SANTA CRUZ BIOTECHNOLOGY, INC.

Mucin 5AC (2-11M1): sc-59951

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Mucins are a group of high molecular weight glycoproteins consisting of a mucin core protein and O-linked carbohydrates. Mucin 6 carries GlcNAcα1→4Galβ→R structures, indicating that α1, 4-N-acetylglucosaminyltransferase is important to the formation of the mucous glycoproteins *in vivo*. Mucin 5AC is a gel-forming mucin that is secreted from surface mucous cells. Glucocorticoid is required for the expression of Mucin 5AC mRNA and high doses of hydrocortisone suppresses its expression. Additionally, asthmatic fluid stimulates Mucin 5AC synthesis several-fold. The pro-inflammatory cytokines IL-6 and TNFα stimulate Mucin 5AC secretion and thus contribute to the upregulation of mucin by chronic inflammation. Expression of Mucin 5AC is retinoic acid (RA)- or retinol-dependent, and RA control of mucin genes is mediated by the retinoid acid receptor RARα and, to a lesser extent, by RARγ. Thyroid hormone binding to thyroid receptors inhibits Mucin 5AC gene expression. Mucin 5AC is also expressed in normal endocervical epithelium, small intestine, gastric cells (Lewis type 1) and gastric metaplasia and it is one of the major mucins in the ethmoid mucosa.

REFERENCES

1. Longphre, M., et al. 1999. Allergen-induced IL-9 directly stimulates mucin transcription in respiratory epithelial cells. J. Clin. Invest. 104: 1375-1382.
2. Riethdorf, L., et al. 2000. Differential expression of Mucin 2 and Mucin 5AC in benign and malignant glandular lesions of the cervix uteri. Virchows Arch. 437: 365-371.

CHROMOSOMAL LOCATION

Genetic locus: MUC5AC (human) mapping to 11p15.5; Muc5ac (mouse) mapping to 7 F5.

SOURCE

Mucin 5AC (2-11M1) is a mouse monoclonal antibody raised against an M1 mucin preparation from ovarian cyst fluid of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

Mucin 5AC (2-11M1) is recommended for detection of Mucin 5AC of human, mouse, bovine, feline and monkey origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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 5AC siRNA (h): sc-37131, Mucin 5AC siRNA (m): sc-37132, Mucin 5AC shRNA Plasmid (h): sc-37131-SH, Mucin 5AC shRNA Plasmid (m): sc-37132-SH, Mucin 5AC shRNA (h) Lentiviral Particles: sc-37131-V and Mucin 5AC shRNA (m) Lentiviral Particles: sc-37132-V.

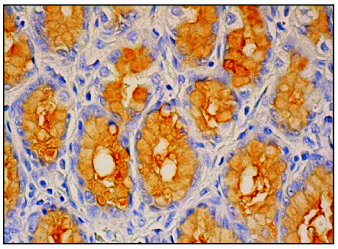
Molecular Weight of Mucin 5AC: 400-600 kDa.

Positive Controls: MCF7 whole cell lysate: sc-2206.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) 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. 3) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



Mucin 5AC (2-11M1): sc-59951. Immunoperoxidase staining of formalin fixed, paraffin-embedded human lower stomach tissue showing cytoplasmic staining of glandular cells.

SELECT PRODUCT CITATIONS

1. Li, R.W., et al. 2009. Mucin biosynthesis in the bovine goblet cell induced by *Cooperia oncophora* infection. Vet. Parasitol. 165: 281-289.
2. Gold, D.V., et al. 2013. Mapping PAM4 (clivatuzumab), a monoclonal antibody in clinical trials for early detection and therapy of pancreatic ductal adenocarcinoma, to MUC5AC mucin. Mol. Cancer 12: 143.
3. Lachowicz-Scroggins, M.E., et al. 2016. Abnormalities in MUC5AC and MUC5B protein in airway mucus in asthma. Am. J. Respir. Crit. Care Med. 194: 1296-1299.
4. Balázs, A., et al. 2022. Age-related differences in structure and function of nasal epithelial cultures from healthy children and elderly people. Front. Immunol. 13: 822437.

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.

CONJUGATES

See **Mucin 5AC (45M1): sc-21701** for Mucin 5AC antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.