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Recombinant Anti-MUC2 Rabbit mAb

Catalog # AP94860

Product Information

Application	WB, IHC, FC, IP, IF/IC
Primary Accession	Q02817
Reactivity	Human, Mouse, Rat
Host	Rabbit
Clonality	Monoclonal
Calculated MW	550850

Additional Information

Gene ID	4583
Other Names	SMUC; Mucin-2; MUC-2; Intestinal mucin-2
Target/Specificity	KLH-conjugated synthetic peptide encompassing a sequence within human MUC2 protein. The exact sequence is proprietary.
Dilution	WB~~WB (1/500 - 1/1000) IHC~~1:100~500 FC~~1:10~50 IP~~N/A IF/IC~~N/A
Format	Liquid in PBS, pH 7.4, containing 50% glycerol, 0.2% BSA and 0.01% sodium azide.
Storage	Store at -20 °C.Stable for 12 months from date of receipt

Protein Information

Name	MUC2 {ECO:0000303|PubMed:8300571, ECO:0000312|HGNC:HGNC:7512}
Function	Coats the epithelia of the intestines and other mucus membrane-containing organs to provide a protective, lubricating barrier against particles and infectious agents at mucosal surfaces (PubMed:17058067, PubMed:19432394, PubMed:33031746). Major constituent of the colon mucus, which is mainly formed by large polymeric networks of MUC2 secreted by goblet cells that cover the exposed surfaces of intestine (PubMed:19432394, PubMed:33031746). MUC2 networks form hydrogels that guard the underlying epithelium from pathogens and other hazardous matter entering from the outside world, while permitting nutrient absorption and gas exchange (PubMed:33031746, PubMed:36206754). Acts as a divalent copper chaperone that protects intestinal cells from copper toxicity and facilitates nutritional copper unptake into cells (PubMed:36206754). Binds both Cu(2+) and its reduced form, Cu(1+), at two juxtaposed binding sites: Cu(2+), once reduced to Cu(1+) by vitamin C (ascorbate) or other dietary antioxidants, transits to the other binding site (PubMed:36206754). MUC2-bound Cu(1+) is protected from oxidation in aerobic environments, and can be released for

nutritional delivery to cells (PubMed:36206754). Mucin gels store antimicrobial molecules that participate in innate immunity (PubMed:33031746). Mucin glycoproteins also house and feed the microbiome, lubricate tissue surfaces, and may facilitate the removal of contaminants and waste products from the body (PubMed:33031746). Goblet cells synthesize two forms of MUC2 mucin that differ in branched chain O-glycosylation and the site of production in the colon: a (1) 'thick' mucus that wraps the microbiota to form fecal pellets is produced in the proximal, ascending colon (By similarity). 'Thick' mucus transits along the descending colon and is lubricated by a (2) 'thin' MUC2 mucus produced in the distal colon which adheres to the 'thick' mucus (By similarity).

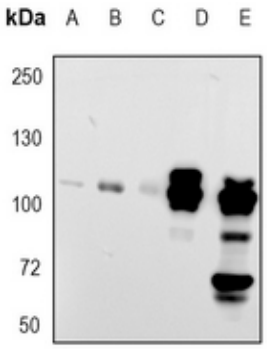
Cellular Location

Secreted. Note=In the intestine, secreted into the inner and outer mucus layers (By similarity). Before secretion, mucin polymers are stored in dedicated secretory vesicles (PubMed:33031746). {ECO:0000250|UniProtKB:Q80Z19, ECO:0000269|PubMed:33031746}

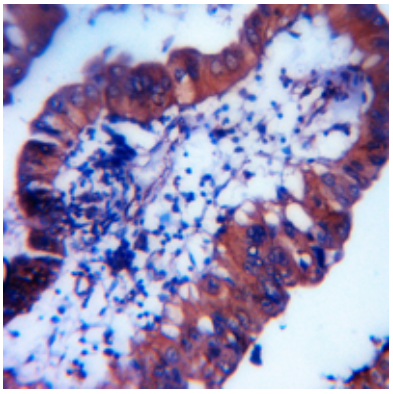
Tissue Location

Colon, small intestine, colonic tumors, bronchus, cervix and gall bladder.

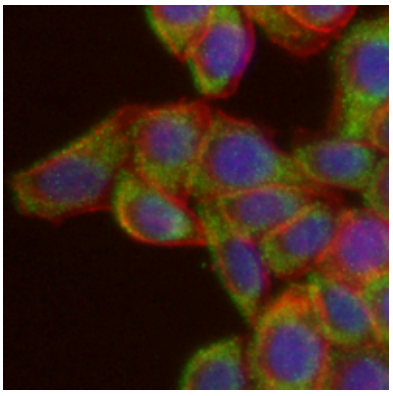
Images



Western blot analysis of MUC2 expression in HEK293T (A), SGC7901 (B), EC9706 (C), mouse brain (D), rat brain (E) whole cell lysates. (Predicted band size: 540, 110 kD; Observed band size: 110 kD)



Immunohistochemical analysis of MUC2 staining in human colon formalin fixed paraffin embedded tissue section. The section was pre-treated using heat mediated antigen retrieval with sodium citrate buffer (pH 6.0). The section was then incubated with the antibody at room temperature and detected using an HRP conjugated compact polymer system. DAB was used as the chromogen. The section was then counterstained with haematoxylin and mounted with DPX.



Immunofluorescent analysis of MUC2 staining in Hela. Formalin-fixed cells were permeabilized with 0.1% Triton X-100 in TBS for 5-10 minutes and blocked with 3% BSA-PBS for 30 minutes at room temperature. Cells were probed with the primary antibody in 3% BSA-PBS and incubated overnight at 4 °C in a humidified chamber. Cells were washed with PBST and incubated with an AF488-conjugated secondary antibody (green) in PBS at room temperature in the dark. Phalloidin - AF594 was used to stain Actin filaments (red). DAPI was used to stain the cell nuclei (blue).

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