

## Anti-MUC1 [AR20.5] Standard Size Ab02845-10.3

This antibody was created using our proprietary Fc Silent™ engineered Fc domain containing key point mutations that abrogate binding to Fc gamma receptors.

This chimeric human antibody was made using the variable domain sequences of the original Mouse IgG format for improved compatibility with existing reagents assays and techniques.

**Isotype and Format:** Human IgG1, Fc Silent™, Kappa

**Clone Number:** AR20.5

**Alternative Name(s) of Target:** Mucin-1; Breast carcinoma-associated antigen DF3; Cancer antigen 15-3; CA 15-3; Carcinoma-associated mucin; Episialin; H23AG; Krebs von den Lungen-6; KL-6; PEMT; Peanut-reactive urinary mucin; PUM; Polymorphic epithelial mucin; PEM; Tumor-associated epithelial membrane antigen; EMA; Tumor-associated mucin; CD227

**UniProt Accession Number of Target Protein:** P15941

**Published Application(s):** functional assay, RIA, therapeutic, ELISA, FC, IF

**Published Species Reactivity:** Human

**Immunogen:** This antibody was raised by immunizing BALB/c mice with MUC1.

**Specificity:** This antibody is specific for human MUC1. The alpha subunit of MUC1 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 of MUC-1 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.

**Application Notes:** While creating and characterizing this antibody, an ELISA was preformed on MUC1 and a 23-mer MUC1 peptide, E23 (CPAHGVTSAPDTRPAPGSTAPPA), Furthermore, the specificity of the antibody was confirmed using flow cytometry on MCF-7, BT-20 and 413BCR cell lines using the murine version of this antibody. Further, a chromium release assay was preformed using the murine version of this antibody on ZR75-1 cells. And finally the biodistribution of the mouse version of this antibody was tested. This was done on mice injected with ZR75-1 cancer cells (Qi et al, 2001; pmid:11839249). To assess the ability of this antibody to cure cancer mice inoculated with a Panc02.MUC1 cancer cell line were treated with the mouse version of this antibody. The antibody showed the ability to slow down or even cure cancer in these mice.

Further, the MUC1 concentrations in the serum of the mice inoculated with a Panc02.MUC1 were tested with ELISA using the mouse version of this antibody. Then spleen and tumor tissue were tested for the presence of MUC1 in both flow cytometry and immunocytochemistry using the mouse version of this antibody. And finally ADCC activity of the mouse version of this antibody was performed using murine splenic NK cells (Mehla et al, 2017; pmid:29204701). The ability of this antibody to halt cancer progression in humans was assessed using the mouse version of this antibody. The antibody showed no significant difference in the progression of cancer. But it did show the ability to cause an anti-MUC1 response (de Bono et al, 2004; pmid:15550589). While creating a new PET scan agent to detect MUC1 positive cancers, flow cytometry was performed on SKOV3, a human ovarian cancer cell line, using the mouse version of this antibody. Further, a radioimmunoassay was performed on human serum using the mouse version of this antibody bound to 89 zirconium. Finally, a pet scan was performed on mice inoculated with the SKOV3 ovarian cancer cell line; the cell line was stained using the mouse version of this antibody bound to 89 zirconium (Fung et al, 2020; pmid:32429033).

**Antibody First Published in:** Qi et al. Characterization of an anti-MUC1 monoclonal antibody with potential as a cancer vaccine. Hybrid Hybridomics. 2001;20(5-6):313-24. [PMID:11839249](#)

**Note on publication:** Describes the generation and characterization of this antibody.

## Product Form

**Size:** 200 µg Purified antibody.

**Purification:** Protein A affinity purified

**Supplied In:** PBS with 0.02% Proclin 300.

**Storage Recommendation:** Store at 4°C for up to 3 months. For longer storage, aliquot and store at -20°C.

**Concentration:** 1 mg/ml.

Important note – This product is for research use only. It is not intended for use in therapeutic or diagnostic procedures for humans or animals.