

ITM1 (h): 293 Lysate: sc-111248

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., Bellacosa, A., Sonoda, G., Miller, P.D., Jhanwar, S.C. and Testa, J.R. 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., Deleersnijder, W., Kozak, C.A., Van Marck, E., Tylzanowski, P. and Merregaert, J. 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.
3. Van Hul, W., Hong, G., Wauters, J., Van Hul, E., Nowak, N., Shows, T.B., Willems, P.J. and Merregaert, J. 1996. Assignment of the human integral transmembrane protein 1 gene (ITM1) to human chromosome band 11q23.3 by *in situ* hybridization and YAC mapping. *Cytogenet. Cell Genet.* 74: 218-219.
4. Yoshida, S., Matsuura, A., Merregaert, J. and Anraku, Y. 1999. *Schizosaccharomyces pombe* STT3⁺ is a functional homologue of *Saccharomyces cerevisiae* STT3 which regulates oligosaccharyltransferase activity. *Yeast* 15: 497-505.
5. Online Mendelian Inheritance in Man, OMIM™. 1999. Johns Hopkins University, Baltimore, MD. MIM Number: 601134. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
6. Kelleher, D.J., Karaoglu, D., Mandon, E.C. and Gilmore, R. 2003. Oligosaccharyltransferase isoforms that contain different catalytic STT3 subunits have distinct enzymatic properties. *Mol. Cell* 12: 101-111.
7. Shibata, T., David, L.L., McCormack, A.L., Frueh, K. and Skach, W.R. 2005. Proteomic analysis of mammalian oligosaccharyltransferase reveals multiple subcomplexes that contain Sec61, TRAP and two potential new subunits. *Biochemistry* 44: 5982-5992.
8. Kelleher, D.J. and Gilmore, R. 2006. An evolving view of the eukaryotic oligosaccharyltransferase. *Glycobiology* 16: 47R-62R.

CHROMOSOMAL LOCATION

Genetic locus: STT3A (human) mapping to 11q24.2.

PRODUCT

ITM1 (h): 293 Lysate represents a lysate of human ITM1 transfected 293 cells and is provided as 100 µg protein in 200 µl SDS-PAGE buffer.

APPLICATIONS

ITM1 (h): 293 Lysate is suitable as a Western Blotting positive control for human reactive ITM1 antibodies. Recommended use: 10-20 µl per lane.

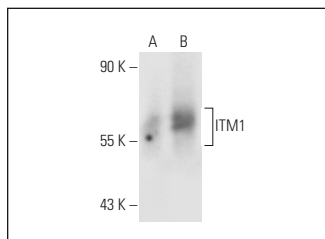
Control 293 Lysate: sc-110760 is available as a Western Blotting negative control lysate derived from non-transfected 293 cells.

ITM1 (JA-07): sc-100796 is recommended as a positive control antibody for Western Blot analysis of enhanced human ITM1 expression in ITM1 transfected 293 cells (starting dilution 1:100, dilution range 1:100-1:1,000).

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.

DATA



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

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

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.