

Mucin 4 (1G8): sc-33654

BACKGROUND

Mucins are a group of high molecular weight glycoproteins consisting of a Mucin core protein and O-linked carbohydrates. Mucin 4, a membrane-bound Mucin, is the human homolog of the rat sialomucin complex (SMC). Mucin 4 protein consists of Mucin 4 α , a large amino Mucin type subunit, and Mucin 4 β , a transmembrane subunit containing three EGF-like domains. The Mucin 4 gene is the predominant Mucin gene expressed in the normal urothelium and is also expressed in several normal tissues such as trachea, lung and testis. Dysregulation of Mucin 4 results in high levels of expression in pancreatic tumors and tumor cell lines. Induction of Mucin 4 in pancreatic carcinoma by all-*trans*-retinoic acid is mediated through the retinoic acid receptor- α signaling pathway. TGF β 2 serves as an interim mediator of this regulated expression. Alternative splicing in the 3'-end of the Mucin 4 gene generates at least 12 splice variants, which are characterized as 2 distinct types, a secreted type and a membrane-associated type. Mucin 4 protein acts as a heterodimeric bifunctional cell-surface glycoprotein and forms thick mucous effusion in the diseased middle ear.

REFERENCES

1. Moniaux, N., et al. 1999. Complete sequence of the human Mucin MUC4: a putative cell membrane-associated Mucin. *Biochem. J.* 338: 325-333.
2. Guillem, P., et al. 2000. Mucin gene expression and cell differentiation in human normal, premalignant and malignant esophagus. *Int. J. Cancer* 88: 856-861.

CHROMOSOMAL LOCATION

Genetic locus: MUC4 (human) mapping to 3q29; Muc4 (mouse) mapping to 16 B3.

SOURCE

Mucin 4 (1G8) is a mouse monoclonal antibody raised against the transmembrane domain of the ASGP-2 subunit of Mucin 4 of rat origin.

PRODUCT

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

Mucin 4 (1G8) is available conjugated to agarose (sc-33654 AC), 500 μ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-33654 HRP), 200 μ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-33654 PE), fluorescein (sc-33654 FITC), Alexa Fluor[®] 488 (sc-33654 AF488), Alexa Fluor[®] 546 (sc-33654 AF546), Alexa Fluor[®] 594 (sc-33654 AF594) or Alexa Fluor[®] 647 (sc-33654 AF647), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-33654 AF680) or Alexa Fluor[®] 790 (sc-33654 AF790), 200 μ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

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STORAGE

Store at 4 $^{\circ}$ C, ****DO NOT FREEZE****. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

APPLICATIONS

Mucin 4 (1G8) is recommended for detection of Mucin 4 of mouse, rat and human by Western Blotting (starting dilution 1:100, dilution range), 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).

Suitable for use as control antibody for Mucin 4 siRNA (h): sc-43163, Mucin 4 siRNA (m): sc-43164, Mucin 4 shRNA Plasmid (h): sc-43163-SH, Mucin 4 shRNA Plasmid (m): sc-43164-SH, Mucin 4 shRNA (h) Lentiviral Particles: sc-43163-V and Mucin 4 shRNA (m) Lentiviral Particles: sc-43164-V.

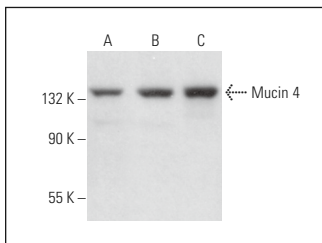
Molecular Weight of glycosylated Mucin 4: 980 kDa.

Molecular Weight of Mucin 4 α : 850 kDa.

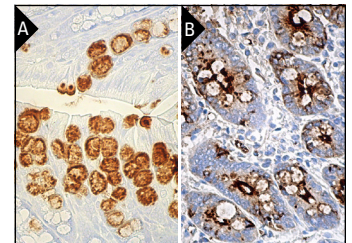
Molecular Weight of Mucin 4 β : 80 kDa.

Positive Controls: HUV-EC-C whole cell lysate: sc-364180, COLO 205 whole cell lysate: sc-364177 or Y79 cell lysate: sc-2240.

DATA



Mucin 4 (1G8): sc-33654. Western blot analysis of Mucin 4 expression in HUV-EC-C (A), Y79 (B) and COLO 205 (C) whole cell lysates.



Mucin 4 (1G8): sc-33654. Immunoperoxidase staining of formalin fixed, paraffin-embedded mouse colon tissue showing cytoplasmic staining of goblet cells. Blocked with 0.25X UltraCruz[®] Blocking Reagent: sc-516214. Detected with m-IgG Fc BP-B: sc-533652 and ImmunoCruz[®] ABC Kit: sc-516216 (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human duodenum tissue showing cytoplasmic staining of goblet cells (B).

SELECT PRODUCT CITATIONS

1. Kusafuka, K., et al. 2008. Cystadenoma of the palate: immunohistochemistry of mucins. *Pathol. Int.* 58: 524-528.
2. Goryszewska, E., et al. 2021. Pleiotropic role of prokineticin 1 in the porcine endometrium during pregnancy establishment and embryo implantation. *Biol. Reprod.* 104: 181-196.
3. Chen, J., et al. 2022. Cordycepin alleviated metabolic inflammation in Western diet-fed mice by targeting intestinal barrier integrity and intestinal flora. *Pharmacol. Res.* 178: 106191.
4. Zeng, H., et al. 2024. Circadian disruption reduces MUC4 expression via the clock molecule BMAL1 during dry eye development. *Exp. Mol. Med.* 56: 1655-1666.

RESEARCH USE

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