SANTA CRUZ BIOTECHNOLOGY, INC.

# LEF-1 siRNA (h): sc-35804

## BACKGROUND

The TCF (T cell factor) family of transcription factors are activated by the Wnt-1 and Wingless pathways and are characterized by the presence of a conserved protein motif, the high mobility group (HMG) 1 box, which mediates DNA binding. The TCF (T cell factor) proteins, which are required during development, include TCF-1, which is essential for lymphoid cell development, and TCF-3 and TCF-4, which are implicated in neuronal development and LEF (leukemia enhancer factor). The Wnt mediated signaling pathway induces cytosolic β-catenin binding to TCF proteins within the nucleus, leading to the enhanced expression of the Wnt target genes. The β-catenin-TCF complexes are negatively regulated by the adenomatous polyposis coli (APC) tumor suppressor protein, which phosphorylates β-catenin and, in turn, increases the degradation of cytosolic β-catenin to, thereby, inhibit the transcriptional activity of the TCF proteins. Mutations in the APC gene, which are commonly observed in colorectal carcinomas, disrupt this regulatory pathway and correlate to an accumulation of β-catenin and the increased activation of the TCF target genes.

## CHROMOSOMAL LOCATION

Genetic locus: LEF1 (human) mapping to 4q25.

## PRODUCT

LEF-1 siRNA (h) 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 LEF-1 shRNA Plasmid (h): sc-35804-SH and LEF-1 shRNA (h) Lentiviral Particles: sc-35804-V as alternate gene silencing products.

For independent verification of LEF-1 (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-35804A, sc-35804B and sc-35804C.

## 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

LEF-1 siRNA (h) is recommended for the inhibition of LEF-1 expression in human cells.

## PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.

## 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

LEF-1 (B-10): sc-374412 is recommended as a control antibody for monitoring of LEF-1 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 LEF-1 gene expression knockdown using RT-PCR Primer: LEF-1 (h)-PR: sc-35804-PR (20 µl, 528 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

## SELECT PRODUCT CITATIONS


1. Zhou, F., et al. 2008. LEF-1 activates the transcription of E2F1. Biochem. Biophys. Res. Commun. 365: 149-153.
2. Deng, R., et al. 2011. PKB/Akt promotes DSB repair in cancer cells through upregulating Mre11 expression following ionizing radiation. Oncogene 30: 944-955.
3. Hitomi, Y., et al. 2019. NFKB1 and MANBA confer disease susceptibility to primary biliary cholangitis via independent putative primary functional variants. Cell. Mol. Gastroenterol. Hepatol. 7: 515-532.
4. Yuan, M., et al. 2020. DC-SIGN-LEF1/TCF1-miR-185 feedback loop promotes colorectal cancer invasion and metastasis. Cell Death Differ. 27: 379-395.
5. Zhang, G., et al. 2021. Downregulation of LEF-1 impairs myeloma cell growth through modulating CYLD/NFκB signaling. Technol. Cancer Res. Treat. 20: 15330338211034270.
6. Mao, X., et al. 2022. Impaired LEF-1 activation accelerates iPSC-derived keratinocytes differentiation in hutchinson-gilford progeria syndrome. Int. J. Mol. Sci. 23: 5499.


## RESEARCH USE

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