abcam

ab240272

Anti-PSMB10/MECL1 antibody [EPR14902] - BSA and Azide free

Recombinant | RabMAb | KO Validated

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Constituents: PBS
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Carrier free	Yes
Clone number	EPR14902
Purification technique	Affinity purification Protein A
Concentration	0.998 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

WB

Tested

Species	Human
Dilution info	-

Notes	-

Predicted

Species	Mouse, Rat
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	-
Notes	ab199376 - Rabbit monoclonal IgG, is suitable for use as an isotype control with this antibody.

Predicted

Species	Mouse, Rat
Dilution info	-
Notes	-

IHC-P

Tested

Species	Human
Dilution info	-
Notes	-

Predicted

Species	Mouse, Rat
Dilution info	-
Notes	-

Target data

See full target information PSMB10

Function	The proteasome is a multicatalytic proteinase complex which is characterized by its ability to cleave peptides with Arg, Phe, Tyr, Leu, and Glu adjacent to the leaving group at neutral or slightly basic pH. The proteasome has an ATP-dependent proteolytic activity. This subunit is involved in antigen processing to generate class I binding peptides.

Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	+4°C
Storage information	Do Not Freeze

Notes

ab240272 is the carrier-free version of ab183506.

Patented technology

Our RabMAb® technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to RabMAb® patents.

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.

Supplementary info

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

Activity summary	PSMB10 also known as MECL1 is a proteasome component involved in protein degradation. This protein has a molecular mass of approximately 29 kDa. PSMB10 is expressed in various tissues with notable expression in the immune system. As a beta subunit of the 20S proteasome MECL1 has a role in cleaving peptides at specific sites contributing to the breakdown of ubiquitinated proteins.
Biological function summary	PSMB10/MECL1 plays a significant role in immune responses. It forms part of the immunoproteasome a variant of the proteasome complex which enhances the generation of antigenic peptides presented on MHC class I molecules. This function is essential for effective immune surveillance and initializing adaptive immunity. In particular PSMB10's influence on antigen processing positions it as an important player in modulating immune system activity.
Pathways	PSMB10/MECL1 participates in pathways associated with protein catabolism and immune signaling. It is involved in the ubiquitin-proteasome pathway which is critical for maintaining cellular protein balance. The function of PSMB10 within the immunoproteasome links it to immune signaling pathways. It has associations with other 20S proteasome subunits such as PSMB8 and PSMB9 which also contribute to the formation of the immunoproteasome complex.
Associated diseases and disorders	PSMB10/MECL1 has connections to autoimmune diseases and cancer. In autoimmune diseases the altered function of PSMB10 within the immunoproteasome can lead to improper antigen presentation potentially triggering excessive immune responses. In oncology aberrant expression of immunoproteasome subunits including PSMB10 has implications in tumor immune evasion. The interplay with proteins like PSMB9 in these contexts suggests an intricate network affecting disease progression and immune regulation.

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

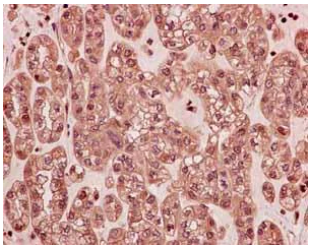
We do not recommend this combination. It is not covered by our product promise.

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.

4 product images

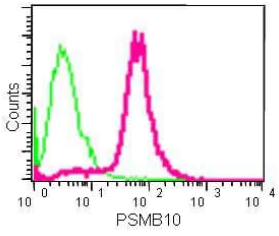


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-PSMB10/MECL1 antibody [EPR14902] - BSA and Azide free (ab240272)

PSMB10/MECL1 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-PSMB10/MECL1 antibody

Immunohistochemical analysis of paraffin-embedded Human Kidney adenocarcinoma tissue labeling PSMB10/MECL1 with ab183506 at 1/100 dilution followed by pre-diluted HRP-conjugated secondary antibody and counter-stained with Hematoxylin.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab183506).

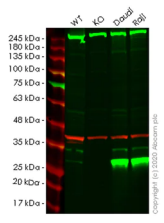
Perform heat mediated antigen retrieval with EDTA buffer pH 9 before commencing with IHC staining protocol.



Flow Cytometry (Intracellular) - Anti-PSMB10/MECL1 antibody [EPR14902] - BSA and Azide free (ab240272)

PSMB10/MECL1 Flow Cytometry (Intracellular) staining using rabbit Anti-PSMB10/MECL1 antibody

Intracellular flow cytometric analysis of Daudi cells (2% paraformaldehyde-fixed) labeling PSMB10/MECL1 with ab183506 at 1/90 dilution (red) or a rabbit IgG (negative) (green), followed by Goat anti rabbit IgG (FITC) secondary at 1/150 dilution.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab183506).



Western blot - Anti-PSMB10/MECL1 antibody [EPR14902] - BSA and Azide free (ab240272)

PSMB10/MECL1 Western blot staining using rabbit Anti-PSMB10/MECL1 antibody

This data was developed using the same antibody clone in a different buffer formulation (ab183506).
Lanes 1-4: Merged signal (red and green). Green - ab183506 observed at 29 kDa. Red - loading control ab8245 observed at 36 kDa.

ab183506 Anti-PSMB10/MECL1 antibody [EPR14902] was shown to specifically react with PSMB10/MECL1 in wild-type HeLa cells. Loss of signal was observed when knockout cell line ab264923 (knockout cell lysate ab258145) was used. Wild-type and PSMB10/MECL1 knockout samples were subjected to SDS-PAGE. ab183506 and Anti-GAPDH antibody [6C5] - Loading Control (ab8245) were incubated overnight at 4°C at 1 in 1000 dilution and 1 in 20000 dilution respectively. Blots were developed with Goat anti-Rabbit IgG H&L (IRDye® 800CW) preadsorbed (ab216773) and Goat anti-Mouse IgG H&L (IRDye® 680RD) preadsorbed (ab216776) secondary antibodies at 1 in 20000 dilution for 1 hour at room temperature before imaging.
All lanes:
Western blot - Anti-PSMB10/MECL1 antibody [EPR14902] (ab183506) at 1/1000 dilution

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

Lane 2:
Western blot - Human PSMB10 (MECL1) knockout HeLa cell lysate (ab258145) at 20 µg

Lane 3:
Daudi cell lysate at 20 µg

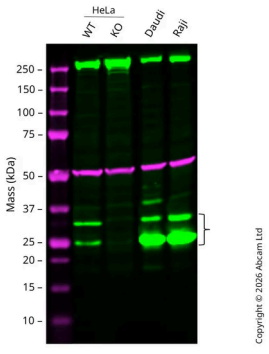
Lane 4:
Raji cell lysate at 20 µg

Secondary

All lanes:
Western blot - Goat anti-Rabbit IgG H&L (IRDye® 800CW) preadsorbed (ab216773) at 1/10000 dilution

Predicted band size: 29 kDa

Observed band size: 29 kDa



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Western blot - Anti-PSMB10/MECL1 antibody [EPR14902] - BSA and Azide free (ab240272)

PSMB10/MECL1 Western blot staining using rabbit Anti-PSMB10/MECL1 antibody

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab183506).

Western blot: Anti-PSMB10/MECL1 antibody [EPR14902] ab183506 staining at 1/1000 dilution, shown in green; Mouse anti alpha Tubulin ab7291 loading control staining at 1/20000 dilution, shown in magenta. A band was observed at 25,29 kDa in Wild-type HeLa cell lysates with no signal observed at this size in PSMB10 knockout HeLa cell line. To generate this image, samples were run on an SDS-PAGE gel then transferred onto a nitrocellulose membrane. Membranes were blocked in 3% Milk in TBS-0.1 % Tween® 20 (TBS-T) before incubation with primary antibodies overnight at 4 °C. Blots were washed four times in TBS-T, incubated with secondary antibodies for 1 h at room temperature, washed again four times then imaged. Secondary antibodies used were Goat anti-Rabbit 800CW and Goat anti-Mouse 680RD at 1/20,000 dilution.
All lanes:
Western blot - Anti-PSMB10/MECL1 antibody [EPR14902] (ab183506) at 1/1000 dilution

Lane 1:
Wild-type HeLa cell lysates at 40 µg

Lane 2:
Western blot - Human PSMB10 (MECL1) knockout HeLa cell line (ab264923) at 40 µg

Lane 3:

Daudi cell lysates at 20 µg

Lane 4:
Raji cell lysates at 20 µg

Secondary

All lanes:
Goat anti-Rabbit 800CW & Goat anti-Mouse 680RD at 1/20000 dilution

Performed under reducing conditions.

Predicted band size: 29 kDa

Observed band size: 29 kDa, 25 kDa

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