

# Cacna2d2 (G-5): sc-365911

## BACKGROUND

CACNA2D2 is a gene coding for the protein calcium channel, voltage-dependent  $\alpha_2\delta$ -2 (Cacna2d2), a regulatory subunit of the voltage dependent calcium channels. The protein interacts with  $\alpha$ -1,  $\beta$  and  $\gamma$  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 3p21.3 in humans. Expression deficiency occurs in lung, breast and other cancers in humans. Part of a family of  $\alpha_2\delta$  subunits involved in voltage-dependent calcium influx, Cacna2d2 shares 56% amino acid homology with the  $\alpha_2\delta$ -1 subunit, although they have different patterns of tissue expression.

## REFERENCES

1. Alden, K.J., et al. 2001. Differential effect of gabapentin on neuronal and muscle calcium currents. *J. Pharmacol. Exp. Ther.* 297: 727-735.
2. 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.
3. 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  $\alpha_2\delta$ -2 protein with abnormal function. *J. Biol. Chem.* 277: 7684-7693.
4. 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.

## CHROMOSOMAL LOCATION

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

## SOURCE

Cacna2d2 (G-5) is a mouse monoclonal antibody raised against amino acids 1-210 mapping at the N-terminus of Cacna2d2 of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG $\kappa$  kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Cacna2d2 (G-5) is available conjugated to agarose (sc-365911 AC), 500  $\mu$ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-365911 HRP), 200  $\mu$ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-365911 PE), fluorescein (sc-365911 FITC), Alexa Fluor<sup>®</sup> 488 (sc-365911 AF488), Alexa Fluor<sup>®</sup> 546 (sc-365911 AF546), Alexa Fluor<sup>®</sup> 594 (sc-365911 AF594) or Alexa Fluor<sup>®</sup> 647 (sc-365911 AF647), 200  $\mu$ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor<sup>®</sup> 680 (sc-365911 AF680) or Alexa Fluor<sup>®</sup> 790 (sc-365911 AF790), 200  $\mu$ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

Alexa Fluor<sup>®</sup> is a trademark of Molecular Probes, Inc., Oregon, USA

## APPLICATIONS

Cacna2d2 (G-5) is recommended for detection of Cacna2d2 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ 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).

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.

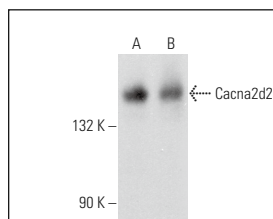
Molecular Weight of glycosylated Cacna2d2: 150 kDa.

Positive Controls: rat cerebellum extract: sc-2398, rat brain extract: sc-2392 or TT whole cell lysate: sc-36419.

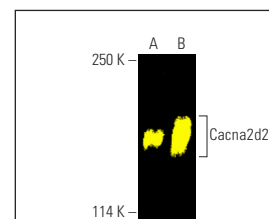
## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker<sup>™</sup> Molecular Weight Standards: sc-2035, UltraCruz<sup>®</sup> 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-IgG $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz<sup>®</sup> Mounting Medium: sc-24941 or UltraCruz<sup>®</sup> Hard-set Mounting Medium: sc-359850.

## DATA



Cacna2d2 (G-5): sc-365911. Western blot analysis of Cacna2d2 expression in rat brain (A) and rat cerebellum (B) tissue extracts.



Cacna2d2 (G-5): sc-365911. Fluorescent western blot analysis of Cacna2d2 expression in rat brain (A) and rat cerebellum (B) tissue extracts. Blocked with UltraCruz<sup>®</sup> Blocking Reagent: sc-516214. Detection reagent used: m-IgG $\kappa$  BP-CFL 488: sc-533661.

## 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.