

ERp57 (4E69): sc-71075

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

- Hirano, N., et al. 1995. Molecular cloning of the human glucose-regulated protein ERp57/GRP 58, a thiol-dependent reductase. Identification of its secretory form and inducible expression by the oncogenic transformation. *Eur. J. Biochem.* 234: 336-342.
- Hughes, E.A. and Cresswell, P. 1998. The thiol oxidoreductase ERp57 is a component of the MHC class I peptide-loading complex. *Curr. Biol.* 8: 709-712.
- Morrice, N.A. and Powis, S.J. 1998. A role for the thiol-dependent reductase ERp57 in the assembly of MHC class I molecules. *Curr. Biol.* 8: 713-716.
- Online Mendelian Inheritance in Man, OMIM™. 1998. Johns Hopkins University, Baltimore, MD. MIM Number: 602046. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
- 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.

CHROMOSOMAL LOCATION

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

SOURCE

ERp57 (4E69) is a mouse monoclonal antibody raised against recombinant human ERp57.

PRODUCT

Each vial contains 200 µg IgG₁ 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

ERp57 (4E69) 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)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

ERp57 (4E69) 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.

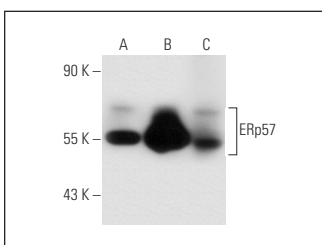
Molecular Weight of ERp57: 61 kDa.

Positive Controls: ERp57 (h): 293T Lysate: sc-175161, Daudi cell lysate: sc-2415 or MDCK cell lysate: sc-2252.

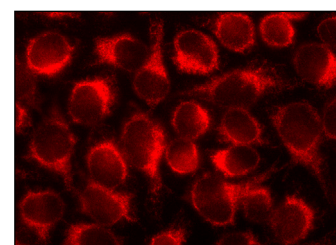
RECOMMENDED SUPPORT REAGENTS

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



ERp57 (4E69): sc-71075. Western blot analysis of ERp57 expression in non-transfected 293T: sc-117752 (A), human ERp57 transfected 293T: sc-175161 (B) and Daudi (C) whole cell lysates.



ERp57 (4E69): sc-71075. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization.

SELECT PRODUCT CITATIONS

- Wang, H., et al. 2010. ERp57 is up-regulated in free fatty acids-induced steatotic L-02 cells and human nonalcoholic fatty livers. *J. Cell. Biochem.* 110: 1447-1456.

RESEARCH USE

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