DAB was used as the chromogen. The section was then counterstained with haematoxylin and mounted with DPX.

For other IHC staining systems (automated and non-automated) customers should optimize variable parameters such as antigen retrieval conditions, primary antibody concentration and antibody incubation times.



Western blot - Anti-HLA E antibody [MEM-E/02] (ab2216)

HLA E Western blot staining using mouse Anti-HLA E antibody

Lanes 1-3: Merged signal (red and green). Green - ab2216 observed at 40 kDa. Red - loading control ab52901 observed at kDa.
ab2216 Anti-HLA E antibody [MEM-E/02] was shown to specifically react with HLA E in wild-type HEK293T cells. Loss of signal was observed when knockout cell line ab267231 (knockout cell lysate ab258454) was used. Wild-type and HLA E knockout samples were subjected to SDS-PAGE. ab2216 and Anti-beta Tubulin [EP1331Y] - Microtubule Marker (ab52901) were incubated overnight at 4°C at 1 in 500 dilution and 1 in 20000 dilution respectively. Blots were developed with Goat anti-Rabbit IgG H&L (IRDye® 680RD) preadsorbed (ab216777) and Goat anti-Mouse IgG H&L (IRDye® 800CW) preadsorbed (ab216772) secondary antibodies at 1 in 20000 dilution for 1 hour at room temperature before imaging.

All lanes:
Western blot - Anti-HLA E antibody [MEM-E/02] (ab2216) at 1/500 dilution

Lane 1:
Wild-type HEK-293T cell lysate at 20 µg

Lane 2:
HLA-E knockout HEK-293T cell lysate at 20 µg

Lane 3:
THP-1 cell lysate at 20 µg

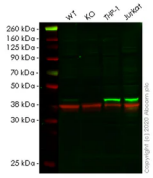
Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (IRDye® 680RD) preadsorbed (ab216777) at 1/10000 dilution

Performed under reducing conditions.

Predicted band size: 40 kDa

Observed band size: 40 kDa



Western blot - Anti-HLA E antibody [MEM-E/02] (ab2216)

HLA E Western blot staining using mouse Anti-HLA E antibody

Lanes 1-4: Merged signal (red and green). Green - ab2216 observed at 40 kDa. Red - loading control ab181602 observed at 36 kDa.
ab2216 Anti-HLA E antibody [MEM-E/02] was shown to specifically react with HLA E in wild-type A549 cells. Loss of signal was observed when knockout cell line ab267081 (knockout cell lysate ab258453) was used. Wild-type and HLA E knockout samples were subjected to SDS-PAGE. ab2216 and Anti-GAPDH antibody[EPR16891] - Loading Control (ab181602) were incubated at room temperature for 2.5 hours at 1 in 500 dilution and 1 in 20000 dilution respectively. Blots were developed with Goat anti-Rabbit IgG H&L (IRDye® 680RD) preadsorbed (ab216777) and Goat anti-Mouse IgG H&L (IRDye® 800CW) preadsorbed (ab216772) secondary antibodies at 1 in 20000 dilution for 1 hour at room temperature before imaging.

All lanes:
Western blot - Anti-HLA E antibody [MEM-E/02] (ab2216) at 1/1000 dilution

Lane 1:
Wild-type A549 cell lysate at 20 µg

Lane 2:
HLA-E knockout A549 cell lysate at 20 µg

Lane 3:
THP-1 cell lysate at 20 µg

Lane 4:
Jurkat cell lysate at 20 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (IRDye® 680RD) preadsorbed (ab216777) at 1/10000 dilution

Predicted band size: 40 kDa

Observed band size: 40 kDa

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