SANTA CRUZ BIOTECHNOLOGY, INC.

# MSK2 siRNA (h): sc-75836

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*The Power to Question*

## BACKGROUND

The phosphorylation and dephosphorylation of proteins on serine and threonine residues is an essential means of regulating a broad range of cellular functions in eukaryotes, including cell division, homeostasis and apoptosis. A group of proteins that are intimately involved in this process are the serine/threonine (Ser/Thr) protein kinases. MSK2, also known as RPS6KA4 (ribosomal protein S6 kinase, 90 kDa, polypeptide 4) or RSKB, is a 772 amino acid protein that localizes to the nucleus and contains one AGC kinase C-terminal domain and two protein kinase domains. Using magnesium as a cofactor, MSK2 functions as a Ser/Thr kinase that is thought to play a role in the regulation of growth factor and stress-induced transcriptional activation, specifically by catalyzing the ATP-dependent phosphorylation of target proteins. Multiple isoforms of MSK2 exist due to alternative splicing events.

## REFERENCES


1. Deak, M., et al. 1998. Mitogen- and stress-activated protein kinase-1 (MSK1) is directly activated by MAPK and SAPK2/p38, and may mediate activation of CREB. EMBO J. 17: 4426-4441.
2. Pierrat, B., et al. 1998. RSK-B, a novel ribosomal S6 kinase family member, is a CREB kinase under dominant control of p38α mitogen-activated protein kinase (p38α MAPK). J. Biol. Chem. 273: 29661-29671.
3. Online Mendelian Inheritance in Man, OMIM™. 1999. Johns Hopkins University, Baltimore, MD. MIM Number: 603606. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
4. Gudi, T., et al. 2000. NO activation of Fos promoter elements requires nuclear translocation of G-kinase I and CREB phosphorylation but is independent of MAP kinase activation. Oncogene 19: 6324-6333.
5. Tomás-Zuber, M., et al. 2001. C-terminal elements control location, activation threshold, and p38 docking of ribosomal S6 kinase B (RSKB). J. Biol. Chem. 276: 5892-5899.
6. Prymakowska-Bosak, M., et al. 2001. Mitotic phosphorylation prevents the binding of HMGN proteins to chromatin. Mol. Cell. Biol. 21: 5169-5178.


## CHROMOSOMAL LOCATION

Genetic locus: RPS6KA4 (human) mapping to 11q13.1.

## PRODUCT

MSK2 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 MSK2 shRNA Plasmid (h): sc-75836-SH and MSK2 shRNA (h) Lentiviral Particles: sc-75836-V as alternate gene silencing products.

For independent verification of MSK2 (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-75836A, sc-75836B and sc-75836C.

## RESEARCH USE

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

## 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

MSK2 siRNA (h) is recommended for the inhibition of MSK2 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

MSK2 (F-2): sc-377151 is recommended as a control antibody for monitoring of MSK2 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 MSK2 gene expression knockdown using RT-PCR Primer: MSK2 (h)-PR: sc-75836-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

## PROTOCOLS

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