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Mucin 2 / MUC2 Antibody (clone SPM512)

Mouse Monoclonal Antibody
Catalog # ALS12800

Specification

Mucin 2 / MUC2 Antibody (clone SPM512) - Product Information

Application	**IHC**
Primary Accession	Q02817
Reactivity	**Human**
Host	**Mouse**
Clonality	**Monoclonal**
Calculated MW	**540kDa KDa**

Mucin 2 / MUC2 Antibody (clone SPM512) - Additional Information

Gene ID 4583

Other Names
Mucin-2, MUC-2, Intestinal mucin-2, MUC2, SMUC

Reconstitution & Storage
Store at 2°C to 8°C degrees. Do not freeze.

Precautions
Mucin 2 / MUC2 Antibody (clone SPM512) is for research use only and not for use in diagnostic or therapeutic procedures.

Mucin 2 / MUC2 Antibody (clone SPM512) - 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.

Volume
250 µl

Mucin 2 / MUC2 Antibody (clone SPM512) - Protocols

Provided below are standard protocols that you may find useful for product applications.

- Western Blot
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

Mucin 2 / MUC2 Antibody (clone SPM512) - Images

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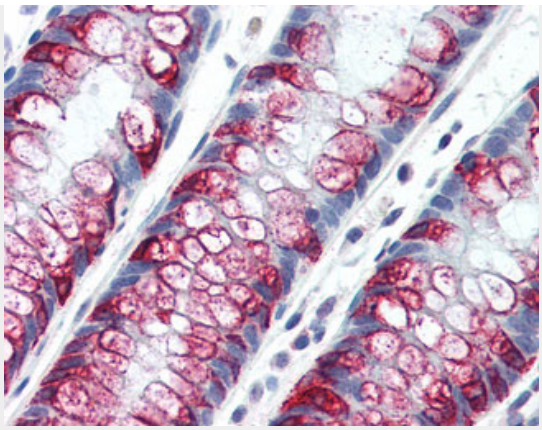
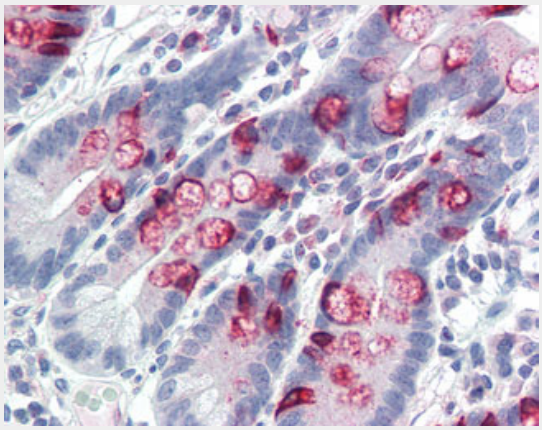


Anti-MUC2 antibody IHC of human colon.



Anti-MUC2 antibody IHC of human small intestine.

Mucin 2 / MUC2 Antibody (clone SPM512) - Background

Coats the epithelia of the intestines, airways, and other mucus membrane-containing organs. Thought to provide a protective, lubricating barrier against particles and infectious agents at mucosal surfaces. Major constituent of both the inner and outer mucus layers of the colon and may play a role in excluding bacteria from the inner mucus layer.

Mucin 2 / MUC2 Antibody (clone SPM512) - References

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Xu G.,et al.Biochem. Biophys. Res. Commun. 183:821-828(1992).