

# Mucin 5AC (2Q445): sc-71621

## BACKGROUND

Mucins are a group of high molecular weight glycoproteins consisting of a mucin core protein and O-linked carbohydrates. Mucin 6 carries GlcNAc $\alpha$ 1 $\rightarrow$ 4Gal $\beta$  $\rightarrow$ R structures, indicating that  $\alpha$ 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 suppresses its expression. Additionally, asthmatic fluid stimulates Mucin 5AC synthesis several-fold. The pro-inflammatory cytokines IL-6 and TNF $\alpha$  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 $\alpha$  and, to a lesser extent, by RAR $\gamma$ . 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; Muc5ac (mouse) mapping to 7 F5.

## SOURCE

Mucin 5AC (2Q445) is a mouse monoclonal antibody raised against a synthetic peptide of the Mucin 5AC tandem repeat of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG $_1$  kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## 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 (2Q445) is recommended for detection of Mucin 5AC of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ 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).

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.

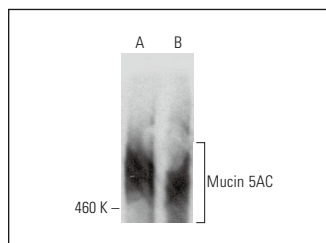
Molecular Weight of Mucin 5AC: 400-600 kDa.

Positive Controls: MCF7 whole cell lysate: sc-2206, human stomach extract: sc-363780 or mouse stomach extract: sc-394628.

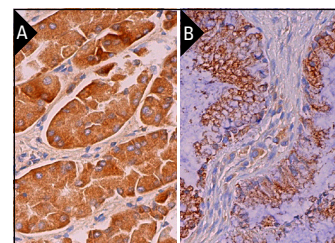
## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgG $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850. 4) Immunohistochemistry: use m-IgG $\kappa$  BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

## DATA



Mucin 5AC (2Q445): sc-71621. Western blot analysis of Mucin 5AC expression in human stomach (A) and mouse stomach (B) tissue extracts.



Mucin 5AC (2Q445): sc-71621. Immunoperoxidase staining of formalin fixed, paraffin-embedded human upper stomach (A) and human uterine cervix (B) tissue showing cytoplasmic staining of glandular cells.

## SELECT PRODUCT CITATIONS

1. Liu, D., et al. 2015. Identification of PAM4 (clivatuzumab)-reactive epitope on MUC5AC: a promising biomarker and therapeutic target for pancreatic cancer. *Oncotarget* 6: 4274-4285.
2. 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.
3. Krause, T., et al. 2017. Validation of antibody reagents for mucin analysis in chronic inflammatory airway diseases. *MAbs* 9: 333-341.
4. Munteanu, O., et al. 2019. Colon cancer in pregnancy: a diagnostic and therapeutic challenge. *Rom. J. Morphol. Embryol.* 60: 307-317.

## RESEARCH USE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.



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.