abcam

ab190077

Anti-Cathepsin B antibody

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.4 Preservative: 0.09% Sodium azide Constituents: PBS
Form	Liquid
Clonality	Polyclonal
Immunogen	Synthetic Peptide within Human CTSB aa 150-250 conjugated to Keyhole Limpet Haemocyanin. The exact immunogen used to generate this antibody is proprietary information. Database link P07858
Purification technique	Affinity purification Immunogen
Concentration	0.5 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

WB

Tested

Species	Human
Dilution info	1/1000
Notes	-

IHC-P

Tested

Species	Human
Dilution info	10 µg/mL
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	-
Notes	ab171870 - Rabbit polyclonal IgG, is suitable for use as an isotype control with this antibody.

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
Storage information	Avoid freeze / thaw cycle

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

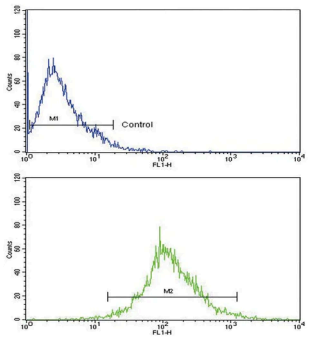
We do not recommend this combination. It is not covered by our product promise.

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.

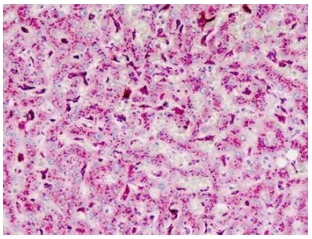
3 product images



Flow Cytometry (Intracellular) - Anti-Cathepsin B antibody (ab190077)

Cathepsin B Flow Cytometry (Intracellular) staining using rabbit Anti-Cathepsin B antibody

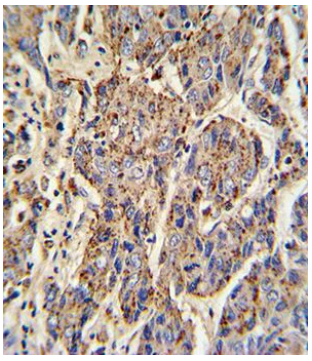
Intracellular flow cytometric analysis of HepG2cells labeling Cathepsin B with ab190077 at 1/10 dilution (lowerhistogram) compared to a negative control (upperhistogram). FITC-conjugated goat-anti-rabbit secondary antibodies were used for the analysis.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Cathepsin B antibody (ab190077)

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

Immunohistochemical analysis of formalin-fixed, paraffin-embedded Human liver tissue labeling Cathepsin B with ab190077 at 10 µg/ml.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Cathepsin B antibody (ab190077)

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

Immunohistochemical analysis of formalin-fixed, paraffin-embedded Human hepatocarcinoma tissue labeling Cathepsin B with ab190077 at 10 µg/ml followed by peroxidase-conjugated secondary antibody and DAB staining.

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