

Cacna2d1 (V-21): sc-133436

BACKGROUND

Voltage-dependent calcium channels are essential for the release of neurotransmitters. Cacna2d1 (calcium channel, voltage-dependent, $\alpha 2/\delta$ 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 $\alpha 2/\delta$ 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 $\alpha 2-1$ and $\delta 1$, which are disulfide-linked to one another.

REFERENCES

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2. Williams, M.E., et al. 1992. Structure and functional expression of $\alpha 1$, $\alpha 2$, 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 $\alpha 2/\delta$ 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 $\alpha 2/\delta$ 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 $\alpha 2/\delta$ 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 $\beta 3$ subunit. *J. Biol. Chem.* 279: 3793-3800.

CHROMOSOMAL LOCATION

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

SOURCE

Cacna2d1 (V-21) is an affinity purified rabbit polyclonal antibody raised against synthetic Cacna2d1 peptide of human origin.

PRODUCT

Each vial contains 50 μ g IgG in 500 μ l PBS with < 0.1% sodium azide, 0.1% gelatin and < 0.02% sucrose.

APPLICATIONS

Cacna2d1 (V-21) 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), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

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.

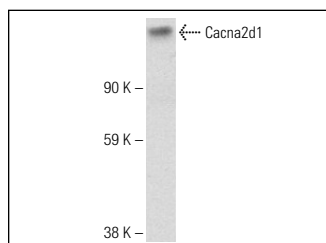
Molecular Weight of Cacna2d1: 123 kDa.

Positive Controls: human fetal muscle tissue extract.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (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).

DATA



Cacna2d1 (V-21): sc-133436. Western blot analysis of Cacna2d1 expression in human fetal muscle tissue extract.

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.



Try **Cacna2d1 (E-10): sc-271697**, our highly recommended monoclonal alternative to Cacna2d1 (V-21).