SANTA CRUZ BIOTECHNOLOGY, INC.

Cacna2d1 (K-14): sc-104118

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The Power to Question

BACKGROUND

Voltage-dependent calcium channels are essential for the release of neurotransmitters. Cacna2d1 (calcium channel, voltage-dependent, α2/δ subunit 1), also known as CACNA2, CCHL2A, MHS3 or CACNL2A, is a 1,091 amino acid single-pass type I membrane protein that contains one VWFA domain and one cache domain. Expressed in skeletal muscle, aorta tissues and in the central nervous system (CNS), Cacna2d1 functions as an α2/δ subunit of voltage-dependent calcium channels and plays an important role in calcium current density, as well as in excitation-contraction coupling. The Cacna2d1 precursor is proteolytically processed to produce two functional subunits, designated α2-1 and δ1, both of which are disulfide-linked to one another.

REFERENCES

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2. Williams, M.E., et al. 1992. Structure and functional expression of α1, α2, and β subunits of a novel human neuronal calcium channel subtype. Neuron 8: 71-84.
3. Brust, P.F., et al. 1993. Human neuronal voltage-dependent calcium channels: studies on subunit structure and role in channel assembly. Neuropharmacology 32: 1089-1102.
4. Powers, P.A., et al. 1994. Localization of the gene encoding the α2/δ subunit (CACNL2A) of the human skeletal muscle voltage-dependent Ca^{2+} channel to chromosome 7q21-q22 by somatic cell hybrid analysis. Genomics 19: 192-193.
5. Iles, D.E., et al. 1994. Localization of the gene encoding the α2/δ subunits of the L-type voltage-dependent calcium channel to chromosome 7q and analysis of the segregation of flanking markers in malignant hyperthermia susceptible families. Hum. Mol. Genet. 3: 969-975.
6. Schleithoff, L., et al. 1999. Genomic structure and functional expression of a human α2/δ calcium channel subunit gene (CACNA2). Genomics 61: 201-209.
7. Stotz, S.C., et al. 2004. Several structural domains contribute to the regulation of N-type calcium channel inactivation by the β3 subunit. J. Biol. Chem. 279: 3793-3800.
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CHROMOSOMAL LOCATION

Genetic locus: CACNA2D1 (human) mapping to 7q21.11; Cacna2d1 (mouse) mapping to 5 A2.

SOURCE

Cacna2d1 (K-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an extracellular domain of Cacna2d1 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-104118 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

Cacna2d1 (K-14) is recommended for detection of Cacna2d1 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); non cross-reactive with family members Cacna2d2, Cacna2d3 or Cacna2d4.

Cacna2d1 (K-14) is also recommended for detection of Cacna2d1 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for Cacna2d1 siRNA (h): sc-89621, Cacna2d1 siRNA (m): sc-141968, Cacna2d1 shRNA Plasmid (h): sc-89621-SH, Cacna2d1 shRNA Plasmid (m): sc-141968-SH, Cacna2d1 shRNA (h) Lentiviral Particles: sc-89621-V and Cacna2d1 shRNA (m) Lentiviral Particles: sc-141968-V.

Molecular Weight of Cacna2d1: 123 kDa.

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.

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 or our catalog for detailed protocols and support products.