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SANTA CRUZ BIOTECHNOLOGY, INC.

L-type Ca^{++} CP γ6 (h): 293T Lysate: sc-176120

BACKGROUND

Voltage-dependent calcium channels are important for the release of neurotransmitters in neurons. L-type (long lasting current) voltage-dependent calcium channels are composed of four subunits: an α1 subunit, a β subunit, a γ subunit, and an α2δ subunit. The γ subunit is encoded by eight genes, γ1-γ8, and functions by influencing the properties of calcium current. L-type Ca^{++} CP γ6 (voltage-dependent calcium channel subunit γ6), also called CACNG6, belongs to the CACNG subfamily of the PMP-22/EMP/MP20 family. It is a membrane protein with four transmembrane domains, an N-linked glycosylation site in the first extracellular loop and cytoplasmic N- and C-termini. CACNG is expressed in a variety of tissues including fetal and adult brain. L-type Ca^{++} CP γ6 is most closely related to family member CACNG1. Both subunits lack the PSD-95/DLG/ZO-1(PDZ) binding motif. L-type Ca^{++} CP γ6 may function to stabilize the calcium channel in an inactivated state.

REFERENCES

1. Burgess, D.L., et al. 2000. Identification of three novel Ca^{2+} channel γ subunit genes reveals molecular diversification by tandem and chromosome duplication. Genome Res. 9: 1204-1213.
2. Chu, P.J., et al. 2001. Calcium channel γ subunits provide insights into the evolution of this gene family. Gene 280: 37-48.
3. Burgess, D.L., et al. 2001. A cluster of three novel Ca^{2+} channel γ subunit genes on chromosome 19q13.4: evolution and expression profile of the γ subunit gene family. Genomics 71: 339-350.
4. Black, J.L., 3rd., 2004. The voltage-gated calcium channel γ subunits: a review of the literature. J. Bioenerg. Biomembr. 35: 649-660.
5. Hansen, J.P., et al. 2004. Calcium channel γ6 subunits are unique modulators of low voltage-activated (Cav3.1) calcium current. J. Mol. Cell. Cardiol. 37: 1147-1158.
6. Letts, V.A., et al. 2005. A targeted mutation in Cacng4 exacerbates spike-wave seizures in stargazer (Cacng2) mice. Proc. Natl. Acad. Sci. USA 102: 2123-2128.
7. Price, M.G., et al. 2005. The α-amino-3-hydroxyl-5-methyl-4-isoxazolepropionate receptor trafficking regulator "stargazin" is related to the claudin family of proteins by its ability to mediate cell-cell adhesion. J. Biol. Chem. 280: 19711-19720.

CHROMOSOMAL LOCATION

Genetic locus: CACNG6 (human) mapping to 19q13.42.

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.

APPLICATIONS

L-type Ca^{++} CP γ6 (h): 293T Lysate is suitable as a Western Blotting positive control for human reactive L-type Ca^{++} CP γ6 antibodies. Recommended use: 10-20 µl per lane.

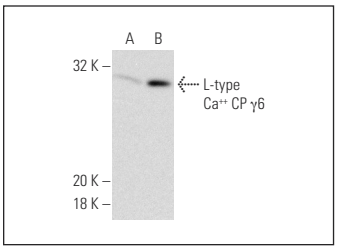
Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

L-type Ca^{++} CP γ6 (L-24): sc-133719 is recommended as a positive control antibody for Western Blot analysis of enhanced human L-type Ca^{++} CP γ6 expression in L-type Ca^{++} CP γ6 transfected 293T cells (starting dilution 1:100, dilution range 1:100-1:1,000).

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.

DATA



L-type Ca^{++} CP γ6 (L-24): sc-133719. Western blot analysis of L-type Ca^{++} CP γ6 expression in non-transfected: sc-117752 (**A**) and human L-type Ca^{++} CP γ6 transfected: sc-176120 (**B**) 293T whole cell lysates.

RESEARCH USE

For research use only, not for use in diagnostic procedures.