SANTA CRUZ BIOTECHNOLOGY, INC.

Mucin 4 (H-300): sc-20117

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 4α, a large amino mucin type subunit, and Mucin 4β, 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. TGFβ2 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. Mucin 4: a putative cell membrane-associated mucin. Biochem. J. 338: 325-333.
2. Arul, G.S., et al. 2000. Mucin gene expression in Barrett's oesophagus: an *in situ* hybridisation and immunohistochemical study. Gut 47: 753-61.
3. Choudhury, A., et al. 2000. Retinoic acid-dependent transforming growth factor-β2 mediated induction of MUC 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 MUC 4 mucins. Eur. J. Biochem. 267: 4536-4544.

CHROMOSOMAL LOCATION

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

SOURCE

Mucin 4 (H-300) is a rabbit polyclonal antibody raised against amino acids 1870-2169 mapping at the C-terminus of Mucin 4 of human origin.

PRODUCT

Each vial contains 200 µg IgG 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 4 (H-300) is recommended for detection of Mucin 4 of human and, to a lesser extent, mouse and rat origin by Western Blotting (starting dilution 1:200, 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 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 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.

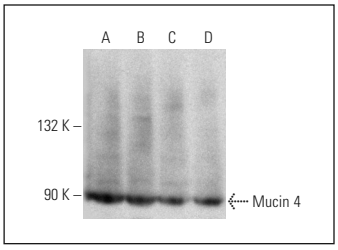
Molecular Weight of glycosylated Mucin 4: 980 kDa.

Molecular Weight of Mucin 4 α: 850 kDa.

Molecular Weight of Mucin 4 β: 80 kDa.

Positive controls: MCF7 whole cell lysate: sc-2206, HeLa whole cell lysate: sc-2200 or SW480 cell lysate: sc-2219.

DATA



Mucin 4 (H-300): sc-20117. Western blot analysis of Mucin 4 expression in MCF7 (**A**), SW480 (**B**), HeLa (**C**) and SCC-4 (**D**) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Yuan, Z.L., et al. 2004. Central role of the threonine residue within the p+1 loop of receptor tyrosine kinase in Stat3 constitutive phosphorylation in metastatic cancer cells. Mol. Cell. Biol. 24: 9390-9400.
2. Zoghbi, S., et al. 2006. β-Casomorphin-7 regulates the secretion and expression of gastrointestinal mucins through a μ-opioid pathway. Am. J. Physiol. Gastrointest. Liver Physiol. 290: G1105-G1113.
3. Kuver, R., et al. 2006. Absence of CFTR is associated with pleiotropic effects on mucins in mouse gallbladder epithelial cells. Am. J. Physiol. Gastrointest. Liver Physiol. 291: G1148-G1154.
4. Di Iorio, E., et al. 2012. Limbal stem cell deficiency and ocular phenotype in ectrodactyly-ectodermal dysplasia-clefting syndrome caused by p63 mutations. Ophthalmology 119: 74-83.

RESEARCH USE

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