

# Mucin 7 (1C10): sc-517138

## BACKGROUND

Mucin glycoproteins are major constituents of the glycocalyx that covers mucosal epithelium. There are two broad classes of mucins: membrane-associated and secretory mucins. The MUC7 gene encodes a low-molecular-mass salivary mucin, mucin 7 (also designated MG2, mucin glycoprotein 2), that lacks cysteine-rich domains and is secreted as a soluble monomer. The MUC7 glycoprotein can bind to a variety of microbes and this binding requires a cysteine-containing domain in the N-terminal region of MUC7. MUC7 is expressed in human submandibular/sublingula secretions and in mucous acinar cells. Among all normal malignant tissue samples and tumor cell lines, MUC7 is only expressed in bladder cancer cell lines and samples of invasive transitional cell carcinomas, suggesting differential MUC7 gene expression with the onset of malignant transformation of the bladder urothelium. MUC7 is also expressed in a variety of epithelial cancers. Expression of MUC7 is retinoic acid (RA)- or retinol-dependent and is mediated by the retinoid acid receptors RAR $\alpha$  and, to a lesser extent, by RAR $\gamma$ . Thyroid hormone T3 binds to thyroid receptors and interacts with RA to inhibit mucin gene expression.

## REFERENCES

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- Khan, S.H., et al. 1998. *In situ* hybridization localized MUC7 mucin gene expression to the mucous acinar cells of human and MUC7-transgenic mouse salivary glands. *Glycoconj. J.* 15: 1125-1132.
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- Retz, M., et al. 1998. Differential mucin MUC7 gene expression in invasive bladder carcinoma in contrast to uniform MUC1 and MUC2 gene expression in both normal urothelium and bladder carcinoma. *Cancer Res.* 58: 5662-5666.
- Zhang, S., et al. 1998. Selection of tumor antigens as targets for immune attack using immunohistochemistry: protein antigens. *Clin. Cancer Res.* 4: 2669-2676.
- Lagow, E., et al. 1999. Mammalian reproductive tract mucins. *Hum. Reprod. Update* 5: 280-292.
- Liu, B., et al. 2000. The recombinant N-terminal region of human salivary mucin MG2 (MUC7) contains a binding domain for oral streptococci and exhibits candidacidal activity. *Biochem. J.* 345: 557-564.
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## CHROMOSOMAL LOCATION

Genetic locus: MUC7 (human) mapping to 4q13.3.

## SOURCE

Mucin 7 (1C10) is a mouse monoclonal antibody raised against amino acids 36-135 representing partial length Mucin 7 of human origin.

## PRODUCT

Each vial contains 100  $\mu$ g IgG<sub>2a</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

Mucin 7 (1C10) is recommended for detection of Mucin 7 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

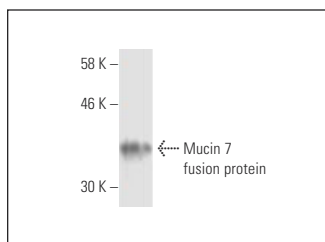
Suitable for use as control antibody for Mucin 7 siRNA (h): sc-43167, Mucin 7 shRNA Plasmid (h): sc-43167-SH and Mucin 7 shRNA (h) Lentiviral Particles: sc-43167-V.

Molecular Weight of Mucin 7: 39 kDa.

## 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<sup>™</sup> Molecular Weight Standards: sc-2035, UltraCruz<sup>®</sup> 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).

## DATA



Mucin 7 (1C10): sc-517138. Western blot analysis of human recombinant Mucin 7 fusion protein.

## SELECT PRODUCT CITATIONS

- Yousaf, N.Y., et al. 2022. Daily exposure to a cranberry polyphenol oral rinse alters the oral microbiome but not taste perception in PROP taster status classified individuals. *Nutrients* 14: 1492.

## 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.

## PROTOCOLS

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