SANTA CRUZ BIOTECHNOLOGY, INC.

# ERp72 (3): sc-135901

## BACKGROUND

Mammals defend themselves against intracellular pathogens through presentation of cytoplasmically derived short pathogenic peptides to the cell surface of cytotoxic T lymphocytes, which subsequently leads to cytotoxic events with respect to the affected cell. Antigen presentation is mediated by major histocompatibility complex (MHC) class I molecules, which bind and coordinate short pathogenic peptides. The proper folding and assembly of MHC class I molecules in the endoplasmic reticulum (ER) involve a number of components. MHC class I molecules assemble in the ER with chaperones before binding to the transporter associated with antigen processing (TAP) protein. ERp57 is a component of the MHC class I pathway that appears to interact with MHC class I molecules before they associate with TAP. ERp72, also designated protein disulfide-isomerase A4, is involved in the catalysis of protein-S-S- bond rearrangement. ERp57 and ERp72 may act as proteases, protein disulfide isomerases, phospholipases or a combination of these.

## REFERENCES


1. Huang, S.H., et al. 1991. Human deoxycytidine kinase. Sequence of cDNA clones and analysis of expression in cell lines with and without enzyme activity. J. Biol. Chem. 266: 5353.
2. Hirano, N., et al. 1995. Molecular cloning of the human glucose-regulated protein ERp57/GRP58, a thiol-dependent reductase. Identification of its secretory form and inducible expression by the oncogenic transformation. Eur. J. Biochem. 234: 336-342.
3. Hughes, E.A., et al. 1998. The thiol oxidoreductase ERp57 is a component of the MHC class I peptide-loading complex. Curr. Biol. 8: 709-712.
4. Morrice, N.A., et al. 1998. A role for the thiol-dependent reductase ERp57 in the assembly of MHC class I molecules. Curr. Biol. 8: 713-716.
5. MacAry, P.A., et al. 2001. Mobilization of MHC class I molecules from late endosomes to the cell surface following activation of CD34-derived human Langerhans cells. Proc. Natl. Acad. Sci. USA 98: 3982-3987.
6. SWISS-PROT/TrEMBL (P13667). World Wide Web URL: http://www.expasy.ch/sprot/sprot-top.html


## CHROMOSOMAL LOCATION

Genetic locus: PDIA4 (human) mapping to 7q36.1; Pdia4 (mouse) mapping to 6 B2.3.

## SOURCE

ERp72 (3) is a mouse monoclonal antibody raised against amino acids 427-642 of ERp72 of human origin.

## PRODUCT

Each vial contains 50 µg $IgG_1$ in 0.5 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

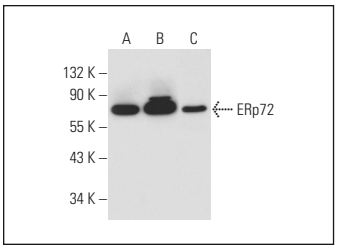
ERp72 (3) is recommended for detection of ERp72 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for ERp72 siRNA (h): sc-44571, ERp72 siRNA (m): sc-44576, ERp72 shRNA Plasmid (h): sc-44571-SH, ERp72 shRNA Plasmid (m): sc-44576-SH, ERp72 shRNA (h) Lentiviral Particles: sc-44571-V and ERp72 shRNA (m) Lentiviral Particles: sc-44576-V.

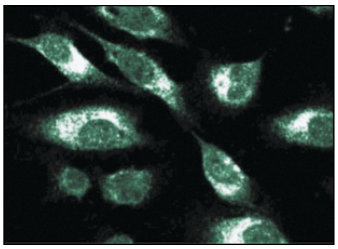
Molecular Weight of ERp72: 72 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204, HeLa whole cell lysate: sc-2200 or ERp72 (h): 293T Lysate: sc-175288.

## DATA




ERp72 (3): sc-135901. Western blot analysis of ERp72 expression in non-transfected 293T: sc-117752 (**A**), human ERp72 transfected 293T: sc-175288 (**B**) and HeLa (**C**) whole cell lysates.



ERp72 (3): sc-135901. Immunofluorescence staining of human endothelial cells showing cytoplasmic localization.

## SELECT PRODUCT CITATIONS


1. Munteanu, C.V.A., et al. 2021. Affinity proteomics and deglycoproteomics uncover novel EDEM2 endogenous substrates and an integrative ERAD network. Mol. Cell. Proteomics 20: 100125.


## RESEARCH USE

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

## PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.