

JNK3 siRNA (m): sc-39104

BACKGROUND

c-Jun N-terminal kinases (JNKs) phosphorylate and augment transcriptional activity of c-Jun. JNKs originate from three genes that yield ten isoforms through alternative mRNA splicing, including JNK1 α 1, JNK1 β 1, JNK2 α 1, JNK2 β 1 and JNK3 α 1, which represent the p46 isoforms, and JNK1 α 2, JNK1 β 2, JNK2 α 2, JNK2 β 2 and JNK3 β 2, which represent the p54 isoforms. JNKs coordinate cell responses to stress and influence regulation of cell growth and transformation. The human JNK1 (PRKM8, SAPK1, MAPK8) gene maps to chromosome 10q11.22 and shares 83% amino acid identity with JNK2. JNK1 is necessary for normal activation and differentiation of CD4 helper T (TH) cells into TH1 and TH2 effector cells. Capsaicin activates JNK1 and p38 in Ras-transformed human breast epithelial cells. Nitrogen oxides (NOx) upregulate JNK1 in addition to c-Fos, c-Jun and other signaling kinases, including MEK1 and p38. JNK3 (MK10, MAPK10, PRKM10) is activated by pro-inflammatory cytokines and environmental stresses by phosphorylating transcription factors such as c-Jun and ATF2. This is important for AP-1 transcriptional activity regulation. JNK3 is crucial for neuronal apoptosis (stress-induced).

REFERENCES

1. Gupta, S., et al. 1996. Selective interaction of JNK protein kinase isoforms with transcription factors. *EMBO J.* 15: 2760-2770.
2. Dong, C., et al. 1998. Defective T cell differentiation in the absence of JNK1. *Science* 282: 2092-2095.
3. Xie, X., et al. 1998. Crystal structure of JNK3: a kinase implicated in neuronal apoptosis. *Structure* 6: 983-991.

CHROMOSOMAL LOCATION

Genetic locus: Mapk10 (mouse) mapping to 5 E5.

PRODUCT

JNK3 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 JNK3 shRNA Plasmid (m): sc-39104-SH and JNK3 shRNA (m) Lentiviral Particles: sc-39104-V as alternate gene silencing products.

For independent verification of JNK3 (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-39104A, sc-39104B and sc-39104C.

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

JNK3 siRNA (m) is recommended for the inhibition of JNK3 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

p-JNK (G-7): sc-6254 is recommended as a control antibody for monitoring of JNK3 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, TBS Blotto B Blocking Reagent: sc-2335 (use 50 mM NaF, sc-24988, as diluent), Lambda Phosphatase: sc-200312A 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 JNK3 gene expression knockdown using RT-PCR Primer: JNK3 (m)-PR: sc-39104-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Erdogan, M., et al. 2008. Transforming growth factor- β (TGF β) and TGF β -associated kinase 1 are required for R-Ras-mediated transformation of mammary epithelial cells. *Cancer Res.* 68: 6224-6231.
2. Qu, C., et al. 2013. c-Jun N-terminal kinase 1 (JNK1) is required for coordination of netrin signaling in axon guidance. *J. Biol. Chem.* 288: 1883-1895.

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.