BACKGROUND

Transient receptor potential cation (TRPC) channels are a superfamily of six transmembrane segment-spanning, gated cation channels. TRPC subtypes mediate store-operated Ca\(^{2+}\) entry, a process involving Ca\(^{2+}\) influx and replenishment of Ca\(^{2+}\) stores formerly emptied through the action of inositol 1,4,5-trisphosphate production and other Ca\(^{2+}\) mobilizing agents. TRPC channels influence calcium-depletion induced calcium influx processes in response to chemo-, mechano- and osmoregulatory events. Human TRPC3 protein, also known as TRP3, is a 848 amino acid cation channel that is predominantly expressed in brain and, at lower levels, in testis, ovaries, colon, prostate, small intestine, placenta and lung. The activation of store-mediated Ca\(^{2+}\) entry in human cells likely occurs through the association between IP3R (inositol 1,4,5-trisphosphate receptors) and TRPC3. TRPC3 activity is also activated by DAG (diacylglycerol) independently of PKC (protein kinase C).

REFERENCES


CHROMOSOMAL LOCATION

Genetic locus: TRPC3 (human) mapping to 4q27.

PRODUCT

TRPC3 shRNA Plasmid (h) is a pool of 3 target-specific lentiviral vector plasmids each encoding 19-25 nt (plus hairpin) shRNAs designed to knock down gene expression. Each vial contains 20 µg of lyophilized shRNA plasmid DNA. Suitable for up to 20 transfections. Also see TRPC3 siRNA (h): sc-42666 and TRPC3 shRNA (h) Lentiviral Particles: sc-42666-V as alternate gene silencing products.

STORAGE AND RESUSPENSION

Store lyophilized shRNA plasmid DNA at 4° C with desiccant. Stable for at least one year from the date of shipment. Once resuspended, store at 4° C for short term storage or -80° C for long term storage. Avoid repeated freeze thaw cycles.

Resuspend lyophilized shRNA plasmid DNA in 200 µl of the deionized water provided. Resuspension of the shRNA plasmid DNA in 200 µl of deionized water makes a 0.1 µg/µl solution in a 10 mM Tris, 1 mM EDTA buffered solution.

PROTOCOLS

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

APPLICATIONS

TRPC3 shRNA Plasmid (h) is recommended for the inhibition of TRPC3 expression in human cells.

SUPPORT REAGENTS

For optimal shRNA Plasmid transfection efficiency, Santa Cruz Biotechnology’s shRNA Plasmid Transfection Reagent: sc-108061 (0.2 ml) and shRNA Plasmid Transfection Medium: sc-108062 (20 ml) are recommended. Control shRNAs are available as 20 µg lyophilized plasmid DNA. Each encodes a scrambled shRNA sequence that will not lead to the specific degradation of any known cellular mRNA. Control shRNA Plasmids include: sc-108060, sc-108065 and sc-108066.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor TRPC3 gene expression knockdown using RT-PCR Primer: TRPC3 (h)-PR: sc-42666-PR (20 µl, 497 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

RESEARCH USE

The purchase of this product conveys to the buyer the nontransferable right to use the purchased amount of the product and all replicates and derivatives for research purposes conducted by the buyer in his laboratory only (whether the buyer is an academic or for-profit entity). The buyer cannot sell or otherwise transfer (a) this product (b) its components or (c) materials made using this product or its components to a third party, or otherwise use this product or its components or materials made using this product or its components for Commercial Purposes.