

# ERp72 (B-4): sc-390530

## 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.

## CHROMOSOMAL LOCATION

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

## SOURCE

ERp72 (B-4) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 617-645 of ERp72 of human origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

ERp72 (B-4) is available conjugated to agarose (sc-390530 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-390530 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-390530 PE), fluorescein (sc-390530 FITC), Alexa Fluor® 488 (sc-390530 AF488), Alexa Fluor® 546 (sc-390530 AF546), Alexa Fluor® 594 (sc-390530 AF594) or Alexa Fluor® 647 (sc-390530 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-390530 AF680) or Alexa Fluor® 790 (sc-390530 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

In addition, ERp72 (B-4) is available conjugated to biotin (sc-390530 B), 200 µg/ml, for WB, IHC(P) and ELISA.

Blocking peptide available for competition studies, sc-390530 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

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## APPLICATIONS

ERp72 (B-4) 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), 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).

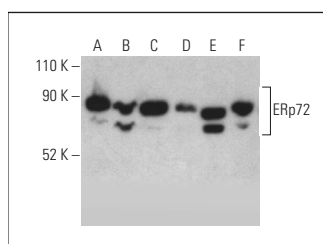
ERp72 (B-4) is also recommended for detection of ERp72 in additional species, including bovine and avian.

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.

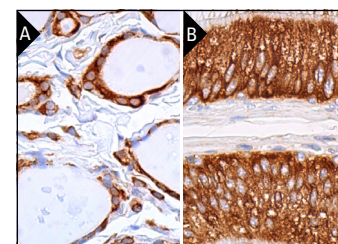
Molecular Weight of ERp72: 72 kDa.

Positive Controls: Caki-1 cell lysate: sc-2224, JAR cell lysate: sc-2276 or Jurkat whole cell lysate: sc-2204.

## DATA



ERp72 (B-4) HRP: sc-390530 HRP. Direct western blot analysis of ERp72 expression in JAR (A), Jurkat (B), Caki-1 (C), HeLa (D), SUP-T1 (E) and DU 145 (F) whole cell lysates.



ERp72 (B-4): sc-390530. Immunoperoxidase staining of formalin fixed, paraffin-embedded human thyroid gland (A) and human epididymis (B) tissue showing cytoplasmic staining of glandular cells.

## SELECT PRODUCT CITATIONS

- Yi, M.C., et al. 2018. Endoplasmic reticulum-resident protein 57 (ERp57) oxidatively inactivates human transglutaminase 2. *J. Biol. Chem.* 293: 2640-2649.
- Weingartner, M., et al. 2022. Albendazole reduces hepatic inflammation and endoplasmic reticulum-stress in a mouse model of chronic *Echinococcus multilocularis* infection. *PLoS Negl. Trop. Dis.* 16: e0009192.
- Gregorczyk, P., et al. 2023. N-glycosylation acts as a switch for FGFR1 trafficking between the plasma membrane and nuclear envelope. *Cell Commun. Signal.* 21: 177.

## STORAGE

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

## RESEARCH USE

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