

ERp72 (B-2): sc-376210

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

- 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.
- 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.
- 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.
- 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.
- 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.
- 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 (B-2) is a mouse monoclonal antibody raised against amino acids 257-528 mapping within an internal region of ERp72 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.

STORAGE

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

APPLICATIONS

ERp72 (B-2) is recommended for detection of ERp72 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 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.

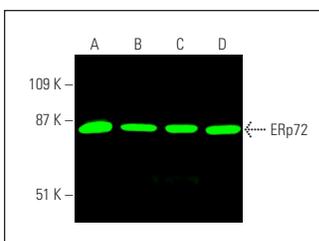
Molecular Weight of ERp72: 72 kDa.

Positive Controls: JAR cell lysate: sc-2276, K-562 whole cell lysate: sc-2203 or NIH/3T3 whole cell lysate: sc-2210.

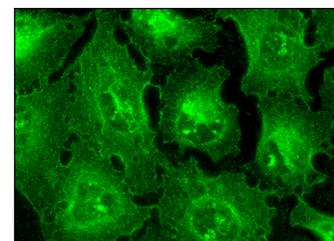
RECOMMENDED SUPPORT REAGENTS

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.

DATA



ERp72 (B-2): sc-376210. Near-infrared western blot analysis of ERp72 expression in JAR (A), K-562 (B), Ramos (C) and NIH/3T3 (D) whole cell lysates. Blocked with UltraCruz® Blocking Reagent: sc-516214. Detection reagent used: m-IgGκ BP-CFL 680: sc-516180.



ERp72 (B-2): sc-376210. Immunofluorescence staining of methanol-fixed HeLa cells showing membrane localization.

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.