SANTA CRUZ BIOTECHNOLOGY, INC.

ITM1 (A-2): sc-390227

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.

REFERENCES

1. Lissy, N.A., et al. 1996. Isolation, characterization, and mapping to human chromosome 11q24-25 of a cDNA encoding a highly conserved putative transmembrane protein, TMC. Biochim. Biophys. Acta 1306: 137-141.
2. Hong, G., et al. 1996. Molecular cloning of a highly conserved mouse and human integral membrane protein (ITM1) and genetic mapping to mouse chromosome 9. Genomics 31: 295-300.

CHROMOSOMAL LOCATION

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

SOURCE

ITM1 (A-2) is a mouse monoclonal antibody raised against amino acids 407-485 mapping within an internal region of ITM1 of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

ITM1 (A-2) is available conjugated to agarose (sc-390227 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-390227 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-390227 PE), fluorescein (sc-390227 FITC), Alexa Fluor® 488 (sc-390227 AF488), Alexa Fluor® 546 (sc-390227 AF546), Alexa Fluor® 594 (sc-390227 AF594) or Alexa Fluor® 647 (sc-390227 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-390227 AF680) or Alexa Fluor® 790 (sc-390227 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

STORAGE

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

APPLICATIONS

ITM1 (A-2) is recommended for detection of ITM1 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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).

ITM1 (A-2) is also recommended for detection of ITM1 in additional species, including equine, canine, porcine and avian.

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.

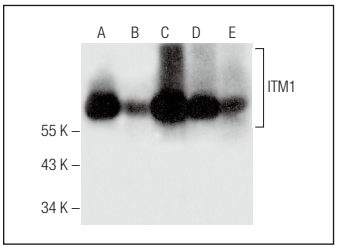
Molecular Weight of glycosylated ITM1: 60-70 kDa.

Positive Controls: MCF7 whole cell lysate: sc-2206, K-562 whole cell lysate: sc-2203 or HeLa whole cell lysate: sc-2200.

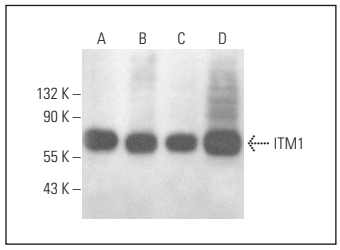
RECOMMENDED SUPPORT REAGENTS

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.

DATA



ITM1 (A-2): sc-390227. Western blot analysis of ITM1 expression in K-562 (**A**), HEK293 (**B**), COLO 320DM (**C**), MCF7 (**D**) and HeLa (**E**) whole cell lysates.



ITM1 (A-2): sc-390227. Western blot analysis of ITM1 expression in Caki-1 (**A**), J774.A1 (**B**), 3T3-L1 (**C**) and C6 (**D**) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Hirata, T., et al. 2022. ER entry pathway and glycosylation of GPI-anchored proteins are determined by N-terminal signal sequence and C-terminal GPI-attachment sequence. J. Biol. Chem. 298: 102444.

RESEARCH USE

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