

Mucin 1 (VU4H5): sc-7313

BACKGROUND

The mucins are a family of highly glycosylated, secreted proteins with a basic structure consisting of a variable number of tandem repeats (VNTRs) encoded by 60 base pairs (Mucin 1), 69 base pairs (Mucin 2) and 51 base pairs (Mucin 3). The number of repeats is highly polymorphic and varies among different alleles. Mucin 1 proteins are expressed as type I membrane proteins in addition to secreted forms. Mucin 1 is aberrantly expressed in epithelial tumors including breast carcinomas. Mucin 2 coats the epithelia of the intestines and airways and is associated with colonic tumors. Mucin 3 is a major component of various mucus gels and is broadly expressed in normal and tumor cells.

CHROMOSOMAL LOCATION

Genetic locus: MUC1 (human) mapping to 1q22.

SOURCE

Mucin 1 (VU4H5) is a mouse monoclonal antibody raised against the tandem repeat region of Mucin 1 of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Mucin 1 (VU4H5) is available conjugated to agarose (sc-7313 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-7313 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-7313 PE), fluorescein (sc-7313 FITC), Alexa Fluor® 488 (sc-7313 AF488), Alexa Fluor® 546 (sc-7313 AF546), Alexa Fluor® 594 (sc-7313 AF594) or Alexa Fluor® 647 (sc-7313 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-7313 AF680) or Alexa Fluor® 790 (sc-7313 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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APPLICATIONS

Mucin 1 (VU4H5) is recommended for detection of Mucin 1 of human 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), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and flow cytometry (1 µg per 1 x 10⁶ cells).

Suitable for use as control antibody for Mucin 1 siRNA (h): sc-35985, Mucin 1 shRNA Plasmid (h): sc-35985-SH and Mucin 1 shRNA (h) Lentiviral Particles: sc-35985-V.

Molecular Weight of Mucin 1: 200 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, MCF7 whole cell lysate: sc-2206 or IMR-32 cell lysate: sc-2409.

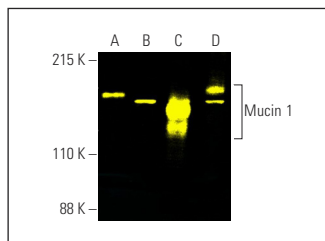
RESEARCH USE

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

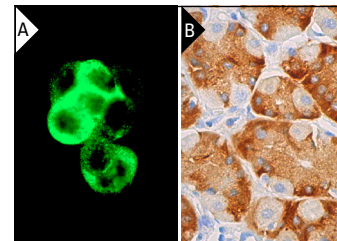
STORAGE

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

DATA



Mucin 1 (VU4H5) Alexa Fluor® 488: sc-7313 AF488. Direct fluorescent western blot analysis of Mucin 1 expression in MCF7 (A), IMR-32 (B), T-47D (C) and HeLa (D) whole cell lysates. Blocked with UltraCruz® Blocking Reagent: sc-516214.



Mucin 1 (VU4H5): sc-7313. Immunofluorescence staining of methanol-fixed MCF7 cells showing cell surface localization (A). Mucin 1 (VU4H5) HRP: sc-7313 HRP. Direct immunoperoxidase staining of formalin fixed, paraffin-embedded human upper stomach tissue showing cytoplasmic staining of glandular cells. Blocked with 0.25X UltraCruz® Blocking Reagent: sc-516214 (B).

SELECT PRODUCT CITATIONS

- Osanaï, M., et al. 2001. Adenocarcinoma arising in gastric heterotopic pancreas: clinicopathological and immunohistochemical study with genetic analysis of a case. *Pathol. Int.* 51: 549-554.
- Eminaga, O., et al. 2016. MUC1 expression by immunohistochemistry is associated with adverse pathologic features in prostate cancer: a multi-institutional study. *PLoS ONE* 11: e0165236.
- Furukawa, K., et al. 2017. A practical approach to pancreatic cancer immunotherapy using resected tumor lysate vaccines processed to express α -gal epitopes. *PLoS ONE* 12: e0184901.
- Jeong, S.J., et al. 2018. Inhibition of MUC1 biosynthesis via threonyl-tRNA synthetase suppresses pancreatic cancer cell migration. *Exp. Mol. Med.* 50: e424.
- Sun, L., et al. 2019. Modelling liver cancer initiation with organoids derived from directly reprogrammed human hepatocytes. *Nat. Cell Biol.* 21: 1015-1026.
- Satpathy, S., et al. 2020. Microscaled proteogenomic methods for precision oncology. *Nat. Commun.* 11: 532.
- Supimon, K., et al. 2021. Anti-Mucin 1 chimeric antigen receptor T cells for adoptive T cell therapy of cholangiocarcinoma. *Sci. Rep.* 11: 6276.
- Takizawa, K., et al. 2022. Urinary extracellular vesicles signature for diagnosis of kidney disease. *iScience* 25: 105416.
- Aftab, F., et al. 2023. An intrinsic purine metabolite AICAR blocks lung tumour growth by targeting oncoprotein Mucin 1. *Br. J. Cancer* 128: 1647-1664.

PROTOCOLS

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