SANTA CRUZ BIOTECHNOLOGY, INC.

# MAPKAPK-2 siRNA (m): sc-35856

SANTA CRUZ BIOTECHNOLOGY

*The Power to Question*

## BACKGROUND

The MAPKAP kinases (for MAP kinase activated protein kinases) are a group of MAP kinase substrates which are themselves kinases. In response to activation, the MAP kinases phosphorylate downstream components on a consensus Pro-X-Ser/Thr-Pro motif. Several kinases that contain this motif have been identifed and serve as substrates for the ERK and p38 MAP kinases. These include the Serine/threonine kinases Rsk-1 (also designated MAPKAP kinase-1), Rsk-2 and Rsk-3, which are phosphorylated by ERK1 and ERK2. Similarly, p38 phosphorylates and activates the Serine/threonine kinases MAPKAP kinase-2 and MAPKAP kinase-3 (also designated 3pK). The Serine/threonine kinases Mnk1 and Mnk2 are substrates for both ERK and p38 MAP kinases.

## REFERENCES


1. Sturgill, T.W., et al. 1988. Insulin-stimulated MAP2 kinase phosphorylates and activates ribosomal protein S6 kinase II. Nature 334: 715-718.
2. Stokoe, D., et al. 1992. MAPKAP kinase-2: a novel protein kinase activated by mitogen-activated protein kinase. EMBO J. 11: 3985-3994.
3. Davis, R.J. 1993. The mitogen-activated protein kinase signal transduction pathway. J. Biol. Chem. 268: 14553-14556.
4. Zhao, Y., et al. 1995. RSK3 encodes a novel pp90rsk isoform with a unique N-terminal sequence: growth factor stimulated kinase function and nuclear translocation. Mol. Cell. Biol. 15: 4353-4363.
5. McLaughlin, M.M., et al. 1996. Identification of mitogen-activated protein (MAP) kinase-activated protein kinase-3, a novel substrate of CSBP p38 MAP kinase. J. Biol. Chem. 271: 8488-8492.


## CHROMOSOMAL LOCATION

Genetic locus: Mapkapk2 (mouse) mapping to 1 E4.

## PRODUCT

MAPKAPK-2 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 MAPKAPK-2 shRNA Plasmid (m): sc-35856-SH and MAPKAPK-2 shRNA (m) Lentiviral Particles: sc-35856-V as alternate gene silencing products.

For independent verification of MAPKAPK-2 (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-35856A, sc-35856B and sc-35856C.

## 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

MAPKAPK-2 siRNA (m) is recommended for the inhibition of MAPKAPK-2 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

MAPKAPK-2 (A-11): sc-393609 is recommended as a control antibody for monitoring of MAPKAPK-2 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 MAPKAPK-2 gene expression knockdown using RT-PCR Primer: MAPKAPK-2 (m)-PR: sc-35856-PR (20 µl, 479 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

## SELECT PRODUCT CITATIONS


1. Miguel, S., et al. 2005. ERK1/2-activated *de novo* MAPKAPK-2 synthesis is essential for osteogenic growth peptide mitogenic signaling in osteoblastic cells. J. Biol. Chem. 280: 37495-37502.
2. Ofek, O., et al. 2011. CB2 cannabinoid receptor targets mitogenic $G_i$ protein-cyclin D1 axis in osteoblasts. J. Bone Miner. Res. 26: 308-316.
3. Tran, Q.T.N., et al. 2023. Degradation of MK2 with natural compound andrographolide: a new modality for anti-inflammatory therapy. Pharmacol. Res. 194: 106861.


## RESEARCH USE

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