

▶ HELZ siRNA (m): sc-145934

BACKGROUND

Helicases comprise a class of enzymes that function as motor proteins which move along nucleic acid phosphodiester bonds, effectively separating two annealed nucleic acid strands. RNA helicases alter the conformation of RNA, specifically by unwinding double-stranded RNA regions to yield single RNA strands, a process which changes the biological activity of the RNA molecule. HELZ (helicase with zinc finger), also known as DHRC or HUMORF5, is a 1,942 amino acid nuclear protein that contains one C3H1-type zinc finger and belongs to the RNA helicase superfamily. Expressed ubiquitously during embryonic development, HELZ is thought to function as an RNA helicase that modifies RNA structure and plays a role in the development of multiple organs and tissues within the developing embryo.

REFERENCES

1. Nomura, N., Nagase, T., Miyajima, N., Sazuka, T., Tanaka, A., Sato, S., Seki, N., Kawarabayashi, Y., Ishikawa, K. and Tabata, S. 1994. Prediction of the coding sequences of unidentified human genes. II. The coding sequences of 40 new genes (KIAA0041-KIAA0080) deduced by analysis of cDNA clones from human cell line KG-1. *DNA Res.* 1: 223-229.
2. Wagner, D.S., Gan, L. and Klein, W.H. 1999. Identification of a differentially expressed RNA helicase by gene trapping. *Biochem. Biophys. Res. Commun.* 262: 677-684.
3. Online Mendelian Inheritance in Man, OMIM[™]. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 606699. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
4. Nagai, H., Yabe, A., Mine, N., Mikami, I., Fujiwara, H., Terada, Y., Hirano, A., Tsuneizumi, M., Yokota, T. and Emi, M. 2003. Down-regulation in human cancers of DRHC, a novel helicase-like gene from 17q25.1 that inhibits cell growth. *Cancer Lett.* 193: 41-47.
5. Suzuki, Y., Yamashita, R., Shiota, M., Sakakibara, Y., Chiba, J., Mizushima-Sugano, J., Nakai, K. and Sugano, S. 2004. Sequence comparison of human and mouse genes reveals a homologous block structure in the promoter regions. *Genome Res.* 14: 1711-1718.
6. Hamamoto, R., Furukawa, Y., Morita, M., Imura, Y., Silva, F.P., Li, M., Yagyu, R. and Nakamura, Y. 2004. SMYD3 encodes a histone methyltransferase involved in the proliferation of cancer cells. *Nat. Cell Biol.* 6: 731-740.

CHROMOSOMAL LOCATION

Genetic locus: Helz (mouse) mapping to 11 E1.

PRODUCT

HELZ 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see HELZ shRNA Plasmid (m): sc-145934-SH and HELZ shRNA (m) Lentiviral Particles: sc-145934-V as alternate gene silencing products.

For independent verification of HELZ (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-145934A, sc-145934B and sc-145934C.

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

HELZ siRNA (m) is recommended for the inhibition of HELZ 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 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor HELZ gene expression knockdown using RT-PCR Primer: HELZ (m)-PR: sc-145934-PR (20 μ l). 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.