

TMEM66 siRNA (m): sc-154492

BACKGROUND

Calcium is considered an essential second messenger in the regulation of many important biological processes, including cell proliferation, differentiation, migration and apoptosis. One major pathway for calcium entry and signaling in nonexcitable cells is through Store-operated calcium channels (SOCs). Activation of SOCs is triggered by depletion of intracellular Ca^{2+} and mediated by specific Ca^{2+} sensor surface receptors of the endoplasmic reticulum. TMEM66 (transmembrane protein 66), also known as SARAF (store-operated calcium entry-associated regulatory factor), XTP3, FOAP-7 or HSPC035 is a 339 amino acid single-pass type I membrane protein that localizes to the endoplasmic reticulum. Highly expressed in macrophages, TMEM66 acts as a negative regulator of store-operated Ca^{2+} entry (SOCE), protecting cells from excessive uptake of Ca^{2+} . Elevation of cytosolic Ca^{2+} induces TMEM66, promoting slow inactivation of STIM1 or STIM2-dependent SOCE activity, leveling Ca^{2+} uptake. TMEM66 exists as two alternatively spliced isoforms and is encoded by a gene located on human chromosome 8p12.

REFERENCES

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PROTOCOLS

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

CHROMOSOMAL LOCATION

Genetic locus: Tmem66 (mouse) mapping to 8 A4.

PRODUCT

TMEM66 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 TMEM66 shRNA Plasmid (m): sc-154492-SH and TMEM66 shRNA (m) Lentiviral Particles: sc-154492-V as alternate gene silencing products.

For independent verification of TMEM66 (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-154492A, sc-154492B and sc-154492C.

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

TMEM66 siRNA (m) is recommended for the inhibition of TMEM66 expression in mouse 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 TMEM66 gene expression knockdown using RT-PCR Primer: TMEM66 (m)-PR: sc-154492-PR (20 μl). Annealing temperature for the primers should be $55-60^{\circ}\text{C}$ and the extension temperature should be $68-72^{\circ}\text{C}$.

RESEARCH USE

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