

Mucin 4 (P-20): sc-16901

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 homologue 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

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2. Arul, G.S., et al. 2000. Mucin gene expression in Barrett's oesophagus: an *in situ* hybridisation and immunohistochemical study. *Gut* 47: 753-761.
3. Choudhury, et al. 2000. Retinoic acid-dependent transforming growth factor- β 2 mediated induction of Mucin 4 mucin expression in human pancreatic tumor cells follows retinoic acid receptor- α signaling pathway. *J. Biol. Chem.* 275: 33929-33936.
4. Guillem, P., et al. 2000. Mucin gene expression and cell differentiation in human normal, premalignant and malignant esophagus. *Int. J. Cancer* 88: 856-861.
5. Moniaux, N., et al. 2000. Alternative splicing generates a family of putative secreted and membrane-associated Mucin 4 mucins. *Eur. J. Biochem.* 267: 4536-4544.
6. N'Dow, J., et al. 2000. Mucin gene expression in human urothelium and in intestinal segments transposed into the urinary tract. *J. Urol.* 164: 1398-1404.
7. Choudhury, et al. 2001. Alternative splicing at the 3'-end of the human pancreatic tumor-associated mucin Mucin 4 cDNA. *Teratog. Carcinog. Mutagen.* 21: 83-96.

CHROMOSOMAL LOCATION

Genetic locus: MUC4 (human) mapping to 3q29.

SOURCE

Mucin 4 (P-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of Mucin 4 isoform C of human origin.

RESEARCH USE

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

PRODUCT

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

Blocking peptide available for competition studies, sc-16901 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

Mucin 4 (P-20) is recommended for detection of Mucin 4, isoforms A, B and C of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

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

Molecular Weight of glycosylated Mucin 4: 980 kDa.

Molecular Weight (predicted) of Mucin 4 α : 850 kDa.

Molecular Weight (predicted) of Mucin 4 β : 80 kDa.

Positive controls: MCF7 whole cell lysate: sc-2206 or HUV-EC-C whole cell lysate: sc-364180.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

SELECT PRODUCT CITATIONS

1. Liegl, B., et al. 2007. Mammary and extramammary Paget's disease: an immunohistochemical study of 83 cases. *Histopathology* 50: 439-447.

STORAGE

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

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.