

Mucin 2 (B306.1): sc-59859

BACKGROUND

The mucins are a family of highly glycosylated, secreted proteins with a basic structure consisting of a variable number of tandem repeats (VNTRs) encoded by 60 base pairs (Mucin 1), 69 base pairs (Mucin 2) and 51 base pairs (Mucin 3). The number of repeats is highly polymorphic and varies among different alleles. Mucin 1 proteins are expressed as type I membrane proteins in addition to secreted forms. Mucin 1 is aberrantly expressed in epithelial tumors including breast carcinomas. Mucin 2 coats the epithelia of the intestines and airways and is associated with colonic tumors. Mucin 3 is a major component of various mucus gels and is broadly expressed in normal and tumor cells.

CHROMOSOMAL LOCATION

Genetic locus: MUC2 (human) mapping to 11p15.5; Muc2 (mouse) mapping to 7 F5.

SOURCE

Mucin 2 (B306.1) is a mouse monoclonal antibody raised against a synthetic peptide encoding 5 tandem repeats of MUC2 apomucin of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

Mucin 2 (B306.1) is recommended for detection of Mucin 2 of mouse, rat and human origin by immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for Mucin 2 siRNA (h): sc-43160, Mucin 2 siRNA (m): sc-155920, Mucin 2 shRNA Plasmid (h): sc-43160-SH, Mucin 2 shRNA Plasmid (m): sc-155920-SH, Mucin 2 shRNA (h) Lentiviral Particles: sc-43160-V and Mucin 2 shRNA (m) Lentiviral Particles: sc-155920-V.

Molecular Weight of Mucin 2 monomer: 300 kDa.

Molecular Weight of Mucin 2 dimer: 600 kDa.

Positive Controls: SW480 cell lysate: sc-2219.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz[®] Mounting Medium: sc-24941 or UltraCruz[®] Hard-set Mounting Medium: sc-359850. 2) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

STORAGE

Store at 4° C, ****DO NOT FREEZE****. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

SELECT PRODUCT CITATIONS

1. Biton, M., et al. 2011. Epithelial microRNAs regulate gut mucosal immunity via epithelium-T cell crosstalk. *Nat. Immunol.* 12: 239-246.
2. Stremmel, W., et al. 2016. Phosphatidylcholine passes through lateral tight junctions for paracellular transport to the apical side of the polarized intestinal tumor cell-line CaCo2. *Biochim. Biophys. Acta* 1861: 1161-1169.
3. Chen, W., et al. 2018. SRC-3 protects intestine from DSS-induced colitis by inhibiting inflammation and promoting goblet cell differentiation through enhancement of KLF4 expression. *Int. J. Biol. Sci.* 14: 2051-2064.
4. Dosh, R.H., et al. 2019. Long-term *in vitro* 3D hydrogel co-culture model of inflammatory bowel disease. *Sci. Rep.* 9: 1812.
5. Zhang, X., et al. 2019. Interleukin-22 regulates the homeostasis of the intestinal epithelium during inflammation. *Int. J. Mol. Med.* 43: 1657-1668.
6. Pu, Z., et al. 2019. Dual roles of IL-18 in colitis through regulation of the function and quantity of goblet cells. *Int. J. Mol. Med.* 43: 2291-2302.
7. Stremmel, W., et al. 2019. Phosphatidylcholine passes by paracellular transport to the apical side of the polarized biliary tumor cell line Mz-ChA-1. *Int. J. Mol. Sci.* 20: 4034.
8. Yin, S., et al. 2020. Artesunate ameliorates DSS-induced ulcerative colitis by protecting intestinal barrier and inhibiting inflammatory response. *Inflammation* 43: 765-776.
9. Wang, Q., et al. 2020. Arachidonic acid promotes intestinal regeneration by activating WNT signaling. *Stem Cell Reports* 15: 374-388.
10. Yin, S., et al. 2021. The inhibitory effect of artesunate on excessive endoplasmic reticulum stress alleviates experimental colitis in mice. *Front. Pharmacol.* 12: 629798.
11. Bai, D., et al. 2021. Oroxylin A maintains the colonic mucus barrier to reduce disease susceptibility by reconstituting a dietary fiber-deprived gut microbiota. *Cancer Lett.* 515: 73-85.
12. Wang, S., et al. 2021. Isosteviol sodium exerts anti-colitic effects on BALB/c mice with dextran sodium sulfate-induced colitis through metabolic reprogramming and immune response modulation. *J. Inflamm. Res.* 14: 7107-7130.
13. Rubbino, F., et al. 2022. GPR120 prevents colorectal adenocarcinoma progression by sustaining the mucosal barrier integrity. *Sci. Rep.* 12: 381.
14. Chen, L., et al. 2022. Hepatic cytochrome P450 8B1 and cholic acid potentiate intestinal epithelial injury in colitis by suppressing intestinal stem cell renewal. *Cell Stem Cell* 29: 1366-1381.e9.

CONJUGATES

See **Mucin 2 (F-2): sc-515032** for Mucin 2 antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor[®] 488, 546, 594, 647, 680 and 790.