

ERp57 (N-20): sc-18619

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 15q15.3 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

- 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.
- 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.
- 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.
- 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 (N-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-18619 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 (N-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).

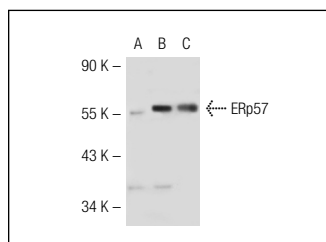
ERp57 (N-20) is also recommended for detection of ERp57 in additional species, including equine, canine, bovine and porcine.

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.

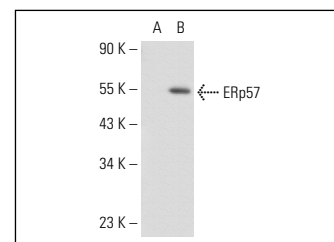
Molecular Weight of ERp57: 61 kDa.

Positive Controls: Caki-1 cell lysate: sc-2224, ERp57 (h): 293T Lysate: sc-175161 or ERp57 (m): 293T Lysate: sc-126807.

DATA



ERp57 (N-20): sc-18619. Western blot analysis of ERp57 expression in non-transfected 293T: sc-117752 (A), mouse ERp57 transfected 293T: sc-126807 (B) and Daudi (C) whole cell lysates.



ERp57 (N-20): sc-18619. Western blot analysis of ERp57 expression in non-transfected: sc-117752 (A) and human ERp57 transfected: sc-175161 (B) 293T whole cell lysates.

SELECT PRODUCT CITATIONS

- Chignard, N., et al. 2006. Cleavage of endoplasmic reticulum proteins in hepatocellular carcinoma: Detection of generated fragments in patient sera. *Gastroenterology* 130: 2010-2022.

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.


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