abcam

ab109185

Anti-MUC1 antibody [EPR1023]

Anti-MUC1 antibody [EPR1023] (ab109185) is a rabbit monoclonal antibody detecting MUC1 in **Western Blot, Flow Cytometry (Intra), IP, IHC-P, ICC/IF**. Suitable for **Human, Mouse, Rat**.

- KO validated for confirmed specificity
- Biophysical QC for unrivalled batch-batch consistency
- Over 50 publications

Recombinant | 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, 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	EPR1023
Purification technique	Affinity purification Protein A
Specificity	This antibody detects the 17 kDa carboxy-terminal subunit (subunit beta). Depending on the N-glycosylation extent, the size of this subunit is estimated to be between 17 kDa (without N-glycosylation) and 23-25 kDa
Dissociation constant	8.9×10^{-12} M
Concentration	0.163 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IHC-P

Tested

Species	Mouse
Dilution info	1/250 - 1/500
Notes	Perform heat-mediated antigen retrieval before commencing with IHC staining protocol.

Species	Rat
Dilution info	1/250 - 1/500
Notes	Perform heat-mediated antigen retrieval before commencing with IHC staining protocol.

Species	Human
Dilution info	1/250 - 1/500
Notes	Perform heat-mediated antigen retrieval before commencing with IHC staining protocol.

IP

Tested

Species	Human
Dilution info	1/20
Notes	**For unpurified use at 1/10 - 1/100.**

Expected

Species	Mouse, Rat
Dilution info	Use at an assay dependent concentration.
Notes	-

WB

Tested

Species	Human

Dilution info	1/1000 - 1/5000
Notes	-

Expected

Species	Mouse, Rat
Dilution info	Use at an assay dependent concentration.
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	1/1000
Notes	**For unpurified use at 1/100 - 1/250.**

Expected

Species	Mouse, Rat
Dilution info	Use at an assay dependent concentration.
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/30
Notes	For unpurified use at 1/100 - 1/1000. ab172730 - Rabbit monoclonal IgG, is suitable for use as an isotype control with this antibody.

Expected

Species	Mouse, Rat
Dilution info	Use at an assay dependent concentration.

Notes	-

Target data

See full target information MUC1

Function	The alpha subunit has cell adhesive properties. Can act both as an adhesion and an anti-adhesion protein. May provide a protective layer on epithelial cells against bacterial and enzyme attack. The beta subunit contains a C-terminal domain which is involved in cell signaling, through phosphorylations and protein-protein interactions. Modulates signaling in ERK, SRC and NF-kappa-B pathways. In activated T-cells, influences directly or indirectly the Ras/MAPK pathway. Promotes tumor progression. Regulates TP53-mediated transcription and determines cell fate in the genotoxic stress response. Binds, together with KLF4, the PE21 promoter element of TP53 and represses TP53 activity.

Storage

Shipped at conditions	Conditional Ambient
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	-20°C
Storage information	Stable for 12 months at -20°C

Notes

Product Specifications
Anti-MUC1 antibody [EPR1023] (ab109185) was developed by Abcam using patented rabbit monoclonal antibody technology and is validated for use in Flow Cyt (Intra), ICC/IF, IHC-P, IP, WB in human, mouse, rat samples.
Anti-MUC1 antibody [EPR1023] (ab109185) specifically detects MUC1 (UniProt ID: P15941; Molecular weight: 120kDa) and is sold in 100 µL and 1 mL selling sizes.

Quality and Validation
Abcam's high quality manufacturing and validation processes ensure Anti-MUC1 antibody [EPR1023] (ab109185) has high sensitivity and specificity alongside high lot-to-lot consistency and reproducibility.
The specificity of Anti-MUC1 antibody [EPR1023] (ab109185) has been confirmed by testing in knockout samples.
Anti-MUC1 antibody [EPR1023] (ab109185) has been cited over 55 times in peer reviewed journals and is trusted by the scientific community.

Related Products
Antibody clone EPR1023 is also available pre-conjugated to a variety of labels for your convenience - HRP, Alexa Fluor® 488, PE, APC, Alexa Fluor® 647, Alexa Fluor® 594, Alexa Fluor® 568, Alexa Fluor® 555, Alexa Fluor® 750 (ab195936, ab196443, ab211592, ab310811, ab311079, ab311673, ab312948, ab313157, ab320930).

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.

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

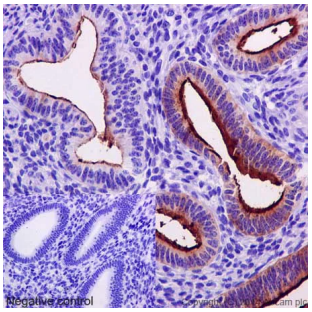
We do not recommend this combination. It is not covered by our product promise.

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.

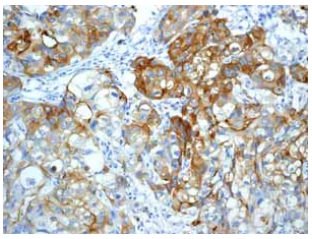
16 product images



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-MUC1 antibody [EPR1023] (ab109185)

MUC1 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-MUC1 antibody

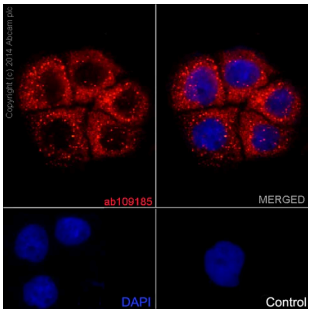
Immunohistochemical staining of paraffin embedded human endometrium with purified ab109185 at a working dilution of 1 in 500. The secondary antibody used is a HRP polymer for rabbit IgG. The sample is counter-stained with hematoxylin. Antigen retrieval was perfomed using Tris-EDTA buffer pH 9.0. PBS was used instead of the primary antibody as the negative control and is shown in the inset.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-MUC1 antibody [EPR1023] (ab109185)

MUC1 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-MUC1 antibody

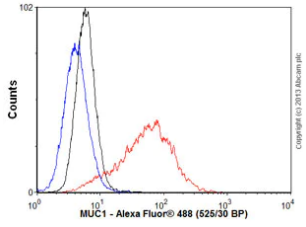
ab109185 (unpurified) showing positive staining in Breast ductal infiltrating carcinoma tissue. Perform heat mediated antigen retrieval before commencing with IHC staining protocol.



Immunocytochemistry/ Immunofluorescence - Anti-MUC1 antibody [EPR1023] (ab109185)

MUC1 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-MUC1 antibody

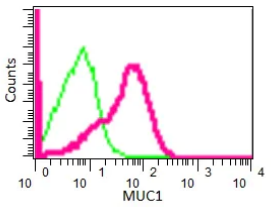
Immunofluorescence staining of A431 cells with purified ab109185 at a working dilution of 1 in 1000 counter-stained with DAPI. The secondary antibody was Alexa Fluor® 555 goat anti rabbit used at a dilution of 1 in 400. The cells were fixed in 4% PFA and permeabilized using 0.1% Triton X 100. The negative control is shown in bottom right hand panel - for the negative control purified ab109185 was used at a dilution of 1/200 followed by an Alexa Fluor® 555 goat anti-mouse antibody at a dilution of 1/500.



Flow Cytometry (Intracellular) - Anti-MUC1 antibody [EPR1023] (ab109185)

MUC1 Flow Cytometry (Intracellular) staining using rabbit Anti-MUC1 antibody

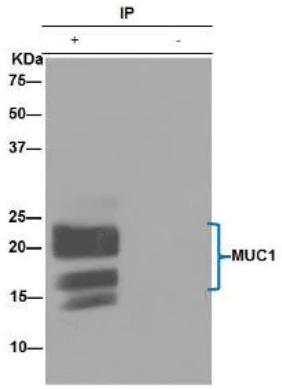
Overlay histogram showing MCF7 cells stained with unpurified ab109185 (red line). The cells were fixed with 80% methanol (5 min) and then permeabilized with 0.1% PBS-Tween for 20 min. The cells were then incubated in 1x PBS / 10% normal goat serum / 0.3M glycine to block non-specific protein-protein interactions followed by the antibody (ab109185, 1/1000 dilution) for 30 min at 22°C. The secondary antibody used was Alexa Fluorr® 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) (0.1µg/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 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.



Flow Cytometry (Intracellular) - Anti-MUC1 antibody [EPR1023] (ab109185)

MUC1 Flow Cytometry (Intracellular) staining using rabbit Anti-MUC1 antibody

Overlay histogram showing MCF7 cells fixed in 2% PFA andstained with purified ab109185 at a dilution of 1 in 30 (pink line). The secondary antibody used wasFITC goat anti-rabbit at a dilution of 1 in 150. Rabbit monoclonal IgG was used as an isotype control.



Immunoprecipitation - Anti-MUC1 antibody [EPR1023] (ab109185)

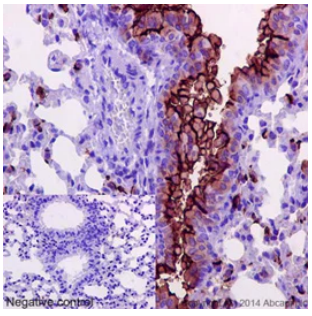
ab109185 (purified) at 1/20 immunoprecipitating MUC1 in T47-D (Lane 1). Lane 2 - PBS. For western blotting, a HRP-conjugated anti-rabbit IgG, specific to the non-reduced form of IgG was used as the secondary antibody (1/1500).
Blocking buffer and concentration: 5% NFDM/TBST.

Diluting buffer and concentration: 5% NFDM /TBST.

All lanes:
Immunoprecipitation - Anti-MUC1 antibody [EPR1023] (ab109185)

Predicted band size: 122 kDa

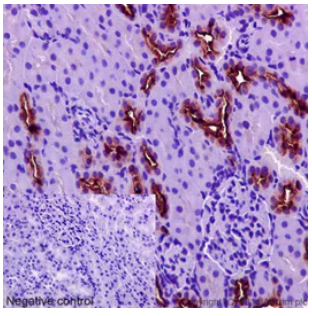
Observed band size: 18-25 kDa



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-MUC1 antibody [EPR1023] (ab109185)

MUC1 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-MUC1 antibody

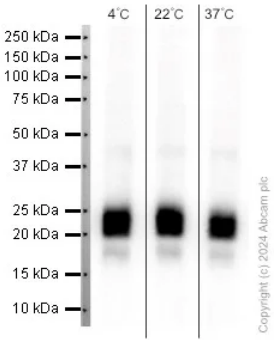
Immunohistochemical staining of paraffin embedded mouse lung with purified ab109185 at a working dilution of 1 in 500. The secondary antibody used is a HRP polymer for rabbit IgG. The sample is counter-stained with hematoxylin. Antigen retrieval was perfomed using Tris-EDTA buffer pH 9.0. PBS was used instead of the primary antibody as the negative control and is shown in the inset.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-MUC1 antibody [EPR1023] (ab109185)

MUC1 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-MUC1 antibody

Immunohistochemical staining of paraffin embedded rat kidney with purified ab109185 at a working dilution of 1 in 500. The secondary antibody used is a HRP polymer for rabbit IgG. The sample is counter-stained with hematoxylin. Antigen retrieval was perfomed using Tris-EDTA buffer pH 9.0. PBS was used instead of the primary antibody as the negative control and is shown in the inset.



Western blot - Anti-MUC1 antibody [EPR1023] (ab109185)

MUC1 Western blot staining of T-47D whole cell lysate using rabbit Anti-MUC1 antibody

This blot was produced using 4-20% SDS-PAGE containing 15 µg of T-47D whole cell lysate per lane at 150V for 1hr before being transferred onto a 0.45 µm PVDF membrane at 75V for 1hr. The membrane was then blocked for 1hr using 5% NFDM/TBST, then incubated with ab109185 (1/5000) at room temperature for 1hr. After being washed three times in TBST, the membrane was incubated with Peroxidase conjugated goat anti-rabbit IgG (H+L) (ab97051) at 1/20,000 dilution for 1hr at room temperature. The membrane was washed three times again. Then the signal was developed using the ECL technique.

ab109185 was stored at a range of temperatures (+4°C, +22°C, +37°C) for 1 week before being tested in WB. The image shows the band intensity remains relatively constant for temperatures ranging between 4°C, 22°C and 37°C, demonstrating that antibody activity is not affected under these conditions. This data was generated as part of a structured antibody stability study supporting Abcam’ s transition from cold chain to ambient shipping.

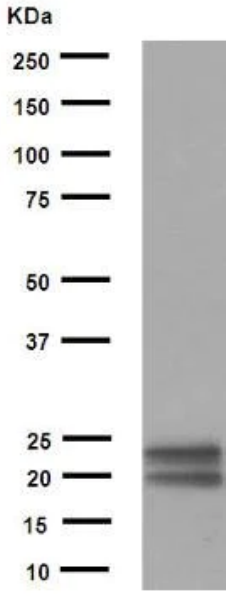
All lanes:
Western blot - Anti-MUC1 antibody [EPR1023] (ab109185) at 1/5000 dilution

All lanes:
T-47D whole cell lysate at 15 µg with NDFM/TBST

Secondary

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

Exposure time: 10s



Western blot - Anti-MUC1 antibody [EPR1023] (ab109185)

MUC1 Western blot staining of T47D cell lysate using rabbit Anti-MUC1 antibody

Blocking buffer: 5% NFDM/TBST
Dilution buffer: 5% NFDM/TBST

All lanes:
Western blot - Anti-MUC1 antibody [EPR1023] (ab109185) at 1/5000 dilution

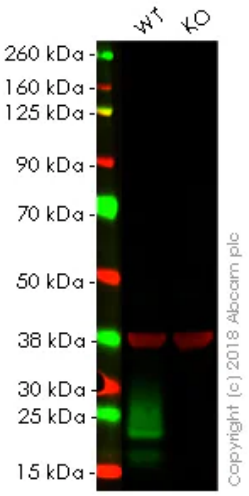
All lanes:
T47D cell lysate at 10 µg

Secondary

All lanes:
Secondary ab: Anti-Rabbit IgG (HRP), specific to the non-reduced form of IgG at 1/1000 dilution

Predicted band size: 122 kDa

Observed band size: 18-25 kDa



Western blot - Anti-MUC1 antibody [EPR1023] (ab109185)

Lanes 1 - 2: Merged signal (red and green). Green - ab109185 observed at 24 kDa. Red - loading control, ab9484, observed at 37 kDa.
ab109185 was shown to specifically react with MUC1 in wild-type HeLa cells as signal was lost in MUC1 knockout cells. Wild-type and MUC1 knockout samples were subjected to SDS-PAGE. ab109185 and ab9484 (Mouse anti-GAPDH loading control) were incubated overnight at 4°C at 1/1000 dilution and 1/20000 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.

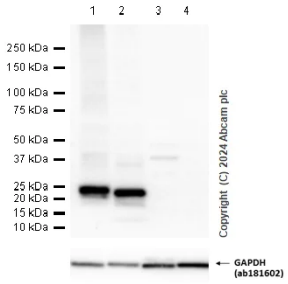
All lanes:
Western blot - Anti-MUC1 antibody [EPR1023] (ab109185) at 1/1000 dilution

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

Lane 2:
MUC1 knockout HeLa whole cell lysate at 20 µg

Predicted band size: 122 kDa

Observed band size: 17-24 kDa



Western blot - Anti-MUC1 antibody [EPR1023] (ab109185)

MUC1 Western blot staining using rabbit Anti-MUC1 antibody

Blocking and dilution buffer: 5% NFDM/TBST.
ab181602 was used as loading control at 1/1000000 dilution.

No expression of MUC1 was detected in normal liver (PMID:16094706).

All lanes:
Western blot - Anti-MUC1 antibody [EPR1023] (ab109185) at 1/1000 dilution

Lane 1:
Mouse lung tissue lysate at 20 µg

Lane 2:
Rat lung tissue lysate at 20 µg

Lane 3:
Mouse liver tissue lysate at 20 µg

Lane 4:
Rat liver tissue lysate at 20 µg

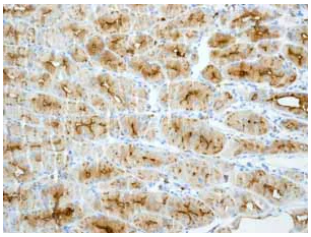
Secondary

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

Predicted band size: 122 kDa

Observed band size: 17-24 kDa

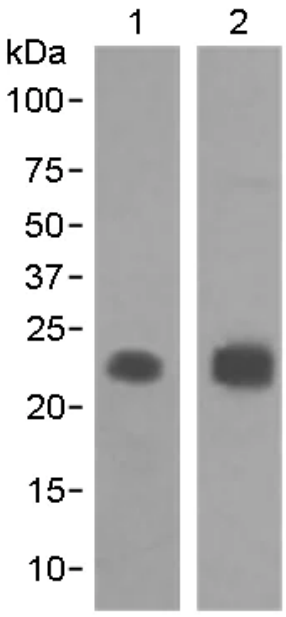
Exposure time: 20s



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-MUC1 antibody [EPR1023] (ab109185)

MUC1 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-MUC1 antibody

ab109185 (unpurified) showing positive staining in Normal stomach tissue.
Perform heat mediated antigen retrieval before commencing with IHC staining protocol.



Western blot - Anti-MUC1 antibody [EPR1023] (ab109185)

All lanes:
Western blot - Anti-MUC1 antibody [EPR1023] (ab109185) at 1/1000 dilution

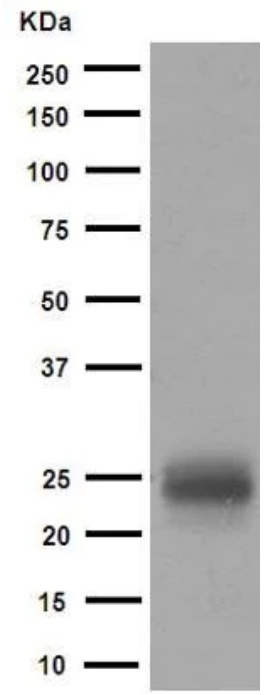
Lane 1:
T47-D cell lysate at 10 µg

Lane 2:
Human colon cancer lysate at 10 µg

Performed under reducing conditions.

Predicted band size: 122 kDa

Observed band size: 17 kDa



Western blot - Anti-MUC1 antibody [EPR1023] (ab109185)

Blocking buffer: 5% NFDM/TBST
Dilution buffer: 5% NFDM/TBST

All lanes:
Western blot - Anti-MUC1 antibody [EPR1023] (ab109185) at 1/1000 dilution

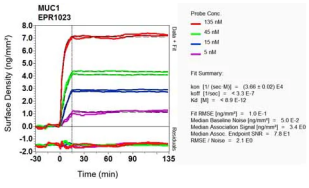
All lanes:
Colon cancer at 10 µg

Secondary

All lanes:
Anti-Rabbit IgG (HRP), specific to the non-reduced form of IgG at 1/1000 dilution

Predicted band size: 122 kDa

Observed band size: 24 kDa



OI-RD Scanning - Anti-MUC1 antibody [EPR1023] (ab109185)

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'.