SANTA CRUZ BIOTECHNOLOGY, INC.

JNK2 siRNA (m): sc-39102

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 JNK1α1, JNK1β1, JNK2α1, JNK2β1, and JNK3α1, which represent the p46 isoforms, and JNK1α2, JNK1β2, JNK2α2, JNK2β2, and JNK3β2, 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 MEKK1 and p38.

REFERENCES

1. Kallunki, T., et al. 1994. JNK2 contains a specificity-determining region responsible for efficient c-Jun binding and phosphorylation. Genes Dev. 8: 2996-3007.
2. Dong, C., et al. 1998. Defective T cell differentiation in the absence of JNK1. Science 282: 2092-2095.
3. Dong, C., et al. 2000. JNK is required for effector T-cell function but not for T-cell activation. Nature 405: 91-94.

CHROMOSOMAL LOCATION

Genetic locus: Mapk9 (mouse) mapping to 11 B1.2.

PRODUCT

JNK2 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 JNK2 shRNA Plasmid (m): sc-39102-SH and JNK2 shRNA (m) Lentiviral Particles: sc-39102-V as alternate gene silencing products.

For independent verification of JNK2 (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-39102A, sc-39102B and sc-39102C.

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

JNK2 siRNA (m) is recommended for the inhibition of JNK2 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

JNK2 (A-7): sc-271133 is recommended as a control antibody for monitoring of JNK2 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).

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor JNK2 gene expression knockdown using RT-PCR Primer: JNK2 (m)-PR: sc-39102-PR (20 µl, 449 bp). 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. Jiao, P., et al. 2009. Obesity-related upregulation of monocyte chemotactic factors in adipocytes: involvement of nuclear factor-κB and c-Jun NH_2-terminal kinase pathways. Diabetes 58: 104-115.
3. 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.
4. Lee, K.G., et al. 2015. α-chaconine isolated from a *Solanum tuberosum L.* cv Jayoung suppresses lipopolysaccharide-induced pro-inflammatory mediators via AP-1 inactivation in RAW 264.7 macrophages and protects mice from endotoxin shock. Chem. Biol. Interact. 235: 85-94.
5. Zhou, J., et al. 2015. Hypochlorous acid via peroxynitrite activates protein kinase Cθ and Insulin resistance in adipocytes. J. Mol. Endocrinol. 54: 25-37.
6. Yang, C.C., et al. 2022. Induction of heme oxygenase-1 by 15d-prostaglandin J_2 mediated via a ROS-dependent Sp1 and AP-1 cascade suppresses lipopolysaccharide-triggered interleukin-6 expression in mouse brain microvascular endothelial cells. Antioxidants 11: 719.

RESEARCH USE

For research use only, not for use in diagnostic procedures.