SANTA CRUZ BIOTECHNOLOGY, INC.

PDIR (B-9): sc-390862

BACKGROUND

Oxidoreductase-protein disulfide isomerase (PDI) is a homodimer that catalyzes thiol-disulfide exchange, mediates folding of newly synthesized proteins and functions as a molecular chaperone. PDIR (protein disulfide isomerase-related protein), also known as PDIA5 (protein disulfide-isomerase A5), is a 519 amino acid protein that catalyzes the rearrangement of sulfur-sulfur bonds in various proteins. Localized to the lumen of the endoplasmic reticulum (ER), PDIR has an oxidative refolding activity that is specific for α1-antitrypsin (AAT) and aids in the formation of disulfide bonds in the ER lumen. PDIR contains one ER retention signal at its C-terminus and three thioredoxin (CXXC) motifs which mediate the substrate-specific isomerase, chaperone and redox activity of PDIR.

REFERENCES

1. Hayano, T. and Kikuchi, M. 1995. Molecular cloning of the cDNA encoding a novel protein disulfide isomerase-related protein (PDIR). FEBS Lett. 372: 210-214.
2. Horibe, T., et al. 2004. Different contributions of the three CXXC motifs of human protein-disulfide isomerase-related protein to isomerase activity and oxidative refolding. J. Biol. Chem. 279: 4604-4611.
3. Horibe, T., et al. 2004. Replacement of domain b of human protein disulfide isomerase-related protein with domain b' of human protein disulfide isomerase dramatically increases its chaperone activity. FEBS Lett. 566: 311-315.

CHROMOSOMAL LOCATION

Genetic locus: PDIA5 (human) mapping to 3q21.1; Pdia5 (mouse) mapping to 16 B3.

SOURCE

PDIR (B-9) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 145-164 within an internal region of PDIR of human origin.

PRODUCT

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

PDIR (B-9) is available conjugated to agarose (sc-390862 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-390862 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-390862 PE), fluorescein (sc-390862 FITC), Alexa Fluor® 488 (sc-390862 AF488), Alexa Fluor® 546 (sc-390862 AF546), Alexa Fluor® 594 (sc-390862 AF594) or Alexa Fluor® 647 (sc-390862 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-390862 AF680) or Alexa Fluor® 790 (sc-390862 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-390862 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

PDIR (B-9) is recommended for detection of PDIR 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 PDIR siRNA (h): sc-62767, PDIR siRNA (m): sc-62768, PDIR shRNA Plasmid (h): sc-62767-SH, PDIR shRNA Plasmid (m): sc-62768-SH, PDIR shRNA (h) Lentiviral Particles: sc-62767-V and PDIR shRNA (m) Lentiviral Particles: sc-62768-V.

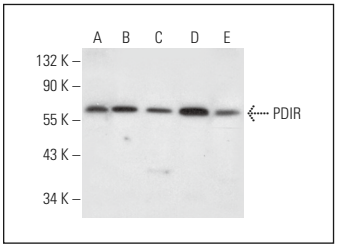
Molecular Weight of PDIR: 60 kDa.

Positive Controls: JAR cell lysate: sc-2276, HeLa whole cell lysate: sc-2200 or Hep G2 cell lysate: sc-2227.

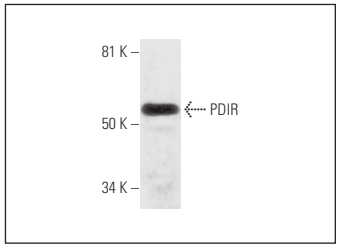
RECOMMENDED SUPPORT REAGENTS

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 A/G PLUS-Agarose: sc-2003 (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



PDIR (B-9): sc-390862. Western blot analysis of PDIR expression in HeLa (**A**), Hep G2 (**B**), HT-1080 (**C**), MIA PaCa-2 (**D**) and JEG-3 (**E**) whole cell lysates.



PDIR (B-9): sc-390862. Western blot analysis of PDIR expression in JAR whole cell lysate.

SELECT PRODUCT CITATIONS

1. Tsuchiya, Y., et al. 2018. IRE1-XBP1 pathway regulates oxidative proinsulin folding in pancreatic β cells. J. Cell Biol. 217: 1287-1301.

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.