

Keratin 82 siRNA (h): sc-96055

BACKGROUND

The keratin multigene family is made of the "soft" epithelial cytokeratins and the "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 hair keratins: the acidic type I hair keratin proteins and the basic/neutral type II hair keratin proteins. Keratin 82 (KRT82), also known as type-II keratin Kb22, type-II hair keratin Hb2 or KRTHB2, is a 513 amino acid protein that exists as a heterotetramer of two type I and two type II keratins. A member of the intermediate filament family, Keratin 82 is expressed in the hair cuticle and is encoded by a gene that maps to human chromosome 12q13.13. Chromosome 12 encodes over 1,100 genes and comprises approximately 4.5% of the human genome. Chromosome 12 is associated with a variety of diseases and afflictions, including hypochondrogenesis, achondrogenesis, Kniest dysplasia, Noonan syndrome and trisomy 12p.

REFERENCES

1. Heid, H.W., Werner, E. and Franke, W.W. 1986. The complement of native α -keratin polypeptides of hair-forming cells: a subset of eight polypeptides that differ from epithelial cytokeratins. *Differentiation* 32: 101-119.
2. Bowden, P.E., Hainey, S., Parker, G. and Hodgins, M.B. 1994. Sequence and expression of human hair keratin genes. *J. Dermatol. Sci.* 7: S152-S163.
3. Allen, T.L., Brothman, A.R., Carey, J.C. and Chance, P.F. 1996. Cytogenetic and molecular analysis in trisomy 12p. *Am. J. Med. Genet.* 63: 250-256.
4. Rogers, M.A., Winter, H., Langbein, L., Wolf, C. and Schweizer, J. 2000. Characterization of a 300 kbp region of human DNA containing the type II hair keratin gene domain. *J. Invest. Dermatol.* 114: 464-472.
5. Delgado Carrasco, J., Casanova Morcillo, A., Zabalza Alvillos, M. and Ayala Garces, A. 2001. Achondrogenesis type II-hypochondrogenesis: radiological features. Case report. *An. Esp. Pediatr.* 55: 553-557.
6. Yokoyama, T., Nakatani, S. and Murakami, A. 2003. A case of Kniest dysplasia with retinal detachment and the mutation analysis. *Am. J. Ophthalmol.* 136: 1186-1188.
7. 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.
8. 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.
9. Lo, F.S., Luo, J.D., Lee, Y.J., Shu, S.G., Kuo, M.T. and Chiou, C.C. 2009. High resolution melting analysis for mutation detection for PTPN11 gene: applications of this method for diagnosis of Noonan syndrome. *Clin. Chim. Acta* 409: 75-77.

PROTOCOLS

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

CHROMOSOMAL LOCATION

Genetic locus: KRT82 (human) mapping to 12q13.13.

PRODUCT

Keratin 82 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 Keratin 82 shRNA Plasmid (h): sc-96055-SH and Keratin 82 shRNA (h) Lentiviral Particles: sc-96055-V as alternate gene silencing products.

For independent verification of Keratin 82 (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-96055A, sc-96055B and sc-96055C.

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

Keratin 82 siRNA (h) is recommended for the inhibition of Keratin 82 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 Keratin 82 gene expression knockdown using RT-PCR Primer: Keratin 82 (h)-PR: sc-96055-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.