abcam

ab32118

Anti-Cytokeratin 18 antibody [E431-1]

Recombinant | RabMAb | 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	E431-1
Purification technique	Affinity purification Protein A
Specificity	Human Cytokeratin 18 (K18) was used as immunogen after isolation from cells pre-treated with okadaic acid or pervanadate to promote Tyr hyperphosphorylation.
Concentration	0.04 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

WB

Tested

Species	Human
Dilution info	1/2000

Notes	For unpurified use at 1/10000

ICC/IF

Tested

Species	Human
Dilution info	1/100 - 1/500
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/20
Notes	ab172730 - Rabbit monoclonal IgG, is suitable for use as an isotype control with this antibody.

IHC-P

Tested

Species	Human
Dilution info	1/500
Notes	Perform heat-mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

Target data

See full target information KRT18

Function	Required for the formation of KRT8/KRT18 filaments that are involved in ARHGEF40-mediated actin stress fiber formation and tensional force-induced stress fiber formation and reinforcement (PubMed:26823019). Also acts downstream of ROCK kinase activation as part of a positive feedback mechanism in response to cellular mechanical stress loading (PubMed:26823019). Organization and orientation of KRT18 filaments are responsible for the properly elongated morphology of epithelial tubules (By similarity). Involved in the uptake of thrombin-antithrombin complexes by hepatic cells (By similarity). When phosphorylated, plays a role in filament reorganization. Involved in the delivery of

mutated CFTR to the plasma membrane. Together with KRT8, is involved in interleukin-6 (IL-6)-mediated barrier protection.

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.

Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

Activity summary	Cytokeratin 18 (CK18) also known as Keratin 18 or KRT18 is a type I intermediate filament protein with a molecular weight of approximately 45 kDa. It plays a mechanical role in stabilizing epithelial cell structure and function. CK18 is expressed in single-layered epithelial tissues such as the liver intestine and pancreas. It partners with the type II keratin usually KRT8 to form a stable cytoskeletal network in these cells providing structural integrity and resilience.

Biological function summary	CK18 maintains cellular integrity and mediates resistance to mechanical and non-mechanical stresses in epithelial cells. It forms heterodimers with KRT8 participating in a complex network of filaments important for maintaining cell shape and stability. This organization plays a role in managing cell survival during stress and apoptosis helping regulate cellular functions and responses in tissues where it is expressed.
Pathways	Cytokeratin 18 is involved in the apoptosis and cellular stress response pathways. It interacts with proteins such as caspases during apoptosis facilitating cytoskeletal reorganization and cell fragmentation. CK18 in coordination with KRT8 also participates in signaling pathways that regulate cell cycle and apoptotic processes underlining its importance in cellular turnover and tissue homeostasis.
Associated diseases and disorders	Elevated levels of CK18 fragments are often observed in cases of non-alcoholic steatohepatitis (NASH) and breast cancer. It serves as a biomarker for liver injury due to its abundance in hepatocytes and release upon cell death. In breast cancer alterations in CK18 expression can reflect disease progression where it interacts with other proteins such as vimentin indicating epithelial-to-mesenchymal transition a process that facilitates metastasis.

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

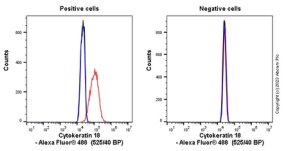
We do not recommend this combination. It is not covered by our product promise.

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.

16 product images



Flow Cytometry (Intracellular) - Anti-Cytokeratin 18 antibody [E431-1] (ab32118)

Cytokeratin 18 Flow Cytometry (Intracellular) staining using rabbit Anti-Cytokeratin 18 antibody

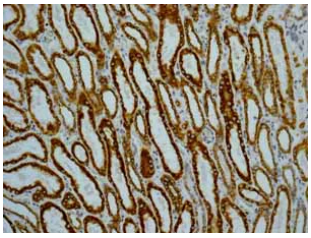
Flow cytometry overlay histogram showing left MCF7 positive cells and right negative A375 stained with ab32118 (red line). The cells were fixed with 80% methanol (5 min) and then permeabilised with 0.1% PBS-Triton X-100 for 15 min. The cells were then incubated in 1x PBS containing 10% normal goat serum to block non-specific protein-protein interaction followed by the antibody (ab32118) (1x 106 in 100µl at 0.008µg/ml (1/258750)) for 30min at 22°C.

The secondary antibody Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed was incubated at 1/4000 for 30min at 22°C

Isotype control antibody (black line) was Recombinant Rabbit IgG, monoclonal [EPR25A] - Isotype Control used at the same concentration and conditions as the primary antibody. Unlabelled sample (blue line) was also used as a control.

Acquisition of >5000 events were collected using a 50 mW Blue laser (488nm) and 525/40 bandpass filter.

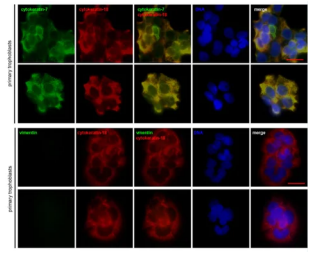
This antibody gave a positive signal in MCF7 Fixed with 4% formaldehyde (10 min) / permeabilised with 0.1% PBS-Triton X-100 for 15 min under the same conditions.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Cytokeratin 18 antibody [E431-1] (ab32118)

Cytokeratin 18 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Cytokeratin 18 antibody

ab32118 showing positive staining in Normal kidney tissue.

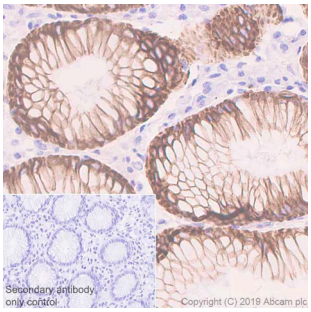


Muschol-Steinmetz C. et al PLoS One. 2013 Sep 19;8(9):e73337. doi: 10.1371/journal.pone.0073337. eCollection 2013. Reproduced under the Creative Commons license http://creativecommons.org/licenses/by/4.0/

Immunocytochemistry/ Immunofluorescence - Anti-Cytokeratin 18 antibody [E431-1] (ab32118)

Cytokeratin 18 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-Cytokeratin 18 antibody

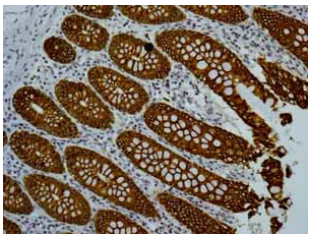
Indirect immunofluorescence staining with antibodies against DNA, cytokeratin-7 and cytokeratin-18 (upper panel) or against DNA, vimentin and cytokeratin-18 (lower panel). Representatives are presented. Scale bar: 20 µm.
Control or treated cells were fixed for 15 min with 4% PFA containing 0.1% Triton X-100 at room temperature. The following primary antibodies were used for staining: monoclonal mouse antibodies against vimentin and cytokeratin-7 (both 1:100, DAKO) and monoclonal rabbit antibody against cytokeratin-18 (1:50, Abcam). DNA was stained using DAPI (4',6-diamidino-2-phenylindole-dihydrochlorid) (Roche). Slides were examined using an Axio Imager 7.1 microscope (Zeiss) and images were taken using an Axio Cam MRm camera (Zeiss). The immunofluorescence stained slides were also examined by a confocal laser scanning microscope (CLSM) (Leica CTR 6500, Heidelberg). Images were processed using Photoshop.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Cytokeratin 18 antibody [E431-1] (ab32118)

Cytokeratin 18 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Cytokeratin 18 antibody

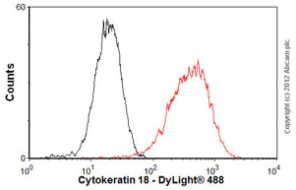
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of Human stomach tissue sections labeling Cytokeratin 18 with purified ab32118 at 1/500 dilution (0.08 µg/ml). Perform heat mediated antigen retrieval using ab93684 (Tris/EDTA buffer, pH 9.0). ImmunoHistoProbe one step HRP Polymer (ready to use) was used as the secondary antibody. Negative control: PBS instead of the primary antibody. Hematoxylin was used as a counterstain.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Cytokeratin 18 antibody [E431-1] (ab32118)

Cytokeratin 18 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Cytokeratin 18 antibody

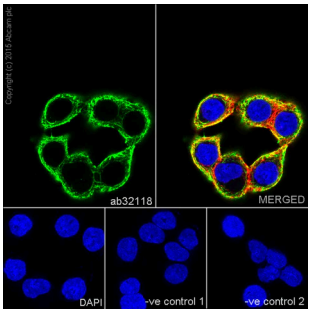
ab32118 showing positive staining in Normal colon tissue.



Flow Cytometry (Intracellular) - Anti-Cytokeratin 18 antibody [E431-1] (ab32118)

Cytokeratin 18 Flow Cytometry (Intracellular) staining using rabbit Anti-Cytokeratin 18 antibody

Overlay histogram showing MCF7 cells stained with ab32118 (red line). The cells were fixed with 80% methanol (5 min) and then permeabilized with 0.1% PBS-Tween for 20 min. The cells were then incubated in 1x PBS / 10% normal goat serum / 0.3M glycine to block non-specific protein-protein interactions followed by the antibody (ab32118, 1/100 dilution) for 30 min at 22°C. The secondary antibody used was DyLight® 488 goat anti-rabbit IgG (H+L) (ab96899) at 1/500 dilution for 30 min at 22°C. Isotype control antibody (black line) was rabbit IgG (monoclonal) (1µg/1x10^6 cells) used under the same conditions. Acquisition of >5,000 events was performed. This antibody gave a positive signal in MCF7 cells fixed with 4% paraformaldehyde (10 min)/permeabilized with 0.1% PBS-Tween for 20 min used under the same conditions.

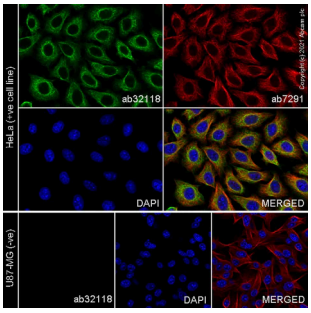


Immunocytochemistry/ Immunofluorescence - Anti-Cytokeratin 18 antibody [E431-1] (ab32118)

Cytokeratin 18 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-Cytokeratin 18 antibody

Immunocytochemistry/Immunofluorescence analysis of HT-29 cells labelling Cytokeratin 18 with purified ab32118 at 1/500. Cells were fixed with 100% Methanol. An Alexa Fluor® 488-conjugated goat anti-rabbit IgG (ab150077) at 1/1000 dilution was used as the secondary antibody. The cells were co-stained with ab7291, a mouse anti-tubulin antibody (1/1000) using ab150120, an Alexa Fluor® 594-conjugated goat anti-mouse IgG (1/1000) as the secondary antibody. Nuclei were counterstained with DAPI (blue).
For negative control 1, rabbit primary antibody was used followed by anti-mouse secondary antibody (ab150120).
For negative control 2, mouse primary antibody (ab7291) and anti-rabbit secondary antibody (ab150077) were used.

Alexa Fluor® 488 (ab194124) conjugated version is available for this clone.

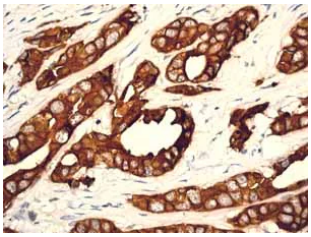


Immunocytochemistry/ Immunofluorescence - Anti-Cytokeratin 18 antibody [E431-1] (ab32118)

Cytokeratin 18 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-Cytokeratin 18 antibody

Immunocytochemistry/Immunofluorescence analysis of HeLa (+ve) and U87-MG (-ve) cells labelling Cytokeratin 18 with ab32118 at 2 ug/ml overnight at +4°C. Cells were fixed with 100% Methanol (5 min), permeabilized with 0.1% Triton X-100 for 5 minutes and then blocked with 1% BSA/10% normal goat serum/0.3M glycine in 0.1% PBS-Tween for 1h. A preadsorbed Alexa Fluor® 488-conjugated goat anti-rabbit IgG (ab150081) at 1/1000 dilution was used as the secondary antibody. The cells were co-stained with ab7291, a mouse anti-tubulin antibody (1/1000), using ab150119, a preadsorbed Alexa Fluor® 647-conjugated goat anti-mouse IgG (1/1000) as the secondary antibody. Nuclei were counterstained with DAPI (blue).
Image was taken with a confocal microscope (Leica-Microsystems, TCS SP8).

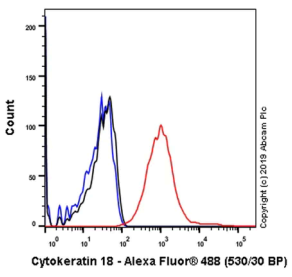
This product also gave a positive signal under the same testing conditions in HeLa cells fixed with 4% formaldehyde (10 min).



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Cytokeratin 18 antibody [E431-1] (ab32118)

Cytokeratin 18 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Cytokeratin 18 antibody

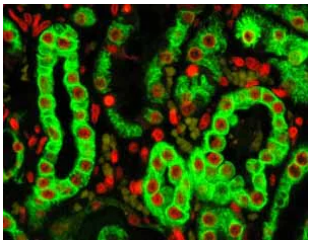
ab32118 showing positive staining in Breast carcinoma tissue.



Flow Cytometry (Intracellular) - Anti-Cytokeratin 18 antibody [E431-1] (ab32118)

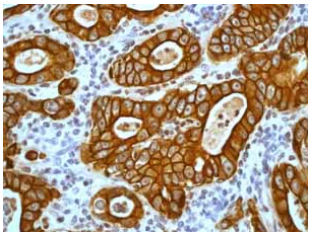
Cytokeratin 18 Flow Cytometry (Intracellular) staining using rabbit Anti-Cytokeratin 18 antibody

Intracellular Flow Cytometry analysis of MCF7 (Human breast adenocarcinoma epithelial cell) cells labeling Cytokeratin 18 with purified ab32118 at 1/20 dilution (2µg/ml) (red). Cells were fixed with 80% Methanol and permeabilised with 0.1% Tween-20. A Goat anti rabbit IgG (Alexa Fluorr® 488, ab150077) secondary antibody was used at 1/2000. Isotype control - Rabbit monoclonal IgG (Black). Unlabeled control - Cell without incubation with primary antibody and secondary antibody (Blue).
R-PE (ab210410) conjugated version is available for this clone.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Cytokeratin 18 antibody [E431-1] (ab32118)

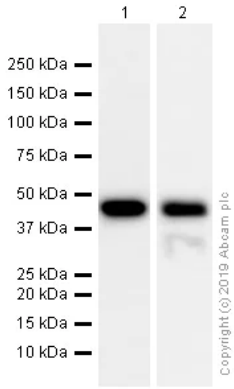
Fluorescent immunohistochemical analysis of paraffin-embedded human normal kidney tissue using ab32118. Green-CK18 red-PI



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Cytokeratin 18 antibody [E431-1] (ab32118)

Cytokeratin 18 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Cytokeratin 18 antibody

ab32118 showing positive staining in Gastric adenocarcinoma tissue.



Western blot - Anti-Cytokeratin 18 antibody [E431-1] (ab32118)

All lanes:
Western blot - Anti-Cytokeratin 18 antibody [E431-1] (ab32118) at 1/2000 dilution

Lane 1:
A431 (Human epidermoid carcinoma epithelial cell) whole cell lysates at 15 µg

Lane 2:
HeLa (Human cervix adenocarcinoma epithelial cell) whole cell lysates at 15 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/20000 dilution

Predicted band size: 48 kDa

Observed band size: 48 kDa



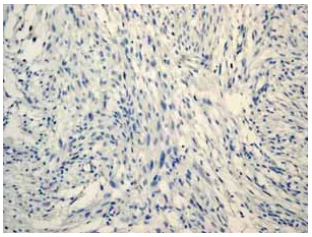
Western blot - Anti-Cytokeratin 18 antibody [E431-1] (ab32118)

All lanes:
Western blot - Anti-Cytokeratin 18 antibody [E431-1] (ab32118) at 1/10000 dilution

All lanes:
A431 cell lysate

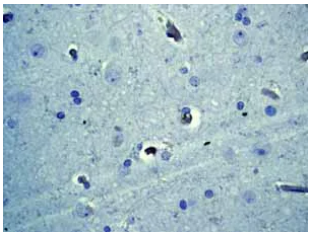
Predicted band size: 48 kDa

Observed band size: 48 kDa



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Cytokeratin 18 antibody [E431-1] (ab32118)

ab32118 showing negative staining in Glioma tissue.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Cytokeratin 18 antibody [E431-1] (ab32118)

ab32118 showing negative staining in Normal brain tissue.

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