SANTA CRUZ BIOTECHNOLOGY, INC.

T-type Ca^{++} CP α1I (N-20): sc-16264

BACKGROUND

Voltage-dependent Ca^{2+} channels mediate Ca^{2+} 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 α1 subunit, an intracellular β subunit, a disulfide linked α2/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. T-type Ca^{++} currents are activated and inactivated more rapidly and at more negative membrane potentials than other Ca^{2+} current types. T-type Ca^{++} channels enhance odor sensitivity by lowering the threshold of spike generation in olfactory receptor cells (ORCs).

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^{2+} channel diversity: is it time for T? J. Membr. Biol. 161: 207-213.
3. Catterall, W.A. 2000. Structure and regulation of voltage-gated Ca^{2+} channels. Annu. Rev. Cell. Dev. Biol. 16: 521-525.
4. Kawai, F. and Miyachi, E. 2001. Enhancement by T-type Ca^{++} currents of odor sensitivity in olfactory receptor cells. J. Neurosci. 21: 44.
5. 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: CACNA1I (human) mapping to 22q13.1; Cacna1i (mouse) mapping to 15 E1.

SOURCE

T-type Ca^{++} CP α1I (N-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of T-type Ca^{++} CP α1I 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-16264 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 or our catalog for detailed protocols and support products.

APPLICATIONS

T-type Ca^{++} CP α1I (N-20) is recommended for detection of T-type calcium channel α1I 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).

Suitable for use as control antibody for T-type Ca^{++} CP α1I siRNA (h): sc-42708, T-type Ca^{++} CP α1I siRNA (m): sc-42709, T-type Ca^{++} CP α1I shRNA Plasmid (h): sc-42708-SH, T-type Ca^{++} CP α1I shRNA Plasmid (m): sc-42709-SH, T-type Ca^{++} CP α1I shRNA (h) Lentiviral Particles: sc-42708-V and T-type Ca^{++} CP α1I shRNA (m) Lentiviral Particles: sc-42709-V.

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.

SELECT PRODUCT CITATIONS

1. Trevino, C.L., et al. 2004. Expression and differential cell distribution of low-threshold Ca^{2+} channels in mammalian male germ cells and sperm. FEBS Lett. 563: 87-92.
2. De Proost, I., et al. 2007. Pulmonary expression of voltage-gated calcium channels: special reference to sensory airway receptors. Histochem. Cell Biol. 128: 301-316.
3. Liu, X.B., et al. 2011. Low-threshold calcium channel subunit Ca_V 3.3 is specifically localized in GABAergic neurons of rodent thalamus and cerebral cortex. J. Comp. Neurol. 519: 1181-1195.
4. Albéri, L., et al. 2013. The calcium-binding protein parvalbumin modulates the firing properties of the reticular thalamic nucleus bursting neurons. J. Neurophysiol. 109: 2827-2841.

RESEARCH USE

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