abcam

ab32522

Anti-Caspase-7 antibody [E22]

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, 50% Glycerol (glycerin, glycerine), 0.05% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	E22
Purification technique	Affinity purification Protein A
Specificity	The antibody should recognize both pro-form and p20 cleaved-form. The antibody does not cross-react with other Caspase family members.
Concentration	0.096 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IHC-P

Tested

Species	Human
Dilution info	1/50 - 1/100
Notes	

Perform heat-mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.

IP

Tested

Species	Human
Dilution info	1/20
Notes	-

WB

Tested

Species	Human
Dilution info	1/1000
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	1/100
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/250
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	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

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.

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

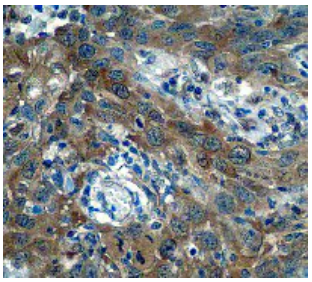
We do not recommend this combination. It is not covered by our product promise.

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.

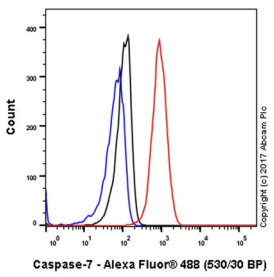
7 product images



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Caspase-7 antibody [E22] (ab32522)

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

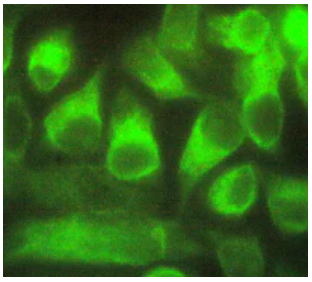
Immunohistochemical analysis of paraffin embedded human skin cancer tissue using ab32522 at 1:50 dilution.
Perform heat mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.



Flow Cytometry (Intracellular) - Anti-Caspase-7 antibody [E22] (ab32522)

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

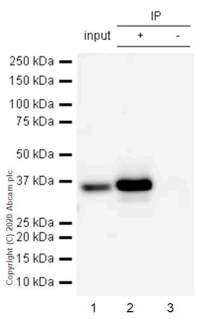
Intracellular Flow Cytometry analysis of HeLa (human cervix adenocarcinoma) cells labeling Caspase-7 (red) with ab32522 at a 1/250 dilution. Cells were fixed with 4% paraformaldehyde and permeabilized with 90% methanol. A goat anti-rabbit IgG (Alexa Fluorr® 488) (ab150077) was used as the secondary antibody at a 1/2000 dilution. Black - Rabbit monoclonal IgG (ab172730). Blue (unlabeled control) - Cells without incubation with the primary and secondary antibodies.



Immunocytochemistry/ Immunofluorescence - Anti-Caspase-7 antibody [E22] (ab32522)

Caspase-7 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-Caspase-7 antibody

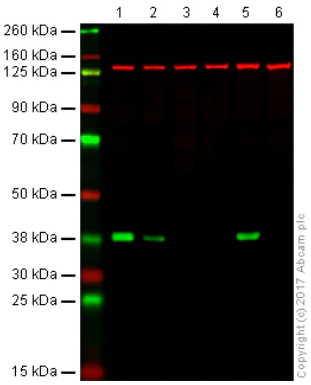
Immunofluorescent staining of HeLa cells using ab32522 at 1:100 dilution.



Immunoprecipitation - Anti-Caspase-7 antibody [E22] (ab32522)

Purified ab32522 at 1/20 dilution (1µg) immunoprecipitating Caspase-7 in Jurkat whole cell lysate.
Lane 1 (input): Jurkat (Human T cell leukemia T lymphocyte) whole cell lysate 10µg
Lane 2 (+): ab32522 + Jurkat whole cell lysate.
Lane 3 (-): Rabbit monoclonal IgG (ab172730) instead of ab32522 in Jurkat whole cell lysate.
VeriBlot for IP Detection Reagent (HRP) (ab131366) (1/1000 dilution) was used for Western blotting.
Blocking Buffer and concentration: 5% NFDM/TBST.
Diluting buffer and concentration: 5% NFDM/TBST.
Observed band size: 34 kDa
All lanes:
Immunoprecipitation - Anti-Caspase-7 antibody [E22] (ab32522)

Predicted band size: 34 kDa



Western blot - Anti-Caspase-7 antibody [E22] (ab32522)

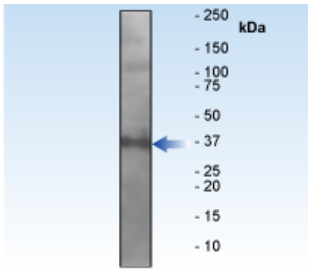
Caspase-7 Western blot staining using rabbit Anti-Caspase-7 antibody

Lane 1: Wild type HAP1 whole cell lysate (20 µg)
Lane 2: Wild type HAP1 + Staurosporine ab120056 whole cell lysate (20 µg)
Lane 3: CASP7 knockout HAP1 whole cell lysate (20 µg)
Lane 4: CASP7 + Staurosporine knockout HAP1 whole cell lysate (20 µg)
Lane 5: HeLa whole cell lysate (20 µg)
Lane 6: HeLa + Staurosporine whole cell lysate (20 µg)
Lanes 1 - 6: Merged signal (red and green). Green - ab32522 observed at 38 kDa. Red - loading control, ab18058, observed at 130 kDa.

ab32522 was shown to specifically react with HAP1 + Staurosporine when HAP1 + Staurosporine knockout samples were used. Wild-type and HAP1 + Staurosporine knockout samples were subjected to SDS-PAGE. ab32522 and ab18058 (Mouse anti Vinculin loading control) were incubated overnight at 4°C at 1000 dilution and 1/10000 dilution respectively. Blots were developed 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 1/20000 dilution for 1 hour at room temperature before imaging.

All lanes:
Western blot - Anti-Caspase-7 antibody [E22] (ab32522)

Predicted band size: 34 kDa



Western blot - Anti-Caspase-7 antibody [E22] (ab32522)

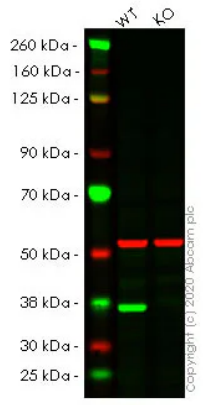
Caspase-7 Western blot staining of Jurkat cell lysate using rabbit Anti-Caspase-7 antibody

All lanes:
Western blot - Anti-Caspase-7 antibody [E22] (ab32522) at 1/1000 dilution

All lanes:
Jurkat cell lysate

Predicted band size: 34 kDa

Observed band size: 34 kDa



Western blot - Anti-Caspase-7 antibody [E22] (ab32522)

Caspase-7 Western blot staining using rabbit Anti-Caspase-7 antibody

Lanes 1- 2: Merged signal (red and green). Green - ab32522 observed at 38 kDa. Red - Anti-alpha Tubulin antibody [DM1A] - Loading Control (ab7291) observed at 50 kDa.
ab32522 was shown to react with pro Caspase-7 in wild-type HeLa cells in western blot. Loss of signal was observed when knockout cell line ab265777 (knockout cell lysate ab257380) was used. Wild-type HeLa and CASP7 knockout HeLa cell lysates were subjected to SDS-PAGE. ab32522 and Anti-alpha Tubulin antibody [DM1A] - Loading Control (ab7291) overnight at 4°C at a 1 in 1000 dilution and a 1 in 20000 dilution respectively. Blots were developed with Goat anti-Rabbit IgG H&L (IRDye®800CW) preadsorbed (ab216773) and Goat anti-Mouse IgG H&L (IRDye®680RD) preadsorbed (ab216776) secondary antibodies at 1 in 20000 dilution for 1 hour at room temperature before imaging.

All lanes:

Western blot - Anti-Caspase-7 antibody [E22] (ab32522) at 1/1000 dilution

Lane 1:
Wild-type HeLa cell lysate at 20 µg

Lane 2:
Western blot - Human CASP7 (Caspase-7) knockout HeLa cell lysate (ab257380) at 20 µg

Performed under reducing conditions.

Predicted band size: 34 kDa

Observed band size: 38 kDa

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