SANTA CRUZ BIOTECHNOLOGY, INC.

L-type Ca^{++} CP γ6 siRNA (h): sc-62050

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., et al. 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.

CHROMOSOMAL LOCATION

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

PRODUCT

L-type Ca^{++} CP γ6 siRNA (h) is a pool of 3 target-specific 19-25 nt siRNAs designed to knock down gene expression. Each vial contains 3.3 nmol of lyophilized siRNA, sufficient for a 10 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see L-type Ca^{++} CP γ6 shRNA Plasmid (h): sc-62050-SH and L-type Ca^{++} CP γ6 shRNA (h) Lentiviral Particles: sc-62050-V as alternate gene silencing products.

For independent verification of L-type Ca^{++} CP γ6 (h) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-62050A, sc-62050B and sc-62050C.

PROTOCOLS

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

STORAGE AND RESUSPENSION

Store lyophilized siRNA duplex at -20° C with desiccant. Stable for at least one year from the date of shipment. Once resuspended, store at -20° C, avoid contact with RNAses and repeated freeze thaw cycles.

Resuspend lyophilized siRNA duplex in 330 µl of the RNAse-free water provided. Resuspension of the siRNA duplex in 330 µl of RNAse-free water makes a 10 µM solution in a 10 µM Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

L-type Ca^{++} CP γ6 siRNA (h) is recommended for the inhibition of L-type Ca^{++} CP γ6 expression in human cells.

SUPPORT REAGENTS

For optimal siRNA transfection efficiency, Santa Cruz Biotechnology's siRNA Transfection Reagent: sc-29528 (0.3 ml), siRNA Transfection Medium: sc-36868 (20 ml) and siRNA Dilution Buffer: sc-29527 (1.5 ml) are recommended. Control siRNAs or Fluorescein Conjugated Control siRNAs are available as 10 µM in 66 µl. Each contain a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA. Fluorescein Conjugated Control siRNAs include: sc-36869, sc-44239, sc-44240 and sc-44241. Control siRNAs include: sc-37007, sc-44230, sc-44231, sc-44232, sc-44233, sc-44234, sc-44235, sc-44236, sc-44237 and sc-44238.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor L-type Ca^{++} CP γ6 gene expression knockdown using RT-PCR Primer: L-type Ca^{++} CP γ6 (h)-PR: sc-62050-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

RESEARCH USE

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