SANTA CRUZ BIOTECHNOLOGY, INC.

ERp57 (MaP.ERp57): sc-23886

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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. MHC class I molecules assemble in the endoplasmic reticulum with chaperones before binding to the transporter associated with antigen processing (TAP). ERp57, also designated GRP57, GRP58, ERp60 and ERp61, is a component of the MHC class I pathway that appears to interact with MHC class I molecules before they associate with TAP. The human ERp57 gene maps to chromosome 15q15.3 and encodes a 505 amino acid protein. ERp57 has two Trp-Cys-Gly-His-Cys-Lys motifs completely conserved among the mammals. ERp57 may act as a protease, a protein disulfide isomerase, a phospholipase or a combination of these.

REFERENCES

1. 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.
2. 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.

CHROMOSOMAL LOCATION

Genetic locus: PDIA3 (human) mapping to 15q15.3; Pdia3 (mouse) mapping to 2 E5.

SOURCE

ERp57 (MaP.ERp57) is a mouse monoclonal antibody raised against recombinant human ERp57.

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.

ERp57 (MaP.ERp57) is available conjugated to agarose (sc-23886 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-23886 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-23886 PE), fluorescein (sc-23886 FITC), Alexa Fluor® 488 (sc-23886 AF488), Alexa Fluor® 546 (sc-23886 AF546), Alexa Fluor® 594 (sc-23886 AF594) or Alexa Fluor® 647 (sc-23886 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-23886 AF680) or Alexa Fluor® 790 (sc-23886 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

STORAGE

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

APPLICATIONS

ERp57 (MaP.ERp57) is recommended for detection of ERp57 of mouse, rat and human origin by Western Blotting (starting dilution 1:100,000, dilution range 1:100,000-1:200,000), 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 immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

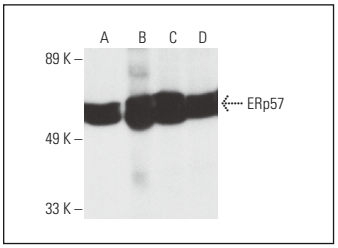
ERp57 (MaP.ERp57) is also recommended for detection of ERp57 in additional species, including canine.

Suitable for use as control antibody for ERp57 siRNA (h): sc-35341, ERp57 siRNA (m): sc-42876, ERp57 siRNA (r): sc-270455, ERp57 shRNA Plasmid (h): sc-35341-SH, ERp57 shRNA Plasmid (m): sc-42876-SH, ERp57 shRNA Plasmid (r): sc-270455-SH, ERp57 shRNA (h) Lentiviral Particles: sc-35341-V, ERp57 shRNA (m) Lentiviral Particles: sc-42876-V and ERp57 shRNA (r) Lentiviral Particles: sc-270455-V.

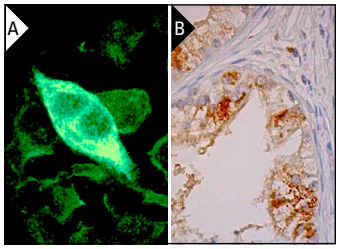
Molecular Weight of ERp57: 61 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, Daudi cell lysate: sc-2415 or MDCK cell lysate: sc-2252.

DATA



ERp57 (MaP.ERp57): sc-23886. Western blot analysis of ERp57 expression in HeLa (**A**), Daudi (**B**), MDCK (**C**) and Caki-1 (**D**) whole cell lysates.



ERp57 (MaP.ERp57): sc-23886. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human epididymis tissue showing cytoplasmic staining of subset of glandular cells (**B**).

SELECT PRODUCT CITATIONS

1. Park, B., et al. 2006. Redox regulation facilitates optimal peptide selection by MHC class I during antigen processing. Cell 127: 369-382.
2. Ciplys, E., et al. 2015. High-level secretion of native recombinant human calreticulin in yeast. Microb. Cell Fact. 14: 165.
3. Pacello, F., et al. 2016. An ERp57-mediated disulphide exchange promotes the interaction between *Burkholderia cenocepacia* and epithelial respiratory cells. Sci. Rep. 6: 21140.
4. Wang, K., et al. 2017. Combination of CALR and PDIA3 is a potential prognostic biomarker for non-small cell lung cancer. Oncotarget 8: 96945-96957.
5. Lloyd-Lewis, B., et al. 2018. Stat3-mediated alterations in lysosomal membrane protein composition. J. Biol. Chem. 293: 4244-4261.

RESEARCH USE

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