abcam

## ab45167

# Anti-MUC1 antibody [EP1024Y]

Anti-MUC1 antibody [EP1024Y] (ab45167) is a rabbit monoclonal antibody detecting MUC1 in **Western Blot, Flow Cytometry, IP, ICC/IF**. Suitable for **Human, Mouse, Rat**.

- KO validated for confirmed specificity
- Biophysical QC for unrivalled batch-batch consistency
- Over 30 publications
- Trusted since 2006

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** | EP1024Y |
| **Purification technique** | Affinity purification Protein A |
| **Specificity** | Based on the immunogen sequence, the antibody recognises several isoforms of MUC1 (Uniprot ID P15941). They are Isoform Y (28 kDa), Isoform Y-LSP (28 kDa), Isoform S2 (17 kDa) and Isoform J13 (28 kDa). |
| **Concentration** | 0.126 mg/mL The concentration of this product may be batch-dependent<br>Batch concentration finder → |

## Reactivity data

## IP

### Tested

| | |
|---|---|
| **Species** | Human |
| **Dilution info** | 1/20 |
| **Notes** | **For unpurified use at 1/50.** |

### Expected

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

## Flow Cyt

### Tested

| | |
|---|---|
| **Species** | Human |
| **Dilution info** | 1/20 |
| **Notes** | 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** | - |

## WB

### Tested

| | |
|---|---|
| **Species** | Mouse |
| **Dilution info** | 1/1000 |
| **Notes** | MUC1 isoform 7. |

| | |
|---|---|
| **Species** | Rat |
| **Dilution info** | 1/1000 |

| | |
|---|---|
| **Notes** | MUC1 isoform 7. |

| | |
|---|---|
| **Species** | Human |
| **Dilution info** | 1/1000 |
| **Notes** | MUC1 isoform 7. |

## ICC/IF

### Tested

| | |
|---|---|
| **Species** | Human |
| **Dilution info** | 1/500 |
| **Notes** | - |

### 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 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

**What is this antibody validated in?**
Anti-MUC1 antibody [EP1024Y] (ab45167) is a rabbit recombinant monoclonal antibody and is validated for use in Western Blot (WB), Flow Cytometry (Flow Cyt), Immunoprecipitation (IP), Immunocytochemistry/immunofluorescence (ICC/IF) in Human, Mouse, Rat samples.

**Trusted by the scientific community**
Anti-MUC1 [EP1024Y] (ab45167) was first used in a scientific publication in 2006 and has been cited over 30 times in peer-reviewed journals.

**Specificity confirmed**
The specificity of Anti-MUC1 antibody [EP1024Y] (ab45167) has been confirmed by Western blot testing in Mucin-1 Knockout HeLa cells.

**Other related products**
We have a range of other formats of antibody clone [EP1024Y] also available for your convenience: ab45167, PE - ab213337, Carrier free - ab218998, Carrier free - ab256588, APC - ab317951, Alexa Fluor® 488 - ab317992, Alexa Fluor® 594 - ab318034, Alexa Fluor® 555 - ab318076, Alexa Fluor® 647 - ab318117

**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.

**Trial sizes available!**
Test your antibody or perform pre-screening before committing to a larger quantity. Sold in 20µl. Discover our selection of trial-size 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.

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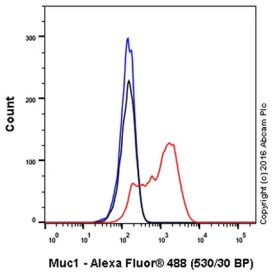
We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

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.

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## 11 product images

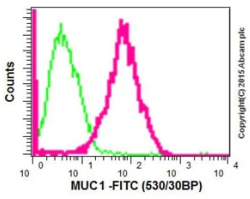



### Flow Cytometry - Anti-MUC1 antibody [EP1024Y] (ab45167)

MUC1 Flow Cytometry staining using rabbit Anti-MUC1 antibody

Flow Cytometry analysis of A549 (human lung carcinoma cell line) cells labeling MUC1 with purified ab45167 at 1/20 dilution (10 ug/ml). Cells were fixed with 4% paraformaldehyde. A goat anti-rabbit IgG (Alexa Fluor® 488) was used as the secondary antibody at 1/2000 dilution. Black - Isotype control, Rabbit monoclonal IgG. Blue - unlabeled control, cells without incubation with primary antibody and secondary antibody.

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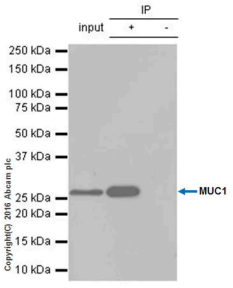



### Flow Cytometry - Anti-MUC1 antibody [EP1024Y] (ab45167)

MUC1 Flow Cytometry staining using rabbit Anti-MUC1 antibody

Flow cytometry analysis of T47D (human mammary gland ductal carcinoma) cells labelling MUC1 with unpurified ab45167 (pink) at a dilution of 1/150. Cells were fixed with 2% paraformaldehyde. A FITC-conjugated goat anti-rabbit IgG was used as the secondary antibody. Rabbit monoclonal IgG (ab172730) was used as the isotype control (green).

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### Immunoprecipitation - Anti-MUC1 antibody [EP1024Y] (ab45167)

ab45167 (purified) at 1/20 dilution (2ug) immunoprecipitating MUC1 in Human fetal lung lysate.
**Lane 1 (input):** Human fetal lung lysate 10ug

**Lane 2 (+):** ab45167 + Human fetal lung lysate 10ug

**Lane 3 (-):** Rabbit monoclonal IgG (ab172730) instead of ab45167 in Human fetal lung lysate

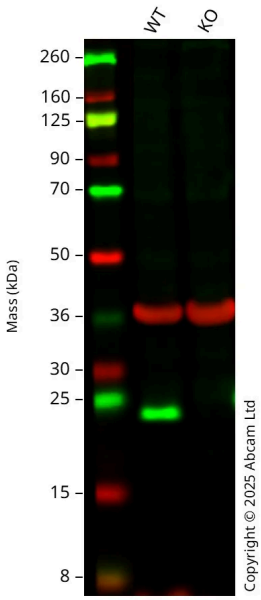
For western blotting, ab131366 VeriBlot for IP Detection Reagent (HRP) was used for detection (1/1000).

Blocking buffer and concentration: 5% NFDM/TBST.

Diluting buffer and concentration: 5% NFDM /TBST.
All lanes:
Immunoprecipitation - Anti-MUC1 antibody [EP1024Y] (ab45167)

Predicted band size: 122 kDa

Observed band size: 27 kDa




## Western blot - Anti-MUC1 antibody [EP1024Y] (ab45167)

MUC1 Western blot staining using rabbit Anti-MUC1 antibody

**Lanes 1- 2:** Merged signal (red and green). Green - ab45167 observed at 24 kDa. Red - Anti-GAPDH antibody [6C5] - Loading Control (ab8245) observed at 37 kDa.
ab45167 was shown to react with MUC1 in Wild-type HeLa (Human epithelial cell line from cervix adenocarcinoma) cells in western blot. Loss of signal was observed when knockout cell line ab255412 (knockout cell lysate ab263764) was used. Wild-type HeLa (Human epithelial cell line from cervix adenocarcinoma) and MUC1 knockout HeLa (Human epithelial cell line from cervix adenocarcinoma) cell lysates were subjected to SDS-PAGE. Membrane was blocked for 1 hour at room temperature in 0.1% TBST with 3% non-fat dried milk. ab45167 and Anti-GAPDH antibody [6C5] - Loading Control (ab8245) overnight at 4°C at a 1 in 1000 dilution and a 1 in 20000 dilution respectively. Blots were developed with Goat anti-Rabbit IgG H&L (IRDye®800CW) preadsorbed (ab216773) and Goat anti-Mouse IgG H&L (IRDye®680RD) preadsorbed (ab216776) secondary antibodies at 1 in 20000 dilution for 1 hour at room temperature before imaging.

All lanes:
Western blot - Anti-MUC1 antibody [EP1024Y] (ab45167) at 1/1000 dilution

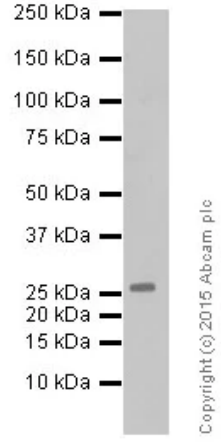
Lane 1:
Wild-type HeLa (Human epithelial cell line from cervix adenocarcinoma) cell lysate at 20 µg

Lane 2:
Western blot - Human MUC1 knockout HeLa cell lysate (ab263764) at 20 µg

Performed under reducing conditions.

Predicted band size: 122 kDa

Observed band size: 24 kDa




## Western blot - Anti-MUC1 antibody [EP1024Y] (ab45167)

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

Blocking and diluting buffer: 5% NFDM/TBST.
All lanes:
Western blot - Anti-MUC1 antibody [EP1024Y] (ab45167) at 1/2000 dilution

All lanes:
T47D cell lysate at 10 µg

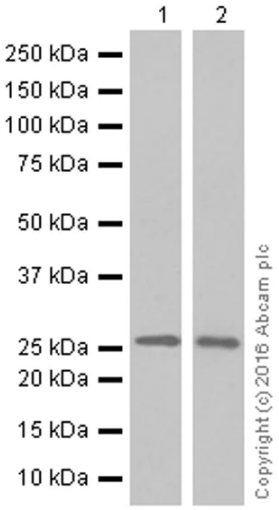
Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/1000 dilution

Predicted band size: 122 kDa

Observed band size: 27 kDa

Exposure time: 3min




## Western blot - Anti-MUC1 antibody [EP1024Y] (ab45167)

MUC1 Western blot staining using rabbit Anti-MUC1 antibody

Blocking and diluting buffer and concentration: 5% NFDM /TBST.
All lanes:
Western blot - Anti-MUC1 antibody [EP1024Y] (ab45167) at 1/1000 dilution

Lane 1:
Human colon cancer lysate at 20 µg

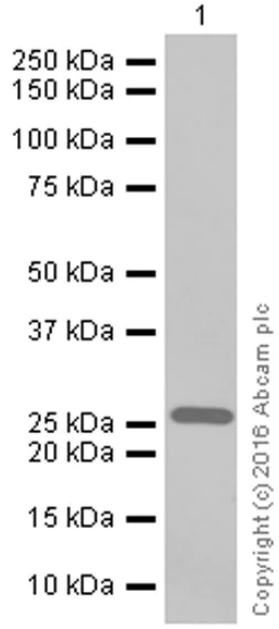
Lane 2:
Rat liver lysate at 20 µg

Secondary

All lanes:
Anti-Rabbit IgG (HRP), specific to the non-reduced form of IgG at 1/2000 dilution

Predicted band size: 122 kDa

Observed band size: 27 kDa




## Western blot - Anti-MUC1 antibody [EP1024Y] (ab45167)

MUC1 Western blot staining of Mouse liver lysate using rabbit Anti-MUC1 antibody

Blocking and diluting buffer and concentration: 5% NFDM /TBST.
All lanes:
Western blot - Anti-MUC1 antibody [EP1024Y] (ab45167) at 1/5000 dilution

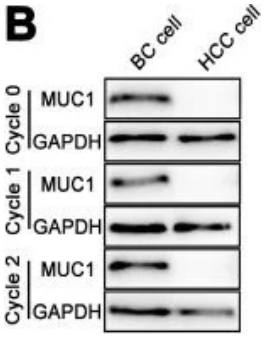
All lanes:
Mouse liver lysate at 20 µg

Secondary

All lanes:
Anti-Rabbit IgG (HRP), specific to the non-reduced form of IgG at 1/2000 dilution

Predicted band size: 122 kDa

Observed band size: 27 kDa




## Western blot - Anti-MUC1 antibody [EP1024Y] (ab45167)

MUC1 Western blot staining using rabbit Anti-MUC1 antibody

Western Blotting using Anti-MUC1 antibody [EP1024Y], ab45167. Publication image from Liu, X. et al., 2020, Theranostics, 32292504. Legend direct from paper.

Nondestructive analysis of breast cancer cells and hepatocellular carcinoma cells that were acquired from volunteer patients and cultured in vitro. (A) Confocal laser scanning microscope

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images of MUC1 expression with immunofluorescent assay using anti-MUC1 antibody. (B) Western blot results of MUC1 expression before (Cycle 0) and after one (Cycle 1) or two (Cycle 2) rounds of DTA analysis. (C) CCK-8 analysis of cell viability with 0/1/2 rounds of DTA analysis. (D-G) Confocal laser scanning microscope images of MUC1 labeled with Cy5-labeled Apt-Pri in the first round (D) and second round (F) of DTA analysis, and corresponding fluorescent signals of released FAM-labeled molecular beacon after the first round (E) and second round (G) of DTA analysis. Ex: 488 nm, Em: 520 nm. The data represent the mean ± SD (error bars) of triplicate experiments. N.S., no significance. *, p<0.05. **, p<0.01. ***, p<0.001.

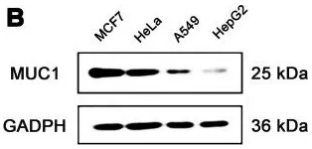



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## Western blot - Anti-MUC1 antibody [EP1024Y] (ab45167)

MUC1 Western blot staining using rabbit Anti-MUC1 antibody

Western Blotting using Anti-MUC1 antibody [EP1024Y], ab45167. Publication image from Liu, X. et al., 2020, Theranostics, 32292504. Legend direct from paper.

Imaging and qualitative detection of MUC1 in MCF-7, HeLa, A549, and HepG2 cells. (A) Confocal laser scanning microscope images of MUC1 with immunofluorescent assay using anti-MUC1 antibody. The cells had been fixed and permeated (dead cells). (B) Western blot results of MUC1 expression level. (C) Confocal laser scanning microscope images of MUC1 labeled with Cy5-labeled Apt-Pri or mApt-Pri for 60 min of incubation. (D) The fluorescent signals of FAM-labeled molecular beacon that were released into the supernatant after the DTA analysis by using fluorescence spectrometer. Ex: 488 nm, Em: 520 nm. The data represent the mean ± SD (error bars) of triplicate experiments. N.S., no significance. *, p<0.05. **, p<0.01. ***, p<0.001.

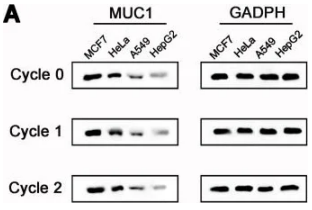



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## Western blot - Anti-MUC1 antibody [EP1024Y] (ab45167)

MUC1 Western blot staining using rabbit Anti-MUC1 antibody

Western Blotting using Anti-MUC1 antibody [EP1024Y], ab45167. Publication image from Liu, X. et al., 2020, Theranostics, 32292504. Legend direct from paper.

Cell viability and protein expression after DTA analysis. (A) Western blot results of MUC1 expression before (Cycle 0) and after one (Cycle 1) or two (Cycle 2) rounds of DTA analysis. (B) Flow cytometry analysis of tumor cells apoptosis with 0/1/2 rounds of DTA analysis using an Annexin V-FITC Apoptosis Detection kit. (C) CCK-8 analysis of cell viability with 0/1/2 rounds of DTA analysis. The data represent the mean ± SD (error bars) of triplicate experiments. N.S., no significance. *, p<0.05. **, p<0.01. ***, p<0.001.

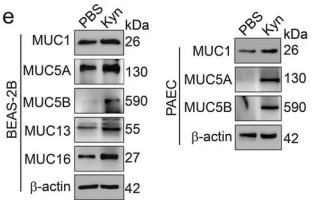



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## Western blot - Anti-MUC1 antibody [EP1024Y] (ab45167)

MUC1 Western blot staining using rabbit Anti-MUC1 antibody

Western Blotting using Anti-MUC1 antibody [EP1024Y], ab45167. Publication image from Liu, Y. et al., 2020, Cell Res, 33159154. Legend direct from paper.

IFN-β and IFN-γ activated the Kyn-AhR pathway for mucin expression.a PAECs or BEAS-2B cells were treated with IFN-β (1 ng/mL) or IFN-γ (10 ng/mL) for 48 h. The expression of IDO1 was determined by western blotting. b BEAS-2B cells were treated with IFN-β (1 ng/mL) or IFN-γ (10 ng/mL) for 48 h. The levels of Kyn from cell lysates or the supernatants were determined by ELISA. c PAECs were isolated from AhR−/− mice were treated with IFN-β (1 ng/mL) or IFN-γ (10 ng/mL) for 24 h. The expression of Mucs 1, 2, 5A, 6, 13, 15 and 16 was determined by real-time PCR. d BEAS-2B cells were treated with Kyn (400 μM) for 24 h. The expression of mucins (MUCs 2, 5A, 6, 7, 13, 15, 16, 17, 18 and 20) was determined by real-time PCR. e Western blot analysis of the expression of

mucins 1, 5A, 5B, 13 and 16 from BEAS-2B cells or PAECs treated with Kyn (400 μM) for 48 h. The data represent means ± SD. In b–d, n = 3 biological independent samples. Representative images are from three independent experiments (a and e). *P < 0.05, **P < 0.01, ***P < 0.001, by two-tailed Student’ s t-test (d) or one-way ANOVA (b and c).

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