


## Product datasheet

# Anti-Cleaved Caspase-3 antibody ab2302

★★★★☆ 54 Abreviews 632 References 5 Images

### Overview

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<b>Product name</b>	Anti-Cleaved Caspase-3 antibody
<b>Description</b>	Rabbit polyclonal to Cleaved Caspase-3
<b>Host species</b>	Rabbit
<b>Tested applications</b>	<b>Suitable for:</b> IHC-P, WB
<b>Species reactivity</b>	<b>Reacts with:</b> Human, Quail, Recombinant fragment <b>Predicted to work with:</b> Mouse, Rat 
<b>Immunogen</b>	Synthetic peptide corresponding to Human Cleaved Caspase-3. Synthetic peptide mapping to the N-terminus adjacent to the cleavage site of human caspase-3 Database link: <a href="#">P42574</a> (Peptide available as <a href="#">ab38283</a> )
<b>General notes</b>	<p>Caspases are synthesized as inactive pro-enzymes that are processed to active form in cells undergoing apoptosis. Caspase 3 has been extensively studied and implicated to play an important role in apoptosis. Active caspase 3 proteolytically cleaves and activates other caspases, as well as relevant targets in the cells (e.g., PARP). This affinity purified antibody recognizing the active forms of caspase-3 provides a new tool for identifying apoptotic cell populations in both tissue sections and cultured cells.</p> <p>Reproducibility is key to advancing scientific discovery and accelerating scientists' next breakthrough.</p> <p>Abcam is leading the way with our range of recombinant antibodies, knockout-validated antibodies and knockout cell lines, all of which support improved reproducibility.</p> <p>We are also planning to innovate the way in which we present recommended applications and species on our product datasheets, so that only applications &amp; species that have been tested in our own labs, our suppliers or by selected trusted collaborators are covered by our Abpromise™ guarantee.</p> <p>In preparation for this, we have started to update the applications &amp; species that this product is Abpromise guaranteed for.</p> <p>We are also updating the applications &amp; species that this product has been “predicted to work with,” however this information is not covered by our Abpromise guarantee.</p> <p>Applications &amp; species from publications and Abreviews that have not been tested in our own labs or in those of our suppliers are not covered by the Abpromise guarantee.</p> <p>Please check that this product meets your needs before purchasing. If you have any questions, special requirements or concerns, please send us an inquiry and/or contact our Support team</p>

ahead of purchase. Recommended alternatives for this product can be found below, as well as customer reviews and Q&As.

## Properties

<b>Form</b>	Liquid
<b>Storage instructions</b>	Shipped at 4°C. Store at +4°C short term (1-2 weeks). Upon delivery aliquot. Store at -20°C or -80°C. Avoid freeze / thaw cycle.
<b>Storage buffer</b>	Preservative: 0.03% Proclin 300 Constituents: PBS, 30% Glycerol (glycerin, glycerine), 0.5% BSA, 0.146% EDTA
<b>Purity</b>	Immunogen affinity purified
<b>Primary antibody notes</b>	Caspases are synthesized as inactive pro-enzymes that are processed to active form in cells undergoing apoptosis. Caspase 3 has been extensively studied and implicated to play an important role in apoptosis. Active caspase 3 proteolytically cleaves and activates other caspases, as well as relevant targets in the cells (e.g., PARP). This affinity purified antibody recognizing the active forms of caspase-3 provides a new tool for identifying apoptotic cell populations in both tissue sections and cultured cells.
<b>Clonality</b>	Polyclonal
<b>Isotype</b>	IgG

## Applications

Our [Abpromise guarantee](#) covers the use of **ab2302** in the following tested applications.

The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

Application	Abreviews	Notes
IHC-P	★★★★☆	1/10 - 1/20. Perform heat mediated antigen retrieval via the microwave method before commencing with IHC staining protocol.
WB	★★★★☆	1/50 - 1/500. Detects a band of approximately 17 kDa.

## Target

<b>Function</b>	Involved in the activation cascade of caspases responsible for apoptosis execution. At the onset of apoptosis it proteolytically cleaves poly(ADP-ribose) polymerase (PARP) at a '216-Asp-Gly-217' bond. Cleaves and activates sterol regulatory element binding proteins (SREBPs) between the basic helix-loop-helix leucine zipper domain and the membrane attachment domain. Cleaves and activates caspase-6, -7 and -9. Involved in the cleavage of huntingtin. Triggers cell adhesion in sympathetic neurons through RET cleavage.
<b>Tissue specificity</b>	Highly expressed in lung, spleen, heart, liver and kidney. Moderate levels in brain and skeletal muscle, and low in testis. Also found in many cell lines, highest expression in cells of the immune system.
<b>Sequence similarities</b>	Belongs to the peptidase C14A family.
<b>Post-translational</b>	Cleavage by granzyme B, caspase-6, caspase-8 and caspase-10 generates the two active

## modifications

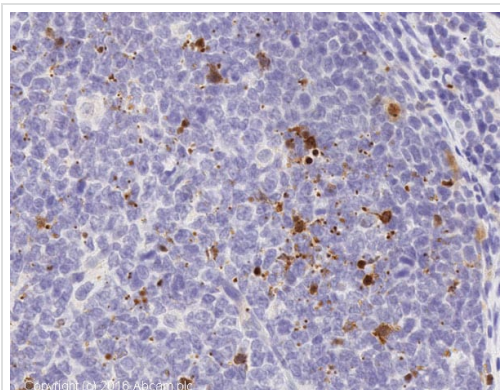
subunits. Additional processing of the propeptides is likely due to the autocatalytic activity of the activated protease. Active heterodimers between the small subunit of caspase-7 protease and the large subunit of caspase-3 also occur and vice versa.

S-nitrosylated on its catalytic site cysteine in unstimulated human cell lines and denitrosylated upon activation of the Fas apoptotic pathway, associated with an increase in intracellular caspase activity. Fas therefore activates caspase-3 not only by inducing the cleavage of the caspase zymogen to its active subunits, but also by stimulating the denitrosylation of its active site thiol.

## Cellular localization

Cytoplasm.

## Images

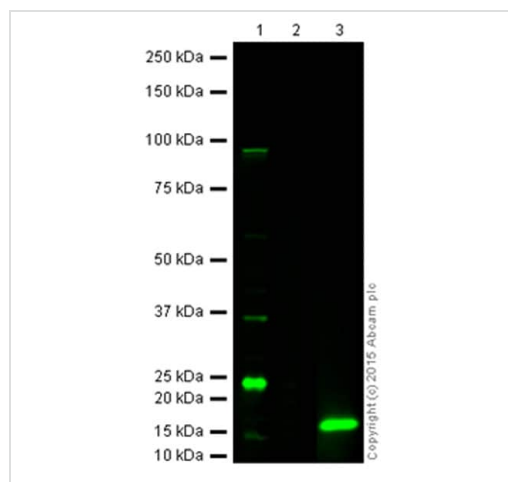


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Cleaved Caspase-3 antibody (ab2302)

IHC image of cleaved caspase-3 staining in human tonsil formalin fixed paraffin embedded tissue section\*, performed on a Leica Bond™ system using the standard protocol F. The section was pre-treated using heat mediated antigen retrieval with sodium citrate buffer (pH6, epitope retrieval solution 1) for 20 mins. The section was then incubated with ab2302, 1µg/ml, for 15 mins at room temperature and detected using an HRP conjugated compact polymer system. DAB was used as the chromogen. The section was then counterstained with haematoxylin and mounted with DPX.

For other IHC staining systems (automated and non-automated) customers should optimize variable parameters such as antigen retrieval conditions, primary antibody concentration and antibody incubation times.

*\*Tissue obtained from the Human Research Tissue Bank, supported by the NIHR Cambridge Biomedical Research Centre*



Western blot - Anti-Cleaved Caspase-3 antibody (ab2302)

**All lanes :** Anti-Cleaved Caspase-3 antibody (ab2302) at 1 µg/ml

**Lane 1 :** HeLa (Human epithelial cell line from cervix adenocarcinoma) whole cell lysate (2 µM Staurosporine, 4Hr) at 20 µg

**Lane 2 :** HeLa whole cell lysate (untreated) at 20 µg

**Lane 3 :** Cleaved Caspase 3 (recombinant protein) at 0.1 µg

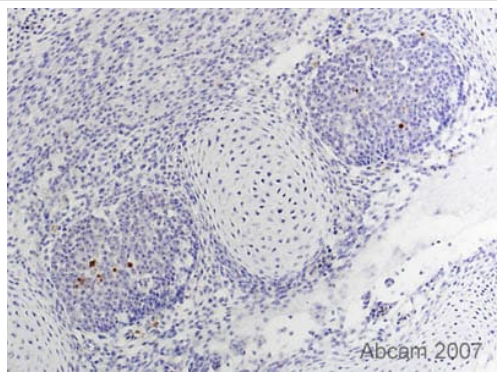
### Secondary

**All lanes :** 800CW Goat Anti-Rabbit IgG at 1/10000 dilution

Performed under reducing conditions.

**Additional bands at:** 17 kDa (possible mature (processed) protein), 24 kDa, 35 kDa. We are unsure as to the identity of these

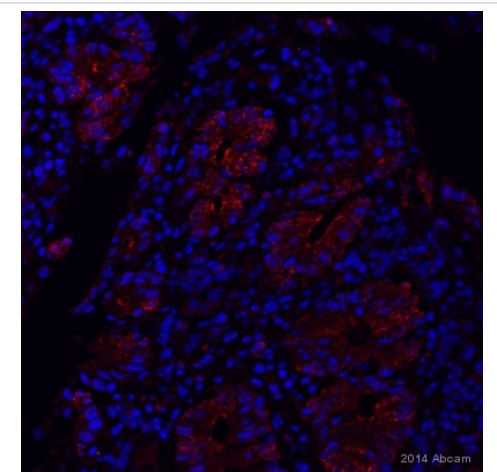
extra bands.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Cleaved Caspase-3 antibody (ab2302)

This image is courtesy of Carl Hobbs, King's College London, United Kingdom

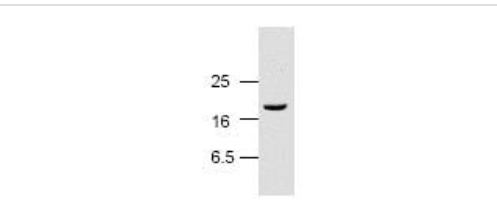
Immunohistochemical detection (on formaldehyde/PFA-fixed paraffin-embedded sections) of cleaved Caspase-3 antibody (ab2302) on Quail Tissue sections (Quail E6/7 developing DRGs Saggital section). Antigen retrieval step: Heat mediated. Blocking step: 1% BSA for 10 mins RT. Primary Antibody ab2302 incubated at 1/50 for at RT. Secondary Antibody: Biotin conjugated goat anti rabbit IgG (1/300).



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Cleaved Caspase-3 antibody (ab2302)

This image is courtesy of an anonymous Abreview

ab2302 staining cleaved Caspase-3 in human ulcerative colitis, colon tissue sections by Immunohistochemistry (IHC-P - paraformaldehyde-fixed, paraffin-embedded sections). Tissue was fixed using the HOPE method and permeabilized. Samples were incubated with primary antibody (1/20) for 1 hour at 25°C. A Biotin-SP-conjugated donkey anti-rabbit IgG polyclonal (1/800) was used as the secondary antibody.



Western blot - Anti-Cleaved Caspase-3 antibody (ab2302)

Anti-Cleaved Caspase-3 antibody (ab2302) at 1 µg/ml + Camptothecin (2 µM) treated Jurkat (Human T cell leukemia cell line from peripheral blood) whole cell lysate

**Please note:** All products are "FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC PROCEDURES"

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