abcam

ab58802

Anti-Cathepsin B antibody [CA10]

Key facts

Isotype	IgG2a
Host species	Mouse
Storage buffer	Constituents: 0.158% Ammonium bicarbonate, 0.1% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	Native Full Length Protein corresponding to Human CTSB. Database link P07858
Clone number	CA10
Purification technique	Affinity purification Protein G
Specificity	This antibody recognizes an epitope on the heavy chain of mature Cathepsin B and therefore detects both mature (~31 kDa) and pro (~43 kDa)Cathepsin B.
Epitope	Within the heavy chain of mature cathepsin B
Concentration	0.1 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

Flow Cyt

Tested

Species	Human
Dilution info	0.5 µg for 10^6 Cells

Notes	ab170191 - Mouse monoclonal IgG2a, is suitable for use as an isotype control with this antibody.

Not recommended

Species	Purified native protein - Human
Dilution info	-
Notes	-

WB

Tested

Species	Purified native protein - Human
Dilution info	0.25 µg/mL
Notes	-

Expected

Species	Human
Dilution info	Use at an assay dependent concentration.
Notes	-

Target data

See full target information CTSB

Function	Thiol protease which is believed to participate in intracellular degradation and turnover of proteins (PubMed:12220505). Cleaves matrix extracellular phosphoglycoprotein MEPE (PubMed:12220505). Involved in the solubilization of cross-linked TG/thyroglobulin in the thyroid follicle lumen (By similarity). Has also been implicated in tumor invasion and metastasis (PubMed:3972105).

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

Notes

This product has switched from ascites to TCS on 26th October 2020.

Supplementary info

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

Activity summary	Cathepsin B also known as CTSB or cathepsin beta is a lysosomal cysteine protease belonging to the papain family. This enzyme possesses a molecular weight of approximately 25 to 30 kDa. You can find cathepsin B expressed in various tissues with high levels observed in the liver kidney and spleen. It plays a mechanical role in protein degradation within lysosomes operating optimally in acidic environments. The enzyme has active and inactive forms depending on structural modifications and environmental conditions.
Biological function summary	Cathepsin B participates as a proteolytic enzyme involved in protein turnover and processing. It does not function in isolation but often associates with various other proteases forming complexes essential for efficient substrate breakdown. Cathepsin B assists in the activation of other enzymes by cleaving propeptides therefore facilitating the initiation of cascade reactions. This role is critical in maintaining cellular homeostasis and modulating physiological processes including cell migration and immune response modulation.
Pathways	Cathepsin B significantly contributes to the lysosomal protein degradation pathway and the autophagy-lysosome pathway. It interacts with proteins such as B protein which are important for cellular recycling and energy homeostasis. Its activity supports the MHC class II antigen processing pathway playing an essential part in immune system functionality. Cathepsin B also exhibits interactions with Ctsb protein inhibitors which regulate its proteolytic activity within these pathways.
Associated diseases and disorders	Cathepsin B has strong associations with cancer progression and neurological disorders such as Alzheimer's disease. Its overexpression and dysregulation are linked to tumor metastasis where it degrades extracellular matrix components promoting invasion. Ctsb protein interactions with corey mazo proteins influence tumor microenvironment and immune evasion. In Alzheimer's disease cathepsin B can influence amyloid beta peptide processing connected to neurodegenerative pathology progression. These roles highlight the potential for cathepsin B as a therapeutic target in addressing these conditions.

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.

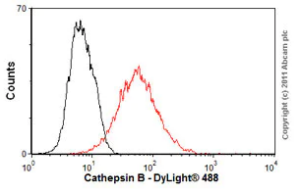
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1 product image



Flow Cytometry - Anti-Cathepsin B antibody [CA10] (ab58802)

Cathepsin B Flow Cytometry staining using mouse Anti-Cathepsin B antibody

Overlay histogram showing HepG2 cells stained with ab58802 (red line). The cells were fixed with 4% paraformaldehyde (10 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 (ab58802, 0.5µg/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 IgG2a [ICIGG2A] (ab91361, 1µg/1x10^6 cells) used under the same conditions. Acquisition of >5,000 events was performed. This antibody gave a positive signal in HepG2 cells fixed with 80% methanol (5 min)/permeabilized with 0.1% PBS-Tween for 20 min used under the same conditions.

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