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SZABO-SCANDIC HandelsgmbH

Quellenstraße 110, A-1100 Wien

T. +43(0)1 489 3961-0

F. +43(0)1 489 3961-7

mail@szabo-scandic.com

www.szabo-scandic.com

[linkedin.com/company/szaboscandic](https://www.linkedin.com/company/szaboscandic) 

MAPKBP-1 siRNA (m): sc-149261

BACKGROUND

MAP kinases play a significant role in many biological processes, including cell adhesion and spreading, cell differentiation and apoptosis. MAPKBP-1 (mitogen-activated protein kinase binding protein 1), also known as JNKBP-1, is a 1,514 amino acid protein that contains 12 WD repeats. Induced by TRAF2 (TNF receptor-associated factor 2) and Tak1 (TGF β -activated kinase 1), MAPKBP-1 is thought to act as an adaptor protein for NF κ B (nuclear factor κ -B) activation. MAPKBP-1 interacts with JNK3 and may promote TRAF2 polyubiquitination. MAPKBP-1 exists as six alternatively spliced variants and is encoded by a gene located on human chromosome 15. Human chromosome 15 houses over 700 genes and comprises nearly 3% of the human genome. Angelman syndrome, Prader-Willi syndrome, Tay-Sachs disease and Marfan syndrome are all associated with defects in chromosome 15-localized genes.

REFERENCES

1. Koyano, S., et al. 1999. A novel Jun N-terminal kinase (JNK)-binding protein that enhances the activation of JNK by MEK kinase 1 and TGF β -activated kinase 1. *FEBS Lett.* 457: 385-388.
2. Cox, N.J., et al. 1999. Loci on chromosomes 2 (NIDDM1) and 15 interact to increase susceptibility to diabetes in Mexican Americans. *Nat. Genet.* 21: 213-215.
3. Khandoudi, N., et al. 2002. Rosiglitazone, a peroxisome proliferator-activated receptor- γ , inhibits the Jun NH $_2$ -terminal kinase/activating protein 1 pathway and protects the heart from ischemia/reperfusion injury. *Diabetes* 51: 1507-1514.
4. Meng W., et al. 2002. Structure of mitogen-activated protein kinase-activated protein (MAPKAP) kinase 2 suggests a bifunctional switch that couples kinase activation with nuclear export. *J. Biol. Chem.* 277: 37401-37405.
5. Seternes O.M., et al. 2002. Both binding and activation of p38 mitogen-activated protein kinase (MAPK) play essential roles in regulation of the nucleocytoplasmic distribution of MAPK-activated protein kinase 5 by cellular stress. *Mol. Cell. Biol.* 22: 6931-6945.

CHROMOSOMAL LOCATION

Genetic locus: Mapkbp1 (mouse) mapping to 2 E5.

PRODUCT

MAPKBP-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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see MAPKBP-1 shRNA Plasmid (m): sc-149261-SH and MAPKBP-1 shRNA (m) Lentiviral Particles: sc-149261-V as alternate gene silencing products.

For independent verification of MAPKBP-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-149261A, sc-149261B and sc-149261C.

PROTOCOLS

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

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 μ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNase-free water makes a 10 μ M solution in a 10 μ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

MAPKBP-1 siRNA (m) is recommended for the inhibition of MAPKBP-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 μ M in 66 μ l. 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

MAPKBP-1 (B-4): sc-514754 is recommended as a control antibody for monitoring of MAPKBP-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-IgG κ BP-HRP: sc-516102 or m-IgG κ 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-IgG κ BP-FITC: sc-516140 or m-IgG κ 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 MAPKBP-1 gene expression knockdown using RT-PCR Primer: MAPKBP-1 (m)-PR: sc-149261-PR (20 μ l). 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.