abcam

Product datasheet

Anti-MUC1 antibody [EP1024Y] ab45167

KO 評価済 リコンビナント RabMAb

4 Abreviews 30 References 画像数 9

製品の概要

製品名	Anti-MUC1 antibody [EP1024Y]
製品の詳細	Rabbit monoclonal [EP1024Y] to MUC1
由来種	Rabbit
特異性	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).
アプリケーション	**適用あり:** WB, Flow Cyt, IP, ICC/IF
種交差性	**交差種:** Mouse, Rat, Human
免疫原	Synthetic peptide corresponding to Human MUC1 aa 1-100 (N terminal).
ポジティブ・コントロール	WB: HeLa, T47D, MCF7 and A549 cell lysates; Human kidney, human breast carcinoma, human thyroid carcinoma and human colon cancer lysates; Human fetal lung lysate; Rat liver lysate and mouse liver lysate. ICC/IF: MCF7 cells. Flow Cyt: T47D and A549 cells.
特記事項	Isoform 7 of MUC1 behaves as a receptor and binds the secreted isoform 5. The binding induces the phosphorylation of the isoform 7, alters cellular morphology and initiates cell signaling. The mouse and rat recommendation is based on WB results. Our RabMAb® technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to **RabMAb® patents**.

製品の特性

製品の状態	Liquid
保存方法	Shipped at 4°C. Store at +4°C short term (1-2 weeks). Upon delivery aliquot. Store at -20°C. Avoid freeze / thaw cycle.
バッファー	pH: 7.20 Preservative: 0.01% Sodium azide Constituents: 59% PBS, 40% Glycerol, 0.05% BSA
精製度	Protein A purified
一次抗体 備考	Isoform 7 of MUC1 behaves as a receptor and binds the secreted isoform 5. The binding induces the phosphorylation of the isoform 7, alters cellular morphology and initiates cell signaling.

ポリ/モノ	モノクローナル
クローン名	EP1024Y
アイソタイプ	IgG

アプリケーション

The Abpromise guarantee Abpromise保証は、次のテスト済みアプリケーションにおけるab45167の使用に適用されます

アプリケーションノートには、推奨の開始希釈率がありますが、適切な希釈率につきましてはご検討ください。

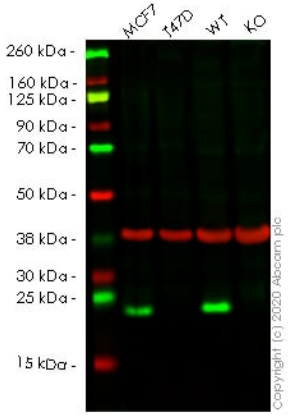
アプリケーション	Abreviews	特記事項
WB		1/1000. Detects a band of approximately 27 kDa. MUC1 isoform 7.
Flow Cyt		1/20. **ab172730** - Rabbit monoclonal IgG, is suitable for use as an isotype control with this antibody.
IP		1/20. **For unpurified use at 1/50.**
ICC/IF		1/500.

ターゲット情報

機能	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.
組織特異性	Expressed on the apical surface of epithelial cells, especially of airway passages, breast and uterus. Also expressed in activated and unactivated T-cells. Overexpressed in epithelial tumors, such as breast or ovarian cancer and also in non-epithelial tumor cells. Isoform Y is expressed in tumor cells only.
関連疾患	MUC1/CA 15-3 is used as a serological clinical marker of breast cancer to monitor response to breast cancer treatment and disease recurrence (PubMed:20816948). Decreased levels over time may be indicative of a positive response to treatment. Conversely, increased levels may indicate disease progression. At an early stage disease, only 21% of patients exhibit high MUC1/CA 15-3 levels, that is why CA 15-3 is not a useful screening test. Most antibodies target the highly immunodominant core peptide domain of 20 amino acid (APDTRPAPGSTAPPAHGVTS) tandem repeats. Some antibodies recognize glycosylated epitopes. Medullary cystic kidney disease 1
配列類似性	Contains 1 SEA domain.

発生段階	During fetal development, expressed at low levels in the colonic epithelium from 13 weeks of gestation.
翻訳後修飾	Highly glycosylated (N- and O-linked carbohydrates and sialic acid). O-glycosylated to a varying degree on serine and threonine residues within each tandem repeat, ranging from mono- to penta-glycosylation. The average density ranges from about 50% in human milk to over 90% in T47D breast cancer cells. Further sialylation occurs during recycling. Membrane-shed glycoproteins from kidney and breast cancer cells have preferentially sialyated core 1 structures, while secreted forms from the same tissues display mainly core 2 structures. The O-glycosylated content is overlapping in both these tissues with terminal fucose and galactose, 2- and 3-linked galactose, 3- and 3,6-linked GalNAc-ol and 4-linked GlcNAc predominating. Differentially O-glycosylated in breast carcinomas with 3,4-linked GlcNAc. N-glycosylation consists of high-mannose, acidic complex-type and hybrid glycans in the secreted form MUC1/SEC, and neutral complex-type in the transmembrane form, MUC1/TM. Proteolytic cleavage in the SEA domain occurs in the endoplasmic reticulum by an autoproteolytic mechanism and requires the full-length SEA domain as well as requiring a Ser, Thr or Cys residue at the P + 1 site. Cleavage at this site also occurs on isoform MUC1/X but not on isoform MUC1/Y. Ectodomain shedding is mediated by ADAM17. Dual palmitoylation on cysteine residues in the CQC motif is required for recycling from endosomes back to the plasma membrane. Phosphorylated on tyrosines and serine residues in the C-terminal. Phosphorylation on tyrosines in the C-terminal increases the nuclear location of MUC1 and beta-catenin. Phosphorylation by PKC delta induces binding of MUC1 to beta-catenin/CTNNB1 and thus decreases the formation of the beta-catenin/E-cadherin complex. Src-mediated phosphorylation inhibits interaction with GSK3B. Src- and EGFR-mediated phosphorylation on Tyr-1229 increases binding to beta-catenin/CTNNB1. GSK3B-mediated phosphorylation on Ser-1227 decreases this interaction but restores the formation of the beta-cadherin/E-cadherin complex. On T-cell receptor activation, phosphorylated by LCK. PDGFR-mediated phosphorylation increases nuclear colocalization of MUC1CT and CTNNB1. The N-terminal sequence has been shown to begin at position 24 or 28.
細胞内局在	Secreted; Cell membrane. Cytoplasm. Nucleus. On EGF and PDGFRB stimulation, transported to the nucleus through interaction with CTNNB1, a process which is stimulated by phosphorylation. On HRG stimulation, colocalizes with JUP/gamma-catenin at the nucleus and Apical cell membrane. Exclusively located in the apical domain of the plasma membrane of highly polarized epithelial cells. After endocytosis, internalized and recycled to the cell membrane. Located to microvilli and to the tips of long filopodial protusions.

画像



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

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

Lane 1 : MCF7 (Human breast adenocarcinoma cell line) cell lysate
Lane 2 : T-47D (Human ductal breast epithelial tumor cell line) cell lysate
Lane 3 : Wild-type HeLa (Human epithelial cell line from cervix adenocarcinoma) cell lysate
Lane 4 : MUC1 knockout HeLa (Human epithelial cell line from cervix adenocarcinoma) cell lysate

Lysates/proteins at 20 µg per lane.

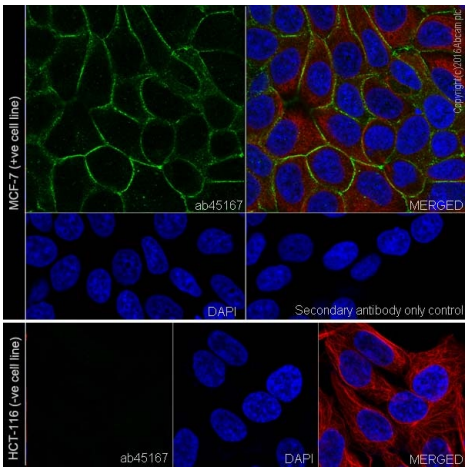
Performed under reducing conditions.

Observed band size: 24 kDa

Lanes 1- 4: 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.

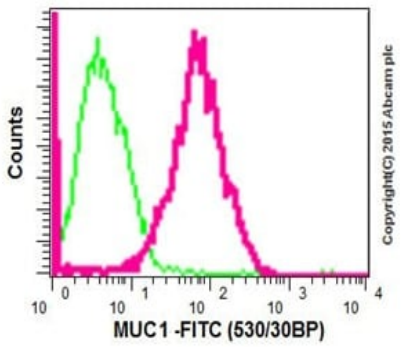


Immunocytochemistry/ Immunofluorescence - Anti-MUC1 antibody [EP1024Y] (ab45167)

Immunocytochemistry/Immunofluorescence analysis of MCF7 (Human breast adenocarcinoma cell line) cells labeling purified MUC1 with ab45167 at 1/500. Cells were fixed with 4% paraformaldehyde and permeabilized with 0.1% Triton X-100. **ab150077**, an Alexa Fluor® 488-conjugated goat anti-rabbit IgG (1/1000) was used as the secondary antibody. Nuclei counterstained with DAPI (blue).

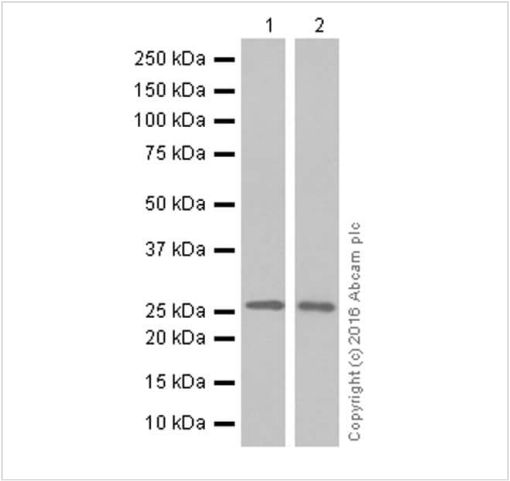
Confocal image showing membranous staining on MCF7 cell line.

Negative control: HCT-116 (PMID: **14998492**).



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

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).



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

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

Lane 1 : Human colon cancer lysate

Lane 2 : Rat liver lysate

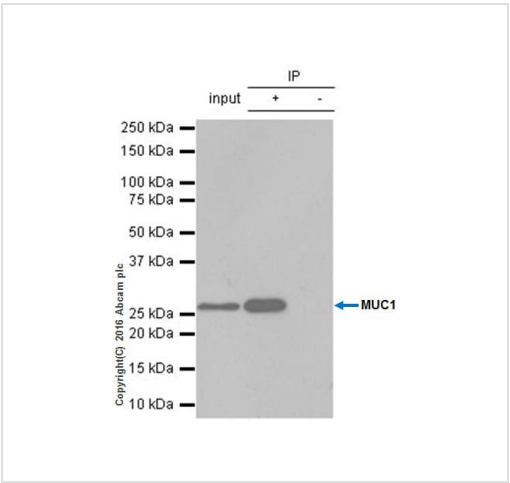
Lysates/proteins at 20 µg per lane.

Secondary

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

Observed band size: 27 kDa

Blocking and diluting buffer and concentration: 5% NFDM /TBST.



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

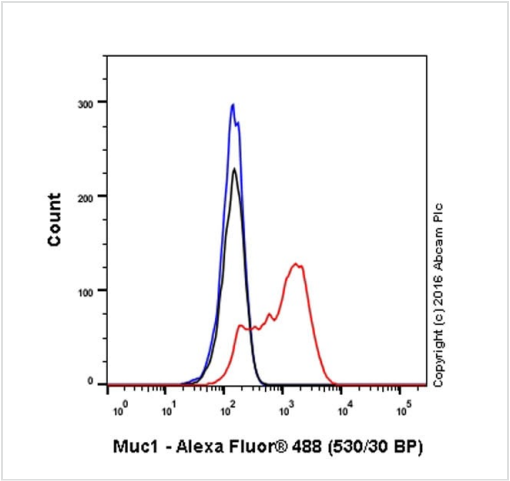
Lane 2 (+): ab45167 + Human fetal lung lysate 10ug

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).

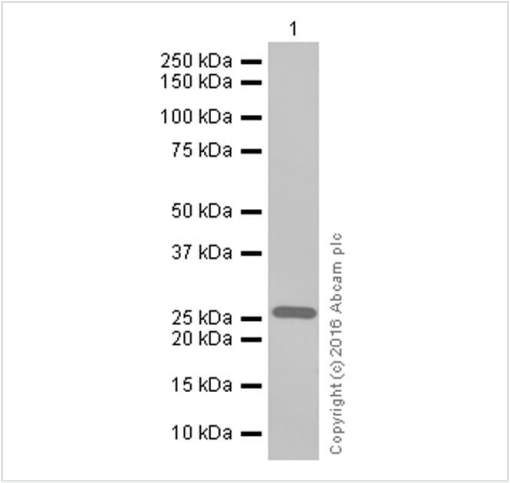
Blocking buffer and concentration: 5% NFDM/TBST.

Diluting buffer and concentration: 5% NFDM /TBST.



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

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.



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

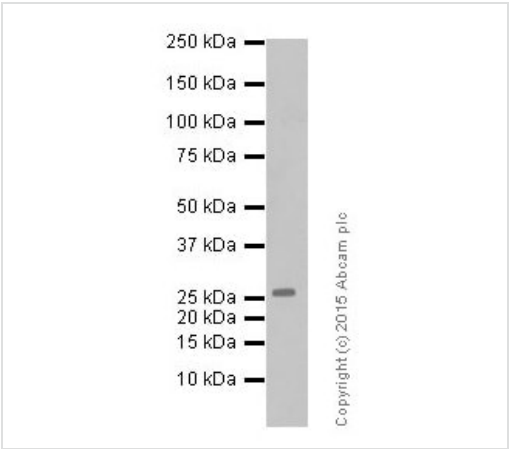
Anti-MUC1 antibody [EP1024Y] (ab45167) at 1/5000 dilution (purified) + Mouse liver lysate at 20 µg

Secondary

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

Observed band size: 27 kDa

Blocking and diluting buffer and concentration: 5% NFDM /TBST.



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

Anti-MUC1 antibody [EP1024Y] (ab45167) at 1/2000 dilution (unpurified) + T47D cell lysate at 10 µg

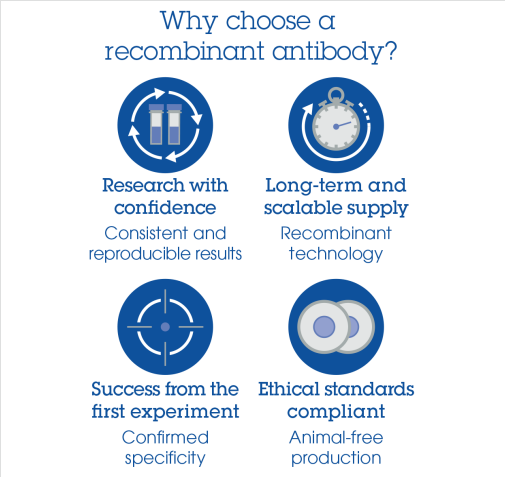
Secondary

Goat Anti-Rabbit IgG H&L (HRP) (**ab97051**) at 1/1000 dilution

Observed band size: 27 kDa

Exposure time: 3 minutes

Blocking and diluting buffer: 5% NFDM/TBST.



Anti-MUC1 antibody [EP1024Y] (ab45167)

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