SANTA CRUZ BIOTECHNOLOGY, INC.

IK1 siRNA (h): sc-72200

BACKGROUND

The intermediate conductance calcium-activated potassium channel protein 4 (SK4 or IK1) is a member of the KCNN family of potassium channels. IK1 is an integral membrane protein that functions in a variety of physiological functions. Activation of the IK1 channel is induced by intracellular calcium levels and regulated by calmodulin.

REFERENCES

1. Warth, R., et al. 1999. Molecular and functional characterization of the small Ca^{2+}-regulated K^+ channel (rSK4) of colonic crypts. Pflugers Arch. 438: 437-444.
2. von Hahn, T., et al. 2001. Characterisation of the rat SK4/IK1 K^+ channel. Cell. Physiol. Biochem. 11: 219-230.
3. Joiner, W.J., et al. 2001. Calmodulin regulates assembly and trafficking of SK4/IK1 Ca^{2+}-activated K^+ channels. J. Biol. Chem. 276: 37980-37985.
4. Tamarina, N.A., et al. 2003. Small-conductance calcium-activated K^+ channels are expressed in pancreatic islets and regulate glucose responses. Diabetes 52: 2000-2006.
5. Takahata, T., et al. 2003. SK4/IK1-like channels mediate TEA-insensitive, Ca^{2+}-activated K^+ currents in bovine parotid acinar cells. Am. J. Physiol. Cell Physiol. 284: 127-144.
6. Hayashi, M., et al. 2004. ATP-dependent regulation of SK4/IK1-like currents in rat submandibular acinar cells: possible role of cAMP-dependent protein kinase. Am. J. Physiol. Cell Physiol. 286: 635-646.
7. SWISS-PROT/TrEMBL (O15554). World Wide Web URL: http://www.expasy.ch/sprot/sprot-top.html

CHROMOSOMAL LOCATION

Genetic locus: KCNN4 (human) mapping to 19q13.31.

PRODUCT

IK1 siRNA (h) 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 IK1 shRNA Plasmid (h): sc-72200-SH and IK1 shRNA (h) Lentiviral Particles: sc-72200-V as alternate gene silencing products.

For independent verification of IK1 (h) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-72200A, sc-72200B and sc-72200C.

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.

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

IK1 siRNA (h) is recommended for the inhibition of IK1 expression in human 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

IK1 (D-5): sc-365265 is recommended as a control antibody for monitoring of IK1 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 IK1 gene expression knockdown using RT-PCR Primer: IK1 (h)-PR: sc-72200-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.