

PDI (h): 293 Lysate: sc-111237

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), 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

- Burgess, J.K., Hotchkiss, K.A., Suter, C., Dudman, N.P., Szollosi, J., Chesterman, C.N., Chong, B.H. and Hogg, P.J. 2000. Physical proximity and functional association of glycoprotein 1b α and protein-disulfide isomerase on the platelet plasma membrane. *J. Biol. Chem.* 275: 9758-9766.
- Klappa, P., Koivunen, P., Pineskoski, A., Karvonen, P., Ruddock, L.W., Kivirikko, K.I. and Freedman, R.B. 2000. Mutations that destabilize the α' domain of human protein-disulfide isomerase indirectly affect peptide binding. *J. Biol. Chem.* 275: 13213-13218.
- Mayer, M., Kies, U., Kammermeier, R. and Buchner, J. 2000. BiP and PDI cooperate in the oxidative folding of antibodies *in vitro*. *J. Biol. Chem.* 275: 29421-29425.
- Lahav, J., Gofer-Dadosh, N., Luboshitz, J., Hess, O. and Shalkai, M. 2000. Protein disulfide isomerase mediates Integrin-dependent adhesion. *FEBS Lett.* 475: 89-92.
- Maattanen, P., Kozlov, G., Gehring, K. and Thomas, D.Y. 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., Choksi, K.B., DeFord, J.H. and Papaconstantinou, J. 2008. Decreased enzyme activities of chaperones PDI and BiP in aged mouse livers. *Biochem. Biophys. Res. Commun.* 365: 355-361.
- Appenzeller-Herzog, C. and Ellgaard, L. 2008. The human PDI family: versatility packed into a single fold. *Biochim. Biophys. Acta* 1783: 535-548.
- Shnyder, S.D., Mangum, J.E. and Hubbard, M.J. 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.
- Hashimoto, S., Okada, K. and Imaoka, S. 2008. Interaction between bisphenol derivatives and protein disulfide isomerase (PDI) and inhibition of PDI functions: requirement of chemical structure for binding to PDI. *J. Biochem.* 144: 335-342.

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

CHROMOSOMAL LOCATION

Genetic locus: P4HB (human) mapping to 17q25.3.

PRODUCT

PDI (h): 293 Lysate represents a lysate of human PDI transfected 293 cells and is provided as 100 μ g protein in 200 μ l SDS-PAGE buffer.

APPLICATIONS

PDI (h): 293 Lysate is suitable as a Western Blotting positive control for human reactive PDI antibodies. Recommended use: 10-20 μ l per lane.

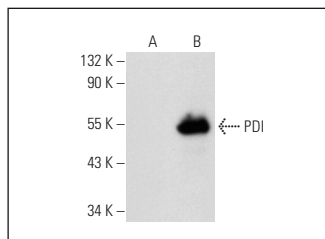
Control 293 Lysate: sc-110760 is available as a Western Blotting negative control lysate derived from non-transfected 293 cells.

PDI (F-11): sc-166474 is recommended as a positive control antibody for Western Blot analysis of enhanced human PDI expression in PDI transfected 293 cells (starting dilution 1:100, dilution range 1:100-1:1,000).

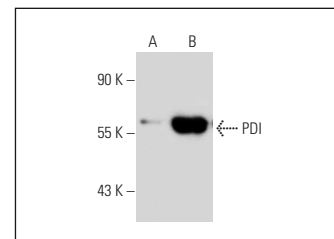
RECOMMENDED SUPPORT REAGENTS

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.

DATA



PDI (F-11): sc-166474. Western blot analysis of PDI expression in non-transfected: sc-110760 (A) and human PDI transfected: sc-111237 (B) 293 whole cell lysates.



PDI (C-2): sc-74551. Western blot analysis of PDI expression in non-transfected: sc-117752 (A) and human PDI transfected: sc-111237 (B) 293T 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.