

## Technical Data Sheet

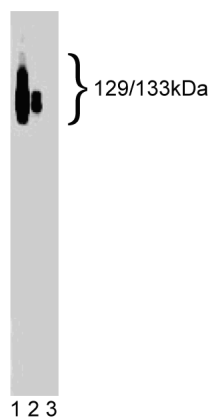
## Purified Mouse Anti-PMCA2

## Product Information

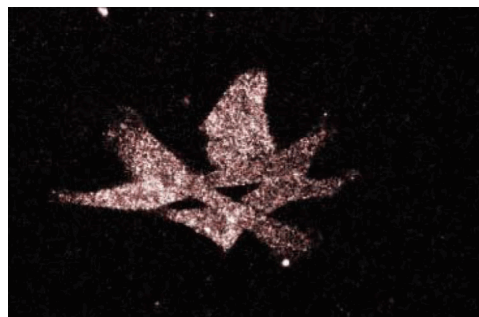
<b>Material Number:</b>	610932
<b>Alternate Name:</b>	Plasma Membrane Calcium ATPases
<b>Size:</b>	50 µg
<b>Concentration:</b>	250 µg/ml
<b>Clone:</b>	28/PMCA2
<b>Immunogen:</b>	Rat PMCA2 aa. 81-193
<b>Isotype:</b>	Mouse IgG1
<b>Reactivity:</b>	QC Testing: Rat Tested in Development: Mouse, Human
<b>Target MW:</b>	129-133 kDa
<b>Storage Buffer:</b>	Aqueous buffered solution containing BSA, glycerol, and ≤0.09% sodium azide.

## Description

Depolarization of the plasma membrane during neurotransmitter release or muscle excitation/contraction involves increases in intracellular  $\text{Ca}^{2+}$ . Homeostasis is reestablished through the action of various enzymes, including ion pumps. PMCA2 (Plasma Membrane Calcium ATPases) belong to the P-type family of transport ATPases which couple ATP hydrolysis to the export of intracellular  $\text{Ca}^{2+}$ . They are characterized by large molecular mass, high affinity for  $\text{Ca}^{2+}$ , and direct regulation by interaction with  $\text{Ca}^{2+}$ /calmodulin. Four different genes (*PMCA 1-4*) and independent alternative splice sites combine to generate multiple PMCA isoforms. PMCA 1-4 are highly homologous, but differ substantially in their N-terminal regions. PMCA1 and 4 are ubiquitously expressed and perform housekeeping roles. However, PMCA2 and 3 exhibit tissue-specific expression and perform more specialized functions. Although PMCA2 and 3 are both expressed to some degree in muscle, PMCA2 is primarily found in the cerebellum. There, it accounts for the majority of neural pump protein. Thus, PMCA2 is thought to be the principal ATPase that functions to maintain  $\text{Ca}^{2+}$  homeostasis in response to neural excitation.



**Western blot analysis of PMCA2 on a rat cerebrum lysate.** Lane 1: 1:250, lane 2: 1:500, lane 3: 1:1000 dilution of the mouse anti-PMCA2 antibody.



**Immunofluorescence staining of SK-BR-3 cells (Human breast adenocarcinoma; ATCC HTB-30).**

## Preparation and Storage

The monoclonal antibody was purified from tissue culture supernatant or ascites by affinity chromatography.

Store undiluted at -20°C.

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## Application Notes

### Application

Western blot	Routinely Tested
Immunofluorescence	Tested During Development

### Recommended Assay Procedure:

**Western blot:** Please refer to [http://www.bdbiosciences.com/pharmingen/protocols/Western\\_Blotting.shtml](http://www.bdbiosciences.com/pharmingen/protocols/Western_Blotting.shtml)

### Suggested Companion Products

Catalog Number	Name	Size	Clone
611463	Rat Cerebrum Lysate	500 µg	(none)
554002	HRP Goat Anti-Mouse Ig	1.0 ml	(none)
554001	FITC Goat Anti-Mouse Ig	0.5 mg	Polyclonal

### Product Notices

1. Since applications vary, each investigator should titrate the reagent to obtain optimal results.
2. Please refer to [www.bdbiosciences.com/pharmingen/protocols](http://www.bdbiosciences.com/pharmingen/protocols) for technical protocols.
3. Caution: Sodium azide yields highly toxic hydrazoic acid under acidic conditions. Dilute azide compounds in running water before discarding to avoid accumulation of potentially explosive deposits in plumbing.
4. Source of all serum proteins is from USDA inspected abattoirs located in the United States.

### References

Filoteo AG, Elwess NL, Enyedi A, Caride A, Aung HH, Penniston JT. Plasma membrane Ca<sup>2+</sup> pump in rat brain. Patterns of alternative splices seen by isoform-specific antibodies. *J Biol Chem.* 1997; 272(38):23741-23747.(Biology)

Hilfiker H, Guerini D, Carafoli E. Cloning and expression of isoform 2 of the human plasma membrane Ca<sup>2+</sup> ATPase. Functional properties of the enzyme and its splicing products. *J Biol Chem.* 1994; 269(42):26178-26183.(Biology)

Shull GE, Greeb J. Molecular cloning of two isoforms of the plasma membrane Ca<sup>2+</sup>-transporting ATPase from rat brain. Structural and functional domains exhibit similarity to Na<sup>+</sup>,K<sup>+</sup>- and other cation transport ATPases. *J Biol Chem.* 1988; 263(18):8646-8657.(Biology)

Stauffer TP, Hilfiker H, Carafoli E, Strehler EE. Quantitative analysis of alternative splicing options of human plasma membrane calcium pump genes. *J Biol Chem.* 1993; 268(34):25993-26003.(Biology)