abcam

ab75994

Anti-Calpain 2 antibody [EPR2562Y]

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	EPR2562Y
Purification technique	Affinity purification Protein A
Concentration	0.688 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

ICC/IF

Not recommended

Species	Human
Dilution info	-
Notes	-

WB

Tested

Species	Human
Dilution info	1/2000
Notes	-

IHC-P

Not recommended

Species	Human
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/60
Notes	ab172730 - Rabbit monoclonal IgG, is suitable for use as an isotype control with this antibody.

Target data

See full target information CAPN2

Function	Calcium-regulated non-lysosomal thiol-protease which catalyzes limited proteolysis of substrates involved in cytoskeletal remodeling and signal transduction. Proteolytically cleaves MYOC at 'Arg-226' (PubMed:17650508). Proteolytically cleaves CPEB3 following neuronal stimulation which abolishes CPEB3 translational repressor activity, leading to translation of CPEB3 target mRNAs (By similarity).

Storage

Shipped at conditions	Conditional Ambient
Appropriate short-term storage conditions	+4°C

Appropriate long-term storage conditions	-20°C
Storage information	Stable for 12 months at -20°C

Notes

Species reactivity
Mouse, Rat: We have preliminary internal testing data to indicate this antibody may not react with these species. Please contact us for more information.

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	Calpain 2 also known as CAPN2 or calpain-2 is a heterodimer protease enzyme weighing around 80 kDa. It belongs to the calpain family which requires calcium ions for activation. Calpain 2 expresses in many tissues including the brain muscles and liver indicating its widespread role in cellular processes. The enzyme comprises a large catalytic subunit and a small regulatory subunit each encoded by different genes.
Biological function summary	Calpain-2 plays a significant role in cell signaling cytoskeletal remodeling and apoptosis regulation. It does not typically function in isolation but partners with other molecules forming complexes necessary for precise proteolytic activity. This enzyme modulates several cell functions by cleaving substrates like cytoskeletal proteins transcription factors and enzymes which allows cells to respond adaptively to various stimuli.
Pathways	Calpain-2 integrates into important signaling cascades such as the ERK and PI3K/AKT pathways. It influences these pathways by processing specific proteins and modifying their activity thereby affecting cell survival and proliferation. Calpain-2 closely interacts with proteins like phosphatidylinositol-45-bisphosphate 3-kinase (PI3K) and extracellular signal-regulated kinases (ERKs) within these pathways emphasizing its importance in finely-tuning cellular responses.

Associated diseases and disorders	Calpain-2 links to several pathological conditions including neurodegenerative diseases like Alzheimer's and muscular disorders such as Duchenne Muscular Dystrophy. In Alzheimer's disease calpain-2 activity influences the processing of amyloid precursor proteins contributing to plaque formation. In Duchenne Muscular Dystrophy calpain-2 activity disrupts muscle fiber integrity through its interaction with proteins like dystrophin aggravating the disorder's 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

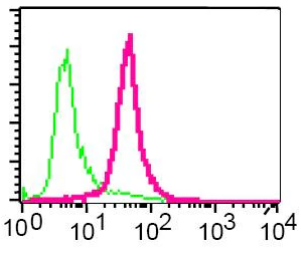
We do not recommend this combination. It is not covered by our product promise.

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.

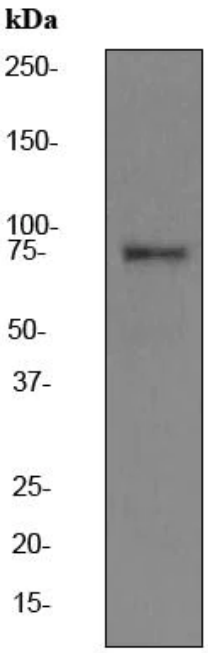
4 product images



Flow Cytometry (Intracellular) - Anti-Calpain 2 antibody [EPR2562Y] (ab75994)

Calpain 2 Flow Cytometry (Intracellular) staining using rabbit Anti-Calpain 2 antibody

Intracellular flow cytometric analysis of permeabilized HeLa cells using ab75994 (red) or a rabbit IgG (negative) (green).



Western blot - Anti-Calpain 2 antibody [EPR2562Y] (ab75994)

Calpain 2 Western blot staining of HeLa cell lysate using rabbit Anti-Calpain 2 antibody

All lanes:
Western blot - Anti-Calpain 2 antibody [EPR2562Y] (ab75994) at 1/500 dilution

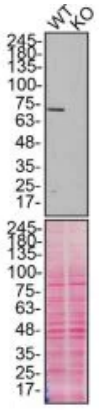
All lanes:
HeLa cell lysate at 10 µg

Secondary

All lanes:
HRP labelled goat anti-rabbit at 1/2000 dilution

Predicted band size: 80 kDa

Observed band size: 75 kDa

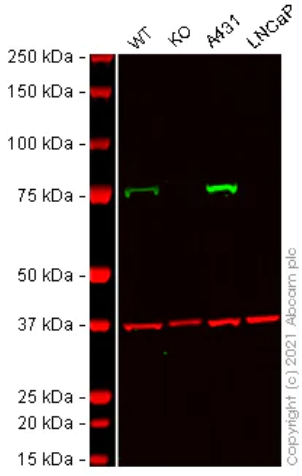


Western blot - Anti-Calpain 2 antibody [EPR2562Y] (ab75994)

Calpain 2 Western blot staining using rabbit Anti-Calpain 2 antibody

ab75994 was shown to react with CAPN2 in wild-type MDA-MB-231 (wpxld GFP) cells in Western blot with loss of signal observed in a CAPN2 knockout cell line. Wild-type MDA-MB-231 (wpxld GFP) and CAPN2 knockout cell lysates were subjected to SDS-PAGE. Membranes were blocked in 5% milk in TBST for 1 hr before incubation with ab75994 overnight at 4 °C at a 1/2000 dilution. Blots were incubated with goat anti-rabbit HRP secondary antibodies at 0.2 µg/ml before imaging. These data were provided by YCharOS Inc., an open science company with the mission of characterizing commercially available antibody reagents for all human proteins. Abcam and YCharOS are working together to help address the reproducibility crisis by enabling the life science community to better evaluate commercially available antibodies.
All lanes:
Western blot - Anti-Calpain 2 antibody [EPR2562Y] (ab75994)

Predicted band size: 80 kDa



Western blot - Anti-Calpain 2 antibody [EPR2562Y] (ab75994)

Lanes 1 - 4: Merged signal (red and green). Green - ab75994 observed at 75 kDa. Red - loading control ab8245 (Mouse anti-GAPDH antibody [6C5]) observed at 37 kDa.
ab75994 was shown to react with Calpain 2 in wild-type HEK-293T cells in Western blot with loss of signal observed in CAPN2 knockout cell line ab266628 (CAPN2 knockout cell lysate ab257379). Wild-type HEK-293T and CAPN2 knockout cell lysates were subjected to SDS-PAGE. Membranes were blocked in 3 % milk in TBS-T (0.1 % Tween®) before incubation with ab75994 and ab8245 (Mouse anti-GAPDH antibody [6C5]) overnight at 4°C at a 1 in 2000 dilution and a 1 in 20000 dilution respectively. Blots were incubated with Goat anti-Rabbit IgG H&L (IRDye® 800CW) preabsorbed (ab216773) and Goat anti-Mouse IgG H&L (IRDye® 680RD) preabsorbed (ab216776) secondary antibodies at 1 in 20000 dilution for 1 h at room temperature before imaging.

All lanes:
Western blot - Anti-Calpain 2 antibody [EPR2562Y] (ab75994) at 1/2000 dilution

Lane 1:
Wild-type HEK-293T cell lysate at 40 µg

Lane 2:
CAPN2 knockout HEK-293T cell lysate at 40 µg

Lane 2:
Western blot - Human CAPN2 (Calpain 2) knockout HEK-293T cell line (ab266628)

Lane 3:
A431 cell lysate at 20 µg

Lane 4:
LNCaP cell lysate at 20 µg

Performed under reducing conditions.

Predicted band size: 80 kDa

Observed band size: 75 kDa

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