# TXNDC4 (H-11): sc-515435

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## BACKGROUND

TXNDC4 (thioredoxin domain containing 4), also known as ERP44, is a 406 amino acid protein that contains one thioredoxin domain, a motif that participates in various redox reactions throughout the cell. Localized to the lumen of the endoplasmic reticulum (ER), TXNDC4 functions to inhibit the activity of IP3R-I (inositol 1,4,5-triphosphate receptor,type 1) within calcium channels. In addition, TXNDC4 is thought to regulate oxidative protein folding within the ER and may be involved in retaining proteins, such as Ero1-L$\beta$ and Ero1-L$\alpha$, in the ER. TXNDC4 expression is induced by ER stress, further suggesting an important role for TXNDC4 in the maintenance of intraluminal conditions. TXNDC4 contains an N-terminal ER targeting sequence, as well as a C-terminal ER retention signal (RDEL), both of which keep TXNDC4 within the ER.

## REFERENCES

1. Nagase, T., et al. 1998. Prediction of the coding sequences of unidentified human genes. IX. The complete sequences of 100 new cDNA clones from brain which can code for large proteins *in vitro.* DNA Res. 5: 31-39.

2. Anelli, T., et al. 2002. ERp44, a novel endoplasmic reticulum folding assistant of the thioredoxin family. EMBO J. 21: 835-844.

3. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 609170. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/

4. Anelli, T., et al. 2003. Thiol-mediated protein retention in the endoplasmic reticulum: the role of ERp44. EMBO J. 22: 5015-5022.

5. Breuza, L., et al. 2004. Proteomics of endoplasmic reticulum-Golgi intermediate compartment (ERGIC) membranes from brefeldin A-treated Hep G2 cells identifies ERGIC-32, a new cycling protein that interacts with human Erv46. J. Biol. Chem. 279: 47242-47253.

6. Higo, T., et al. 2005. Subtype-specific and ER lumenal environment-dependent regulation of inositol 1,4,5-trisphosphate receptor type 1 by ERp44. Cell 120: 85-98.

## CHROMOSOMAL LOCATION

Genetic locus: ERP44 (human) mapping to 9q31.1; Erp44 (mouse) mapping to 4 B1.

## SOURCE

TXNDC4 (H-11) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 351-374 near the C-terminus of TXNDC4 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.

Blocking peptide available for competition studies, sc-515435 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

## APPLICATIONS

TXNDC4 (H-11) is recommended for detection of TXNDC4 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).

Suitable for use as control antibody for TXNDC4 siRNA (h): sc-92957, TXNDC4 siRNA (m): sc-154823, TXNDC4 shRNA Plasmid (h): sc-92957-SH, TXNDC4 shRNA Plasmid (m): sc-154823-SH, TXNDC4 shRNA (h) Lentiviral Particles: sc-92957-V and TXNDC4 shRNA (m) Lentiviral Particles: sc-154823-V.

Molecular Weight of TXNDC4: 44 kDa.

Positive Controls: K-562 whole cell lysate: sc-2203, Raji whole cell lysate: sc-364236 or A-431 whole cell lysate: sc-2201.

## 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
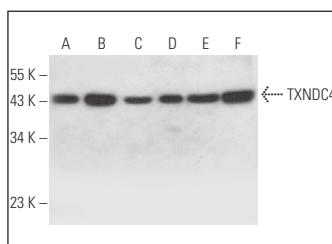


TXNDC4 (H-11): sc-515435. Western blot analysis of TXNDC4 expression in HeLa (**A**), K-562 (**B**), Raji (**C**), A-431 (**D**) and MCF7 (**E**) whole cell lysates and human liver tissue extract (**F**).
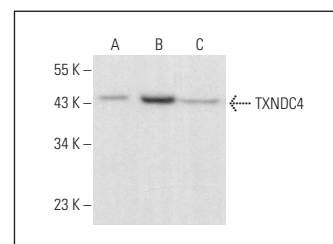
TXNDC4 (H-11): sc-515435. Western blot analysis of TXNDC4 expression in NAMALWA (**A**), MM-142 (**B**) and TK-1 (**C**) whole cell lysates.

## STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. 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.