abcam

ab314645

Anti-Cathepsin C antibody [EPR26636-76] - 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	EPR26636-76
Purification technique	Affinity purification Protein A
Concentration	1.028 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	-

Notes	-

Expected

Species	Mouse, Rat
Dilution info	Use at an assay dependent concentration.
Notes	-

WB

Tested

Species	Human, Mouse, Rat
Dilution info	-
Notes	-

IHC-P

Tested

Species	Human, Mouse, Rat
Dilution info	-
Notes	-

ICC/IF

Not recommended

Species	Human, Mouse, Rat
Dilution info	-
Notes	-

IP

Not recommended

Species	Human, Mouse, Rat
Dilution info	-

Notes	-

Target data

See full target information CTSC

Function	Thiol protease (PubMed:1586157). Has dipeptidylpeptidase activity (PubMed:1586157). Active against a broad range of dipeptide substrates composed of both polar and hydrophobic amino acids (PubMed:1586157). Proline cannot occupy the P1 position and arginine cannot occupy the P2 position of the substrate (PubMed:1586157). Can act as both an exopeptidase and endopeptidase (PubMed:1586157). Activates serine proteases such as elastase, cathepsin G and granzymes A and B (PubMed:8428921).

Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	+4°C

Notes

ab314645 is the carrier-free version of ab314644.

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	Cathepsin C also known as dipeptidyl peptidase I is a lysosomal cysteine protease with a molecular mass of approximately 51 kDa. It functions mechanically by cleaving off dipeptides from the N-terminal end of proteins and peptides. Cathepsin C is widely expressed in various tissues with higher levels in immune cells like neutrophils and macrophages. This enzyme activates serine proteases from their inactive zymogen forms which is important for immune responses.
Biological function summary	The enzyme contributes significantly to the immune system. It forms part of a multi-enzyme complex that processes proenzymes such as granzymes and cathepsin G into their active forms. Through these actions Cathepsin C regulates cellular activities linked to inflammation and apoptosis. The proteolytic activity it provides is critical for the functioning of immune-related cells facilitating defense mechanisms against pathogens.
Pathways	Cathepsin C plays roles in the inflammatory and immune response pathways. It connects to the granzyme and lysosomal pathways important in processing and regulating granzyme activities critical for cytotoxic T lymphocyte functions. Cathepsin C maintains connections with proteins like granzymes and cathepsin G each involved in mediating immune responses and cellular death.
Associated diseases and disorders	Cathepsin C is associated with conditions such as Papillon-Lefèvre Syndrome and aggressive periodontitis. These disorders arise due to disruptions in immune protection resulting from mutations in the Cathepsin C gene. The enzyme's abnormal activity in these diseases highlights its connection with proteins such as neutrophil elastase which play critical roles in tissue degradation processes leading to periodontal disease.

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.

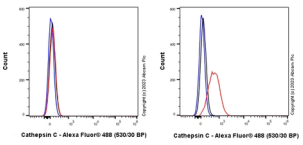
We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

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.

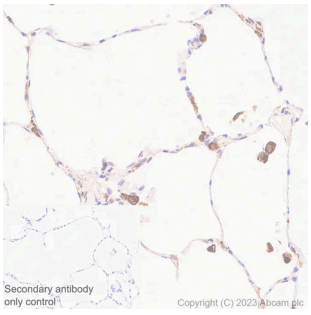
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8 product images



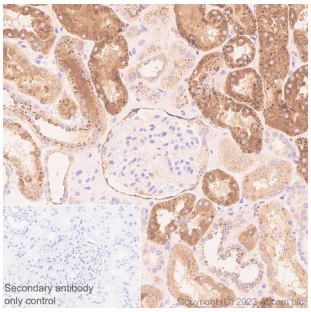
Flow Cytometry (Intracellular) - Anti-Cathepsin C antibody [EPR26636-76] - BSA and Azide free (ab314645)

This data was developed using ab314644, the same antibody clone in a different buffer formulation. Flow cytometric analysis of 4% paraformaldehyde fixed 90% methanol permeabilized CTSC KO HeLa (human CTSC knockout cervical adenocarcinoma epithelial cell, Left) / Parental HeLa (Right) cells labelling Cathepsin C with ab314644 at 1/5000 dilution (0.01 ug, Red) compared with a Rabbit monoclonal IgG (ab172730) (Black) isotype control and an unlabelled control (cells without incubation with primary antibody and secondary antibody) (Blue). A Goat Anti-Rabbit IgG (Alexa Fluor® 488, ab150081) at 1/5000 dilution was used as the secondary antibody.



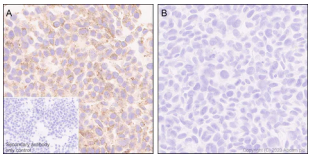
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Cathepsin C antibody [EPR26636-76] - BSA and Azide free (ab314645)

This data was developed using ab314644, the same antibody clone in a different buffer formulation. Immunohistochemical analysis of paraffin-embedded human lung tissue labeling Cathepsin C with ab314644 at 1/5000 (0.101 ug/ml) followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection). Positive staining on human lung. The section was incubated with ab314644 for 30 mins at room temperature. The immunostaining was performed on a Leica Biosystems BOND® RX instrument. Counterstained with Hematoxylin. Secondary antibody only control: Secondary antibody is a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection). Heat mediated antigen retrieval was performed with Tris-EDTA buffer (pH 9.0, Epitope Retrieval Solution2) for 20 mins.



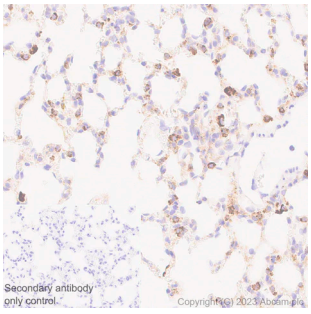
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Cathepsin C antibody [EPR26636-76] - BSA and Azide free (ab314645)

This data was developed using ab314644, the same antibody clone in a different buffer formulation. Immunohistochemical analysis of paraffin-embedded human kidney tissue labeling Cathepsin C with ab314644 at 1/5000 (0.101 ug/ml) followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection). Positive staining on human kidney. The section was incubated with ab314644 for 30 mins at room temperature. The immunostaining was performed on a Leica Biosystems BOND® RX instrument. Counterstained with Hematoxylin. Secondary antibody only control: Secondary antibody is a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection). Heat mediated antigen retrieval was performed with Tris-EDTA buffer (pH 9.0, Epitope Retrieval Solution2) for 20 mins.



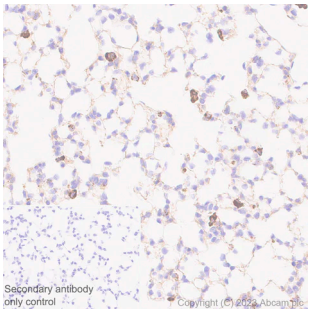
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Cathepsin C antibody [EPR26636-76] - BSA and Azide free (ab314645)

This data was developed using ab314644, the same antibody clone in a different buffer formulation. Immunohistochemical analysis of paraffin-embedded Panel A. Wild-type HeLa (human cervix adenocarcinoma epithelial cell) pellets. Panel B. CTSC knockout HeLa cell pellets. tissue labeling Cathepsin C with ab314644 at 1/2000 (0.254 ug/ml) followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection). Positive staining on Wild-type HeLa cell pellets (Panel A); No staining on CTSC knockout HeLa cell pellets (Panel B). The section was incubated with ab314644 for 30 mins at room temperature. The immunostaining was performed on a Leica Biosystems BOND® RX instrument. Counterstained with Hematoxylin. Secondary antibody only control: Secondary antibody is a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection). Heat mediated antigen retrieval was performed with Tris-EDTA buffer (pH 9.0, Epitope Retrieval Solution2) for 20 mins.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Cathepsin C antibody [EPR26636-76] - BSA and Azide free (ab314645)

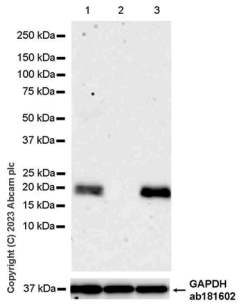
This data was developed using ab314644, the same antibody clone in a different buffer formulation. Immunohistochemical analysis of paraffin-embedded rat lung tissue labeling Cathepsin C with ab314644 at 1/5000 (0.101 ug/ml) followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection). Positive staining on rat lung. The section was incubated with ab314644 for 30 mins at room temperature. The immunostaining was performed on a Leica Biosystems BOND® RX instrument. Counterstained with Hematoxylin. Secondary antibody only control: Secondary antibody is a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection). Heat mediated antigen retrieval was performed with Tris-EDTA buffer (pH 9.0, Epitope Retrieval Solution2) for 20 mins.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Cathepsin C antibody [EPR26636-76] - BSA and Azide free (ab314645)

This data was developed using ab314644, the same antibody clone in a different buffer formulation. Immunohistochemical analysis of paraffin-embedded mouse lung tissue labeling Cathepsin C with ab314644 at 1/2000 (0.254 ug/ml) followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection). Positive staining on mouse lung. The section was incubated

with ab314644 for 30 mins at room temperature. The immunostaining was performed on a Leica Biosystems BOND® RX instrument. Counterstained with Hematoxylin. Secondary antibody only control: Secondary antibody is a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection). Heat mediated antigen retrieval was performed with Tris-EDTA buffer (pH 9.0, Epitope Retrieval Solution2) for 20 mins.



Western blot - Anti-Cathepsin C antibody [EPR26636-76] - BSA and Azide free (ab314645)

Cathepsin C Western blot staining using rabbit Anti-Cathepsin C antibody

This data was developed using ab314644, the same antibody clone in a different buffer formulation.
Blocking and diluting buffer and concentration: 5% NFDM/TBST

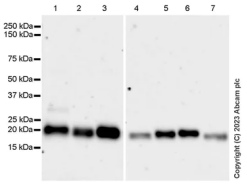
20-kDa mature form of Cathepsin C is observed. The MW is consistent with that described in the literature (PMID: 25244098).

In Western blot, ab314644 was shown to bind specifically to Cathepsin C.

Target of interest was observed at 20 kDa in wild-type HeLa cell lysates (lane 1, wild-type cell line ab255928) with no signal observed at this size in CTSC knockout cell line (lane 2, knockout cell line ab265822/ knockout cell lysate ab257909). In Western blot, Anti-GAPDH antibody [EPR16891] - Loading Control (ab181602) staining at 1/200000 dilution.

Performed under reducing conditions.

Exposure time: 180s



Western blot - Anti-Cathepsin C antibody [EPR26636-76] - BSA and Azide free (ab314645)

This data was developed using ab314644, the same antibody clone in a different buffer formulation. Blocking and diluting buffer and concentration: 5% NFDM/TBST 20-kDa mature form of Cathepsin C is observed. The MW is consistent with that described in the literature (PMID: 25244098).
All lanes:
Western blot - Anti-Cathepsin C antibody [EPR26636-76] (ab314644) at 1/1000 dilution

Lane 1:
Human spleen tissue lysate at 20 µg

Lane 2:
Human liver tissue lysate at 20 µg

Lane 3:
Human lung tissue lysate at 20 µg

Lane 4:
Mouse lung tissue lysate at 20 µg

Lane 5:
Rat spleen tissue lysate at 20 µg

Lane 6:
Rat liver tissue lysate at 20 µg

Lane 7:

Rat lung tissue lysate at 20 µg

Secondary

All lanes:
Goat Anti-Rabbit IgG (HRP) with minimal cross-reactivity with human IgG at 1/2000 dilution

Observed band size: 20 kDa

Exposure time: 81s

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