

**Mucin 2 / MUC2 Antibody (clone SPM512)**  
**Mouse Monoclonal Antibody**  
**Catalog # ALS12800****Specification**

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

Application	IHC
Primary Accession	<a href="#">Q02817</a>
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](http://www.uniprot.org/citations/17058067), PubMed:[19432394](http://www.uniprot.org/citations/19432394), PubMed:[33031746](http://www.uniprot.org/citations/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](http://www.uniprot.org/citations/19432394), PubMed:[33031746](http://www.uniprot.org/citations/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](http://www.uniprot.org/citations/33031746), PubMed:[36206754](http://www.uniprot.org/citations/36206754)). Acts as a divalent copper chaperone that protects intestinal cells from copper toxicity and facilitates nutritional copper uptake into cells (PubMed:[36206754](http://www.uniprot.org/citations/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:<a href="http://www.uniprot.org/citations/36206754" target="\_blank">36206754</a>). MUC2-bound Cu(1+) is protected from oxidation in aerobic environments, and can be released for nutritional delivery to cells (PubMed:<a href="http://www.uniprot.org/citations/36206754" target="\_blank">36206754</a>). Mucin gels store antimicrobial molecules that participate in innate immunity (PubMed:<a href="http://www.uniprot.org/citations/33031746" target="\_blank">33031746</a>). 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:<a href="http://www.uniprot.org/citations/33031746" target="\_blank">33031746</a>). 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

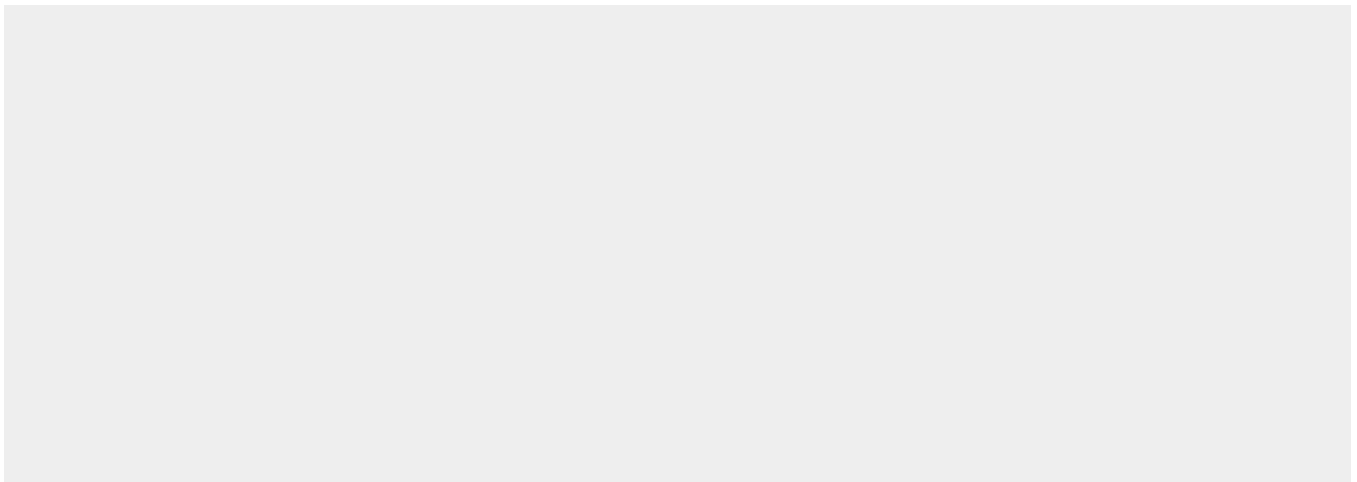
250 µl

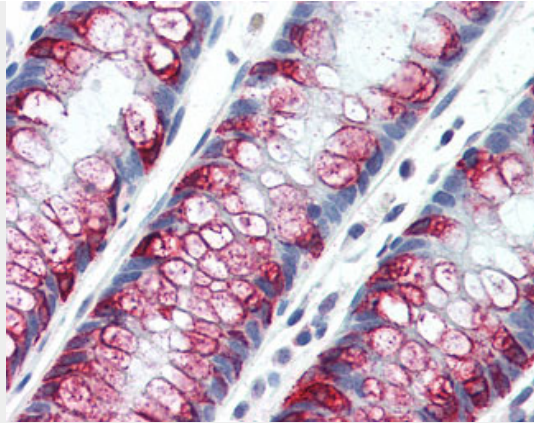
### Mucin 2 / MUC2 Antibody (clone SPM512) - Protocols

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

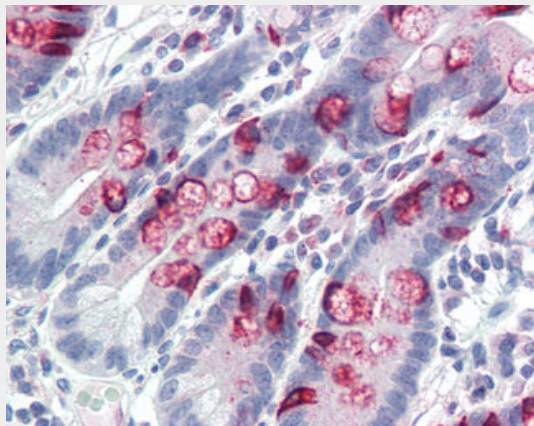
- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

### Mucin 2 / MUC2 Antibody (clone SPM512) - Images





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**

- Gum J.R. Jr., et al. J. Biol. Chem. 269:2440-2446(1994).
- Gum J.R. Jr., et al. J. Biol. Chem. 267:21375-21383(1992).
- Toribara N.W., et al. J. Clin. Invest. 88:1005-1013(1991).
- Gum J.R. Jr., et al. J. Biol. Chem. 264:6480-6487(1989).
- Xu G., et al. Biochem. Biophys. Res. Commun. 183:821-828(1992).