SANTA CRUZ BIOTECHNOLOGY, INC.

PDI (C-2): sc-74551

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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.

CHROMOSOMAL LOCATION

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

SOURCE

PDI (C-2) is a mouse monoclonal antibody raised against amino acids 211-370 mapping near the N-terminus of PDI of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

PDI (C-2) is available conjugated to agarose (sc-74551 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-74551 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-74551 PE), fluorescein (sc-74551 FITC), Alexa Fluor® 488 (sc-74551 AF488), Alexa Fluor® 546 (sc-74551 AF546), Alexa Fluor® 594 (sc-74551 AF594) or Alexa Fluor® 647 (sc-74551 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-74551 AF680) or Alexa Fluor® 790 (sc-74551 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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APPLICATIONS

PDI (C-2) is recommended for detection of PDI of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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), immunohistochemistry (including paraffin-embedded sections) (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 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.

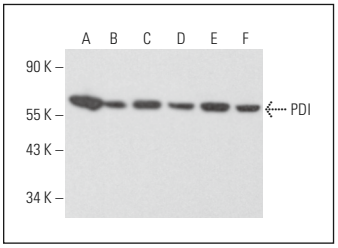
Molecular Weight of PDI: 55 kDa.

Positive Controls: MOLT-4 cell lysate: sc-2233, Hep G2 cell lysate: sc-2227 or JAR cell lysate: sc-2276.

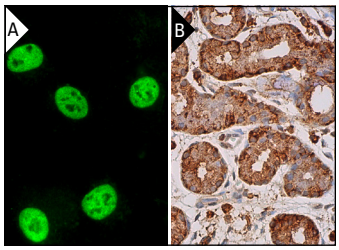
STORAGE

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

DATA



PDI (C-2): sc-74551. Western blot analysis of PDI expression in Hep G2 (**A**), MOLT-4 (**B**), HT-1080 (**C**), A2058 (**D**), HeLa (**E**) and JAR (**F**) whole cell lysates.



PDI (C-2): sc-74551. Immunofluorescence staining of formalin-fixed Hep G2 cells showing nuclear localization (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human salivary gland tissue showing cytoplasmic staining of glandular cells (**B**).

SELECT PRODUCT CITATIONS

1. Staubach, S., et al. 2009. Proteomics of MUC1-containing lipid rafts from plasma membranes and exosomes of human breast carcinoma cells MCF7. Proteomics 9: 2820-2835.
2. Li, J.H., et al. 2016. N-linked glycosylation at Asn152 on CD147 affects protein folding and stability: promoting tumour metastasis in hepatocellular carcinoma. Sci. Rep. 6: 35210.
3. Cowling, R.T., et al. 2017. Ascorbate starvation alters endoplasmic reticulum-resident enzymes in cardiac fibroblasts, priming them for increased procollagen secretion. J. Mol. Cell. Cardiol. 113: 1-8.
4. Toyoda, Y., et al. 2018. Extracellular glucose level regulates dependence on GRP78 for cell surface localization of multipass transmembrane proteins in HeLa cells. FEBS Lett. 592: 3295-3304.
5. Yang, R., et al. 2019. CDK5RAP3, a UFL1 substrate adaptor, is critical for liver development. Development 146: dev169235.
6. Guenzle, J., et al. 2020. Pharmacological inhibition of mTORC2 reduces migration and metastasis in melanoma. Int. J. Mol. Sci. 22: 30.
7. Watanabe, K., et al. 2021. ILDR2 stabilization is regulated by its interaction with GRP78. Sci. Rep. 11: 8414.
8. Lan, H.T., et al. 2022. Humic acids inhibit platelet activation to reduce venous thromboembolism in mice. Evid. Based Complement. Alternat. Med. 2022: 6606423.
9. Xu, W.Q., et al. 2023. Dynamic mapping of proteome trafficking within and between living cells by TransitID. bioRxiv. E-published.
10. Oswalia, J., et al. 2024. Altered autophagic flux in GNE mutant cells of Indian origin: potential drug target for GNE myopathy. Exp. Cell Res. 440: 114118.

RESEARCH USE

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