

Rabbit anti-Human CD227/MUC1 Polyclonal Antibody | anti-CD227/MUC1 antibody

CD227/MUC1 Antibody

CATALOG #	HOST	REACTIVITY	APPLICATIONS
AAA329959	Rabbit	Human	ELISA, Immunocytochemistry, Immunofluorescence, Immunohistochemistry, Western Blot

PRODUCT SYNONYMS

CD227/MUC1; Polyclonal Antibody; CD227/MUC1 Antibody; ADMCKD; ADMCKD1; Breast carcinoma associated antigen DF3; Breast carcinoma-associated antigen DF3; CA 15-3; CA15 3; CA15 3 antigen; CA15.3; Cancer antigen 15-3; Carcinoma associated mucin; Carcinoma-associated mucin; CD 227; CD227; DF3 antigen; EMA; Episialin; H23 antigen; H23AG; KL 6; KL-6; KL6; Krebs von den Lungen-6; MAM 6; MAM6; MCD; MCKD; MCKD1; Medullary cystic kidney disease 1 (autosomal dominant); Medullary cystic kidney disease; autosomal dominant; MUC 1; MUC-1; MUC-1/SEC; MUC-1/X; MUC1; MUC1-alpha; MUC1-beta; MUC1-CT; MUC1-NT; MUC1/ZD; MUC1_HUMAN; Mucin 1; Mucin 1 transmembrane; cell surface associated; Mucin-1 subunit beta; Peanut reactive urinary mucin; Peanut-reactive urinary mucin; PEM; PEMT; Polymorphic epithelial mucin; PUM; Tumor associated epithelial membrane antigen; Tumor associated epithelial mucin; Tumor associated mucin; Tumor-associated epithelial membrane antigen; Tumor-associated mucin; anti-CD227/MUC1 antibody

PRODUCT SPECIFICATIONS

Host	Rabbit
Reactivity	Human
Clonality	Polyclonal
Isotype	Rabbit IgG
Specificity	CD227/MUC1 Antibody detects endogenous levels of total CD227/MUC1. Tissue Specificity: 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.
Purity/Purification	The antiserum was purified by peptide affinity chromatography using SulfoLink Coupling Resin
Form/Format	Liquid. Rabbit IgG in phosphate buffered saline, pH7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol.
Concentration	1mg/ml (varies by lot)
Applicable Applications for anti-CD227/MUC1 antibody	ELISA (Peptide ELISA), ICC (Immunocytochemistry), IF (Immunofluorescence), IHC (Immunohistochemistry), WB (Western Blot)
Immunogen	A synthesized peptide derived from human CD227/MUC1, corresponding to a region within C-terminal amino acids.
Conjugation	Unconjugated
Fragment	Fab fragment

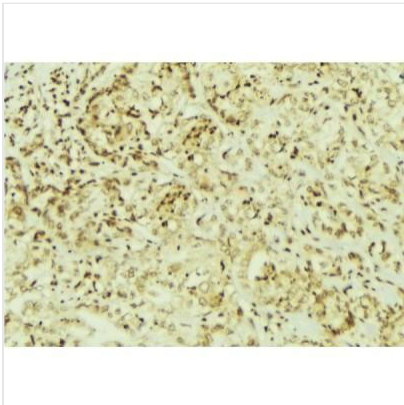
Post Translational Modifications	Highly glycosylated (N- and O-linked carbohydrates and sialic acid). O-glycosylated to a varying degree on serine and threonine residues within each tandem repeat, ranging from mono- to penta-glycosylation. The average density ranges from about 50% in human milk to over 90% in T47D breast cancer cells. Further sialylation occurs during recycling. Membrane-shed glycoproteins from kidney and breast cancer cells have preferentially sialylated 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.
Subunit Structure	The alpha subunit forms a tight, non-covalent heterodimeric complex with the proteolytically-released beta-subunit. Interaction, via the tandem repeat region, with domain 1 of ICAM1 is implicated in cell migration and metastases. Isoform 1 binds directly the SH2 domain of GRB2, and forms a MUC1/GRB2/SOS1 complex involved in RAS signaling. The cytoplasmic tail (MUC1CT) interacts with several proteins such as SRC, CTNNB1 and ERBs. Interaction with the SH2 domain of CSK decreases interaction with GSK3B. Interacts with CTNNB1/beta-catenin and JUP/gamma-catenin and promotes cell adhesion. Interaction with JUP/gamma-catenin is induced by heregulin. Binds PRKCD, ERBB2, ERBB3 and ERBB4. Heregulin (HRG) stimulates the interaction with ERBB2 and, to a much lesser extent, the interaction with ERBB3 and ERBB4. Interacts with P53 in response to DNA damage. Interacts with KLF4. Interacts with estrogen receptor alpha/ESR1, through its DNA-binding domain, and stimulates its transcription activity. Binds ADAM17. Isoform ZD forms disulfide-linked oligomers.
Subcellular Location	Apical cell membrane>Single-pass type I membrane protein. Note: 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. Secreted. Secreted. Secreted. Cell membrane. Cytoplasm. Nucleus. Note: 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.
Preparation and Storage	Store at -20 degree C. Stable for 12 months from date of receipt.

IMAGES



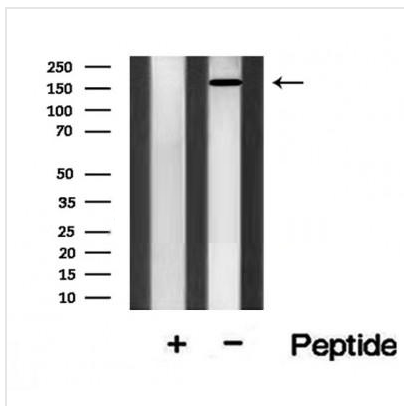
Application Data

At 25 degree C. The primary antibody was diluted at 1/200 and incubated with the sample for 1 hour at 37 degree C. An Alexa Fluor 594 conjugated goat anti-rabbit IgG (H+L) Ab, diluted at 1/600, was used as the secondary antibody.



IHC (Immunohiostchemistry)

Staining Human breast cancer tissue by IHC-P. The sample was formaldehyde fixed and a heat mediated antigen retrieval step in citrate buffer was performed. The sample was then blocked and incubated with the antibody for 1.5 hours at 22 degree C. An HRP conjugated goat anti-rabbit antibody was used as the secondary antibody.



WB (Western Blot)

Western blot analysis of MUC1 using PMA treated 293 whole cell lysates. The lane on the left was treated with blocking peptide.

ADDITIONAL INFORMATION

Related Product Information for anti-CD227/MUC1 antibody

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.

NCBI AND UNIPROT INFORMATION

NCBI GI #	67189007
NCBI GeneID	4582
NCBI Accession #	NP_001018016.1
NCBI GenBank Nucleotide #	NM_001018016.2
UniProt Accession #	P15941; P13931; P15942; P17626; Q0VAP6; Q14128; Q14876; Q16437; Q16442; Q16615; B1AVQ8; B1AVR0
Molecular Weight	122,102 Da
NCBI Official Full Name	mucin-1 isoform 2
NCBI Official Synonym Full Names	mucin 1, cell surface associated
NCBI Official Symbol	MUC1
NCBI Official Synonym Symbols	EMA; PEM; PUM; KL-6; MAM6; PEMT; CD227; H23AG; MUC-1; CA 15-3; MUC-1/X; MUC1/ZD; MUC-1/SEC
NCBI Protein Information	mucin-1; episialin; DF3 antigen; H23 antigen; cancer antigen 15-3; krebs von den Lungen-6; mucin 1, transmembrane; tumor-associated mucin; carcinoma-associated mucin; polymorphic epithelial mucin; peanut-reactive urinary mucin; tumor associated epithelial
UniProt Protein Name	Mucin-1
UniProt Gene Name	MUC1
UniProt Synonym Gene Names	PUM; MUC-1; CA 15-3; KL-6; PUM; PEM; EMA; MUC1-NT; MUC1-alpha; MUC1-beta
UniProt Entry Name	MUC1_HUMAN

For Research Use Only. Not for use in diagnostic or therapeutic procedures. Small volumes of product may become entrapped in the seal of the vial during shipment and storage; if necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the cap.

