SANTA CRUZ BIOTECHNOLOGY, INC.

P/Q-type Ca^{++} CP α1A (C-2): sc-390004

BACKGROUND

Voltage-dependent Ca^{++} channels mediate Ca^{++} entry into excitable cells in response to membrane depolarization, and they are involved in a variety of Ca^{2+}-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^{2+} 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^{2+} channels are localized to presynaptic nerve terminals and are crucial elements in the coupling of neuronal excitation to secretion. P/Q-type Ca^{2+} 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. Jodice, C., et al. 1997. Episodic ataxia type 2 (EA2) and spinocerebellar ataxia type 6 (SCA6) due to CAG repeat expansion in the CACNA1A gene on chromosome 19p. Hum. Mol. Genet. 6: 1973-1978.
3. Randall, A.D. 1998. The molecular basis of voltage-gated Ca^{2+} channel diversity: is it time for T? J. Membr. Biol. 161: 207-213.
4. Denier, C., et al. 1999. High prevalence of CACNA1A truncations and broader clinical spectrum in episodic ataxia type 2. Neurology 52: 1816-1821.
5. Jen, J., et al. 1999. A novel nonsense mutation in CACNA1A causes episodic ataxia and hemiplegia. Neurology 53: 34-37.

CHROMOSOMAL LOCATION

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

SOURCE

P/Q-type Ca^{++} CP α1A (C-2) is a mouse monoclonal antibody raised against amino acids 2225-2314 mapping within a cytoplasmic domain of P/Q-type Ca^{++} CP α1A of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

P/Q-type Ca^{++} CP α1A (C-2) is available conjugated to agarose (sc-390004 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-390004 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-390004 PE), fluorescein (sc-390004 FITC), Alexa Fluor® 488 (sc-390004 AF488), Alexa Fluor® 546 (sc-390004 AF546), Alexa Fluor® 594 (sc-390004 AF594) or Alexa Fluor® 647 (sc-390004 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-390004 AF680) or Alexa Fluor® 790 (sc-390004 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

P/Q-type Ca^{++} CP α1A (C-2) is recommended for detection of P/Q-type Ca^{++} CP α1A of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], 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).

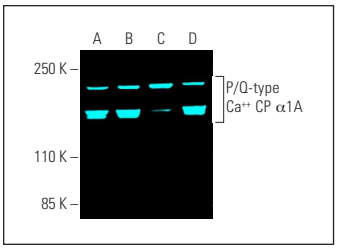
Suitable for use as control antibody for P/Q-type Ca^{++} CP α1A siRNA (h): sc-42700, P/Q-type Ca^{++} CP α1A siRNA (m): sc-42701, P/Q-type Ca^{++} CP α1A shRNA Plasmid (h): sc-42700-SH, P/Q-type Ca^{++} CP α1A shRNA Plasmid (m): sc-42701-SH, P/Q-type Ca^{++} CP α1A shRNA (h) Lentiviral Particles: sc-42700-V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

Positive Controls: SK-N-MC cell lysate: sc-2237, Ramos cell lysate: sc-2216 or THP-1 cell lysate: sc-2238.

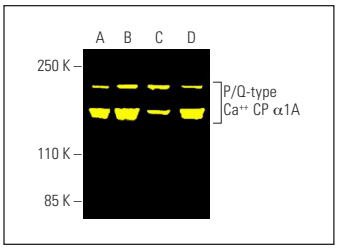
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



P/Q-type Ca^{++} CP α1A (C-2): sc-390004. Fluorescent western blot analysis of P/Q-type Ca^{++} CP α1A expression in SK-N-MC (**A**), Ramos (**B**), THP-1 (**C**) and NAMALWA (**D**) whole cell lysates. Blocked with UltraCruz® Blocking Reagent: sc-516214. Detection reagent used: m-IgG_1 BP-CFL 647: sc-533664.



P/Q-type Ca^{++} CP α1A (C-2): sc-390004. Fluorescent western blot analysis of P/Q-type Ca^{++} CP α1A expression in SK-N-MC (**A**), Ramos (**B**), THP-1 (**C**) and NAMALWA (**D**) whole cell lysates. Blocked with UltraCruz® Blocking Reagent: sc-516214. Detection reagent used: m-IgGκ BP-CFL 488: sc-516176.

STORAGE

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

RESEARCH USE

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

PROTOCOLS

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