SANTA CRUZ BIOTECHNOLOGY, INC.

# SAPK4 siRNA (m): sc-36457

## BACKGROUND

Lipopolysaccharide has been shown to induce tyrosine phosphorylation of a unique protein, designated p38. p38 is a member of the MAP kinase family with features most closely resembling those of the *Saccharomyces cerevisiae* protein Hog1. p38 and Hog1 share a TGY phosphorylation sequence, whereas most other MAP kinase family proteins have a TEY sequence. A related protein, p38β, has been shown to phosphorylate ATF-2 at a 20-fold higher rate than p38, suggesting distinct substrate preferences. Stress activated protein kinase-4, or SAPK4, also designated p38δ, is a related protein that is phosphorylated by MKK6 in response to cytokines and cellular stresses.

## REFERENCES


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2. Brewster, J.L., et al. 1993. An osmosensing signal transduction pathway in yeast. Science 259: 1760-1763.
3. Nishida, E. and Gotoh, Y. 1993. The MAP kinase cascade is essential for diverse signal transduction pathways. Trends Biochem. Sci. 18: 128-131.
4. Han, J., et al. 1994. A MAP kinase targeted by endotoxin and hyperosmolarity in mammalian cells. Science 265: 808-811.
5. Jiang, Y., et al. 1996. Characterization of the structure and function of a new mitogen-activated protein kinase (p38β). J. Biol. Chem. 271: 17920-17926.
6. Goedert, M., et al. 1997. Activation of the novel stress-activated protein kinase SAPK4 by cytokines and cellular stresses is mediated by SKK3 (MKK6); comparison of its substrate specificity with that of other SAP kinases. EMBO J. 16: 3563-3571.
7. Kumar, S., et al. 1997. Novel homologs of CSBP/p38 MAP kinase: activation, substrate specificity and sensitivity to inhibition by pyridinyl imidazoles. Biochem. Biophys. Res. Commun. 235: 533-538.
8. Wang, X.S., et al. 1997. Molecular cloning and characterization of a novel p38 mitogen activated protein kinase. J. Biol. Chem. 272: 23668-23674.


## CHROMOSOMAL LOCATION

Genetic locus: Mapk13 (mouse) mapping to 17 A3.3.

## PRODUCT

SAPK4 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 SAPK4 shRNA Plasmid (m): sc-36457-SH and SAPK4 shRNA (m) Lentiviral Particles: sc-36457-V as alternate gene silencing products.

For independent verification of SAPK4 (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-36457A, sc-36457B and sc-36457C.

## 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

SAPK4 siRNA (m) is recommended for the inhibition of SAPK4 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

SAPK4 (E-7): sc-46678 is recommended as a control antibody for monitoring of SAPK4 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 SAPK4 gene expression knockdown using RT-PCR Primer: SAPK4 (m)-PR: sc-36457-PR (20 µl, 585 bp). 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.