SANTA CRUZ BIOTECHNOLOGY, INC.

JNK1 siRNA (h): sc-29380

BACKGROUND

c-Jun N-terminal kinases (JNKs) phosphorylate and augment transcriptional activity of c-Jun. JNKs originate from three genes that yield 10 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.

CHROMOSOMAL LOCATION

Genetic locus: MAPK8 (human) mapping to 10q11.22.

PRODUCT

JNK1 siRNA (h) is a target-specific 19-25 nt siRNA 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 JNK1 shRNA Plasmid (h): sc-29380-SH and JNK1 shRNA (h) Lentiviral Particles: sc-29380-V as alternate gene silencing 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 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

JNK1 siRNA (h) is recommended for the inhibition of JNK1 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.

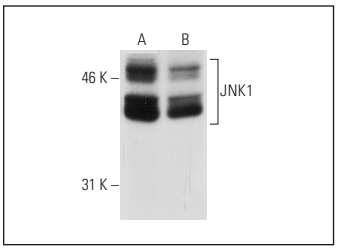
GENE EXPRESSION MONITORING

JNK1 (F-3): sc-1648 is recommended as a control antibody for monitoring of JNK1 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 JNK1 gene expression knockdown using RT-PCR Primer: JNK1 (h)-PR: sc-29380-PR (20 µl, 568 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

DATA



JNK1 siRNA (h): sc-29380. Western blot analysis of JNK1 expression in non-transfected control (**A**) and JNK1 siRNA transfected (**B**) HeLa cells. Blot probed with JNK1 (C-17): sc-474.

SELECT PRODUCT CITATIONS

1. Beers, A., et al. 2006. Inhibition of apolipoprotein AI gene expression by tumor necrosis factor α: roles for MEK/ERK and JNK signaling. Biochemistry 45: 2408-2413.
2. Li, Y., et al. 2011. Up-regulation of cyclin D1 by JNK1/c-Jun is involved in tumorigenesis of human embryo lung fibroblast cells induced by a low concentration of arsenite. Toxicol. Lett. 206: 113-120.
3. Lai, H.C., et al. 2012. Activation of NK cell cytotoxicity by the natural compound 2,3-butanediol. J. Leukoc. Biol. 92: 807-814.
4. Li, Q., et al. 2013. The dual mTORC1 and mTORC2 inhibitor AZD8055 inhibits head and neck squamous cell carcinoma cell growth *in vivo* and *in vitro*. Biochem. Biophys. Res. Commun. 440: 701-706.
5. He, W., et al. 2014. A JNK-mediated autophagy pathway that triggers c-IAP degradation and necroptosis for anticancer chemotherapy. Oncogene 33: 3004-3013.
6. Parra, E., et al. 2015. Inhibition of basal JNK activity by small interfering RNAs enhances cisplatin sensitivity and decreases DNA repair in T98G glioblastoma cells. Oncol. Rep. 33: 413-418.
7. Lu, C.C., et al. 2016. Immunomodulatory properties of medicinal mushrooms: differential effects of water and ethanol extracts on NK cell-mediated cytotoxicity. Innate Immun. 22: 522-533.

RESEARCH USE

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