

# PMCA4 (F-20): sc-22078

## BACKGROUND

Plasma membrane-type  $\text{Ca}^{2+}$ -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 four distinct genes, PMCA1, 2, 3, and 4. 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  $\text{Ca}^{2+}$  concentrations and  $\text{Ca}^{2+}$  signaling in eukaryotic cells are dependent on the array of PMCA isoforms that are expressed in concert with the rate of  $\text{Ca}^{2+}$  export. PMCA3 expression is confined to brain and skeletal muscle, and it is detected as a protein of approximately 135 kDa. The PMCA4 gene is located on human chromosome 1q32.1 and is ubiquitously expressed.

## REFERENCES

1. Olson, S., et al. 1991. Localization of two genes encoding plasma membrane  $\text{Ca}^{2+}$ -transporting ATPases to human chromosomes 1q25-32 and 12q21-23. *Genomics* 9: 629-641.
2. Eakin, T.J., et al. 1995. Localization of the plasma membrane  $\text{Ca}^{2+}$ -ATPase isoform PMCA3 in rat cerebellum, choroid plexus and hippocampus. *Brain Res. Mol. Brain Res.* 29: 71-80.
3. Fresu, L., et al. 1999. Plasma membrane calcium ATPase isoforms in astrocytes. *Glia* 28: 150-155.
4. Garcia, M.L. and Strehler, E.E. 1999. Plasma membrane calcium ATPases as critical regulators of calcium homeostasis during neuronal cell function. *Front. Biosci.* 4: D869-D882.
5. Caride, A.J., et al. 2001. Delayed activation of the plasma membrane calcium pump by a sudden increase in  $\text{Ca}^{2+}$ : fast pumps reside in fast cells. *Cell Calcium* 30: 49-57.
6. Strehler, E.E. and Zacharias, D.A. 2001. Role of alternative splicing in generating isoform diversity among plasma membrane calcium pumps. *Physiol. Rev.* 81: 21-50.

## CHROMOSOMAL LOCATION

Genetic locus: ATP2B4 (human) mapping to 1q32.1.

## SOURCE

PMCA4 (F-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of PMCA4 of human origin.

## PRODUCT

Each vial contains 200  $\mu\text{g}$  IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-22078 P, (100  $\mu\text{g}$  peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## RESEARCH USE

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

## APPLICATIONS

PMCA4 (F-20) is recommended for detection of PMCA4 of 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), 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).

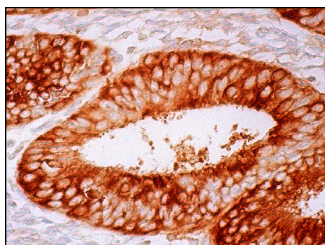
Suitable for use as control antibody for PMCA4 siRNA (h): sc-42602, PMCA4 shRNA Plasmid (h): sc-42602-SH and PMCA4 shRNA (h) Lentiviral Particles: sc-42602-V.

Molecular Weight of PMCA4: 124-138 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. 3) Immunohistochemistry: use ImmunoCruz™: sc-2053 or ABC: sc-2023 goat IgG Staining Systems.

## DATA



PMCA4 (F-20): sc-22078. Immunoperoxidase staining of formalin fixed, paraffin-embedded human premenopausal uterus tissue showing membrane and cytoplasmic staining of glandular cells.

## STORAGE

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


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Try **PMCA (F-3): sc-271917**, our highly recommended monoclonal alternative to PMCA4 (F-20).