SANTA CRUZ BIOTECHNOLOGY, INC.

TALK-1 siRNA (m): sc-61640

BACKGROUND

Potassium channels play an important role in cell excitability and plasticity. The pore loop domain, a highly conserved region common to all potassium channels, is involved in determining potassium ion selectivity. The family of potassium channels possessing two-pore loop domains consists of both inward and outwardly rectifying channels and includes THIK-1, THIK-2, TRESK, TALK-1 and TALK-2. Members of this family are all characterized by four transmembrane domains and may function to help influence the resting membrane potential of cells. TALK-1 is exclusively expressed in the pancreas and its channels are strongly activated by nitric oxide, superoxide anion and singlet oxygen, as well as alkaline conditions. The cDNAs of three splice variants, TALK-1b, TALK-1c and TALK 1-d, encode putative proteins of 294, 322 and 262 amino acids, respectively.

REFERENCES

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3. Han, J., Kang, D. and Kim, D. 2003. Functional properties of four splice variants of a human pancreatic tandem-pore K^+ channel, TALK-1. Am. J. Physiol., Cell Physiol. 285: C529-C538.
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5. Lin, W., Burks, C.A., Hansen, D.R., Kinnamon, S.C. and Gilbertson, T.A. 2004. Taste receptor cells express pH-sensitive leak K^+ channels. J. Neurophysiol. 92: 2909-2919.
6. Duprat, F., Girard, C., Jarretou, G. and Lazdunski, M. 2005. Pancreatic two P domain K^+ channels TALK-1 and TALK-2 are activated by nitric oxide and reactive oxygen species. J. Physiol. 562: 235-244.

CHROMOSOMAL LOCATION

Genetic locus: Kcnk16 (mouse) mapping to 14 A3.

PRODUCT

TALK-1 siRNA (m) is a pool of 2 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 TALK-1 shRNA Plasmid (m): sc-61640-SH and TALK-1 shRNA (m) Lentiviral Particles: sc-61640-V as alternate gene silencing products.

For independent verification of TALK-1 (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-61640A and sc-61640B.

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

TALK-1 siRNA (m) is recommended for the inhibition of TALK-1 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 TALK-1 gene expression knockdown using RT-PCR Primer: TALK-1 (m)-PR: sc-61640-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.