SANTA CRUZ BIOTECHNOLOGY, INC.

TRESK siRNA (m): sc-61710

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. TWIK-related spinal cord K^+ (TRESK) is the most sensitive volatile anesthetic-activated channel in the family and may function to mediate the effects of inhaled anesthetics in the central nervous system in a manner that is sensitive to immunosuppressive drugs. TRESK is activated by the calcium signal from calcineurin, a calcium/calmodulin-dependent phosphatase, and is highly sensitive to zinc.

REFERENCES

1. Czirják, G., et al. 2004. The two-pore domain K^+ channel, TRESK, is activated by the cytoplasmic calcium signal through calcineurin. J. Biol. Chem. 279: 18550-18558.
2. Kang, D., et al. 2004. Functional expression of TRESK-2, a new member of the tandem-pore K^+ channel family. J. Biol. Chem. 279: 28063-28070.
3. Liu, C., et al. 2004. Potent activation of concentrations of volatile anesthetics. Anesth. Analg. 99: 1715-1722.
4. Keshavaprasad, B., et al. 2005. Species-specific differences in response to anesthetics and other modulators by the K2P channel TRESK. Anesth. Analg. 101: 1042-1049.

CHROMOSOMAL LOCATION

Genetic locus: Kcnk18 (mouse) mapping to 19 D3.

PRODUCT

TRESK 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 TRESK shRNA Plasmid (m): sc-61710-SH and TRESK shRNA (m) Lentiviral Particles: sc-61710-V as alternate gene silencing products.

For independent verification of TRESK (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-61710A, sc-61710B and sc-61710C.

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

TRESK siRNA (m) is recommended for the inhibition of TRESK 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.

GENE EXPRESSION MONITORING

TRESK (E-2): sc-514525 is recommended as a control antibody for monitoring of TRESK gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor TRESK gene expression knockdown using RT-PCR Primer: TRESK (m)-PR: sc-61710-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Liu, P., et al. 2021. TRESK regulates Gm11874 to induce apoptosis of spinal cord neurons via ATP5i mediated oxidative stress and DNA damage. Neurochem. Res. 46: 1970-1980.

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.