SANTA CRUZ BIOTECHNOLOGY, INC.

MEK-2 siRNA (h): sc-35905

BACKGROUND

A family of protein kinases located upstream of the MAP kinases and responsible for their activation has been identified. The prototype member of this family, designated MAP kinase kinase, or MEK-1, specifically phosphorylates the MAP kinase regulatory threonine and tyrosine residues present in the Thr-Glu-Tyr motif of ERK. A second MEK family member, MEK-2, resembles MEK-1 in its substrate specificity. MEK-3 (or MKK-3) functions to activate p38 MAP kinase, and MEK-4 (also called SEK1 or MKK-4) activates both p38 and JNK MAP kinases. MEK-5 appears to specifically phosphorylate ERK5, whereas MEK-6 phosphorylates p38 and p38β. MEK-7 (or MKK-7) phosphorylates and activates the JNK signal transduction pathway.

CHROMOSOMAL LOCATION

Genetic locus: MAP2K2 (human) mapping to 19p13.3.

PRODUCT

MEK-2 siRNA (h) is a pool of 2 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 MEK-2 shRNA Plasmid (h): sc-35905-SH and MEK-2 shRNA (h) Lentiviral Particles: sc-35905-V as alternate gene silencing products.

For independent verification of MEK-2 (h) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-35905A and sc-35905B.

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

MEK-2 siRNA (h) is recommended for the inhibition of MEK-2 expression in human 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

MEK-2 (A-1): sc-13159 is recommended as a control antibody for monitoring of MEK-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 MEK-2 gene expression knockdown using RT-PCR Primer: MEK-2 (h)-PR: sc-35905-PR (20 µl, 507 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Joo, J.H., et al. 2008. NFκB-dependent transcriptional activation in lung carcinoma cells by farnesol involves p65/RelA(Ser^{276}) phosphorylation via the MEK-MSK1 signaling pathway. J. Biol. Chem. 283: 16391-16399.
2. Stapleton, C.M., et al. 2010. Induction of ANGPTL4 expression in human airway smooth muscle cells by PMA through activation of PKC and MAPK pathways. Exp. Cell Res. 316: 507-516.
3. Gayle, S.S., et al. 2013. MEK inhibition increases lapatinib sensitivity via modulation of FOXM1. Curr. Med. Chem. 20: 2486-2499.
4. McCarty, S.K., et al. 2014. BRAF activates and physically interacts with PAK to regulate cell motility. Endocr. Relat. Cancer 21: 865-877.
5. Tang, L., et al. 2017. HMGB1 promotes differentiation syndrome by inducing hyperinflammation via MEK/ERK signaling in acute promyelocytic leukemia cells. Oncotarget 8: 27314-27327.
6. Wang, L., et al. 2018. CVB3 nonstructural 2A protein modulates SREBP1a signaling via the MEK/ERK pathway. J. Virol. 92: e01060-18.
7. Soliman, M., et al. 2018. Activation of PI3K, Akt, and ERK during early rotavirus infection leads to V-ATPase-dependent endosomal acidification required for uncoating. PLoS Pathog. 14: e1006820.

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.