SANTA CRUZ BIOTECHNOLOGY, INC.

Keratin 85 siRNA (h): sc-96084

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 85, also known as KRT85, KRTHB5 or HB5, is a 507 amino acid protein that is a member of the basic/neutral class II keratin protein family. Synthesis of Keratin 85 begins at the base of the hair bulb and ends in the lower cortex of the hair shaft. Ectodermal dysplasia pure hair-nail type (EDPHN) is a disorder that causes full alopecia, nail dystrophy and hypotricosis. The gene encoding Keratin 85 maps to human chromosome 12q13.13. EDPHN can be autosomal dominat or recessive, and shows no other genetic abnormalities.

REFERENCES

1. Rogers, M.A., Langbein, L., Praetzel, S., Moll, I., Krieg, T., Winter, H. and Schweizer, J. 1997. Sequences and differential expression of three novel human type-II hair keratins. Differentiation 61: 187-194.
2. Rogers, M.A., Edler, L., Winter, H., Langbein, L., Beckmann, I. and Schweizer, J. 2005. Characterization of new members of the human type II keratin gene family and a general evaluation of the keratin gene domain on chromosome 12q13.13. J. Invest. Dermatol. 124: 536-544.
3. Schweizer, J., Bowden, P.E., Coulombe, P.A., Langbein, L., Lane, E.B., Magin, T.M., Maltais, L., Omary, M.B., Parry, D.A., Rogers, M.A. and Wright, M.W. 2006. New consensus nomenclature for mammalian keratins. J. Cell Biol. 174: 169-174.
4. Naeem, M., Wajid, M., Lee, K., Leal, S.M. and Ahmad, W. 2006. A mutation in the hair matrix and cuticle keratin KRTHB5 gene causes ectodermal dysplasia of hair and nail type. J. Med. Genet. 43: 274-279.
5. Rasool, M., Nawaz, S., Azhar, A., Wajid, M., Westermark, P., Baig, S.M., Klar, J. and Dahl, N. 2010. Autosomal recessive pure hair and nail ectodermal dysplasia linked to chromosome 12p11.1-q14.3 without KRTHB5 gene mutation. Eur. J. Dermatol. 20: 443-446.
6. Shimomura, Y., Wajid, M., Kurban, M., Sato, N. and Christiano, A.M. 2010. Mutations in the Keratin 85 (KRT85/hHb5) gene underlie pure hair and nail ectodermal dysplasia. J. Invest. Dermatol. 130: 892-895.
7. Burkard, T.R., Planyavsky, M., Kaupe, I., Breitwieser, F.P., Bürckstümmer, T., Bennett, K.L., Superti-Furga, G. and Colinge, J. 2011. Initial characterization of the human central proteome. BMC Syst. Biol. 5: 17.

CHROMOSOMAL LOCATION

Genetic locus: KRT85 (human) mapping to 12q13.13.

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

Keratin 85 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 85 shRNA Plasmid (h): sc-96084-SH and Keratin 85 shRNA (h) Lentiviral Particles: sc-96084-V as alternate gene silencing products.

For independent verification of Keratin 85 (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-96084A, sc-96084B and sc-96084C.

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 85 siRNA (h) is recommended for the inhibition of Keratin 85 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 85 gene expression knockdown using RT-PCR Primer: Keratin 85 (h)-PR: sc-96084-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.