

KLHL10 siRNA (h): sc-94031

BACKGROUND

KLHL10 (kelch-like 10) is a 608 amino acid cytoplasmic protein that contains one BTB (POZ) domain and six kelch repeats. The gene encoding KLHL10 maps to human chromosome 17q21.2 and mouse chromosome 11 D. Chromosome 17 comprises over 2.5% of the human genome and encodes over 1,200 genes. Two key tumor suppressor genes are associated with chromosome 17, namely, p53 and BRCA1. Tumor suppressor p53 is necessary for maintenance of cellular genetic integrity by moderating cell fate through DNA repair versus cell death. Malfunction or loss of p53 expression is associated with malignant cell growth and Li-Fraumeni syndrome. Like p53, BRCA1 is directly involved in DNA repair, though specifically it is recognized as a genetic determinant of early onset breast cancer and predisposition to cancers of the ovary, colon, prostate gland and fallopian tubes.

REFERENCES

- Hall, J.M., Friedman, L., Guenther, C., Lee, M.K., Weber, J.L., Black, D.M. and King, M.C. 1992. Closing in on a breast cancer gene on chromosome 17q. *Am. J. Hum. Genet.* 50: 1235-1242.
- Evans, S.C. and Lozano, G. 1997. The Li-Fraumeni syndrome: an inherited susceptibility to cancer. *Mol. Med. Today* 3: 390-395.
- Varley, J.M., Thorncroft, M., McGown, G., Appleby, J., Kelsey, A.M., Tricker, K.J., Evans, D.G. and Birch, J.M. 1997. A detailed study of loss of heterozygosity on chromosome 17 in tumours from Li-Fraumeni patients carrying a mutation to the TP53 gene. *Oncogene* 14: 865-871.
- Kersemaekers, A.M., Hermans, J., Fleuren, G.J. and van de Vijver, M.J. 1998. Loss of heterozygosity for defined regions on chromosomes 3, 11 and 17 in carcinomas of the uterine cervix. *Br. J. Cancer* 77: 192-200.
- Soussi, T., Dehouche, K. and Beroud, C. 2000. p53 website and analysis of p53 gene mutations in human cancer: forging a link between epidemiology and carcinogenesis. *Hum. Mutat.* 15: 105-113.
- Piura, B., Rabinovich, A. and Yanai-Inbar, I. 2001. Three primary malignancies related to BRCA mutation successively occurring in a BRCA1 185delAG mutation carrier. *Eur. J. Obstet. Gynecol. Reprod. Biol.* 97: 241-244.
- Minamoto, T., Buschmann, T., Habelhah, H., Matusevich, E., Tahara, H., Boerresen-Dale, A.L., Harris, C., Sidransky, D. and Ronai, Z. 2001. Distinct pattern of p53 phosphorylation in human tumors. *Oncogene* 20: 3341-3347.
- Yan, W., Ma, L., Burns, K.H. and Matzuk, M.M. 2004. Haploinsufficiency of kelch-like protein homolog 10 causes infertility in male mice. *Proc. Natl. Acad. Sci. USA* 101: 7793-7798.

CHROMOSOMAL LOCATION

Genetic locus: KLHL10 (human) mapping to 17q21.2.

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.

PRODUCT

KLHL10 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see KLHL10 shRNA Plasmid (h): sc-94031-SH and KLHL10 shRNA (h) Lentiviral Particles: sc-94031-V as alternate gene silencing products.

For independent verification of KLHL10 (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-94031A, sc-94031B and sc-94031C.

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

KLHL10 siRNA (h) is recommended for the inhibition of KLHL10 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor KLHL10 gene expression knockdown using RT-PCR Primer: KLHL10 (h)-PR: sc-94031-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.