SANTA CRUZ BIOTECHNOLOGY, INC.

HLF siRNA (m): sc-146044

BACKGROUND

HLF (hepatic leukemia factor) is a 295 amino acid novel nuclear protein that is highly expressed in liver, with lower levels in lung and kidney. Belonging to the bZIP family and the PAR (proline and acidic-rich) subfamily of transcription regulatory proteins, HLF binds DNA specifically as a homodimer or heterodimer with other PAR factors. Chromosomal translocations fusing portions of this gene with the E2A gene causes a subset of childhood B-lineage acute lymphoid leukemias. The E2A-HLF chimeric fusion protein activates SLUG, a mammalian homologue of the cell death specification protein ces-1 in *Caenorhabditis elegans,* which appears to regulate an evolutionarily conserved cell survival program. E2A-HLF functions as a potent trans-activator. HLF is encoded by a gene located on human chromosome 17q22, which comprises over 2.5% of the human genome and encodes over 1,200 genes.

REFERENCES

1. Hunger, S.P., et al. 1992. Hlf, a novel hepatic bZIP protein, shows altered DNA-binding properties following fusion to E2A in t(17;19) acute lymphoblastic leukemia. Genes Dev. 6: 1608-1620.
2. Inaba, T., et al. 1994. DNA-binding specificity and *trans*-activating potential of the leukemia-associated E2A-hepatic leukemia factor fusion protein. Mol. Cell. Biol. 14: 3403-3413.
3. Falvey, E., et al. 1995. The rat hepatic leukemia factor (HLF) gene encodes two transcriptional activators with distinct circadian rhythms, tissue distributions and target preferences. EMBO J. 14: 4307-4317.
4. Hunger, S.P., et al. 1996. The proto-oncogene HLF and the related basic leucine zipper protein TEF display highly similar DNA-binding and transcriptional regulatory properties. Blood 87: 4607-4617.
5. Seidel, M.G. and Look, A.T. 2001. E2A-HLF usurps control of evolutionarily conserved survival pathways. Oncogene 20: 5718-5725.
6. LeBrun, D.P. 2003. E2A basic helix-loop-helix transcription factors in human leukemia. Front. Biosci. 8: s206-s222.
7. Matsunaga, T., et al. 2004. Regulation of annexin II by cytokine-initiated signaling pathways and E2A-HLF oncoprotein. Blood 103: 3185-3191.
8. Gachon, F., et al. 2004. The loss of circadian PAR bZip transcription factors results in epilepsy. Genes Dev. 18: 1397-1412.

CHROMOSOMAL LOCATION

Genetic locus: Hlf (mouse) mapping to 11 C.

PRODUCT

HLF 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 HLF shRNA Plasmid (m): sc-146044-SH and HLF shRNA (m) Lentiviral Particles: sc-146044-V as alternate gene silencing products.

For independent verification of HLF (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-146044A, sc-146044B and sc-146044C.

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

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

HLF (4D8): sc-134359 is recommended as a control antibody for monitoring of HLF 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-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ 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 HLF gene expression knockdown using RT-PCR Primer: HLF (m)-PR: sc-146044-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

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.