

PMCA1 (C-16): sc-16488

BACKGROUND

Plasma membrane-type Ca^{2+} -ATPases (PMCA) mediate the export of bivalent calcium ions from eukaryotic cells. As members of the P class of ion-motive ATPases, PMCA 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.

REFERENCES

1. Greeb, J., et al. 1989. Molecular cloning of a third isoform of the calmodulin-sensitive plasma membrane Ca^{2+} -transporting ATPase that is expressed predominantly in brain and skeletal muscle. *J. Biol. Chem.* 264: 18569-18576.
2. Olson, S., et al. 1991. Localization of two genes encoding plasma membrane Ca^{2+} -transporting ATPases to human chromosomes 1q25-32 and 12q21-23. *Genomics* 9: 629-641.
3. Fresu, L., et al. 1999. Plasma membrane calcium ATPase isoforms in astrocytes. *Glia* 28: 150-155.
4. Caride, A.J., et al. 2001. Delayed activation of the plasma membrane calcium pump by a sudden increase in Ca^{2+} : fast pumps reside in fast cells. *Cell Calcium* 30: 49-57.
5. Strehler, E.E., et al. 2001. Role of alternative splicing in generating isoform diversity among plasma membrane calcium pumps. *Physiol. Rev.* 81: 21-50.

CHROMOSOMAL LOCATION

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

SOURCE

PMCA1 (C-16) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of PMCA1 of human origin.

PRODUCT

Each vial contains 200 μg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-16488 P, (100 μg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

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

APPLICATIONS

PMCA1 (C-16) is recommended for detection of PMCA1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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).

PMCA1 (C-16) is also recommended for detection of PMCA1 in additional species, including equine, canine, bovine, porcine and avian.

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.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

SELECT PRODUCT CITATIONS

1. Cabral, L.M., et al. 2007. Ceramide is a potent activator of plasma membrane Ca^{2+} -ATPase from kidney-promixal tubule cells with protein kinase A as an intermediate. *J. Biol. Chem.* 282: 24599-24606.

RESEARCH USE

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

PROTOCOLS

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



Try **PMCA1 (F-10): sc-398413** or **PMCA (F-3): sc-271917**, our highly recommended monoclonal alternatives to PMCA1 (C-16).