abcam

ab255818

Anti-Caspase-7 antibody [EPR22839-12]

Recombinant | RabMAb | KO Validated | 20ul selling size

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	EPR22839-12
Purification technique	Affinity purification Protein A
Concentration	0.592 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IP

Not recommended

Species	Mouse, Human, Rat
Dilution info	-
Notes	-

WB

Tested

Species	Mouse
Dilution info	1/1000
Notes	-

Species	Human
Dilution info	1/1000
Notes	-

Species	Rat
Dilution info	1/1000
Notes	-

ICC/IF

Not recommended

Species	Human, Mouse, Rat
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Mouse
Dilution info	1/50
Notes	-

Species	Human
Dilution info	1/50
Notes	-

Expected

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

IHC-P

Tested

Species	Mouse
Dilution info	1/2000
Notes	-

Species	Rat
Dilution info	1/2000
Notes	-

Species	Human
Dilution info	1/2000
Notes	-

Target data

See full target information CASP7

Function

Thiol protease involved in different programmed cell death processes, such as apoptosis, pyroptosis or granzyme-mediated programmed cell death, by proteolytically cleaving target proteins (PubMed:11257230, PubMed:11257231, PubMed:11701129, PubMed:15314233, PubMed:16916640, PubMed:17646170, PubMed:18723680, PubMed:19581639, PubMed:8521391, PubMed:8567622, PubMed:8576161, PubMed:9070923). Has a marked preference for Asp-Glu-Val-Asp (DEVD) consensus sequences, with some plasticity for alternate non-canonical sequences (PubMed:12824163, PubMed:15314233, PubMed:17697120, PubMed:19581639, PubMed:20566630, PubMed:23650375, PubMed:23897474, PubMed:27032039). Its involvement in the different programmed cell death processes is probably determined by upstream proteases that activate CASP7 (By similarity). Acts as an effector caspase involved in the execution phase of apoptosis: following cleavage and activation by initiator caspases (CASP8, CASP9 and/or CASP10), mediates execution of apoptosis by catalyzing cleavage of proteins, such as CLSPN, PARP1, PTGES3 and YY1 (PubMed:10497198, PubMed:16123041, PubMed:16374543, PubMed:16916640, PubMed:18723680, PubMed:20566630, PubMed:21555521, PubMed:22184066, PubMed:22451931, PubMed:27889207, PubMed:28863261, PubMed:31586028, PubMed:34156061,

PubMed:35338844, PubMed:35446120). Compared to CASP3, acts as a minor executioner caspase and cleaves a limited set of target proteins (PubMed:18723680). Acts as a key regulator of the inflammatory response in response to bacterial infection by catalyzing cleavage and activation of the sphingomyelin phosphodiesterase SMPD1 in the extracellular milieu, thereby promoting membrane repair (PubMed:21157428). Regulates pyroptosis in intestinal epithelial cells: cleaved and activated by CASP1 in response to S.typhimurium infection, promoting its secretion to the extracellular milieu, where it catalyzes activation of SMPD1, generating ceramides that repair membranes and counteract the action of gasdermin-D (GSDMD) pores (By similarity). Regulates granzyme-mediated programmed cell death in hepatocytes: cleaved and activated by granzyme B (GZMB) in response to bacterial infection, promoting its secretion to the extracellular milieu, where it catalyzes activation of SMPD1, generating ceramides that repair membranes and counteract the action of perforin (PRF1) pores (By similarity). Following cleavage by CASP1 in response to inflammasome activation, catalyzes processing and inactivation of PARP1, alleviating the transcription repressor activity of PARP1 (PubMed:22464733). Acts as an inhibitor of type I interferon production during virus-induced apoptosis by mediating cleavage of antiviral proteins CGAS, IRF3 and MAVS, thereby preventing cytokine overproduction (By similarity). Cleaves and activates sterol regulatory element binding proteins (SREBPs) (PubMed:8643593). Cleaves phospholipid scramblase proteins XKR4, XKR8 and XKR9 (By similarity). In case of infection, catalyzes cleavage of Kaposi sarcoma-associated herpesvirus protein ORF57, thereby preventing expression of viral lytic genes (PubMed:20159985). Cleaves BIRC6 following inhibition of BIRC6-caspase binding by DIABLO/SMAC (PubMed:36758104, PubMed:36758106). Isoform Beta. Lacks enzymatic activity.

Storage

Shipped at conditions	Conditional Ambient
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

Notes

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.

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

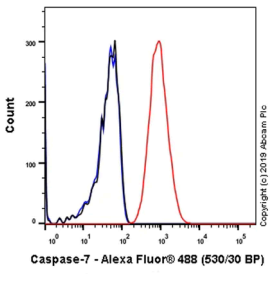
We do not recommend this combination. It is not covered by our product promise.

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.

7 product images

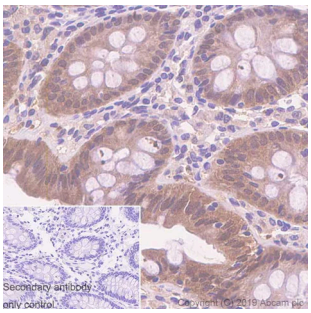


Flow Cytometry (Intracellular) - Anti-Caspase-7 antibody [EPR22839-12] (ab255818)

Caspase-7 Flow Cytometry (Intracellular) staining using rabbit Anti-Caspase-7 antibody

Intracellular flow cytometric analysis of 4% paraformaldehyde fixed, 90% methanol permeabilized HeLa (human cervix adenocarcinoma) cells labeling Caspase-7 with ab255818 at 1/50 (Red) compared with a Rabbit monoclonal IgG (ab172730) / Black isotype control and an unlabeled control (cells without incubation with primary antibody and secondary antibody) (Blue). A Goat

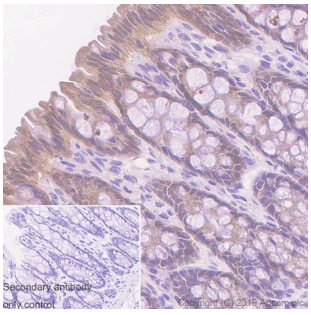
anti rabbit IgG (Alexa Fluor® 488, ab150077) at 1/2000 dilution was used as the secondary antibody.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Caspase-7 antibody [EPR22839-12] (ab255818)

Caspase-7 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Caspase-7 antibody

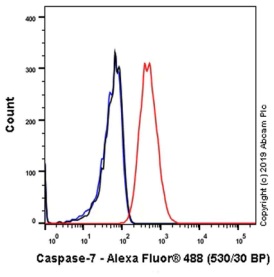
Immunohistochemical analysis of paraffin-embedded human colon tissue labeling Caspase-7 with ab255818 at 1/2000 dilution (0.28 ug/ml) followed by a ready to use Rabbit specific IHC polymer detection kit HRP/DAB (ab209101). Positive staining on human colon (PMID: 30448733) is observed. The section was incubated with ab255818 for 15 mins at room temperature. The immunostaining was performed on a Leica Biosystems BOND® RX instrument. Counterstained with hematoxylin. Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0, epitope retrieval solution 2) for 20 mins.
Secondary antibody only control/ Used PBS instead of primary antibody, secondary antibody is a ready to use Rabbit specific IHC polymer detection kit HRP/DAB (ab209101).



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Caspase-7 antibody [EPR22839-12] (ab255818)

Caspase-7 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Caspase-7 antibody

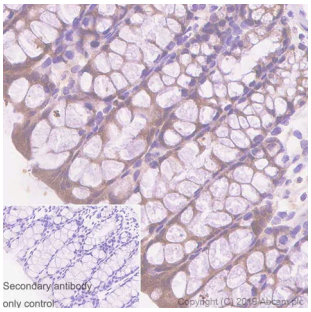
Immunohistochemical analysis of paraffin-embedded rat colon tissue labeling Caspase-7 with ab255818 at 1/2000 dilution (0.28 ug/ml) followed by a ready to use Rabbit specific IHC polymer detection kit HRP/DAB (ab209101). Positive staining on rat colon (PMID: 30448733) is observed. The section was incubated with ab255818 for 15 mins at room temperature. The immunostaining was performed on a Leica Biosystems BOND® RX instrument. Counterstained with hematoxylin. Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0, epitope retrieval solution 2) for 20 mins.
Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is a ready to use Rabbit specific IHC polymer detection kit HRP/DAB (ab209101).



Flow Cytometry (Intracellular) - Anti-Caspase-7 antibody [EPR22839-12] (ab255818)

Caspase-7 Flow Cytometry (Intracellular) staining using rabbit Anti-Caspase-7 antibody

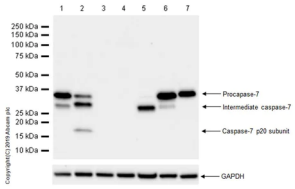
Intracellular flow cytometric analysis of 4% paraformaldehyde fixed, 90% methanol permeabilized C2C12 (mouse muscle) cells labeling Caspase-7 with ab255818 at 1/50 (Red) compared with a Rabbit monoclonal IgG (ab172730) / Black isotype control and an unlabeled control (cells without incubation with primary antibody and secondary antibody) (Blue). A Goat anti rabbit IgG (Alexa Fluor® 488, ab150077) at 1/2000 dilution was used as the secondary antibody.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Caspase-7 antibody [EPR22839-12] (ab255818)

Caspase-7 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Caspase-7 antibody

Immunohistochemical analysis of paraffin-embedded mouse colon tissue labeling Caspase-7 with ab255818 at 1/2000 dilution (0.28 ug/ml) followed by a ready to use Rabbit specific IHC polymer detection kit HRP/DAB (ab209101). Positive staining on mouse colon (PMID: 23572575) is observed. The section was incubated with ab255818 for 15 mins at room temperature. The immunostaining was performed on a Leica Biosystems BOND® RX instrument. Counterstained with hematoxylin. Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0, epitope retrieval solution 2) for 20 mins.
Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is a ready to use Rabbit specific IHC polymer detection kit HRP/DAB (ab209101).



Western blot - Anti-Caspase-7 antibody [EPR22839-12] (ab255818)

Caspase-7 is activated upon apoptotic induction. Procapase-7 (35 kDa), intermediate caspase-7 (32 kDa) and caspase-7 p20 subunit (18 kDa) are observed. The molecular weight observed is consistent with what has been described in the literature (PMID: 15953353, 18596415). ab255818 was shown to specifically react with Caspase-7 in wild-type HAP1 cells as signal was lost in Caspase-7 knockout cells. Wild-type and Caspase-7 knockout samples were subjected to SDS-PAGE. ab255818 and ab181602 (Rabbit anti-GAPDH loading control) were incubated 1 hour at room temperature at 1/1000 dilution and 1/200,000 dilution respectively. Blots were developed with Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated (ab97051) secondary antibody at 1/100,000 dilution for 1 hour at room temperature before imaging. The blot was developed on a BIO-RAD® ChemiDoc™ instrument using the ECL technique. Blocking and Diluting Buffer and concentration: 5% NFDM/TBST

All lanes:
Western blot - Anti-Caspase-7 antibody [EPR22839-12] (ab255818) at 1/1000 dilution

Lane 1:
Untreated wild-type HAP1 whole cell lysate at 20 µg

Lane 2:
Wild-type HAP1 treated with 1 µM staurosporine for 3 hours whole cell lysate at 20 µg

Lane 3:
Untreated caspase-7 knockout HAP1 whole cell lysate at 20 µg

Lane 4:
Caspase-7 knockout HAP1 treated with 1 µM staurosporine for 3 hours whole cell lysate at 20 µg

Lane 5:
C6 (rat glial tumor glial cell) whole cell lysate at 20 µg

Lane 6:
PC-12 (rat adrenal gland pheochromocytoma) whole cell lysate at 20 µg

Lane 7:
RAW 264.7 (mouse abelson murine leukemia virus-induced tumor macrophage) whole cell lysate at 20 µg

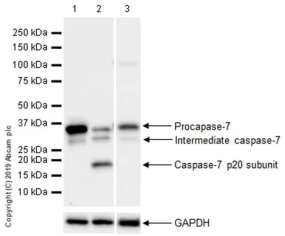
Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/100000 dilution

Predicted band size: 34 kDa

Observed band size: 32 kDa, 35 kDa

Exposure time: 26s



Western blot - Anti-Caspase-7 antibody [EPR22839-12] (ab255818)

Caspase-7 is activated upon apoptotic induction. Procapase-7 (35 kDa), intermediate caspase-7 (32 kDa) and caspase-7 p20 subunit (18 kDa) are observed. The molecular weight observed is consistent with what has been described in the literature (PMID: 15953353, 18596415).
Exposure time: Lanes 1-2: 15 seconds; Lane 3: 3 seconds.

Blocking and Diluting Buffer and concentration: 5% NFDM/TBST.

All lanes:
Western blot - Anti-Caspase-7 antibody [EPR22839-12] (ab255818) at 1/1000 dilution

Lane 1:
Untreated HeLa (human cervix adenocarcinoma epithelial cell) whole cell lysate at 20 µg

Lane 2:
HeLa treated with 1 µM staurosporine for 3 hours whole cell lysate at 20 µg

Lane 3:
C2C12 (mouse myoblasts myoblast) whole cell lysate at 20 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/100000 dilution

Predicted band size: 34 kDa

Observed band size: 18 kDa, 32 kDa, 35 kDa

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