abcam

ab219589

Anti-Cytokeratin 20 antibody [EPR1622Y] - BSA and Azide free

Recombinant | RabMAb

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Constituents: PBS
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Carrier free	Yes
Clone number	EPR1622Y
Purification technique	Affinity purification Protein A
Specificity	The immunogen of this antibody is 73% homolog with Mouse-Cytokeratin 20. This antibody gives positive results for mouse samples in Western Blot only. Therefore we do not recommend this antibody for mouse samples and do not cover mouse with our Abpromise guarantee.
Dissociation constant	3.1×10^{-11} M
Concentration	1.025 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IHC-P

Tested

Species	Human
Dilution info	-
Notes	-

Predicted

Species	Rat, Goat, Pig, Common marmoset
Dilution info	-
Notes	-

WB

Tested

Species	Human
Dilution info	-
Notes	-

Predicted

Species	Rat, Goat, Pig, Common marmoset
Dilution info	-
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	-
Notes	-

Predicted

Species	Rat, Goat, Pig, Common marmoset
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	-
Notes	ab199376 - Rabbit monoclonal IgG, is suitable for use as an isotype control with this antibody.

Predicted

Species	Rat, Goat, Pig, Common marmoset
Dilution info	-
Notes	-

Target data

See full target information KRT20

Function	Plays a significant role in maintaining keratin filament organization in intestinal epithelia. When phosphorylated, plays a role in the secretion of mucin in the small intestine (By similarity).

Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	+4°C
Storage information	Do Not Freeze

Notes

ab219589 is the carrier-free version of ab76126.

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.

Conjugation ready

Our carrier-free antibodies are typically supplied in a PBS-only formulation, purified and free of BSA, sodium azide and glycerol. This conjugation-ready format is designed for use with fluorochromes, metal isotopes, oligonucleotides, and enzymes, which makes them ideal for antibody labelling, functional and cell-based assays, flow-based assays (e.g. mass cytometry) and Multiplex Imaging applications.

Use our conjugation kits for antibody conjugates that are ready-to-use in as little as 20 minutes with 1 minute hands-on-time and 100% antibody recovery: available for fluorescent dyes, HRP, biotin and gold.

Compatibility

This product is compatible with the Maxpar® Antibody Labeling Kit from Fluidigm, without the need for antibody preparation. Maxpar® is a trademark of Fluidigm Canada Inc.

Supplementary info

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

Activity summary	Cytokeratin 20 often known as CK20 KRT20 or keratin 20 is a type of intermediate filament protein that is highly specific to epithelial cells. This cytoskeletal protein has a molecular weight of approximately 46.5 kDa. Cytokeratin 20 is primarily found in the gastric and intestinal epithelium urothelium and Merkel cells. Its function as part of the cytoskeleton provides structural integrity and strength to cells maintaining their shape and resilience against mechanical stress.
Biological function summary	Cytokeratin 20 is essential in cellular differentiation and maintenance within epithelial tissues. It plays an important role in the structural framework of epithelial cells by integrating into the cytoskeletal network which includes other keratins. Typically cytokeratin 20 forms heterodimers with keratin 8 contributing to the assembly of intermediate filaments. These interactions maintain cell stability and are involved in cellular processes such as migration and proliferation.
Pathways	Cytokeratin 20 participates in the framework of intermediate filament signaling influencing cell motility and secretion in epithelial tissues. It contributes mainly to the keratinization pathway which is critical in forming a protective barrier in epithelial cells. Additionally it is related to cell adhesion and signalling pathways

	that are important for tissue integrity. Connections with keratin 8 and other cytoskeletal proteins facilitate signal transduction processes necessary for epithelial homeostasis and response to injury.
Associated diseases and disorders	Cytokeratin 20 serves as a valuable marker for identifying specific cancer types particularly colorectal adenocarcinomas and Merkel cell carcinoma. The presence of cytokeratin 20 is often used in immunohistochemistry for cancer diagnosis and prognosis. Its expression pattern is notably distinct helping differentiate between various adenocarcinomas. In colorectal cancer it shows a unique interaction with proteins like keratin 8 supporting the tumor's structural environment and influencing tumorigenesis and metastasis processes.

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

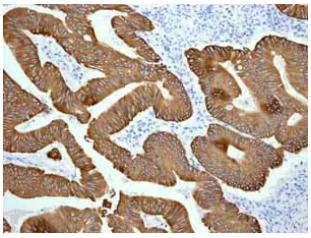
We do not recommend this combination. It is not covered by our product promise.

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.

10 product images



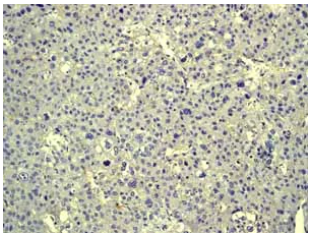
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Cytokeratin 20 antibody [EPR1622Y] - BSA and Azide free (ab219589)

Cytokeratin 20 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Cytokeratin 20 antibody

ab76126 showing positive staining in human colonic adenocarcinoma tissue.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab76126).

Perform heat mediated antigen retrieval before commencing with IHC staining protocol.



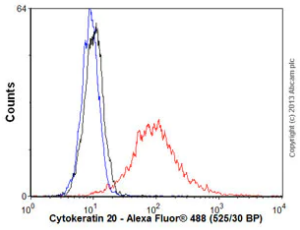
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Cytokeratin 20 antibody [EPR1622Y] - BSA and Azide free (ab219589)

Cytokeratin 20 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Cytokeratin 20 antibody

ab76126 showing **negative staining** in human hepatocellular carcinoma tissue.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab76126).

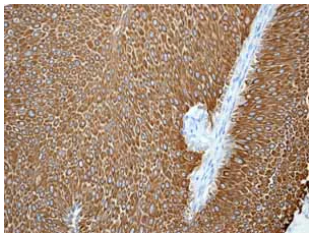
Perform heat mediated antigen retrieval before commencing with IHC staining protocol.



Flow Cytometry (Intracellular) - Anti-Cytokeratin 20 antibody [EPR1622Y] - BSA and Azide free (ab219589)

Cytokeratin 20 Flow Cytometry (Intracellular) staining using rabbit Anti-Cytokeratin 20 antibody

Overlay histogram showing LoVo (Human colorectal adenocarcinoma cell line) cells stained with ab76126 (red line). The cells were fixed with 80% methanol (5 min) and then permeabilized with 0.1% PBS-Triton X-100 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 (ab76126, 1/1000 dilution) for 30 min at 22°C. The secondary antibody used was Alexa Fluor® 488 goat anti-rabbit IgG (H&L) (ab150077) at 1/2000 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. Unlabelled sample (blue line) was also used as a control. Acquisition of >5,000 events were collected using a 20mW Argon ion laser (488nm) and 525/30 bandpass filter.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab76126).



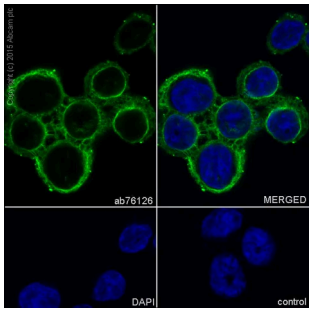
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Cytokeratin 20 antibody [EPR1622Y] - BSA and Azide free (ab219589)

Cytokeratin 20 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Cytokeratin 20 antibody

ab76126 showing positive staining in human urinary bladder transitional carcinoma tissue.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab76126).

Perform heat mediated antigen retrieval before commencing with IHC staining protocol.

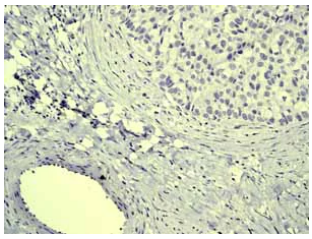


Immunocytochemistry/ Immunofluorescence - Anti-Cytokeratin 20 antibody [EPR1622Y] - BSA and Azide free (ab219589)

Cytokeratin 20 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-Cytokeratin 20 antibody

Immunocytochemistry/Immunofluorescence analysis of HT-29 (human colorectal adenocarcinoma) cells labelling Cytokeratin 20 with purified ab76126 at 1/500. Cells were fixed with 100% methanol. ab150077, Alexa Fluor® 488-conjugated goat anti-rabbit IgG (1/1000) was used as the secondary antibody. Nuclei were counterstained with DAPI (blue).
Secondary Only Control: PBS was used instead of the primary antibody as the negative control.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab76126).



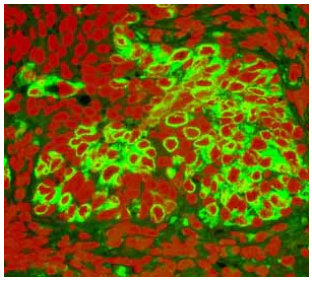
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Cytokeratin 20 antibody [EPR1622Y] - BSA and Azide free (ab219589)

Cytokeratin 20 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Cytokeratin 20 antibody

ab76126 showing **negative staining** in human breast carcinoma tissue.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab76126).

Perform heat mediated antigen retrieval before commencing with IHC staining protocol.



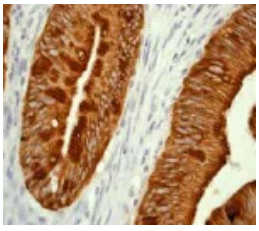
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Cytokeratin 20 antibody [EPR1622Y] - BSA and Azide free (ab219589)

Cytokeratin 20 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Cytokeratin 20 antibody

Fluorescent immunohistochemical analysis of paraffin-embedded human colonic adenocarcinoma tissue using ab76126. Green-CK20 red-PI

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab76126).

Perform heat mediated antigen retrieval before commencing with IHC staining protocol.

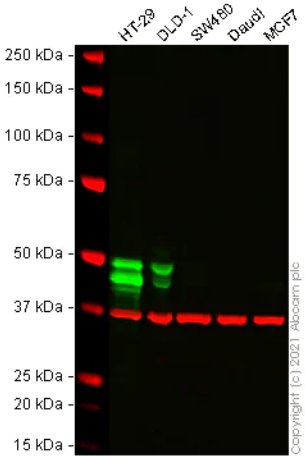


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Cytokeratin 20 antibody [EPR1622Y] - BSA and Azide free (ab219589)

Cytokeratin 20 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Cytokeratin 20 antibody

ab76126 at 1/100 dilution staining Cytokeratin 20 in human colon adenocarcinoma by Immunohistochemistry, Paraffin-embedded tissue.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab76126).

Perform heat mediated antigen retrieval before commencing with IHC staining protocol.



Western blot - Anti-Cytokeratin 20 antibody [EPR1622Y] - BSA and Azide free (ab219589)

Cytokeratin 20 Western blot staining using rabbit Anti-Cytokeratin 20 antibody

False colour image of Western blot: Anti-Cytokeratin 20 antibody [EPR1622Y] - Cytoskeleton Marker staining at 1/10000 dilution, shown in green; Mouse anti-GAPDH antibody [6C5] (ab8245) loading control staining at 1/20000 dilution, shown in red. In Western blot, ab76126 was shown to bind specifically to Cytokeratin 20. First, samples were run on an SDS-PAGE gel then transferred onto a nitrocellulose membrane. Membranes were blocked in 3 % milk in TBS-0.1 % Tween® 20 (TBS-T) before incubation with primary antibodies overnight at 4°C. Blots were washed four times in TBS-T, incubated with secondary antibodies for 1 h at room temperature, washed again four times then imaged. Secondary antibodies used were Goat anti-Rabbit IgG H&L (IRDye® 800CW) preabsorbed (ab216773) and Goat anti-Mouse IgG H&L (IRDye® 680RD) preabsorbed (ab216776) at 1/20000 dilution.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab76126).

All lanes:
Western blot - Anti-Cytokeratin 20 antibody [EPR1622Y] - Cytoskeleton Marker (ab76126) at 1/10000 dilution

Lane 1:
HT-29 cell lysate at 20 µg

Lane 2:
DLD-1 cell lysate at 20 µg

Lane 3:
SW480 cell lysate at 20 µg

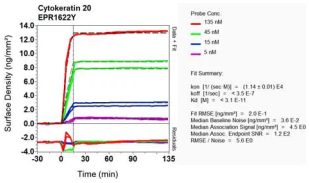
Lane 4:
Daudi cell lysate at 20 µg

Lane 5:
MCF7 cell lysate at 20 µg

Performed under reducing conditions.

Predicted band size: 48 kDa

Observed band size: 45 kDa, 45-50 kDa



OI-RD Scanning - Anti-Cytokeratin 20 antibody [EPR1622Y] - BSA and Azide free (ab219589)

We have systematically measured KD (the equilibrium dissociation constant between the antibody and its antigen), of more than 840 recombinant antibodies to assess not only their individual KD values but also to see the average affinity of antibody. Based on the comparison with published literature values for mouse monoclonal antibodies, Recombinant antibodies appear to be on average 1-2 order of magnitude higher affinity.

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