

TMED4 (h): 293T Lysate: sc-116509

BACKGROUND

TMED4 (transmembrane emp24 domain-containing protein 4), also known as ERS25 (endoplasmic reticulum stress-response protein 25) and putative NFκB-activating protein 156, is a 225 amino acid protein that is a member of the EMP24/GP25L family. Like most members of this family, TMED4 is a single-pass type I membrane protein containing one GOLD domain. The GOLD (Golgi dynamics) domain is a region of about 90 to 150 amino acids that mediates protein-protein interactions. The GOLD domain interacts with lipid, sterol or fatty acid-domains as well as with the RUN domain, which interacts with cytoskeletal filaments, of membrane proteins. Localized to the endoplasmic reticulum, TMED4 is induced by ER-specific stress, heat shock and oxidative stress. Knockdown of TMED4 mRNA results in a significant reduction in apoptosis as well as a reduction in reactive oxidative species. There are three isoforms of TMED4 that are produced as a result of alternative splicing events.

REFERENCES

1. Dominguez, M., Dejgaard, K., Füllekrug, J., Dahan, S., Fazel, A., Paccaud, J.P., Thomas, D.Y., Bergeron, J.J. and Nilsson, T. 1998. gp25L/emp24/p24 protein family members of the *cis*-Golgi network bind both COP I and II coatomer. *J. Cell Biol.* 140: 751-765.
2. Anantharaman, V. and Aravind, L. 2002. The GOLD domain, a novel protein module involved in Golgi function and secretion. *Genome Biol.* 3: research 0023.
3. Matsuda, A., Suzuki, Y., Honda, G., Muramatsu, S., Matsuzaki, O., Nagano, Y., Doi, T., Shimotohno, K., Harada, T., Nishida, E., Hayashi, H. and Sugano, S. 2003. Large-scale identification and characterization of human genes that activate NFκB and MAPK signaling pathways. *Oncogene* 22: 3307-3318.
4. Nakanishi, K., Kamiguchi, K., Torigoe, T., Nabeta, C., Hirohashi, Y., Asanuma, H., Tobioka, H., Koge, N., Harada, O., Tamura, Y., Nagano, H., Yano, S., Chiba, S., Matsumoto, H. and Sato, N. 2004. Localization and function in endoplasmic reticulum stress tolerance of ERdj3, a new member of Hsp40 family protein. *Cell Stress Chaperones* 9: 253-264.
5. Ishiyama, T., Kano, J., Anami, Y., Onuki, T., Iijima, T., Morisita, Y., Yokota, J. and Noguchi, M. 2007. OCIA domain containing 2 is highly expressed in adenocarcinoma mixed subtype with bronchioloalveolar carcinoma component and is associated with better prognosis. *Cancer Sci.* 98: 50-57.
6. Hwang, S.O., Boswell, S.A., Seo, J.S. and Lee, S.W. 2008. Novel oxidative stress-responsive gene ERS25 functions as a regulator of the heat-shock and cell death response. *J. Biol. Chem.* 283: 13063-13069.
7. Online Mendelian Inheritance in Man, OMIM[™]. 2008. Johns Hopkins University, Baltimore, MD. MIM Number: 612038. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
8. Chen, R., Jiang, X., Sun, D., Han, G., Wang, F., Ye, M., Wang, L. and Zou, H. 2009. Glycoproteomics analysis of human liver tissue by combination of multiple enzyme digestion and hydrazide chemistry. *J. Proteome Res.* 8: 651-661.

CHROMOSOMAL LOCATION

Genetic locus: TMED4 (human) mapping to 7p13.

PRODUCT

TMED4 (h): 293T Lysate represents a lysate of human TMED4 transfected 293T cells and is provided as 100 µg protein in 200 µl SDS-PAGE buffer.

APPLICATIONS

TMED4 (h): 293T Lysate is suitable as a Western Blotting positive control for human reactive TMED4 antibodies. Recommended use: 10-20 µl per lane.

Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

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.