

PMCA3 (N-18): sc-22074

BACKGROUND

Plasma membrane-type Ca²⁺-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 Ca²⁺ concentrations and Ca²⁺ signaling in eukaryotic cells are dependent on the array of PMCA isoforms that are expressed in concert with the rate of Ca²⁺ export. PMCA3 expression is confined to brain and skeletal muscle. The PMCA4 gene is located on human chromosome 1q25 and is ubiquitously expressed.

REFERENCES

- Olson, S., et al. 1991. Localization of two genes encoding plasma membrane Ca²⁺-transporting ATPases to human chromosomes 1q25-32 and 12q21-23. *Genomics* 9: 629-641.
- Eakin, T.J., et al. 1995. Localization of the plasma membrane Ca²⁺-ATPase isoform PMCA3 in rat cerebellum, choroid plexus and hippocampus. *Brain Res. Mol. Brain Res.* 29: 71-80.
- Garcia, M.L., et al. 1999. Plasma membrane calcium ATPases as critical regulators of calcium homeostasis during neuronal cell function. *Front. Biosci.* 4: D869-882.
- Fresu, L., et al. 1999. Plasma membrane calcium ATPase isoforms in astrocytes. *Glia.* 28: 150-155.
- Strehler, E.E., et al. 2001. Role of alternative splicing in generating isoform diversity among plasma membrane calcium pumps. *Physiol. Rev.* 81: 21-50.
- Caride, A.J., et al. 2001. Delayed activation of the plasma membrane calcium pump by a sudden increase in Ca²⁺: fast pumps reside in fast cells. *Cell Calcium* 30: 49-57.

CHROMOSOMAL LOCATION

Genetic locus: ATP2B3 (human) mapping to Xq28; Atp2b3 (mouse) mapping to X A7.3.

SOURCE

PMCA3 (N-18) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of PMCA3 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-22074 P, (100 µg 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

PMCA3 (N-18) is recommended for detection of PMCA3 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).

PMCA3 (N-18) is also recommended for detection of PMCA3 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for PMCA3 siRNA (h): sc-42600, PMCA3 siRNA (m): sc-42601, PMCA3 shRNA Plasmid (h): sc-42600-SH, PMCA3 shRNA Plasmid (m): sc-42601-SH, PMCA3 shRNA (h) Lentiviral Particles: sc-42600-V and PMCA3 shRNA (m) Lentiviral Particles: sc-42601-V.

Molecular Weight of PMCA3: 130-140 kDa.

Positive Controls: mouse brain extract: sc-2253, mouse cerebellum extract: sc-2403 or rat cerebellum extract: sc-2398.

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.

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 or our catalog for detailed protocols and support products.

MONOS
Satisfaction
Guaranteed

Try **PMCA3 (G-6): sc-390148** or **PMCA (F-3): sc-271917**, our highly recommended monoclonal alternatives to PMCA3 (N-18).