abcam

Product datasheet

Anti-MUC1 antibody [EP1024Y] - Low endotoxin, Azide free ab218998

敲除验证 重组 RabMAb

5 References 6 图像

概述

产品名称	Anti-MUC1抗体[EP1024Y] - Low endotoxin, Azide free
描述	兔单克隆抗体[EP1024Y] to MUC1 - Low endotoxin, Azide free
宿主	Rabbit
特异性	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).
经测试应用	**适用于:** Flow Cyt, IP, ICC/IF, WB
种属反应性	**与反应:** Mouse, Rat, Human
免疫原	Synthetic peptide. This information is proprietary to Abcam and/or its suppliers.
阳性对照	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.
常规说明	ab218998 is the carrier-free version of **ab45167**. 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 **carrier-free** antibodies are typically supplied in a PBS-only formulation, purified and free of BSA, sodium azide and glycerol. The carrier-free buffer and high concentration allow for increased conjugation efficiency. 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. 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 production
For more information **see here**.

Our RabMAb® technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to **RabMAb® patents**.

Our **Low endotoxin, azide-free formats** have low endotoxin level (≤ 1 EU/ml, determined by the LAL assay) and are free from azide, to achieve consistent experimental results in functional assays.

性能

形式	Liquid
存放说明	Shipped at 4°C. Store at +4°C. Do Not Freeze.
存储溶液	pH: 7.20 Constituent: PBS
无载体	**是**
纯度	Protein A purified
克隆	单克隆
克隆编号	EP1024Y
同种型	IgG

应用

The Abpromise guarantee **Abpromise™承诺保证使用ab218998于以下的经测试应用**

"应用说明"部分 下显示的仅为推荐的起始稀释度;实际最佳的稀释度/浓度应由使用者检定。

应用	Ab评论	说明
Flow Cyt		Use at an assay dependent concentration. **ab199376** - Rabbit monoclonal IgG, is suitable for use as an isotype control with this antibody.
IP		Use at an assay dependent concentration.
ICC/IF		Use at an assay dependent concentration.
WB		Use at an assay dependent concentration.

靶标

功能 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.

组织特异性

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.

疾病相关

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

序列相似性

Contains 1 SEA domain.

发展阶段

During fetal development, expressed at low levels in the colonic epithelium from 13 weeks of gestation.

翻译后修饰

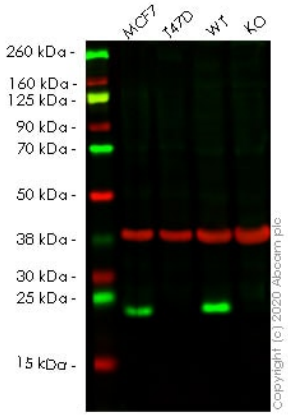
Highly glycosylated (N- and O-linked carbohydrates and sialic acid). O-glycosylated to a varying degree on serine and threonine residues within each tandem repeat, ranging from mono- to penta-glycosylation. The average density ranges from about 50% in human milk to over 90% in T47D breast cancer cells. 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.

细胞定位

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.

图片



Western blot - Anti-MUC1 antibody [EP1024Y] - Low endotoxin, Azide free (ab218998)

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.

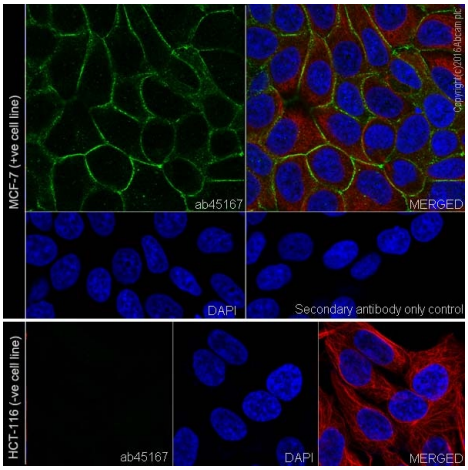
Observed band size: 24 kDa

This data was developed using the same antibody clone in a different buffer formulation (**ab45167**).

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

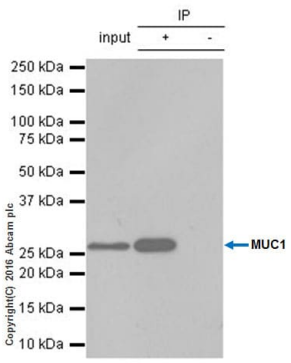
(IRDye®680RD) preadsorbed (**ab216776**) secondary antibodies at 1 in 20000 dilution for 1 hour at room temperature before imaging.



Immunocytochemistry/ Immunofluorescence - Anti-MUC1 antibody [EP1024Y] - Low endotoxin, Azide free (ab218998)

Immunocytochemistry/ Immunofluorescence analysis of MCF7 (Human breast adenocarcinoma cell line) cells labeling MUC1 with purified **ab45167** at 1/500 dilution (0.2µg/ml). Cells were fixed with 4% paraformaldehyde and permeabilized with 0.1% Triton X-100. **ab150077**, a goat anti-rabbit IgG(Alexa Fluor® 488) was used as the secondary antibody at 1/1000 dilution. Ab195889, an anti-alpha Tubulin antibody [DM1A] - Microtubule Marker (Alexa Fluor® 594) was used as counterstain at 1/200 dilution (2.5 µg/ml). The negative control is PBS instead of the primary antibody. Nuclei counterstained with DAPI (blue).

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (**ab45167**).



Immunoprecipitation - Anti-MUC1 antibody [EP1024Y] - Low endotoxin, Azide free (ab218998)

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

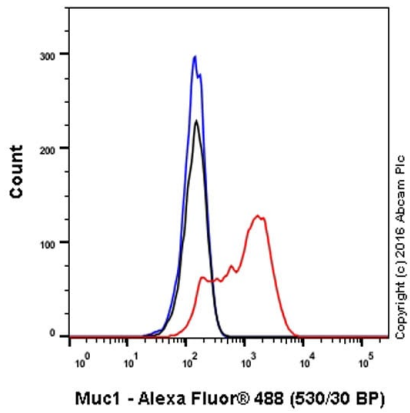
Lane 3 (-): Rabbit monoclonal IgG (**ab172730**) instead of **ab45167** in Human fetal lung lysate

For western blotting, **ab131366** VeriBlot for IP (HRP) was used for detection at 1/1000 dilution.

Blocking buffer and concentration: 5% NFDM/TBST.

Diluting buffer and concentration: 5% NFDM /TBST.

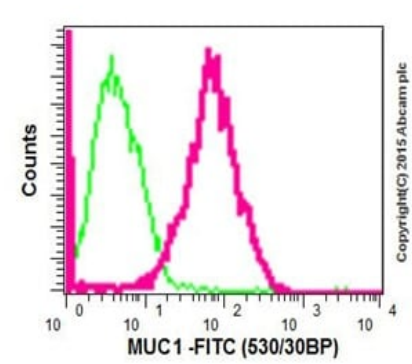
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (**ab45167**).



Flow Cytometry - Anti-MUC1 antibody [EP1024Y] - Low endotoxin, Azide free (ab218998)

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.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (**ab45167**).



Flow Cytometry - Anti-MUC1 antibody [EP1024Y] - Low endotoxin, Azide free (ab218998)

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).

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (**ab45167**).

Anti-MUC1 antibody [EP1024Y] - Low endotoxin, Azide free (ab218998)

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