SANTA CRUZ BIOTECHNOLOGY, INC.

ERp5 (C-4): sc-374494

BACKGROUND

Endoplasmic reticulum proteins (ERps) are widely expressed proteins that localize to the ER and may act as proteases, protein disulfide isomerases, thiol-disulfide oxidases or phospholipases. ERp5, also known as PDIA6 (protein disulfide isomerase family A, member 6) or TXNDC7 is a 440 amino acid protein that contains two thioredoxin domains and belongs to the protein disulfide isomerase family. Localized to the melanosome, as well as to the lumen of the endoplasmic resticulum, ERp5 functions to catalyze the rearrangement of disulfide bonds in a variety of different proteins. Via its catalytic activity, ERp5 is able to reduce the disulfide bond that binds MICA to tumor cells, thereby releasing MICA and reducing the rate of tumor expansion. Multiple isoforms of ERp5 exist due to alternative splicing events.

REFERENCES

1. Chaudhuri, M.M., et al. 1992. The gene for a novel protein, a member of the protein disulphide isomerase/form I phosphoinositide-specific phospholipase C family, is amplified in hydroxyurea-resistant cells. Biochem. J. 281: 645-650.
2. Hayano, T., et al. 1995. Cloning and sequencing of the cDNA encoding human P5. Gene 164: 377-378.
3. Hoshijima, K., et al. 2002. A protein disulfide isomerase expressed in the embryonic midline is required for left/right asymmetries. Genes Dev. 16: 2518-2529.
4. Kikuchi, M., et al. 2002. Functional analysis of human P5, a protein disulfide isomerase homologue. J. Biochem. 132: 451-455.
5. Jordan, P.A., et al. 2005. A role for the thiol isomerase protein ERP5 in platelet function. Blood 105: 1500-1507.
6. Kaiser, B.K., et al. 2007. Disulphide-isomerase-enabled shedding of tumour-associated NKG2D ligands. Nature 447: 482-486.
7. Online Mendelian Inheritance in Man, OMIM™. 2007. Johns Hopkins University, Baltimore, MD. MIM Number: 611099. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/

CHROMOSOMAL LOCATION

Genetic locus: PDIA6 (human) mapping to 2p25.1; Pdia6 (mouse) mapping to 12 A1.1.

SOURCE

ERp5 (C-4) is a mouse monoclonal antibody raised against a peptide mapping near the N-terminus of ERp5 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.

STORAGE

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

APPLICATIONS

ERp5 (C-4) is recommended for detection of ERp5 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 ERp5 siRNA (h): sc-94493, ERp5 siRNA (m): sc-144938, ERp5 shRNA Plasmid (h): sc-94493-SH, ERp5 shRNA Plasmid (m): sc-144938-SH, ERp5 shRNA (h) Lentiviral Particles: sc-94493-V and ERp5 shRNA (m) Lentiviral Particles: sc-144938-V.

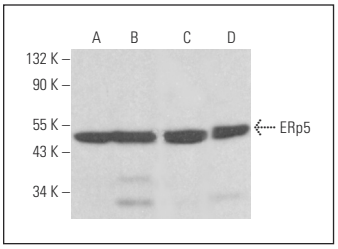
Molecular Weight of ERp5: 48 kDa.

Positive Controls: HEL 92.1.7 Cell Lysate: sc-2270, WEHI-231 Whole Cell Lysate: sc-2213 or K-562 whole cell lysate: sc-2203.

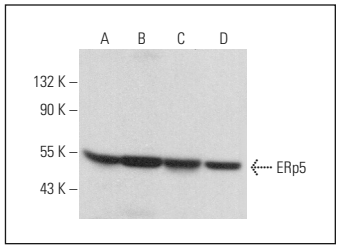
RECOMMENDED SUPPORT REAGENTS

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



ERp5 (C-4): sc-374494. Western blot analysis of ERp5 expression in HT-1080 (**A**), HeLa (**B**), MCF7 (**C**) and K-562 (**D**) whole cell lysates.



ERp5 (C-4): sc-374494. Western blot analysis of ERp5 expression in K-562 (**A**), HEL 92.1.7 (**B**), Ramos (**C**) and WEHI-231 (**D**) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Bai, Y., et al. 2019. PDIA6 modulates apoptosis and autophagy of non-small cell lung cancer cells via the MAP4K1/JNK signaling pathway. EBioMedicine 42: 311-325.

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.