SANTA CRUZ BIOTECHNOLOGY, INC.

Mucin 5AC (CLH2): sc-33667

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.

CHROMOSOMAL LOCATION

Genetic locus: MUC5AC (human) mapping to 11p15.5.

SOURCE

Mucin 5AC (CLH2) is a mouse monoclonal antibody raised against a synthetic peptide of the Mucin 5AC tandem repeat 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.

Mucin 5AC (CLH2) is available conjugated to agarose (sc-33667 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-33667 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-33667 PE), fluorescein (sc-33667 FITC), Alexa Fluor® 488 (sc-33667 AF488), Alexa Fluor® 546 (sc-33667 AF546), Alexa Fluor® 594 (sc-33667 AF594) or Alexa Fluor® 647 (sc-33667 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-33667 AF680) or Alexa Fluor® 790 (sc-33667 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

Mucin 5AC (CLH2) is recommended for detection of Mucin 5AC of human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg 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).

Suitable for use as control antibody for Mucin 5AC siRNA (h): sc-37131, Mucin 5AC shRNA Plasmid (h): sc-37131-SH and Mucin 5AC shRNA (h) Lentiviral Particles: sc-37131-V.

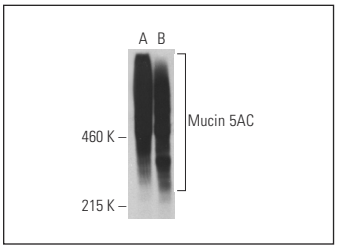
Molecular Weight of Mucin 5AC: 400-600 kDa.

Positive Controls: MCF7 whole cell lysate: sc-2206, A549 cell lysate: sc-2413 or human stomach extract: sc-363780.

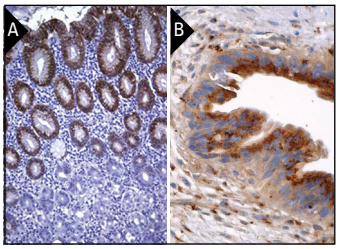
STORAGE

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

DATA



Mucin 5AC (CLH2): sc-33667. Western blot analysis of Mucin 5AC expression in A549 whole cell lysate (**A**) and human stomach tissue extract (**B**). Detection reagent used: m-IgGκ BP-HRP: sc-516102.



Mucin 5AC (CLH2): sc-33667. Immunoperoxidase staining of formalin-fixed, paraffin-embedded human gastric mucosa showing extracellular matrix staining of superficial and foveolar epithelium. Image kindly provided by Celso Albuquerque Reis, Ph.D., Institute of Molecular Pathology and Immunology, University of Porto (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human gall bladder tissue showing cytoplasmic staining of glandular cells (**B**).

SELECT PRODUCT CITATIONS

1. Wang, Y., et al. 2008. Ocular surface and tear functions after topical cyclosporine treatment in dry eye patients with chronic graft-versus-host disease. Bone Marrow Transplant. 41: 293-302.
2. Woodward, A.M. and Argüeso, P. 2014. Expression analysis of the transmembrane mucin MUC20 in human corneal and conjunctival epithelia. Invest. Ophthalmol. Vis. Sci. 55: 6132-6138.
3. Bai, J., et al. 2015. Enhanced expression of SAM-pointed domain-containing Ets-like factor in chronic rhinosinusitis with nasal polyps. Laryngoscope 125: E97-E103.
4. Al-Khayal, K., et al. 2016. Differential expression of mucins in Middle Eastern patients with colorectal cancer. Oncol. Lett. 12: 393-400.
5. Kimura, R., et al. 2018. Expression of cell adhesion molecule 1 in gastric neck and base glandular cells: possible involvement in peritoneal dissemination of signet ring cells. Life Sci. 213: 206-213.
6. Sun, L., et al. 2019. Modelling liver cancer initiation with organoids derived from directly reprogrammed human hepatocytes. Nat. Cell Biol. 21: 1015-1026.
7. Ushiku, T., et al. 2020. Oxyntic gland neoplasm of the stomach: expanding the spectrum and proposal of terminology. Mod. Pathol. 33: 206-216.
8. Nomi, K., et al. 2021. Generation of functional conjunctival epithelium, including goblet cells, from human iPSCs. Cell Rep. 34: 108715.

RESEARCH USE

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