

c-Fos siRNA (h): sc-29221

BACKGROUND

The c-Fos oncogene was initially detected in two independent murine osteosarcoma virus isolates and an avian nephroblastoma virus. The cellular homolog, c-Fos, encodes a nuclear phospho-protein that is rapidly and transiently induced by a variety of agents and functions as a transcriptional regulator for several genes. In contrast to c-Jun proteins, which form homo- and heterodimers which bind to specific DNA response elements, c-Fos proteins are only active as heterodimers with members of the Jun gene family. Functional homologs of c-Fos include the Fra-1, Fra-2 and Fos B genes. In addition, selected ATF/CREB family members can form leucine zipper dimers with Fos and Jun. Different dimers exhibit differential specificity and affinity for AP-1 and CRE sites.

CHROMOSOMAL LOCATION

Genetic locus: FOS (human) mapping to 14q24.3.

PRODUCT

c-Fos siRNA (h) is a pool of 4 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 c-Fos shRNA Plasmid (h): sc-29221-SH and c-Fos shRNA (h) Lentiviral Particles: sc-29221-V as alternate gene silencing products.

For independent verification of c-Fos (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-29221A, sc-29221B, sc-29221C and sc-29221D.

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

c-Fos siRNA (h) is recommended for the inhibition of c-Fos 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 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

c-Fos (D-1): sc-8047 is recommended as a control antibody for monitoring of c-Fos 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 c-Fos gene expression knockdown using RT-PCR Primer: c-Fos (h)-PR: sc-29221-PR (20 μ l, 561 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

- Han, S.W., et al. 2006. Fibronectin increases matrix metalloproteinase 9 expression through activation of c-Fos via extracellular-regulated kinase and phosphatidylinositol 3-kinase pathways in human lung carcinoma cells. *J. Biol. Chem.* 281: 29614-29624.
- Chen, Y.J. and Chang, L.S. 2012. Gallic acid downregulates matrix metalloproteinase-2 (MMP-2) and MMP-9 in human leukemia cells with expressed Bcr/Abl. *Mol. Nutr. Food Res.* 56: 1398-1412.
- Chen, Y.J. and Chang, L.S. 2013. Hydroquinone-induced miR-122 down-regulation elicits ADAM17 up-regulation, leading to increased soluble TNF- α production in human leukemia cells with expressed Bcr/Abl. *Biochem. Pharmacol.* 86: 620-631.
- Ghosh, A., et al. 2014. c-Fos mediates repression of the apical sodium-dependent bile acid transporter by fibroblast growth factor-19 in mice. *Am. J. Physiol. Gastrointest. Liver Physiol.* 306: G163-G171.
- Liu, H., et al. 2015. Aberrantly expressed Fra-1 by IL-6/STAT3 transactivation promotes colorectal cancer aggressiveness through epithelial-mesenchymal transition. *Carcinogenesis.* 36: 459-468.
- Huang, C.H., et al. 2016. The association between p38 MAPK-mediated TNF- α /TNFR2 up-regulation and 2-(4-aminophenyl)-7-methoxybenzothiazole-induced apoptosis in human leukemia U-937 cells. *J. Cell. Physiol.* 231: 130-41.
- Dutta, P., et al. 2017. Biphasic Ccl20 regulation by Toll-like receptor 9 through the activation of ERK-AP-1 and non-canonical NF κ B signaling pathways. *Biochim. Biophys. Acta Gen. Subj.* 1861: 3365-3377.
- Senapati, P., et al. 2018. Oncogene c-Fos and mutant R175H p53 regulate expression of nucleophosmin implicating cancer manifestation. *FEBS J.* 285: 3503-3524.
- Meng, Q., et al. 2020. miR-181c regulates ischemia/reperfusion injury-induced neuronal cell death by regulating c-Fos signaling. *Pharmacazie* 75: 90-93.
- Zhu, S., et al. 2021. GDF15 promotes glioma stem cell-like phenotype via regulation of ERK1/2-c-Fos-LIF signaling. *Cell Death Discov.* 7: 3.

RESEARCH USE

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