abcam

ab187645

Anti-Proteasome 20S LMP2 antibody [EPR13784]

Recombinant | RabMAb | KO Validated

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Preservative: 0.01% Sodium azide Constituents: PBS, 40% Glycerol (glycerin, glycerine), 0.05% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	EPR13784
Purification technique	Affinity purification Protein A
Concentration	0.875 - 0.891 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IP

Tested

Species	Human
Dilution info	1/30 - 1/50
Notes	-

WB

Tested

Species	Human
Dilution info	1/1000 - 1/10000
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	1/100
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/170
Notes	ab172730 - Rabbit monoclonal IgG, is suitable for use as an isotype control with this antibody.

Target data

See full target information PSMB9

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 (PubMed:33727065, PubMed:34819510). The proteasome has an ATP-dependent proteolytic activity. This subunit is involved in antigen processing to generate class I binding peptides. Replacement of PSMB6 by PSMB9 increases the capacity of the immunoproteasome to cleave model peptides after hydrophobic and basic residues.

Storage

Shipped at conditions Conditional Ambient

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

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.

Supplementary info

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

Activity summary	The proteasome LMP2 also known as proteasome subunit beta type-1 or PSMB9 is a component important in the functioning of the 20S proteasome complex. This molecular entity with a mass of approximately 23 kDa is predominantly expressed in immune cells including lymphocytes. LMP2 incorporates into the immunoproteasome a specialized variant of the proteasome that participates prominently in the processing of class I MHC peptides enhancing the immune response.
Biological function summary	LMP2 is integral to protein catabolism and regulation of the cellular protein homeostasis. As part of the larger proteasome complex the LMP2 protein functions in degradative pathways that recycle amino acids from ubiquitin-tagged proteins. This proteasome takes part in antigen processing helping convert proteins into peptides that are presented on the surface of cells for immune system recognition.
Pathways	LMP2 is significantly involved in the ubiquitin-proteasome pathway and immune system processes. It interacts with other immunoproteasome subunits like LMP7

	and MECL-1 which work together to enhance the proteolytic capacity for antigen presentation. The presence of LMP2 in these pathways demonstrates its role in adaptive immunity contributing to the clearance of misfolded or damaged proteins and therefore maintaining cell health.
Associated diseases and disorders	LMP2 associates with immune-related conditions and some cancer types. Dysregulation of LMP2 expression or function can impact antigen presentation potentially leading to autoimmune disorders due to inappropriate immune activation. Moreover alterations in LMP2 expression have been observed in certain cancers such as melanoma where it affects proteasome activity and influences tumor progression. In these contexts interactions with proteins like TAP1 and TAP2 which aid in peptide transport mark its relevance in disease pathogenesis.

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

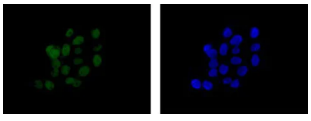
We do not recommend this combination. It is not covered by our product promise.

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.

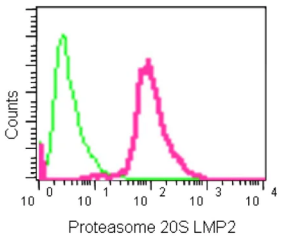
6 product images



Immunocytochemistry/ Immunofluorescence - Anti-Proteasome 20S LMP2 antibody [EPR13784] (ab187645)

Proteasome 20S LMP2 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-Proteasome 20S LMP2 antibody

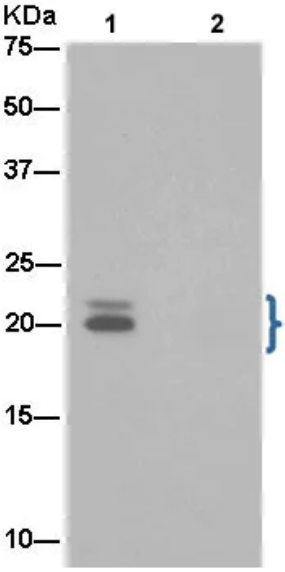
Immunofluorescent analysis of 4% paraformaldehyde-fixed A431 cells labeling Proteasome 20S LMP2 with ab187645 at 1/100 dilution. Counter stained with Dapi (blue).



Flow Cytometry (Intracellular) - Anti-Proteasome 20S LMP2 antibody [EPR13784] (ab187645)

Proteasome 20S LMP2 Flow Cytometry (Intracellular) staining using rabbit Anti-Proteasome 20S LMP2 antibody

Intracellular flow cytometric analysis of 2% paraformaldehyde-fixedRaji cells labeling Proteasome 20S LMP2 with ab187645 at 1/170 dilution compared to a Rabbit monoclonal IgG isotype control, followed byGoat anti rabbit IgG (FITC) secondary antibody at 1/150 dilution.



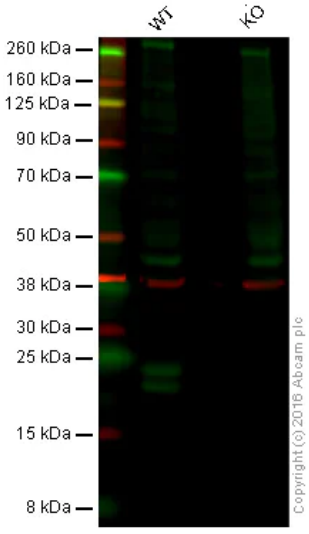
Immunoprecipitation - Anti-Proteasome 20S LMP2 antibody [EPR13784] (ab187645)

Western blot analysis of Proteasome 20S LMP2 in Raji cell lysate immunoprecipitated using ab187645 at 1/50 (Lane 1). Lane 2: PBS instead of Raji lysate.
Secondary antibody: Anti-Rabbit IgG (HRP), specific to the non-reduced form of IgG at 1/1500 dilution.

Based on the sequence analysis by BLAST, ab187645 recognizes two isoforms with the predicted MWs of 22kDa and 23kDa respectively.

All lanes:
Immunoprecipitation - Anti-Proteasome 20S LMP2 antibody [EPR13784] (ab187645)

Predicted band size: 23 kDa

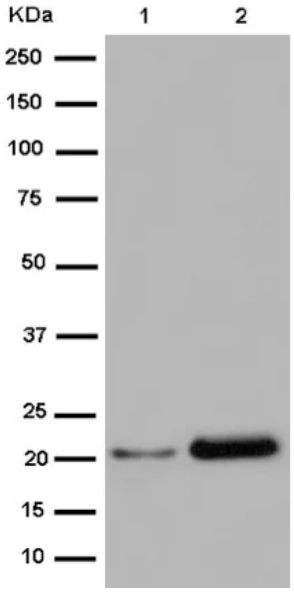


Western blot - Anti-Proteasome 20S LMP2 antibody [EPR13784] (ab187645)

Proteasome 20S LMP2 Western blot staining using rabbit Anti-Proteasome 20S LMP2 antibody

Lane 1: Wild-type HAP1 cell lysate (20 µg)
Lane 2: Proteasome 20S LMP2 knockout HAP1 cell lysate (20 µg)
Lanes 1 - 2: Merged signal (red and green). Green - ab187645 observed at 22 and 24 kDa. Red - loading control, ab8245, observed at 37 kDa.
ab187645 was shown to recognize Proteasome 20S LMP2 when Proteasome 20S LMP2 knockout samples were used, along with additional cross-reactive bands. Wild-type and Proteasome 20S LMP2 knockout samples were subjected to SDS-PAGE. ab187645 and ab8245 (loading control to GAPDH) were diluted 1/1000 and 1/10000 and incubated overnight at 4°C. 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 1/10000 dilution for 1 hour at room temperature before imaging.
All lanes:
Western blot - Anti-Proteasome 20S LMP2 antibody [EPR13784] (ab187645)

Predicted band size: 23 kDa



Western blot - Anti-Proteasome 20S LMP2 antibody [EPR13784] (ab187645)

All lanes:
Western blot - Anti-Proteasome 20S LMP2 antibody [EPR13784] (ab187645) at 1/2000 dilution

Lane 1:
HL-60 cell lysate at 20 µg

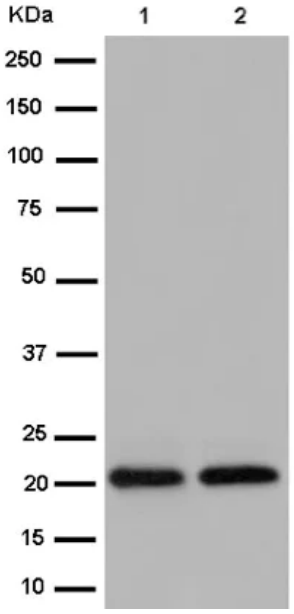
Lane 2:
A431 cell lysate at 20 µg

Secondary

All lanes:
Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugate at 1/1000 dilution

Predicted band size: 23 kDa

Observed band size: 21 kDa



Western blot - Anti-Proteasome 20S LMP2 antibody [EPR13784] (ab187645)

All lanes:
Western blot - Anti-Proteasome 20S LMP2 antibody [EPR13784] (ab187645) at 1/10000 dilution

Lane 1:
Ramos cell lysate at 20 µg

Lane 2:
Raji cell lysate at 20 µg

Secondary

All lanes:
Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugate at 1/1000 dilution

Predicted band size: 23 kDa

Observed band size: 21 kDa

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