

## Anti-MUC1 [Mc5] Standard Size Ab00345-10.3

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 IgG2a format for improved compatibility with existing reagents, assays and techniques.

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

**Clone Number:** Mc5

**Alternative Name(s) of Target:** CD227; BEM; Breast epithelial mucin; 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

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

**Published Application(s):** IP, IRA, WB, ELISA, IHC

**Published Species Reactivity:** Human

**Immunogen:** Human breast epithelial mucin.

**Specificity:** This antibody is specific for the amino acid sequence DTRPAP of 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:** In an attempt to develop a reliable way to detect breast cancer, immunoprecipitation was preformed on NPGP from HMFG using the mouse version of this antibody bound to Sepharose 4B. Furthermore, this antibody was tested in an radioimmunoassay experiment on NPGP using the mouse version of this antibody (Ceriani et al, 1992; pmid:1377884). The epitope of this antibody was mapped by ELISA using small peptides - the murine version of this antibody was used (Petrakou et al, 1998 ; pmid:9422085). This antibody was used to identify cells expressing the MUC1 protein. This was accomplished by using the mouse version of this antibody on cell lysates of cell transfected with the MUC1 protein in a western blot analysis (Rubinstein et al, 2006; pmid:17145869). To compare the diagnostic usefulness of different

antibodies, the mouse version of this antibody was used for immunohistochemistry on cell pellets from pleural fluid specimens (Creaney et al, 2008; pmid:18454162). While developing an antibody against the alpha/beta junction of MUC1 the mouse version of this antibody was used for western blot on the MUC1 protein (Rubinstein et al, 2008; pmid:18821582). While assessing a panel of 56 anti MUC1 antibodies for their ability to detect cancer the mouse version of this antibody was used for an immunoradiometric assay on a serum made from sera from 10 different patients with breast, ovarian or colon cancer (Norum et al, 1998; pmid:9422099). To more accurately determine the epitope of this antibody, an ELISA was preformed using the murine version of this antibody on different small peptides from the MUC1 protein (Karsten et al, 2004; pmid:15115750).

**Antibody First Published in:** Christian et al. 1996 Cloning and expression of cDNAs encoding the variable domains of the anti-breast carcinoma antibody Mc5. Hybridoma 1996; 15(2):155-158 [PMID:8743296](https://pubmed.ncbi.nlm.nih.gov/8743296/)

**Note on publication:** Describes how Mc5 has been used as a reagent in the diagnosis of breast cancer.

## 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.