

# P/Q-type Ca<sup>++</sup> CP α1A (D-20): sc-16227

## BACKGROUND

Voltage-dependent Ca<sup>2+</sup> channels mediate Ca<sup>2+</sup> entry into excitable cells in response to membrane depolarization, and they are involved in a variety of Ca<sup>2+</sup>-dependent processes, including muscle contraction, hormone or neurotransmitter release and gene expression. Calcium channels are highly diverse, multimeric complexes composed of an α-1 subunit, an intracellular β subunit, a disulfide linked α-2/δ subunit and a transmembrane γ subunit. Ca<sup>2+</sup> currents are characterized on the basis of their biophysical and pharmacologic properties and include L-, N-, T-, P-, Q-, and R- types. P/Q-type Ca<sup>++</sup> channels are localized to presynaptic nerve terminals and are crucial elements in the coupling of neuronal excitation to secretion. P/Q-type Ca<sup>++</sup> currents initiate a rapid synaptic transmission that is regulated through G proteins, SNARE proteins, and protein phosphorylation.

## REFERENCES

1. Perez-Reyes, E. and Schneider, T. 1995. Molecular biology of calcium channels. *Kidney Int.* 48: 1111-1124.
2. Randall, A.D. 1998. The molecular basis of voltage-gated Ca<sup>++</sup> channel diversity: is it time for T? *J. Membr. Biol.* 161: 207-213.
3. Catterall, W.A. 1999. Interactions of presynaptic Ca<sup>2+</sup> channels and snare proteins in neurotransmitter release. *Ann. N.Y. Acad. Sci.* 868: 144-159.
4. Catterall, W.A. 2000. Structure and regulation of voltage-gated Ca<sup>++</sup> channels. *Annu. Rev. Cell Dev. Biol.* 16: 521-555.
5. Online Mendelian Inheritance in Man, OMIM<sup>™</sup>. 2001. Johns Hopkins University, Baltimore, MD. MIM Number: 601011. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>

## CHROMOSOMAL LOCATION

Genetic locus: CACNA1A (human) mapping to 19p13.2; Cacna1a (mouse) mapping to 8 C3.

## SOURCE

P/Q-type Ca<sup>++</sup> CP α1A (D-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of P/Q-type Ca<sup>++</sup> CP α1A 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-16227 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.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.

## APPLICATIONS

P/Q-type Ca<sup>++</sup> CP α1A (D-20) is recommended for detection of P/Q-type calcium channel α1A 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).

P/Q-type Ca<sup>++</sup> CP α1A (D-20) is also recommended for detection of P/Q-type calcium channel α1A in additional species, including canine and bovine.

Suitable for use as control antibody for P/Q-type Ca<sup>++</sup> CP α1A siRNA (h): sc-42700, P/Q-type Ca<sup>++</sup> CP α1A siRNA (m): sc-42701, P/Q-type Ca<sup>++</sup> CP α1A shRNA Plasmid (h): sc-42700-SH, P/Q-type Ca<sup>++</sup> CP α1A shRNA Plasmid (m): sc-42701-SH, P/Q-type Ca<sup>++</sup> CP α1A shRNA (h) Lentiviral Particles: sc-42700-V and P/Q-type Ca<sup>++</sup> CP α1A shRNA (m) Lentiviral Particles: sc-42701-V.

Positive Controls: mouse heart extract: sc-2254.

## 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<sup>™</sup> compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker<sup>™</sup> 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<sup>™</sup> Mounting Medium: sc-24941.

## SELECT PRODUCT CITATIONS

1. Fernández-Morales, J.C., et al. 2014. Hypoxia-elicited catecholamine release is controlled by L-type as well as N/PQ types of calcium channels in rat embryo chromaffin cells. *Am. J. Physiol., Cell Physiol.* 307: C455-C465.

## RESEARCH USE

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



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Try **P/Q-type Ca<sup>++</sup> CP α1A (C-2): sc-390004**, our highly recommended monoclonal alternative to P/Q-type Ca<sup>++</sup> CP α1A (D-20).