SANTA CRUZ BIOTECHNOLOGY, INC.

ITM1 (JA-07): sc-100796

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

ITM1 (integral membrane protein 1), also known as TMC (transmembrane protein TMC) or STT3A (STT3, subunit of the oligosaccharyltransferase complex, homolog A), is a member of the STT3 family of proteins. Predominantly expressed in liver, pancreas, muscle, placenta and skin fibroblasts, ITM1 is a multi-pass membrane protein that localizes to the membrane of the endoplasmic reticulum (ER). ITM1 is one of two multicellular eukaryotic homologs of the *S. cerevisiae* protein STT3, an essential component of the yeast OST (oligosaccharyltransferase) complex. Both homologs (ITM1 and SIMP) are glycosylated and function as the catalytic component of the mammalian OST complex which is responsible for catalyzing the transfer of a high mannose oligosaccharide to an asparagine residue in nascent proteins that enter the lumen of the ER. Using lipid-linked oligosaccharides as donors, the OST complex specifically transfers the oligosaccharide to the asparagine residue in an Asn-X-Ser/Thr consensus motif (X is any amino acid excluding proline). Compared with SIMP, ITM1 is less active but also more selective in terms of substrates.

CHROMOSOMAL LOCATION

Genetic locus: STT3A (human) mapping to 11q24.2; Stt3a (mouse) mapping to 9 A4.

SOURCE

ITM1 (JA-07) is a mouse monoclonal antibody raised against recombinant ITM1 of human origin.

PRODUCT

Each vial contains 100 µg IgG_1 kappa light chain in 1.0 ml 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

ITM1 (JA-07) is recommended for detection of ITM1 of mouse, rat and 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 solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for ITM1 siRNA (h): sc-97076, ITM1 siRNA (m): sc-146310, ITM1 shRNA Plasmid (h): sc-97076-SH, ITM1 shRNA Plasmid (m): sc-146310-SH, ITM1 shRNA (h) Lentiviral Particles: sc-97076-V and ITM1 shRNA (m) Lentiviral Particles: sc-146310-V.

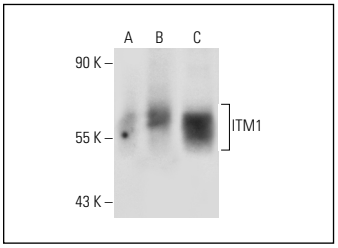
Molecular Weight of glycosylated ITM1: 60-70 kDa.

Positive Controls: ITM1 (h): 293 Lysate: sc-111248, HeLa whole cell lysate: sc-2200 or COLO 320DM cell lysate: sc-2226.

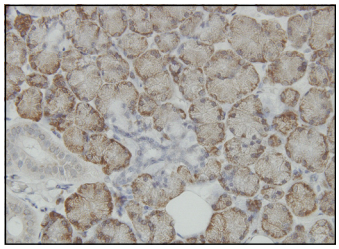
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® 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). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



ITM1 (JA-07): sc-100796. Western blot analysis of ITM1 expression in non-transfected 293: sc-110760 (**A**), human ITM1 transfected 293: sc-111248 (**B**) and HeLa (**C**) whole cell lysates.



ITM1 (JA-07): sc-100796. Immunoperoxidase staining of formalin-fixed, paraffin-embedded human salivary gland tissue showing cytoplasmic localization.

SELECT PRODUCT CITATIONS

1. Hsu, J.M., et al. 2018. STT3-dependent PD-L1 accumulation on cancer stem cells promotes immune evasion. Nat. Commun. 9: 1908.
2. Chan, L.C., et al. 2019. IL-6/JAK1 pathway drives PD-L1 Y112 phosphorylation to promote cancer immune evasion. J. Clin. Invest. 129: 3324-3338.
3. Ma, X.M., et al. 2022. TGF-β1-mediated PD-L1 glycosylation contributes to immune escape via c-Jun/STT3A pathway in nasopharyngeal carcinoma. Front. Oncol. 12: 815437.
4. Shi, H.X., et al. 2022. Elevation of spermine remodels immunosuppressive microenvironment through driving the modification of PD-L1 in hepatocellular carcinoma. Cell Commun. Signal. 20: 175.

RESEARCH USE

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

PROTOCOLS

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