abcam

Product datasheet

Anti-Caspase-3 antibody ab4051

7 Abreviews 288 References 5 Images

Overview

Product name	Anti-Caspase-3 antibody
Description	Rabbit polyclonal to Caspase-3
Host species	Rabbit
Specificity	Caspase-3 is a member of the interleukin-1 β-converting enzyme family. Caspase-3 is thought to be associated with induction of apoptosis. Caspase-3 is synthesized as inactive 32 kDa proenzyme and is processed during apoptosis generating two subunits of 17 kDa and 12 kDa. Caspase-3 stains the epithelial cells of skin, renal proximal tubules and collecting ducts. This antibody reacts with the 32 kDa proenzyme and the 17 kDa active form of caspase 3.
Tested applications	**Suitable for:** WB, IHC-P
Species reactivity	**Reacts with:** Human
Immunogen	Synthetic peptide corresponding to Human Caspase-3 aa 167-175. Corresponding to the cleavage site of human caspase 3. Database link: **P42574**
General notes	The Life Science industry has been in the grips of a reproducibility crisis for a number of years. Abcam is leading the way in addressing this with our range of recombinant monoclonal antibodies and knockout edited cell lines for gold-standard validation. 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 ahead of purchase. Recommended alternatives for this product can be found below, along with publications, customer reviews and Q&As

Properties

Form	Liquid
Storage instructions	Shipped at 4°C. Store at +4°C short term (1-2 weeks). Upon delivery aliquot. Store at -20°C. Avoid freeze / thaw cycle.
Storage buffer	pH: 7.3 Preservative: 0.05% Sodium azide

	Constituent: 1% BSA
Purity	IgG fraction
Purification notes	Purified immunoglobulin fraction of rabbit antiserum against Caspase-3 containing sodium azide as a preservative.
Clonality	Polyclonal
Isotype	IgG

Applications

The Abpromise guarantee Our **Abpromise guarantee** covers the use of ab4051 in the following tested applications.

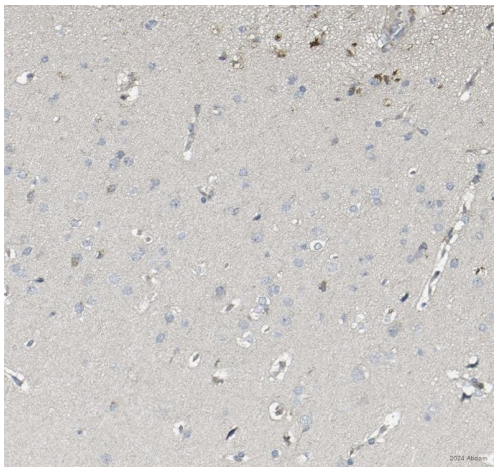
The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

Application	Abreviews	Notes
WB		Use at an assay dependent concentration. Predicted molecular weight: 31 kDa.
IHC-P	★★★★☆ **(6)**	Use a concentration of 0.002 mg/ml. Perform heat mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol. Please note that for manual staining we recommend to optimize the primary antibody concentration and incubation time (overnight incubation), and amplification may be required.

Target

Function	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.
Tissue specificity	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.
Sequence similarities	Belongs to the peptidase C14A family.
Post-translational modifications	Cleavage by granzyme B, caspase-6, caspase-8 and caspase-10 generates the two active 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.

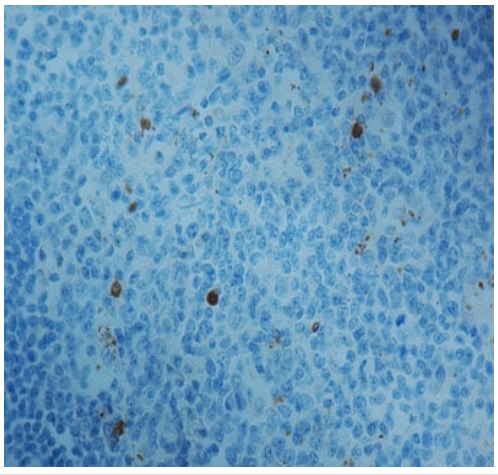
Images



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Caspase-3 antibody (ab4051)

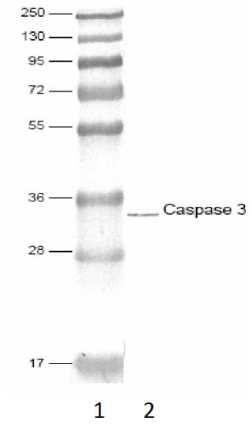
This image is courtesy of an anonymous Abreview.

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of formaldehyde-fixed human brain cortex tissue staining with ab4051 at 1/200 dilution. Secondary antibody was HRP Agilent anti-mouse/rabbit EnVision Dual Link. Samples were incubated with the primary antibody with Agilent antibody diluent for 14 hours at 4°C. Blocking was done using 3% serum for 1 hour at 22°C. Heat mediated antigen retrieval with pH = 6 citrate.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Caspase-3 antibody (ab4051)

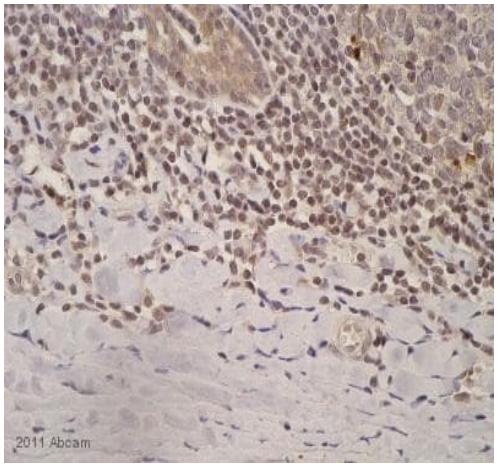
ab4051 staining Caspase-3 in formalin-fixed, paraffin-embedded Human tonsil tissue by Immunohistochemistry.



Western blot - Anti-Caspase-3 antibody (ab4051)

Anti-Caspase-3 antibody (ab4051) + Human Lung Cell Extract

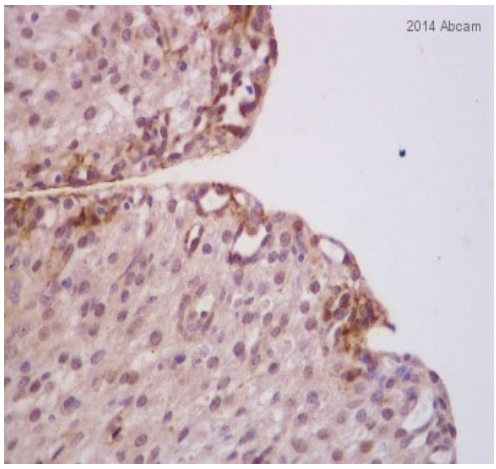
Predicted band size: 31 kDa



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Caspase-3 antibody (ab4051)

Image courtesy of an anonymous AbReview

ab4051 staining Caspase 3 in Pig liver tissue sections by Immunohistochemistry (IHC-P - paraformaldehyde-fixed, paraffin-embedded sections). Tissue was fixed with formaldehyde and blocked with 5% serum for 1 hour at 21°C; antigen retrieval was by heat mediation in a citrate buffer. Samples were incubated with primary antibody (1/100 in milk) for 20 hours at 4°C. A Biotin-conjugated Goat anti-rabbit IgG polyclonal (1/500) was used as the secondary antibody.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Caspase-3 antibody (ab4051)

Image courtesy of an anonymous AbReview

ab4051 staining Caspase 3 in Cow Ovary tissue sections by Immunohistochemistry (IHC-P - paraformaldehyde-fixed, paraffin-embedded sections). Tissue was fixed with formaldehyde and blocked with 10% serum for 15 minutes at 25°C; antigen retrieval was by heat mediation in a citrate buffer. Samples were incubated with primary antibody (1/75 in PBS + BSA) for 16 hours at 4°C. A Biotin-conjugated Goat anti-rabbit IgG polyclonal (1/100) was used as the secondary antibody.

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