SANTA CRUZ BIOTECHNOLOGY, INC.

MAPKAP-1 siRNA (m): sc-60985

BACKGROUND

Mitogen-activated protein kinase associated protein 1 (MAPKAP-1) is a protein that localizes in the nucleus and is involved in several different signal transduction pathways. MAPKAP-1 contains one stress-activated map kinase interacting 1 domain (Pfam), a second peroximal domain and an ER membrane domain (Psort2). MAPKAP-1 binds to and inhibits c-Jun N-terminal kinase (JNK), and may act as a scaffold molecule in the regulation of JNK signaling. Transcription of the MAPKAP-1 gene is activated any time the organism is wounded, and stress to the cell causes the MAPKAP-1 protein to be phosphorylated. Cells lacking this protein may display sterility, multiple stress sensitivity and a cell-cycle delay.

REFERENCES

1. Lee, D.E., et al. 2004. Pathogen resistance of transgenic rice plant protein kinase 1, MK1, from *Capsicum annuum*. Mol. Cells 17: 81-85.
2. Schroder, W., et al. 2004. Alternative polyadenylation and splicing of mRNAs transcribed from the human Sin1 gene. Gene 339: 17-23.
3. Schroder, W., et al. 2005. The human stress-activated protein kinase-interacting 1 gene encodes JNK-binding proteins. Cell. Signal. 17: 761-767.
4. Wang, S.Z. and Roberts, R.M. 2005. The evolution of the Sin1 gene product, a little known protein implicated in stress responses and type I interferon signaling in vertebrates. BMC Evol. Biol. 5: 13.
5. Gaestel, M. 2006. MAPKAP kinases—MKs—two's company, three's a crowd. Nat. Rev. Mol. Cell Biol. 7: 120-130.
6. Cordes, T., et al. 2006. Modulation of MAPK ERK1 and ERK2 in VDR-positive and -negative breast cancer cell lines. Anticancer Res. 26: 2749-2753.
7. Culbert, A.A., et al. 2006. MAPK-activated protein kinase 2 deficiency in microglia inhibits pro-inflammatory mediator release and resultant neurotoxicity. Relevance to neuroinflammation in a transgenic mouse model of Alzheimer disease. J. Biol. Chem. 281: 23658-23667.
8. Kervinen, J., et al. 2006. Effect of construct design on MAPKAP kinase-2 activity, thermodynamic stability and ligand-binding affinity. Arch. Biochem. Biophys. 449: 47-56.

CHROMOSOMAL LOCATION

Genetic locus: Mapkap1 (mouse) mapping to 2 B.

PRODUCT

MAPKAP-1 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 MAPKAP-1 shRNA Plasmid (m): sc-60985-SH and MAPKAP-1 shRNA (m) Lentiviral Particles: sc-60985-V as alternate gene silencing products.

For independent verification of MAPKAP-1 (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-60985A, sc-60985B and sc-60985C.

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

MAPKAP-1 siRNA (m) is recommended for the inhibition of MAPKAP-1 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

MAPKAP-1 (F-3): sc-393166 is recommended as a control antibody for monitoring of MAPKAP-1 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 MAPKAP-1 gene expression knockdown using RT-PCR Primer: MAPKAP-1 (m)-PR: sc-60985-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

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.