SANTA CRUZ BIOTECHNOLOGY, INC.

ERp57 (E-7): sc-133168

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/GRP 58, a thiol-dependent reductase. Identification of its secretory form and inducible expression by the oncogenic transformation. Eur. J. Biochem. 234: 336-342.
2. 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.
3. 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.
4. 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/
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. LocusLink Report (LocusID: 2923). http://www.ncbi.nlm.nih.gov/LocusLink/

CHROMOSOMAL LOCATION

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

SOURCE

ERp57 (E-7) is a mouse monoclonal antibody raised against amino acids 108-207 mapping within an internal region of ERp57 of human origin.

PRODUCT

Each vial contains 200 µg IgM kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

RESEARCH USE

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

APPLICATIONS

ERp57 (E-7) is recommended for detection of ERp57 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), immunohistochemistry (including paraffin-embedded sections) (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 ERp57 siRNA (h): sc-35341, ERp57 siRNA (m): sc-42876, ERp57 shRNA Plasmid (h): sc-35341-SH, ERp57 shRNA Plasmid (m): sc-42876-SH, ERp57 shRNA (h) Lentiviral Particles: sc-35341-V and ERp57 shRNA (m) Lentiviral Particles: sc-42876-V.

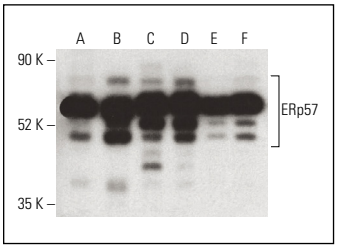
Molecular Weight of ERp57: 61 kDa.

Positive Controls: c4 whole cell lysate: sc-364186, HeLa whole cell lysate: sc-2200 or Daudi cell lysate: sc-2415.

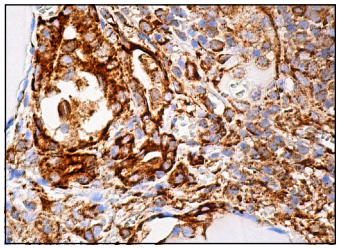
RECOMMENDED SUPPORT REAGENTS

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 L-Agarose: sc-2336 (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. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



ERp57 (E-7): sc-133168. Western blot analysis of ERp57 expression in Caki-1 (**A**), HeLa (**B**), Daudi (**C**), NIH/3T3 (**D**), CTLL-2 (**E**) and c4 (**F**) whole cell lysates. Detection reagent used: m-IgGκ BP-HRP: sc-516102.



ERp57 (E-7): sc-133168. Immunoperoxidase staining of formalin fixed, paraffin-embedded human thyroid gland tissue showing cytoplasmic staining of glandular cells.

SELECT PRODUCT CITATIONS

1. Lenglet, G., et al. 2013. Protein recognition of the S23906-1-DNA adduct by nuclear proteins: direct involvement of glyceraldehyde-3-phosphate dehydrogenase (GAPDH). Biochem. J. 452: 147-159.

STORAGE

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