

ERp5 (G-5): sc-365260

BACKGROUND

Endoplasmic reticulum proteins (ERps) are widely expressed proteins that localize to the ER and may act as proteases, protein disulfide isomerases, thiol-disulfide oxidases or phospholipases. ERp5, also known as PDIA6 (protein disulfide isomerase family A, member 6) or TXNDC7 is a 440 amino acid protein that contains two thioredoxin domains and belongs to the protein disulfide isomerase family. Localized to the melanosome, as well as to the lumen of the endoplasmic reticulum, ERp5 functions to catalyze the rearrangement of disulfide bonds in a variety of different proteins. Via its catalytic activity, ERp5 is able to reduce the disulfide bond that binds MICA to tumor cells, thereby releasing MICA and reducing the rate of tumor expansion. Multiple isoforms of ERp5 exist due to alternative splicing events.

REFERENCES

1. Chaudhuri, M.M., et al. 1992. The gene for a novel protein, a member of the protein disulfide isomerase/form I phosphoinositide-specific phospholipase C family, is amplified in hydroxyurea-resistant cells. *Biochem. J.* 281: 645-650.
2. Hayano, T., et al. 1995. Cloning and sequencing of the cDNA encoding human P5. *Gene* 164: 377-378.

CHROMOSOMAL LOCATION

Genetic locus: PDIA6 (human) mapping to 2p25.1; Pdia6 (mouse) mapping to 12 A1.1.

SOURCE

ERp5 (G-5) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 15-45 near the N-terminus of ERp5 of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

ERp5 (G-5) is available conjugated to agarose (sc-365260 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-365260 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-365260 PE), fluorescein (sc-365260 FITC), Alexa Fluor® 488 (sc-365260 AF488), Alexa Fluor® 546 (sc-365260 AF546), Alexa Fluor® 594 (sc-365260 AF594) or Alexa Fluor® 647 (sc-365260 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-365260 AF680) or Alexa Fluor® 790 (sc-365260 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-365260 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

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STORAGE

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

APPLICATIONS

ERp5 (G-5) is recommended for detection of ERp5 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).

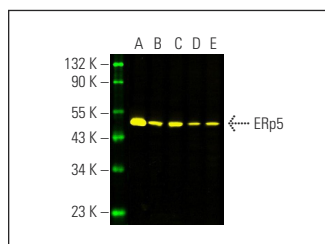
ERp5 (G-5) is also recommended for detection of ERp5 in additional species, including canine, bovine and porcine.

Suitable for use as control antibody for ERp5 siRNA (h): sc-94493, ERp5 siRNA (m): sc-144938, ERp5 shRNA Plasmid (h): sc-94493-SH, ERp5 shRNA Plasmid (m): sc-144938-SH, ERp5 shRNA (h) Lentiviral Particles: sc-94493-V and ERp5 shRNA (m) Lentiviral Particles: sc-144938-V.

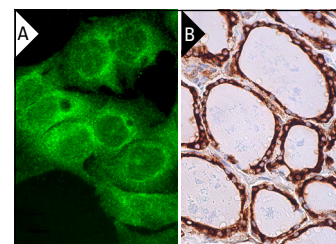
Molecular Weight of ERp5: 48 kDa.

Positive Controls: K-562 whole cell lysate: sc-2203, Daudi cell lysate: sc-2415 or Raji whole cell lysate: sc-364236.

DATA



ERp5 (G-5) Alexa Fluor® 488: sc-365260 AF488. Direct fluorescent western blot analysis of ERp5 expression in Daudi (A), Raji (B), Hep G2 (C), HeLa (D) and K-562 (E) whole cell lysates. Blocked with UltraCruz® Blocking Reagent: sc-516214. Cruz Marker™ Molecular Weight Standards detected with Cruz Marker MW Tag-Alexa Fluor® 680: sc-516730.



ERp5 (G-5): sc-365260. Immunofluorescence staining of formalin-fixed Hep G2 cells showing cytoplasmic localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human thyroid gland tissue showing cytoplasmic staining of glandular cells (B).

SELECT PRODUCT CITATIONS

1. Ozawa, K., et al. 2012. Proteomic analysis of the role of S-nitrosoglutathione reductase in lipopolysaccharide-challenged mice. *Proteomics* 12: 2024-2035.
2. Yi, M.C., et al. 2018. Endoplasmic reticulum-resident protein 57 (ERp57) oxidatively inactivates human transglutaminase 2. *J. Biol. Chem.* 293: 2640-2649.
3. Ma, Y., et al. 2021. PDIA6 promotes pancreatic cancer progression and immune escape through CSN5-mediated deubiquitination of β -catenin and PD-L1. *Neoplasia* 23: 912-928.
4. Law, M.E., et al. 2024. DR5 disulfide bonding as a sensor and effector of protein folding stress. *bioRxiv*. E-published.

RESEARCH USE

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