SANTA CRUZ BIOTECHNOLOGY, INC.

CACFD1 siRNA (m): sc-141954

BACKGROUND

Voltage-dependent Ca^{2+} channels are highly diverse, multimeric complexes that mediate Ca^{2+} entry into excitable cells in response to membrane depolarization, and they are involved in a variety of Ca^{2+}-dependent processes, including muscle contraction, hormone or neurotransmitter release and gene expression. CACFD1 (calcium channel flower domain containing 1), also known as CACFD1, FLOWER or D9S2135, is a 172 amino acid multi-pass membrane protein belonging to the calcium channel flower family. Existing as four alternatively spliced isoforms, CACFD1 may function as a Ca^{2+} channel, regulating synaptic endocytosis. CACFD1 is encoded by a gene located on human chromosome 9, which consists of about 145 million bases and 4% of the human genome and encodes nearly 900 genes.

REFERENCES

1. Perez-Reyes, E., et al. 1995. Molecular biology of calcium channels. Kidney Int. 48: 1111-1124.
2. Catterall, W.A. 2000. Structure and regulation of voltage-gated Ca^{2+} channels. Annu. Rev. Cell Dev. Biol. 16: 521-555.
3. Davare, M.A., et al. 2001. A beta2 adrenergic receptor signaling complex assembled with the Ca^{2+} channel Cav1.2. Science 293: 98-101.
4. Humphray, S.J., et al. 2004. DNA sequence and analysis of human chromosome 9. Nature 429: 369-374.
5. Brose, N., et al. 2009. Flowers for synaptic endocytosis. Cell 138: 836-837.
6. Yao, C.K., et al. 2009. A synaptic vesicle-associated Ca^{2+} channel promotes endocytosis and couples exocytosis to endocytosis. Cell 138: 947-960.
7. SWISS-PROT/TrEMBL (Q9UGQ2). World Wide Web URL: http://www.uniprot.org

CHROMOSOMAL LOCATION

Genetic locus: Cacfd1 (mouse) mapping to 2 A3.

PRODUCT

CACFD1 siRNA (m) 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 CACFD1 shRNA Plasmid (m): sc-141954-SH and CACFD1 shRNA (m) Lentiviral Particles: sc-141954-V as alternate gene silencing products.

For independent verification of CACFD1 (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-141954A, sc-141954B and sc-141954C.

APPLICATIONS

CACFD1 siRNA (m) is recommended for the inhibition of CACFD1 expression in mouse cells.

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.

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 CACFD1 gene expression knockdown using RT-PCR Primer: CACFD1 (m)-PR: sc-141954-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.

PROTOCOLS

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