

PDIR (H-8): sc-376164

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 α_1 -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

- 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.
- 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.
- Horibe, T., et al. 2004. Replacement of domain β of human protein disulfide isomerase-related protein with domain β' of human protein disulfide isomerase dramatically increases its chaperone activity. *FEBS Lett.* 566: 311-315.
- Jessop, C.E., et al. 2004. Oxidative protein folding in the mammalian endoplasmic reticulum. *Biochem. Soc. Trans.* 32: 655-658.
- Maniratanachote, R., et al. 2005. Chaperone proteins involved in troglitazone-induced toxicity in human hepatoma cell lines. *Toxicol. Sci.* 83: 293-302.
- Alanen, H.I., et al. 2006. pH dependence of the peptide thiol-disulfide oxidase activity of six members of the human protein disulfide isomerase family. *Antioxid. Redox Signal.* 8: 283-291.

CHROMOSOMAL LOCATION

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

SOURCE

PDIR (H-8) is a mouse monoclonal antibody raised against amino acids 184-303 mapping within an internal region of PDIR of human origin.

PRODUCT

Each vial contains 200 μ g IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

STORAGE

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

APPLICATIONS

PDIR (H-8) 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 μ g per 100-500 μ g 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.

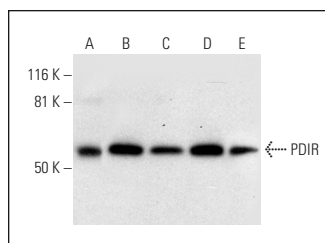
Molecular Weight of PDIR: 60 kDa.

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

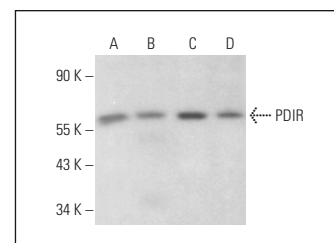
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ 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-IgG κ BP-FITC: sc-516140 or m-IgG κ 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 (H-8): sc-376164. 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 (H-8): sc-376164. Western blot analysis of PDIR expression in JAR (A), HL-60 (B), Caco-2 (C) and F9 (D) whole cell lysates.

RESEARCH USE

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

PROTOCOLS

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