abcam

ab22650

Anti-Proteasome subunit beta type 2/PSMB2 antibody [MCP165]

Key facts

Isotype	IgG1
Host species	Mouse
Storage buffer	Preservative: 0.032% Sodium azide Constituents: 0.58% Sodium chloride, 0.316% Tris HCl
Form	Liquid
Clonality	Monoclonal
Immunogen	Full Length Protein corresponding to Human PSMB2. The exact immunogen used to generate this antibody is proprietary information. Database link P49721
Clone number	MCP165
Purification technique	Affinity purification Protein G
Concentration	1 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IHC-P

Tested

Species	Human
Dilution info	1 µg/mL
Notes	-

IP

Not recommended

Species	Human
Dilution info	-
Notes	-

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	1/1000
Notes	-

Target data

See full target information PSMB2

Function

Non-catalytic component of the 20S core proteasome complex involved in the proteolytic degradation of most intracellular proteins. This complex plays numerous essential roles within the cell by associating with different regulatory particles. Associated with two 19S regulatory particles, forms the 26S proteasome and thus participates in the ATP-dependent degradation of ubiquitinated proteins. The 26S proteasome plays a key role in the maintenance of protein homeostasis by removing misfolded or damaged proteins that could impair cellular functions, and by removing proteins whose functions are no longer required. Associated with the PA200 or PA28, the 20S proteasome mediates ubiquitin-independent protein degradation. This type of proteolysis is required in several pathways including spermatogenesis (20S-PA200 complex) or generation of a subset of MHC class I-presented antigenic peptides (20S-PA28 complex).

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

Supplementary info

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

Activity summary	Proteasome subunit beta type 2 also known as PSMB2 is a part of the proteasome complex which plays an important role in protein degradation. PSMB2 has a mass of about 22 kDa and functions within the multi-catalytic proteinase complex known as the 20S proteasome core particle. This protein is expressed in various tissues with significant activities found in cells that demand high protein turnover. PSMB2 contributes to the proteasome's chymotrypsin-like activity aiding in the breakdown of damaged or unneeded proteins into peptides.
Biological function summary	Proteasome subunit beta type 2 is essential in maintaining protein homeostasis. It functions as a component of the 20S core of the 26S proteasome where it participates in degrading ubiquitin-tagged proteins. This complex also regulates multiple cellular processes including cell cycle progression and signal transduction. Proper function of PSMB2 is necessary for removing misfolded or damaged proteins thereby preventing their accumulation which could be toxic to cells.
Pathways	Proteasome subunit beta type 2 has a role in the ubiquitin-proteasome pathway which is important for protein degradation and turnover. This pathway contributes to important cellular processes such as DNA repair and antigen processing. PSMB2 in this context is linked to other proteins like ubiquitin-ligase that mediate the tagging of proteins for degradation. Another pathway involving PSMB2 is the NF-kB signaling pathway which controls inflammatory responses and immune system regulation.
Associated diseases and disorders	Proteasome subunit beta type 2 has been implicated in neurodegenerative diseases like Parkinson’s. The dysregulation or malfunctioning of the proteasome complex might result in protein aggregation seen in such disorders. Additionally PSMB2 is associated with certain cancers due to its role in regulating apoptosis and cellular proliferative activities. Proteins like p53 which is important for tumor suppression are related to PSMB2 through these disease mechanisms highlighting

its significance in maintaining normal cellular function and preventing disease progression.

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

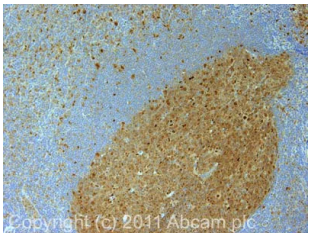
We do not recommend this combination. It is not covered by our product promise.

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



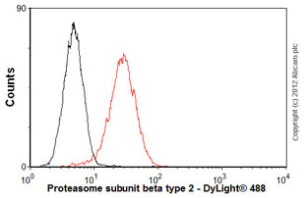
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Proteasome subunit beta type 2/PSMB2 antibody [MCP165] (ab22650)

Proteasome subunit beta type 2/PSMB2 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using mouse Anti-Proteasome subunit beta type 2/PSMB2 antibody

IHC image of ab22650 staining in human normal lymphoid formalin fixed paraffin embedded tissue section, performed on a Leica Bond^{TM} 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 ab22650, 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

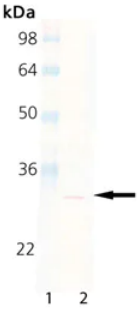
antibody incubation times.



Flow Cytometry - Anti-Proteasome subunit beta type 2/PSMB2 antibody [MCP165] (ab22650)

Proteasome subunit beta type 2/PSMB2 Flow Cytometry staining using mouse Anti-Proteasome subunit beta type 2/PSMB2 antibody

Overlay histogram showing HeLa cells stained with ab22650 (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 (ab22650, 1µg/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, 2µg/1x10^6 cells) used under the same conditions. Acquisition of >5,000 events was performed.

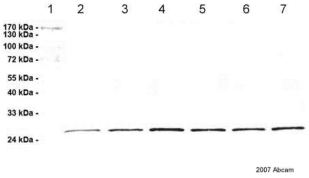


Western blot - Anti-Proteasome subunit beta type 2/PSMB2 antibody [MCP165] (ab22650)

All lanes:
Western blot - Anti-Proteasome subunit beta type 2/PSMB2 antibody [MCP165] (ab22650) at 1/1000 dilution

All lanes:
HeLa cell lysate

Predicted band size: 23 kDa



This image is courtesy of a customer review submitted by Dr Matthias Zenkel

Western blot - Anti-Proteasome subunit beta type 2/PSMB2 antibody [MCP165] (ab22650)

Lane 1:
Protein Marker IV

Lanes 2 - 7:
Western blot - Anti-Proteasome subunit beta type 2/PSMB2 antibody [MCP165] (ab22650) at 1/1000 dilution

Lane 1:
Protein Marker IV

Lanes 2, 4 and 6:
Protein extract from ciliary body of diseased human donor at 2 µg

Lanes 3, 5 and 7:
Protein extract from ciliary body of normal human donor at 2 µg

Secondary

All lanes:
HRP conjugated goat anti mouse antibody

Predicted band size: 23 kDa

Observed band size: 27 kDa

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