

PRODH (A-11): sc-376401

BACKGROUND

PRODH (proline dehydrogenase), also known as proline oxidase 2 (POX2), is a 516 amino acid protein belonging to the proline oxidase family. Induced during p53-induced apoptosis, PRODH catalyzes the first step in proline degradation by converting proline to δ -1-pyrroline-5-carboxylate. Defects in PRODH are the cause of hyperprolinemia type 1, a disorder characterized by elevated serum proline levels. Defects in PRODH may also be involved in the psychiatric and behavioral phenotypes associated with DiGeorge syndrome. Localized to the mitochondrion matrix, PRODH is expressed at higher levels in lung, brain and skeletal muscle and expressed at lower levels in heart, liver, kidney and pancreas. PRODH exists as two isoforms produced by alternative splicing.

CHROMOSOMAL LOCATION

Genetic locus: PRODH (human) mapping to 22q11.21.

SOURCE

PRODH (A-11) is a mouse monoclonal antibody raised against amino acids 13-312 mapping near the N-terminus of PRODH of human origin.

PRODUCT

Each vial contains 200 μ g IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

PRODH (A-11) is available conjugated to agarose (sc-376401 AC), 500 μ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-376401 HRP), 200 μ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-376401 PE), fluorescein (sc-376401 FITC), Alexa Fluor[®] 488 (sc-376401 AF488), Alexa Fluor[®] 546 (sc-376401 AF546), Alexa Fluor[®] 594 (sc-376401 AF594) or Alexa Fluor[®] 647 (sc-376401 AF647), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-376401 AF680) or Alexa Fluor[®] 790 (sc-376401 AF790), 200 μ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

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APPLICATIONS

PRODH (A-11) is recommended for detection of PRODH of human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ 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).

Suitable for use as control antibody for PRODH siRNA (h): sc-76252, PRODH shRNA Plasmid (h): sc-76252-SH and PRODH shRNA (h) Lentiviral Particles: sc-76252-V.

Molecular Weight of PRODH: 68 kDa.

Positive Controls: U-251-MG whole cell lysate: sc-364176, HEK293 whole cell lysate: sc-45136 or A549 cell lysate: sc-2413.

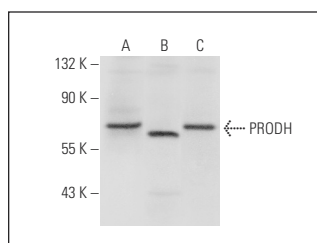
STORAGE

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

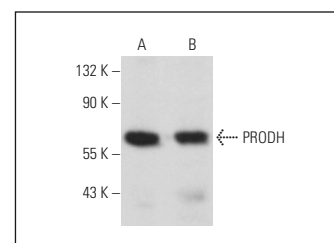
RESEARCH USE

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

DATA



PRODH (A-11): sc-376401. Western blot analysis of PRODH expression in HEK293 (A), U-251-MG (B) and A549 (C) whole cell lysates.



PRODH (A-11): sc-376401. Western blot analysis of PRODH expression in U-251-MG (A) and c4 (B) whole cell lysates.

SELECT PRODUCT CITATIONS

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- Nagano, T., et al. 2016. Identification of cellular senescence-specific genes by comparative transcriptomics. *Sci. Rep.* 6: 31758.
- Szoka, L., et al. 2017. Exogenous proline stimulates type I collagen and HIF-1 α expression and the process is attenuated by glutamine in human skin fibroblasts. *Mol. Cell. Biochem.* 435: 197-206.
- Nagano, T., et al. 2017. Proline dehydrogenase promotes senescence through the generation of reactive oxygen species. *J. Cell Sci.* 130: 1413-1420.
- Szoka, L., et al. 2017. Acetylenic derivative of betulin induces apoptosis in endometrial adenocarcinoma cell line. *Biomed. Pharmacother.* 95: 429-436.
- Scott, G.K., et al. 2019. Targeting mitochondrial proline dehydrogenase with a suicide inhibitor to exploit synthetic lethal interactions with p53 upregulation and glutaminase inhibition. *Mol. Cancer Ther.* 18: 1374-1385.
- Tran, D.H., et al. 2021. Mitochondrial NADP⁺ is essential for proline biosynthesis during cell growth. *Nat. Metab.* 3: 571-585.
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- Hsu, K.S., et al. 2022. Cancer cell survival depends on collagen uptake into tumor-associated stroma. *Nat. Commun.* 13: 7078.

PROTOCOLS

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