SANTA CRUZ BIOTECHNOLOGY, INC.

# ERK 4 siRNA (m): sc-62281

## BACKGROUND

Mitogen-activated protein kinases (MAPKs) are involved in signal transducing pathways which regulate cell growth, differentiation, migration and apoptosis. The MAPK family is thought to be activated by growth factors and other external stimuli via phosphorylation of both threonine and tyrosine. Once activated, the MAPKs move into the nucleus where they phosphorylate nuclear targets. ERK 4 (extracellular signal-regulated kinase 4) is also known as mitogen-activated protein kinase 4, MAP kinase isoform p63 or p63-MAPK, and is a 587 amino acid protein. ERK 4 and ERK 3 differ from the rest of the MAPK family in that they have a phospho-acceptor site in their activation loop S-E-G motif. ERK 4 is expressed in high quantities in heart and brain. ERK 4 is thought to phosphorylate MAP-2 (microtubule-associated protein 2), an association that may trigger cellular division. Upregulation of ERK 4 is found in tumors and is associated with cancer.

## REFERENCES


1. Li, L., et al. 1994. Genomic loci of human mitogen-activated protein kinases. Oncogene 9: 647-649.
2. Peng, X., et al. 1996. Tyrosine phosphorylation of extracellular signal-regulated protein kinase 4 in response to growth factors. J. Neurochem. 66: 1191-1197.
3. García, J.I., et al. 1996. Isolation of a cDNA encoding the rat MAP-kinase homolog of human p63mapk. Mamm. Genome 7: 810-814.
4. Sánchez, C., et al. 2000. Phosphorylation of microtubule-associated protein 2 (MAP2) and its relevance for the regulation of the neuronal cytoskeleton function. Prog. Neurobiol. 61: 133-168.
5. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 176949. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
6. Goetze, B., et al. 2004. Chemically controlled formation of a DNA/calcium phosphate coprecipitate: application for transfection of mature hippocampal neurons. J. Neurobiol. 60: 517-525.


## CHROMOSOMAL LOCATION

Genetic locus: Mapk4 (mouse) mapping to 18 E2.

## PRODUCT

ERK 4 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 ERK 4 shRNA Plasmid (m): sc-62281-SH and ERK 4 shRNA (m) Lentiviral Particles: sc-62281-V as alternate gene silencing products.

For independent verification of ERK 4 (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-62281A, sc-62281B and sc-62281C.

## 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

ERK 4 siRNA (m) is recommended for the inhibition of ERK 4 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.

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor ERK 4 gene expression knockdown using RT-PCR Primer: ERK 4 (m)-PR: sc-62281-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.