SANTA CRUZ BIOTECHNOLOGY, INC.

PMCA1 (F-10): sc-398413

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Plasma membrane-type Ca^{2+}-ATPases (PMCAs) mediate the export of bivalent calcium ions from eukaryotic cells. As members of the P class of ion-motive ATPases, PMCAs are a functionally diverse group of proteins that are derived from alternatively spliced transcripts originating from at least four distinct genes. The expression of different PMCA isoforms and splice variants is regulated in a developmental, tissue- and cell type-specific manner, and with respect to the physiological needs of specific cell and tissue types. Spatial and temporal rates of resting intracellular Ca^{2+} concentrations and Ca^{2+} signaling in eukaryotic cells are dependent on the array of PMCA isoforms that are expressed in concert with the rate of Ca^{2+} export. PMCA1 (ATP2B1) is a ubiquitously expressed form of the PMCA calcium exporter family.

CHROMOSOMAL LOCATION

Genetic locus: ATP2B1 (human) mapping to 12q21.33; Atp2b1 (mouse) mapping to 10 C3.

SOURCE

PMCA1 (F-10) is a mouse monoclonal antibody raised against amino acids 5-62 mapping near the N-terminus of PMCA1 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.

PMCA1 (F-10) is available conjugated to agarose (sc-398413 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-398413 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-398413 PE), fluorescein (sc-398413 FITC), Alexa Fluor® 488 (sc-398413 AF488), Alexa Fluor® 546 (sc-398413 AF546), Alexa Fluor® 594 (sc-398413 AF594) or Alexa Fluor® 647 (sc-398413 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-398413 AF680) or Alexa Fluor® 790 (sc-398413 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

RESEARCH USE

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

APPLICATIONS

PMCA1 (F-10) is recommended for detection of PMCA1 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for PMCA1 siRNA (h): sc-42596, PMCA1 siRNA (m): sc-42597, PMCA1 shRNA Plasmid (h): sc-42596-SH, PMCA1 shRNA Plasmid (m): sc-42597-SH, PMCA1 shRNA (h) Lentiviral Particles: sc-42596-V and PMCA1 shRNA (m) Lentiviral Particles: sc-42597-V.

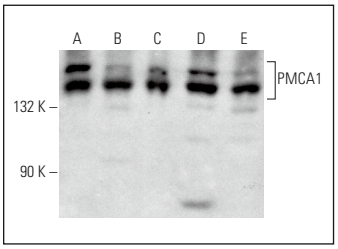
Molecular Weight of PMCA1: 129-139 kDa.

Positive Controls: Hep G2 cell lysate: sc-2227, U-87 MG cell lysate: sc-2411 or HeLa whole cell lysate: sc-2200.

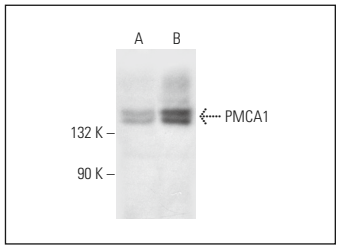
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ 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. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



PMCA1 (F-10): sc-398413. Western blot analysis of PMCA1 expression in HeLa (**A**), U-87 MG (**B**), Neuro-2A (**C**), NIH/3T3 (**D**) and NRK (**E**) whole cell lysates.



PMCA1 (F-10): sc-398413. Western blot analysis of PMCA1 expression in Hep G2 (**A**) and HeLa (**B**) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Foster, J.B., et al. 2018. Pyridazine-derivatives enhance structural and functional plasticity of tripartite synapse via activation of local translation in astrocytic processes. Neuroscience 388: 224-238.
2. Lira, M., et al. 2021. Exo70 intracellular redistribution after repeated mild traumatic brain injury. Biol. Res. 54: 5.
3. Villegas-Mendez, A., et al. 2021. The plasma membrane calcium ATPase 4 does not influence parasite levels but partially promotes experimental cerebral malaria during murine blood stage malaria. Malar. J. 20: 297.
4. Kimura, M., et al. 2021. Plasma membrane Ca^{2+}-ATPase in rat and human odontoblasts mediates dentin mineralization. Biomolecules 11: 1010.

STORAGE

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

PROTOCOLS

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

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