abcam

ab318990

Anti-HLA Class 1 ABC antibody [EMR8-5] - BSA and Azide free

Recombinant

Key facts

Isotype	IgG1
Host species	Mouse
Storage buffer	pH: 7.2 - 7.4 Constituents: PBS
Form	Liquid
Clonality	Monoclonal
Carrier free	Yes
Clone number	EMR8-5
Purification technique	Affinity purification Protein A
Specificity	ab318990 reacts with the heavy chains of human HLA class 1 A, -B, and -C.
Concentration	1.014 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IHC-P

Tested

Species	Human
Dilution info	-

Notes	Perform heat-mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.

Not recommended

Species	Recombinant fragment - Human
Dilution info	-
Notes	-

Flow Cyt

Tested

Species	Human
Dilution info	-
Notes	ab170190 - Mouse monoclonal IgG1, is suitable for use as an isotype control with this antibody.

Not recommended

Species	Recombinant fragment - Human
Dilution info	-
Notes	-

WB

Tested

Species	Human, Recombinant fragment - Human
Dilution info	-
Notes	-

Target data

See full target information HLA-B

Function	Antigen-presenting major histocompatibility complex class I (MHCI) molecule. In complex with B2M/beta 2 microglobulin displays primarily viral and tumor-derived

peptides on antigen-presenting cells for recognition by alpha-beta T cell receptor (TCR) on HLA-B-restricted CD8-positive T cells, guiding antigen-specific T cell immune response to eliminate infected or transformed cells (PubMed:23209413, PubMed:25808313, PubMed:29531227, PubMed:9620674). May also present self-peptides derived from the signal sequence of secreted or membrane proteins, although T cells specific for these peptides are usually inactivated to prevent autoreactivity (PubMed:18991276, PubMed:7743181). Both the peptide and the MHC molecule are recognized by TCR, the peptide is responsible for the fine specificity of antigen recognition and MHC residues account for the MHC restriction of T cells (PubMed:24600035, PubMed:29531227, PubMed:9620674). Typically presents intracellular peptide antigens of 8 to 13 amino acids that arise from cytosolic proteolysis via constitutive proteasome and IFNG-induced immunoproteasome (PubMed:23209413). Can bind different peptides containing allele-specific binding motifs, which are mainly defined by anchor residues at position 2 and 9 (PubMed:25808313, PubMed:29531227). Allele B*07:02: Displays peptides sharing a common signature motif, namely a Pro residue at position 2 and mainly a Leu anchor residue at the C-terminus (PubMed:7743181). Presents a long peptide (APRGPHGGAASGL) derived from the cancer-testis antigen CTAG1A/NY-ESO-1, eliciting a polyclonal CD8-positive T cell response against tumor cells (PubMed:29531227). Presents viral epitopes derived from HIV-1 gag-pol (TPQDLNTML) and Nef (RPQVPLRPM) (PubMed:25808313). Presents an immunodominant epitope derived from SARS-CoV-2 N/nucleoprotein (SPRWYFYYL) (PubMed:32887977). Displays self-peptides including a peptide derived from the signal sequence of HLA-DPB1 (APRTVALTA) (PubMed:7743181). Allele B*08:01: Presents to CD8-positive T cells viral epitopes derived from EBV/HHV-4 EBNA3 (QAKWRLQTL), eliciting cytotoxic T cell response. Allele B*13:02: Presents multiple HIV-1 epitopes derived from gag (RQANFLGKI, GQMREPRGSDI), nef (RQDILDLWI), gag-pol (RQYDQILIE, GQGQWTYQI) and rev (LQLPPLERL), all having in common a Gln residue at position 2 and mainly hydrophobic amino acids Leu, Ile or Val at the C-terminus. Associated with successful control of HIV-1 infection. Allele B*18:01: Preferentially presents octameric and nonameric peptides sharing a common motif, namely a Glu at position 2 and Phe or Tyr anchor residues at the C-terminus (PubMed:14978097, PubMed:18991276, PubMed:23749632). Presents an EBV/HHV-4 epitope derived from BZLF1 (SELEIKRY) (PubMed:23749632). May present to CD8-positive T cells an antigenic peptide derived from MAGEA3 (MEVDPIGHLY), triggering an anti-tumor immune response (PubMed:12366779). May display a broad repertoire of self-peptides with a preference for peptides derived from RNA-binding proteins (PubMed:14978097). Allele B*27:05: Presents to CD8-positive T cells immunodominant viral epitopes derived from HCV POLG (ARMILMTHF), HIV-1 gag (KRWIILGLNK), IAV NP (SRYWAIRTR), SARS-CoV-2 N/nucleoprotein (QRNAPRITF), EBV/HHV-4 EBNA4 (HRCQAIRKK) and EBV/HHV-4 EBNA6 (RRIYDLIEL), conferring longterm protection against viral infection (PubMed:15113903, PubMed:18385228, PubMed:19139562, PubMed:32887977, PubMed:9620674). Can present self-peptides derived from cytosolic and nuclear proteins. All peptides carry an Arg at position 2 (PubMed:1922338). The peptide-bound form interacts with NK cell inhibitory receptor KIR3DL1 and inhibits NK cell activation in a peptide-specific way, being particularly sensitive to the nature of the amino acid side chain at position 8 of the antigenic peptide (PubMed:15657948, PubMed:8879234). KIR3DL1 fails to recognize HLA-B*27:05 in complex with B2M and EBV/HHV-4 EBNA6 (RRIYDLIEL) peptide, which can lead to increased activation of NK cells during infection (PubMed:15657948). May present an altered repertoire of peptides in the absence of TAP1-TAP2 and TAPBPL (PubMed:9620674). Allele B*40:01: Presents immunodominant viral epitopes derived from EBV/HHV-4 LMP2 (IEDPPFNSL) and SARS-CoV-2 N/nucleoprotein (MEVTPSGTWL), triggering memory

CD8-positive T cell response (PubMed:18991276, PubMed:32887977). Displays self-peptides sharing a signature motif, namely a Glu at position 2 and a Leu anchor residue at the C-terminus (PubMed:18991276). Allele B*41:01: Displays self-peptides sharing a signature motif, namely a Glu at position 2 and Ala or Pro anchor residues at the C-terminus. Allele B*44:02: Presents immunodominant viral epitopes derived from EBV/HHV-4 EBNA4 (VEITPYKPTW) and EBNA6 (AEGGVGWRHW, EENLLDFVRF), triggering memory CD8-positive T cell response (PubMed:18991276, PubMed:9620674). Displays self-peptides sharing a signature motif, namely a Glu at position 2 and Phe, Tyr or Trp anchor residues at the C-terminus (PubMed:18991276). Allele B*45:01: Displays self-peptides sharing a signature motif, namely a Glu at position 2 and Ala or Pro anchor residues at the C-terminus. Allele B*46:01: Preferentially presents nonameric peptides sharing a signature motif, namely Ala and Leu at position 2 and Tyr, Phe, Leu, or Met anchor residues at the C-terminus. The peptide-bound form interacts with KIR2DL3 and inhibits NK cell cytotoxic response in a peptide-specific way. Allele B*47:01: Displays self-peptides sharing a signature motif, namely an Asp at position 2 and Leu or Met anchor residues at the C-terminus. Allele B*49:01: Displays self-peptides sharing a signature motif, namely a Glu at position 2 and Ile or Val anchor residues at the C-terminus. Allele B*50:01: Displays self-peptides sharing a signature motif, namely a Glu at position 2 and Ala or Pro anchor residues at the C-terminus. Allele B*51:01: Presents an octameric HIV-1 epitope derived from gag-pol (TAFTIPSI) to the public TRAV17/TRBV7-3 TCR clonotype, strongly suppressing HIV-1 replication. Allele B*54:01: Displays peptides sharing a common signature motif, namely a Pro residue at position 2 and Ala anchor residue at the C-terminus. Allele B*55:01: Displays peptides sharing a common signature motif, namely a Pro residue at position 2 and Ala anchor residue at the C-terminus. Allele B*56:01: Displays peptides sharing a common signature motif, namely a Pro residue at position 2 and Ala anchor residue at the C-terminus. Allele B*57:01: The peptide-bound form recognizes KIR3DL1 and inhibits NK cell cytotoxic response. Presents HIV gag peptides (immunodominant KAFSPEVIPMF and subdominant KALGPAATL epitopes) predominantly to CD8-positive T cell clones expressing a TRAV41-containing TCR, triggering HLA-B-restricted T cell responses. Allele B*67:01: Displays peptides sharing a common signature motif, namely a Pro residue at position 2 and Leu anchor residue at the C-terminus.

Storage

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

Notes

ab318990 is the carrirer-free version of ab70328.

What are the advantages of a recombinant monoclonal antibody?
This product is a recombinant monoclonal antibody, which offers several advantages including:

- High batch-to-batch consistency and reproducibility
- Improved sensitivity and specificity
- Long-term security of supply
- Animal-free batch production

For more information, read more on recombinant antibodies.

Conjugation ready
Our carrier-free antibodies are typically supplied in a PBS-only formulation, purified and free of BSA, sodium azide and glycerol. This conjugation-ready format is designed for use with fluorochromes, metal isotopes, oligonucleotides, and enzymes, which makes them ideal for antibody labelling, functional and cell-based assays, flow-based assays (e.g. mass cytometry) and Multiplex Imaging applications.

Use our conjugation kits for antibody conjugates that are ready-to-use in as little as 20 minutes with 1 minute hands-on-time and 100% antibody recovery: available for fluorescent dyes, HRP, biotin and gold.

Compatibility
This product is compatible with the Maxpar® Antibody Labeling Kit from Fluidigm, without the need for antibody preparation. Maxpar® is a trademark of Fluidigm Canada Inc.

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

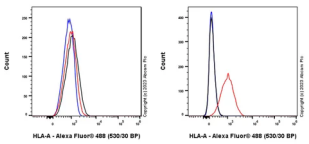
We do not recommend this combination. It is not covered by our product promise.

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.

7 product images

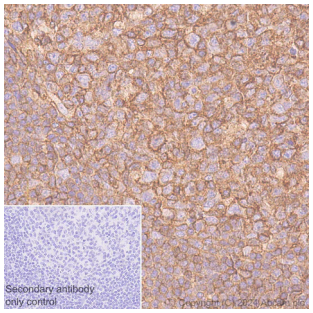


Flow Cytometry - Anti-HLA Class 1 ABC antibody [EMR8-5] - BSA and Azide free (ab318990)

HLA Class 1 ABC Flow Cytometry staining using mouse Anti-HLA Class 1 ABC antibody

This data was developed using ab70328, the same antibody clone in a different buffer formulation.

Flow cytometric analysis of K562(human chronic myelogenous leukemia lymphoblast, Left) / Ramos(human Burkitt's lymphoma B lymphocyte, Right) cells labelling HLA Class 1 ABC with ab70328 at 1/50 dilution (0.1&micor;g)/Red followed by a secondary antibody Goat anti-Mouse IgG (Alexa Fluor® 488, ab150113) used at a 1/5000 dilution compared with isotype control Mouse monoclonal IgG / Black and unlabelled control Cell without incubation with primary antibody and secondary antibody / Blue.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-HLA Class 1 ABC antibody [EMR8-5] - BSA and Azide free (ab318990)

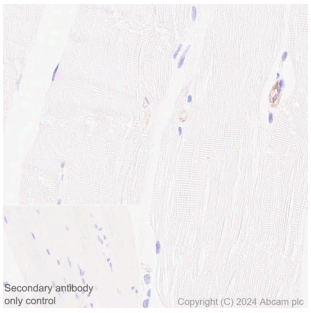
HLA Class 1 ABC Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining of Human tonsil tissue using mouse Anti-HLA Class 1 ABC antibody

This data was developed using ab70328, the same antibody clone in a different buffer formulation.

Immunohistochemical analysis of paraffin-embedded Human tonsil tissue using ab70328 at a 1/20000 dilution followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection).

Positive staining on human tonsil.
The section was incubated with ab70328 for 10 mins at room temperature, followed by anti-mouse IgG1 antibody (ab125913) for 8 mins during the LeicaDS9800 kit staining procedure.
The immunostaining was performed on a Leica Biosystems BOND® RX instrument
Hematoxylin was used as a counter stain.

Heat mediated antigen retrieval was performed with Citrate buffer (pH 6.0, Epitope Retrieval Solution 1) for 20 mins.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-HLA Class 1 ABC antibody [EMR8-5] - BSA and Azide free (ab318990)

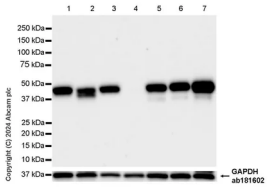
HLA Class 1 ABC Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining of Human skeletal muscle tissue using mouse Anti-HLA Class 1 ABC antibody

This data was developed using ab70328, the same antibody clone in a different buffer formulation.

Immunohistochemical analysis of paraffin-embedded Human skeletal muscle tissue using ab70328 at a 1/20000 dilution followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection).

Low expression tissue: positive staining on blood vessel of human skeletal muscle.
The section was incubated with ab70328 for 10 mins at room temperature, followed by anti-mouse IgG1 antibody (ab125913) for 8 mins during the LeicaDS9800 kit staining procedure.
The immunostaining was performed on a Leica Biosystems BOND® RX instrument
Hematoxylin was used as a counter stain.

Heat mediated antigen retrieval was performed with Citrate buffer (pH 6.0, Epitope Retrieval Solution 1) for 20 mins.



Western blot - Anti-HLA Class 1 ABC antibody [EMR8-5] - BSA and Azide free (ab318990)

HLA Class 1 ABC Western blot staining using mouse Anti-HLA Class 1 ABC antibody

This data was developed using ab70328, the same antibody clone in a different buffer formulation.

Blocking and dilution buffer and concentration: 5% NFDM/TBST

Anti-GAPDH antibody [EPR16891] - Loading Control (ab181602) was used as a loading control at 1/200000 dilution.

Negative control: K-562 (PMID: 9144223).
All lanes:
Western blot - Anti-HLA Class 1 ABC antibody [EMR8-5] (ab70328) at 1/1000 dilution

Lane 1:
Jurkat (human T cell leukemia T lymphocyte from peripheral blood) whole cell lysate at 20 µg

Lane 2:
HepG2 (human hepatocellular carcinoma epithelial cell) whole cell lysate at 20 µg

Lane 3:
THP-1 (human monocytic leukemia monocyte) whole cell lysate at 20 µg

Lane 4:
K-562 (human chronic myelogenous leukemia lymphoblast) whole cell lysate at 20 µg

Lane 5:
Ramos (human Burkitt's lymphoma B lymphocyte) whole cell lysate at 20 µg

Lane 6:
Raji (human Burkitt's lymphoma B lymphocyte) whole cell lysate at 20 µg

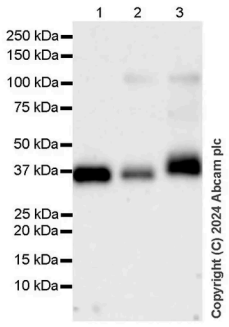
Lane 7:
Human tonsil tissue lysate at 20 µg

Secondary

All lanes:
Peroxidase-Conjugated Goat anti-Mouse IgG (H+L) at 1/1000 dilution

Observed band size: 45 kDa

Exposure time: 37s



Western blot - Anti-HLA Class 1 ABC antibody [EMR8-5] - BSA and Azide free (ab318990)

HLA Class 1 ABC Western blot staining using mouse Anti-HLA Class 1 ABC antibody

This data was developed using ab70328, the same antibody clone in a different buffer formulation.

Blocking and dilution buffer and concentration: 5% NFDM/TBST

All lanes:
Western blot - Anti-HLA Class 1 ABC antibody [EMR8-5] (ab70328) at 1/1000 dilution

Lane 1:
Human HLA-A recombinant protein at 10 ng

Lane 2:
Human HLA-B recombinant protein at 10 ng

Lane 3:
Human HLA-C recombinant protei at 10 ng

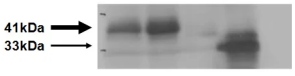
Secondary

All lanes:
Peroxidase-Conjugated Goat anti-Mouse IgG (H+L) at 1/1000 dilution

Developed using the ECL technique.

Observed band size: 40 kDa

Exposure time: 180s



Western blot - Anti-HLA Class 1 ABC antibody [EMR8-5] - BSA and Azide free (ab318990)

HLA Class 1 ABC Western blot staining using mouse Anti-HLA Class 1 ABC antibody

This data was developed using ab70328, the same antibody clone in a different buffer formulation.

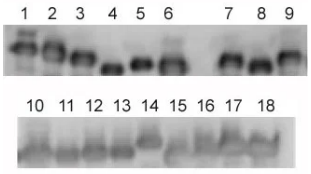
This image was from a different batch produced using hybridoma method
All lanes:
Western blot - Anti-HLA Class 1 ABC antibody [EMR8-5] (ab70328)

Lane 1:
Human oral cancer cell line OSC20

Lane 2:
HLA-A2402 gene transfected OSC20

Lane 3:
Human Leukemia cell line K562

Lane 4:
Recombinant HLA-A2402 heavy chain



Western blot - Anti-HLA Class 1 ABC antibody [EMR8-5] - BSA and Azide free (ab318990)

HLA Class 1 ABC Western blot staining using mouse Anti-HLA Class 1 ABC antibody

This data was developed using ab70328, the same antibody clone in a different buffer formulation.

Western blot analysis of ab70328 reactivity using recominant HLA heavy chains.
Lanes 1-6: HLA-A

Lanes 7-14: HLA-B

Lanes 15-18: HLA-C

This image was from a different batch produced using hybridoma method
All lanes:
Western blot - Anti-HLA Class 1 ABC antibody [EMR8-5] (ab70328)

Lane 1:
A*2402

Lane 2:
A*0101

Lane 3:
A*1101

Lane 4:
A*0201

Lane 5:
A*0207

Lane 6:
A2402

Lane 7:
B*0702

Lane 8:
B*0801

Lane 9:
B*1501

Lane 10:
B*3501

Lane 11:
B*4001

Lane 12:
B*4002

Lane 13:

B*4006

Lane 14:
B*4403

Lane 15:
Cw*0102

Lane 16:
Cw*0801

Lane 17:
Cw*1202

Lane 18:
Cw*1502

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