

# PDIR (T-20): sc-66804

## 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  $\alpha$ 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., Gomi, M., Iguchi, D., Ito, H., Kitamura, Y., Masuoka, T., Tsujimoto, I., Kimura, T. and Kikuchi, M. 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., Iguchi, D., Masuoka, T., Gomi, M., Kimura, T. and Kikuchi, M. 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.
- Jessop, C.E., Chakravarthi, S., Watkins, R.H. and Bulleid, N.J. 2004. Oxidative protein folding in the mammalian endoplasmic reticulum. *Biochem. Soc. Trans.* 32: 655-658.
- Maniratanachote, R., Minami, K., Katoh, M., Nakajima, M. and Yokoi, T. 2005. Chaperone proteins involved in troglitazone-induced toxicity in human hepatoma cell lines. *Toxicol. Sci.* 83: 293-302.

## CHROMOSOMAL LOCATION

Genetic locus: *Pdia5* (mouse) mapping to 16 B3.

## SOURCE

PDIR (T-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of PDIR of mouse origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-66804 P, (100  $\mu$ g 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

PDIR (T-20) is recommended for detection of PDIR of mouse and rat origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ 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).

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

Suitable for use as control antibody for PDIR siRNA (m): sc-62768, PDIR shRNA Plasmid (m): sc-62768-SH and PDIR shRNA (m) Lentiviral Particles: sc-62768-V.

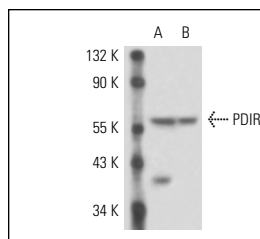
Molecular Weight of PDIR: 60 kDa.

Positive Controls: mouse placenta extract: sc-364247 or rat liver extract: sc-2395.

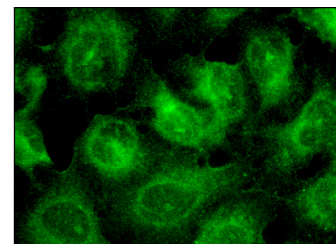
## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 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 donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

## DATA



PDIR (T-20): sc-66804. Western blot analysis of PDIR expression in rat liver (A) and mouse placenta (B) tissue extracts.



PDIR (T-20): sc-66804. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic and membrane localization.

## RESEARCH USE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.