SANTA CRUZ BIOTECHNOLOGY, INC.

PDIR (C-2): sc-365500

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.
4. Jessop, C.E., et al. 2004. Oxidative protein folding in the mammalian endoplasmic reticulum. Biochem. Soc. Trans. 32: 655-658.
5. Maniratanachote, R., et al. 2005. Chaperone proteins involved in troglitazone-induced toxicity in human hepatoma cell lines. Toxicol. Sci. 83: 293-302.
6. 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 (C-2) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 259-293 within an internal region of PDIR of human origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-365500 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

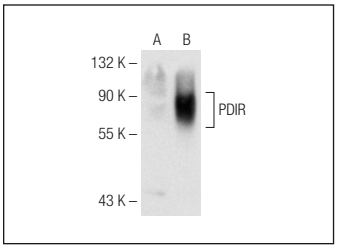
PDIR (C-2) is recommended for detection of PDIR of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

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: PDIR (m): 293T Lysate: sc-122469, Hep G2 cell lysate: sc-2227 or MIA PaCa-2 cell lysate: sc-2285.

DATA



PDIR (C-2): sc-365500. Western blot analysis of PDIR expression in non-transfected: sc-117752 (**A**) and mouse PDIR transfected: sc-122469 (**B**) 293T whole cell lysates.

SELECT PRODUCT CITATIONS

1. Ou, J., et al. 2019. ABHD5 blunts the sensitivity of colorectal cancer to fluorouracil via promoting autophagic uracil yield. Nat. Commun. 10: 1078.

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.

PROTOCOLS

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