SANTA CRUZ BIOTECHNOLOGY, INC.

Keratin 38 siRNA (h): sc-94216

BACKGROUND

The Keratin multigene family is made of "soft" epithelial cytokeratins and "hard" hair Keratins. While the epithelial cytokeratins are involved in the layering and formation of epithelia, the hair Keratins are responsible for creating nails and hair. There are two types of Keratins: the acidic class I Keratin proteins and the basic/neutral class II Keratin proteins. Keratin 38, also known as HA8, KRTHA8 or hHA8, is a 456 amino acid protein that is a member of the acidic class I Keratin protein family. Expressed in the human hair follicle, Keratin 38 forms heterodimers with type II Keratins. The gene encoding Keratin 38 maps to human chromosome 17. Two key tumor suppressor genes are associated with chromosome 17, namely, p53 and BRCA1. 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, and is liked to predisposition of cancers of the ovary, colon, prostate gland and fallopian tubes.

REFERENCES

1. 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.
2. Yu, J., Yu, D.W., Checkla, D.M., Freedberg, I.M. and Bertolino, A.P. 1993. Human hair keratins. J. Invest. Dermatol. 101: 56S-59S.
3. Rogers, M.A., Schweizer, J., Kreig, T. and Winter, H. 1994. A novel human type I hair keratin gene: evidence for two keratin hHa3 isoforms. Mol. Biol. Rep. 20: 155-161.
4. Evans, S.C. and Lozano, G. 1997. The Li-Fraumeni syndrome: an inherited susceptibility to cancer. Mol. Med. Today 3: 390-395.
5. Rogers, M.A., Winter, H., Wolf, C., Heck, M. and Schweizer, J. 1998. Characterization of a 190-kilobase pair domain of human type I hair keratin genes. J. Biol. Chem. 273: 26683-26691.
6. Langbein, L., Rogers, M.A., Winter, H., Praetzel, S., Beckhaus, U., Rackwitz, H.R. and Schweizer, J. 1999. The catalog of human hair keratins. I. Expression of the nine type I members in the hair follicle. J. Biol. Chem. 274: 19874-19884.
7. 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.
8. 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.
9. Langbein, L. and Schweizer, J. 2005. Keratins of the human hair follicle. Int. Rev. Cytol. 243: 1-78.

CHROMOSOMAL LOCATION

Genetic locus: KRT38 (human) mapping to 17q21.2.

PROTOCOLS

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

PRODUCT

Keratin 38 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 Keratin 38 shRNA Plasmid (h): sc-94216-SH and Keratin 38 shRNA (h) Lentiviral Particles: sc-94216-V as alternate gene silencing products.

For independent verification of Keratin 38 (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-94216A, sc-94216B and sc-94216C.

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

Keratin 38 siRNA (h) is recommended for the inhibition of Keratin 38 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 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Keratin 38 gene expression knockdown using RT-PCR Primer: Keratin 38 (h)-PR: sc-94216-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.