

R-type Ca⁺⁺ CP α 1E (C-20): sc-16225

BACKGROUND

Voltage-dependent Ca²⁺ channels mediate Ca²⁺ entry into excitable cells in response to membrane depolarization, and they are involved in a variety of Ca²⁺-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. Ca²⁺ currents are characterized on the basis of their biophysical and pharmacologic properties and include L-, N-, T-, P-, Q- and R-types. R-type Ca²⁺ currents initiate a rapid synaptic transmission that is regulated through G proteins, SNARE proteins, and protein phosphorylation. R-type Ca²⁺ channels may partially regulate the secretory process in chromaffin cells by mediating rapid secretory responses evoked by short depolarizing pulses.

REFERENCES

- Perez-Reyes, E., et al. 1995. Molecular biology of calcium channels. *Kidney Int.* 48: 1111-1124.
- Randall, A.D. 1998. The molecular basis of voltage-gated Ca²⁺ channel diversity: is it time for T? *J. Membr. Biol.* 161: 207-213.
- Catterall, W.A. 2000. Structure and regulation of voltage-gated Ca²⁺ channels. *Annu. Rev. Cell Dev. Biol.* 16: 521-555.
- Albillos, A., et al. 2000. R-Type Ca²⁺ channels are coupled to the rapid component of secretion in mouse adrenal slice chromaffin cells. *J. Neurosci.* 20: 8323-8330.
- Online Mendelian Inheritance in Man, OMIM[™]. 2001. Johns Hopkins University, Baltimore, MD. MIM Number: 601011. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>

CHROMOSOMAL LOCATION

Genetic locus: CACNA1E (human) mapping to 1q25.3; *Cacna1e* (mouse) mapping to 1 G3.

SOURCE

R-type Ca⁺⁺ CP α 1E (C-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of R-type Ca⁺⁺ CP α 1E of human origin.

PRODUCT

Each vial contains 200 μ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-16225 P, (100 μ g 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.

RESEARCH USE

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

APPLICATIONS

R-type Ca⁺⁺ CP α 1E (C-20) is recommended for detection of R-type calcium channel α 1E of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g 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).

R-type Ca⁺⁺ CP α 1E (C-20) is also recommended for detection of R-type calcium channel α 1E in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for R-type Ca⁺⁺ CP α 1E siRNA (h): sc-42702, R-type Ca⁺⁺ CP α 1E siRNA (m): sc-42703, R-type Ca⁺⁺ CP α 1E shRNA Plasmid (h): sc-42702-SH, R-type Ca⁺⁺ CP α 1E shRNA Plasmid (m): sc-42703-SH, R-type Ca⁺⁺ CP α 1E shRNA (h) Lentiviral Particles: sc-42702-V and R-type Ca⁺⁺ CP α 1E shRNA (m) Lentiviral Particles: sc-42703-V.

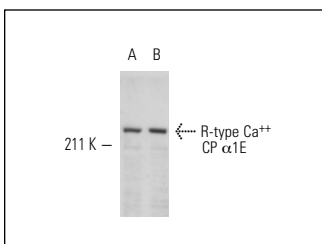
Molecular Weight of R-type Ca⁺⁺ CP α 1E: 220 kDa.

Positive Controls: Caki-1 cell lysate: sc-2224 or SK-N-MC cell lysate: sc-2237.

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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) 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.

DATA



R-type Ca⁺⁺ CP α 1E (C-20): sc-16225. Western blot analysis of R-type Ca⁺⁺ CP α 1E expression in Caki-1 (A) and SK-N-MC (B) whole cell lysates.

SELECT PRODUCT CITATIONS

- Gupta, S., et al. 2009. Voltage gated calcium channels negatively regulate protective immunity to *Mycobacterium tuberculosis*. *PLoS ONE* 4: e5305.
- Müller, C.S., et al. 2010. Quantitative proteomics of the Cav2 channel nano-environments in the mammalian brain. *Proc. Natl. Acad. Sci. USA* 107: 14950-14957.