

# Cacna2d1 (H-147): sc-98693

## 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  $\delta 1$ , both of which are disulfide-linked to one another.

## REFERENCES

1. Ellis, S.B., Williams, M.E., Ways, N.R., Brenner, R., Sharp, A.H., Leung, A.T., Campbell, K.P., McKenna, E., Koch, W.J. and Hui, A. 1988. Sequence and expression of mRNAs encoding the  $\alpha 1$  and  $\alpha 2$  subunits of a DHP-sensitive calcium channel. *Science* 241: 1661-1664.
2. Williams, M.E., Feldman, D.H., McCue, A.F., Brenner, R., Velicelebi, G., Ellis, S.B. and Harpold, M.M. 1992. Structure and functional expression of  $\alpha 1$ ,  $\alpha 2$ , and  $\beta$  subunits of a novel human neuronal calcium channel subtype. *Neuron* 8: 71-84.
3. Brust, P.F., Simerson, S., McCue, A.F., Deal, C.R., Schoonmaker, S., Williams, M.E., Velicelebi, G., Johnson, E.C., Harpold, M.M. and Ellis, S.B. 1993. Human neuronal voltage-dependent calcium channels: studies on subunit structure and role in channel assembly. *Neuropharmacology* 32: 1089-1102.
4. Powers, P.A., Scherer, S.W., Tsui, L.C., Gregg, R.G. and Hogan, K. 1994. Localization of the gene encoding the  $\alpha 2/\delta$  subunit (CACNL2A) of the human skeletal muscle voltage-dependent  $\text{Ca}^{2+}$  channel to chromosome 7q21-q22 by somatic cell hybrid analysis. *Genomics* 19: 192-193.
5. Iles, D.E., Lehmann-Horn, F., Scherer, S.W., Tsui, L.C., Olde Weghuis, D., Suijkerbuijk, R.F., Heytens, L., Mikala, G., Schwartz, A. and Ellis, F.R. 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., Mehrke, G., Reutlinger, B. and Lehmann-Horn, F. 1999. Genomic structure and functional expression of a human  $\alpha 2/\delta$  calcium channel subunit gene (CACNA2). *Genomics* 61: 201-209.

## CHROMOSOMAL LOCATION

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

## SOURCE

Cacna2d1 (H-147) is a rabbit polyclonal antibody raised against amino acids 25-171 mapping near the N-terminus of Cacna2d1 of human origin.

## PRODUCT

Each vial contains 200  $\mu\text{g}$  IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

Cacna2d1 (H-147) 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  $\mu\text{g}$  per 100-500  $\mu\text{g}$  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).

Cacna2d1 (H-147) is also recommended for detection of Cacna2d1 in additional species, including 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 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). 3) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (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](http://www.scbt.com) or our catalog for detailed protocols and support products.



Try **Cacna2d1 (E-10): sc-271697**, our highly recommended monoclonal alternative to Cacna2d1 (H-147).