ARG23393
anti-MUC1 / EMA antibody [VU-3C6]

Package: 100 µg
Store at: -20°C

Summary

Product Description	Mouse Monoclonal antibody [VU-3C6] recognizes MUC1 / EMA Mouse anti Human CD227 antibody, clone VU-3C6 recognises CD227, also known as mucin 1 which is a breast cancer associated mucin encoded by the Muc-1 gene. Mucins are a family of high molecular weight, heavily glycosylated proteins (glycoconjugates) produced by many epithelial tissues in vertebrates. CD227 is expressed on most secretory epithelium, including mammary gland and some hematopoietic cells. This protein is overexpressed abundantly in >90% breast carcinomas and metastases. The dominant epitope recognised by this antibody is the 12-mer GVTSAPDTRPAP of the mucin 1 tandem repeat. Mouse anti Human CD227 antibody has been tested on frozen human ovarian carcinoma tissue sections and paraffin embedded sections from normal breast tissue. This antibody also reacts weakly with sections of small intestine and colon.
Tested Reactivity	Hu
Tested Application	FACS, IHC-Fr, IHC-P, IP, WB
Host	Mouse
Clonality	Monoclonal
Clone	VU-3C6
Isotype	IgG1
Target Name	MUC1 / EMA
Species	Human
Immunogen	Human breast cancer cell line ZR-75-1.
Conjugation	Un-conjugated
Alternate Names	MUC1-NT; EMA; Mucin-1; MAM6; PEM; Peanut-reactive urinary mucin; CD227; MUC-1/SEC; Breast carcinoma-associated antigen DF3; MUC-1/X; Cancer antigen 15-3; H23AG; CD antigen CD227; MCKD; Carcinoma-associated mucin; Polymorphic epithelial mucin; MUC-1; MUC1-alpha; KL-6; Tumor-associated epithelial membrane antigen; MUC1-CT; ADMCKD1; Episialin; PUM; Tumor-associated mucin; PEMT; MCKD1; ADMCKD; MCD; Krebs von den Lungen-6; CA 15-3; MUC1-beta; MUC1/ZD

Application Instructions

Application table

Application	Dilution
FACS	Assay-dependent
IHC-Fr	Assay-dependent
IHC-P	Assay-dependent
IP	Assay-dependent
WB	1:200 - 1:1000

Application Note

IHC-P: Antigen Retrieval: Boil tissue section in Sodium citrate buffer (pH 6.0).
* The dilutions indicate recommended starting dilutions and the optimal dilutions or concentrations should be determined by the scientist.

Properties

Form	Liquid
Purification	Purification with Protein A.
Buffer	PBS and 0.09% Sodium azide.
Preservative	0.09% Sodium azide
Concentration	1 mg/ml
Storage instruction	For continuous use, store undiluted antibody at 2-8°C for up to a week. For long-term storage, aliquot and store at -20°C or below. Storage in frost free freezers is not recommended. Avoid repeated freeze/thaw cycles. Suggest spin the vial prior to opening. The antibody solution should be gently mixed before use.
Note	For laboratory research only, not for drug, diagnostic or other use.

Bioinformation

Gene Symbol	MUC1
Gene Full Name	mucin 1, cell surface associated
Background	This gene encodes a membrane-bound protein that is a member of the mucin family. Mucins are O-glycosylated proteins that play an essential role in forming protective mucous barriers on epithelial surfaces. These proteins also play a role in intracellular signaling. This protein is expressed on the apical surface of epithelial cells that line the mucosal surfaces of many different tissues including lung, breast stomach and pancreas. This protein is proteolytically cleaved into alpha and beta subunits that form a heterodimeric complex. The N-terminal alpha subunit functions in cell-adhesion and the C-terminal beta subunit is involved in cell signaling. Overexpression, aberrant intracellular localization, and changes in glycosylation of this protein have been associated with carcinomas. This gene is known to contain a highly polymorphic variable number tandem repeats (VNTR) domain. Alternate splicing results in multiple transcript variants.[provided by RefSeq, Feb 2011]
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. [UniProt]
Highlight	Related products: MUC1 antibodies; MUC1 ELISA Kits; MUC1 Duos / Panels; Anti-Mouse IgG secondary antibodies; Related news: Lymphoma
Research Area	Cancer antibody; Controls and Markers antibody; Signaling Transduction antibody; Epithelial Marker antibody
Calculated Mw	122 kDa
PTM	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.

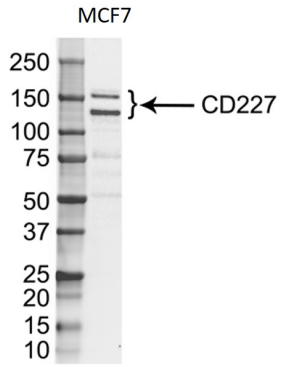
Dual palmitoylation on cysteine residues in the CQC motif is required for recycling from endosomes back to the plasma membrane.

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. [UniProt]

Cellular Localization	Cytoplasmic and cell surface. [UniProt]

Images



ARG23393 anti-MUC1 / EMA antibody [VU-3C6] WB image

Western blot: MCF7 whole cell lysate stained with ARG23393 anti-MUC1 / EMA antibody [VU-3C6] under reducing condition.