

PDI (34): sc-136230

BACKGROUND

Oxidoreductase-protein disulfide isomerase (PDI) is a homodimer consisting of subunits that catalyzes thiol-disulfide exchange, mediates folding of newly synthesized proteins and functions as a molecular chaperone. PDI localizes to the lumen of the endoplasmic reticulum (ER), where in conjunction with folding-helper proteins, such as immunoglobulin heavy chain binding protein (BiP), it mediates tertiary and quaternary protein processing. Cell surface PDI induces sulfhydryl-mediated conformational changes in integrin-mediated adhesion receptor-ligand interactions, thereby regulating integrin responses and cell adhesion. Additionally, PDI functions as a subunit of two more complex enzyme systems: the prolyl-4-hydroxylase and the triacylglycerol transfer proteins.

REFERENCES

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- Clappa, P., et al. 2000. Mutations that destabilize the α' domain of human protein-disulfide isomerase indirectly affect peptide binding. *J. Biol. Chem.* 275: 13213-13218.
- Mayer, M., et al. 2000. BiP and PDI cooperate in the oxidative folding of antibodies *in vitro*. *J. Biol. Chem.* 275: 29421-29425.
- Lahav, J., et al. 2000. Protein disulfide isomerase mediates Integrin-dependent adhesion. *FEBS Lett.* 475: 89-92.
- Maattanen, P., et al. 2006. ERp57 and PDI: multifunctional protein disulfide isomerases with similar domain architectures but differing substrate-partner associations. *Biochem. Cell Biol.* 84: 881-889.
- Nuss, J.E., et al. 2008. Decreased enzyme activities of chaperones PDI and BiP in aged mouse livers. *Biochem. Biophys. Res. Commun.* 365: 355-361.
- Shnyder, S.D., et al. 2008. Triplex profiling of functionally distinct chaperones (ERp29/PDI/BiP) reveals marked heterogeneity of the endoplasmic reticulum proteome in cancer. *J. Proteome Res.* 7: 3364-3372.

CHROMOSOMAL LOCATION

Genetic locus: P4HB (human) mapping to 17q25.3; P4hb (mouse) mapping to 11 E2.

SOURCE

PDI (34) is a mouse monoclonal antibody raised against amino acids 109-214 of PDI of mouse origin.

PRODUCT

Each vial contains 50 μ g IgG₁ in 0.5 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-136230 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

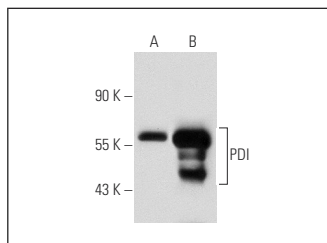
PDI (34) is recommended for detection of PDI of mouse, rat, human, bovine and canine origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for PDI siRNA (h): sc-36201, PDI siRNA (m): sc-36202, PDI shRNA Plasmid (h): sc-36201-SH, PDI shRNA Plasmid (m): sc-36202-SH, PDI shRNA (h) Lentiviral Particles: sc-36201-V and PDI shRNA (m) Lentiviral Particles: sc-36202-V.

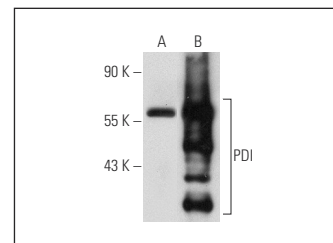
Molecular Weight of PDI: 55 kDa.

Positive Controls: PDI (h): 293 Lysate: sc-111237, Hep G2 cell lysate: sc-2227 or COLO 320DM cell lysate: sc-2226.

DATA



PDI (34): sc-136230. Western blot analysis of PDI expression in non-transfected: sc-117752 (A) and human PDI transfected: sc-113640 (B) 293T whole cell lysates.



PDI (34): sc-136230. Western blot analysis of PDI expression in non-transfected: sc-110760 (A) and human PDI transfected: sc-111237 (B) 293 whole cell lysates.

SELECT PRODUCT CITATIONS

- Qu, W., et al. 2013. B19, a novel monocarbonyl analogue of curcumin, induces human ovarian cancer cell apoptosis via activation of endoplasmic reticulum stress and the autophagy signaling pathway. *Int. J. Biol. Sci.* 9: 766-777.

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. Not for resale.

PROTOCOLS

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



See **PDI (C-2): sc-74551** for PDI antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.