

Mucin 5AC (45M1): sc-21701

BACKGROUND

Mucins are a group of high molecular weight glycoproteins consisting of a mucin core protein and O-linked carbohydrates. Mucin 6 carries GlcNAc1→4Galb→R structures, indicating that α 1, 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 suppress its expression. Additionally, asthmatic fluid stimulates Mucin 5AC synthesis several-fold. The pro-inflammatory cytokines IL-6 and TNF- α 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 RAR α and, to a lesser extent, by RAR γ . 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.

SELECT PRODUCT CITATIONS

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 MUC2 and MUC5AC 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 (45M1) is a mouse monoclonal antibody raised against M1 mucin preparation from the fluid of an ovarian mucinous cyst belonging to an O Le (a-b) patient.

PRODUCT

Each vial contains 200 μ g IgG₁ in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Mucin 5AC (45M1) is available conjugated to agarose (sc-21701 AC), 500 μ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-21701 HRP), 200 μ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-21701 PE), fluorescein (sc-21701 FITC), Alexa Fluor[®] 488 (sc-21701 AF488), Alexa Fluor[®] 546 (sc-21701 AF546), Alexa Fluor[®] 594 (sc-21701 AF594) or Alexa Fluor[®] 647 (sc-21701 AF647), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-21701 AF680) or Alexa Fluor[®] 790 (sc-21701 AF790), 200 μ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

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STORAGE

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

APPLICATIONS

Mucin 5AC (45M1) is recommended for detection of Mucin 5AC of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)], 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).

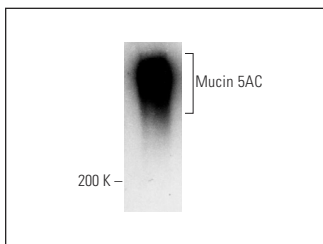
Mucin 5AC (45M1) is also recommended for detection of Mucin 5AC in additional species, including rabbit, porcine, feline, avian, monkey and hedgehog.

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.

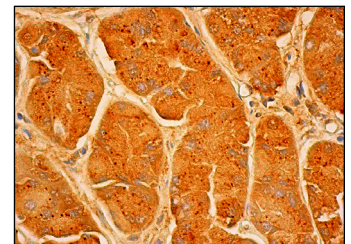
Molecular Weight of Mucin 5AC: 400-600 kDa.

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

DATA



Mucin 5AC (45M1): sc-21701. Western blot analysis of Mucin 5AC in a trypsin-digested Mucin preparation. Kindly provided by Dr. Jaques Bara, INSERM, France.



Mucin 5AC (45M1): sc-21701. Immunoperoxidase staining of formalin fixed, paraffin-embedded human upper stomach tissue showing cytoplasmic staining of glandular cells.

SELECT PRODUCT CITATIONS

1. Trompette, A., et al. 2004. The DHE cell line as a model for studying rat gastro-intestinal mucin expression: effects of dexamethasone. *Eur. J. Cell Biol.* 83: 347-358.
2. Zhang, H., et al. 2018. Long non-coding RNA expression patterns in lung tissues of chronic cigarette smoke induced COPD mouse model. *Sci. Rep.* 8: 7609.
3. Sachs, N., et al. 2019. Long-term expanding human airway organoids for disease modeling. *EMBO J.* 38: e100300.
4. Chen, Q., et al. 2020. Host antiviral response suppresses ciliogenesis and motile ciliary functions in the nasal epithelium. *Front. Cell Dev. Biol.* 8: 581340.
5. Lu, W., et al. 2021. Elevated MUC1 and MUC5AC mucin protein levels in airway mucus of critical ill COVID-19 patients. *J. Med. Virol.* 93: 582-584.

RESEARCH USE

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