SANTA CRUZ BIOTECHNOLOGY, INC.

ERp57 (K-20): sc-18620

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 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 and encodes a 505 amino acid protein. ERp57/GRP58 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. 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.
3. 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.
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.

CHROMOSOMAL LOCATION

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

SOURCE

ERp57 (K-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of ERp57 of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-18620 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

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

APPLICATIONS

ERp57 (K-20) is recommended for detection of ERp57 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, 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).

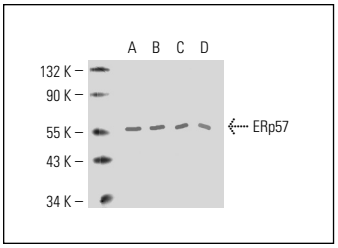
ERp57 (K-20) is also recommended for detection of ERp57 in additional species, including equine, canine, bovine and porcine.

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.

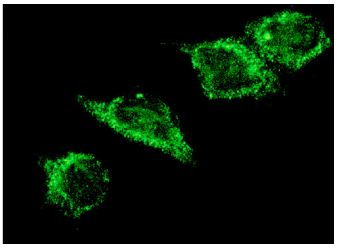
Molecular Weight of ERp57: 61 kDa.

Positive Controls: CTLL-2 cell lysate: sc-2242, Daudi cell lysate: sc-2415 or KNRK whole cell lysate: sc-2214.

DATA



ERp57 (K-20): sc-18620. Western blot analysis of ERp57 expression in Daudi (**A**), NRK (**B**), CTLL-2 (**C**) and KNRK (**D**) whole cell lysates.



ERp57 (K-20): sc-18620. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization.

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.

MONOS Satisfaction Guaranteed

Try **ERp57 (MaP.ERp57): sc-23886** or **ERp57 (B-5): sc-166680**, our highly recommended monoclonal alternatives to ERp57 (K-20).