SANTA CRUZ BIOTECHNOLOGY, INC.

MSK1 siRNA (h): sc-35977

BACKGROUND

The family of ribosomal S6 kinases (Rsks), designated Rsk-1, Rsk-2 and Rsk-3, have been implicated as important signaling intermediates in response to a broad range of ligand-activated receptor tyrosine kinases. A unique feature common to the three members of the Rsk family is that each possesses two non-identical complete kinase catalytic domains. A related S6 kinase, p70 S6 kinase, functions to phosphorylate the S6 protein on ribosomal 40S subunits. p70 S6 kinase β shares high sequence homology with p70 S6 kinase, except in the carboxy-terminus, where it contains a proline-rich domain that may be involved in SH3 domain containing protein interactions. MSK1 (also designated RLPK) is related to Rsk and p70 S6 kinase family members and is thought to be structurally similar to Rsk family members, but it may be regulated by distinct mechanisms.

CHROMOSOMAL LOCATION

Genetic locus: RPS6KA5 (human) mapping to 14q32.11.

PRODUCT

MSK1 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 MSK1 shRNA Plasmid (h): sc-35977-SH and MSK1 shRNA (h) Lentiviral Particles: sc-35977-V as alternate gene silencing products.

For independent verification of MSK1 (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-35977A, sc-35977B and sc-35977C.

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

MSK1 siRNA (h) is recommended for the inhibition of MSK1 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

MSK1 (F-4): sc-518173 is recommended as a control antibody for monitoring of MSK1 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 MSK1 gene expression knockdown using RT-PCR Primer: MSK1 (h)-PR: sc-35977-PR (20 µl, 536 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Reber, L., et al. 2009. Ser276 phosphorylation of NFκB p65 by MSK1 controls SCF expression in inflammation. PLoS ONE 4: e4393.
2. Simboeck, E., et al. 2010. A phosphorylation switch regulates the transcriptional activation of cell cycle regulator p21 by histone deacetylase inhibitors. J. Biol. Chem. 285: 41062-41073.
3. Li, T., et al. 2013. Angiopoietin2 enhances doxorubin resistance in Hep G2 cells by upregulating survivin and Ref-1 via MSK1 activation. Cancer Lett. 337: 276-284.
4. Liu, Z., et al. 2014. Induction of chemoresistance by all-*trans* retinoic acid via a noncanonical signaling in multiple myeloma cells. PLoS ONE 9: e85571.
5. Hwang, S., et al. 2015. CCN1 acutely increases nitric oxide production via Integrin $\alpha_v\beta_3$-Akt-S6K-phosphorylation of endothelial nitric oxide synthase at the serine 1177 signaling axis. Free Radic. Biol. Med. 89: 229-240.
6. Madrigal-Martínez, A., et al. 2019. Prostaglandin E_2 stimulates cancer-related phenotypes in prostate cancer PC3 cells through cyclooxygenase-2. J. Cell. Physiol. 234: 7548-7559.

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.