SANTA CRUZ BIOTECHNOLOGY, INC.

Cacna2d2 (42): sc-136423

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

CACNA2D2 is a gene coding for the protein calcium channel, voltage-dependent α2δ2 (Cacna2d2), a regulatory subunit of the voltage dependent calcium channels. The protein interacts with α-1, β and γ subunits in a 1:1:1:1 ratio to form a channel mediating calcium influx. Protein expression occurs in the brain, heart and other tissues, and is involved in central nervous system function. Disruptions of the CACNA2D2 gene may be involved in cerebellar ataxias and epileptic episodes in humans. The gene is localized to the tumor suppressor region of chromosome 3p21.31 in humans. Expression deficiency occurs in lung, breast and other cancers in humans. Part of a family of α2/δ subunits involved in voltage-dependent calcium influx, Cacna2d2 shares 56% amino acid homology with the α2/δ-1 subunit, although they have different patterns of tissue expression.

REFERENCES

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2. Alden, K.J., et al. 2001. Differential effect of gabapentin on neuronal and muscle calcium currents. J. Pharmacol. Exp. Ther. 297: 727-735.
3. Barclay, J., et al. 2001. Ducky mouse phenotype of epilepsy and ataxia is associated with mutations in the Cacna2d2 gene and decreased calcium channel current in cerebellar Purkinje cells. J. Neurosci. 21: 6095-6104.
4. Brodbeck, J., et al. 2002. The ducky mutation in Cacna2d2 results in altered Purkinje cell morphology and is associated with the expression of a truncated α2/δ-2 protein with abnormal function. J. Biol. Chem. 277: 7684-7693.
5. Ji, L., et al. 2002. Expression of several genes in the human chromosome 3p21.3 homozygous deletion region by an adenovirus vector results in tumor suppressor activities *in vitro* and *in vivo*. Cancer Res. 62: 2715-2720.
6. Braga, E.A., et al. 2003. New tumor suppressor genes in hot spots of human chromosome 3: new methods of identification. Mol. Biol. 37: 194-211.
7. Carboni, G.L., et al. 2003. CACNA2D2-mediated apoptosis in NSCLC cells is associated with alterations of the intracellular calcium signaling and disruption of mitochondria membrane integrity. Oncogene 22: 615-626.
8. Chow, L.S., et al. 2004. RASSF1A is a target tumor suppressor from 3p21.3 in nasopharyngeal carcinoma. Int. J. Cancer 109: 839-847.

CHROMOSOMAL LOCATION

Genetic locus: CACNA2D2 (human) mapping to 3p21.31; Cacna2d2 (mouse) mapping to 9 F1.

SOURCE

Cacna2d2 (42) is a mouse monoclonal antibody raised against amino acids 83-202 of Cacna2d2 of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

Cacna2d2 (42) is recommended for detection of Cacna2d2 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for Cacna2d2 siRNA (h): sc-45522, Cacna2d2 siRNA (m): sc-45523, Cacna2d2 shRNA Plasmid (h): sc-45522-SH, Cacna2d2 shRNA Plasmid (m): sc-45523-SH, Cacna2d2 shRNA (h) Lentiviral Particles: sc-45522-V and Cacna2d2 shRNA (m) Lentiviral Particles: sc-45523-V.

Molecular Weight of Cacna2d2: 130 kDa.

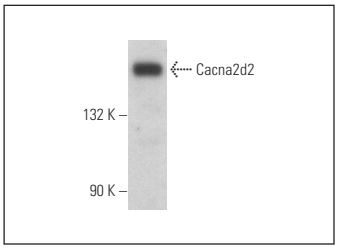
Molecular Weight of glycosylated Cacna2d2: 150 kDa.

Positive Controls: TT whole cell lysate: sc-364195 or rat cerebellum extract: sc-2398.

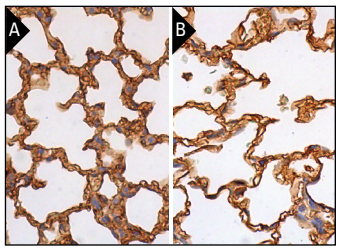
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 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 m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



Cacna2d2 (42): sc-136423. Western blot analysis of Cacna2d2 expression in TT whole cell lysate.



Cacna2d2 (42): sc-136423. Immunoperoxidase staining of formalin fixed, paraffin-embedded mouse lung (**A**) and rat lung (**B**) tissue showing membrane and cytoplasmic staining of pneumocytes and macrophages.

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. Not for resale.