SANTA CRUZ BIOTECHNOLOGY, INC.

Keratin 28 siRNA (h): sc-94189

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 28 (Keratin, type I cytoskeletal 28), also known as Keratin-25D or type I inner root sheath-specific keratin-K25irs4, is a 464 amino acid cytoplasmic protein that belongs to the intermediate filament family. Highly expressed in scalp and skin, Keratin 28 is found at lower levels in thymus and the medulla of beard hair. The gene encoding Keratin 28 maps to human chromosome 17q21.2 and mouse chromosome 11 D.

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. Rogers, M.A., Nischt, R., Korge, B., Krieg, T., Fink, T.M., Lichter, P., Winter, H. and Schweizer, J. 1995. Sequence data and chromosomal localization of human type I and type II hair keratin genes. Exp. Cell Res. 220: 357-362.
3. 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.
4. Bowden, P.E., Hainey, S.D., Parker, G., Jones, D.O., Zimonjic, D., Popescu, N. and Hodgins, M.B. 1998. Characterization and chromosomal localization of human hair-specific keratin genes and comparative expression during the hair growth cycle. J. Invest. Dermatol. 110: 158-164.
5. 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.
6. Rogers, M.A., Winter, H., Langbein, L., Bleiler, R. and Schweizer, J. 2004. The human type I keratin gene family: characterization of new hair follicle specific members and evaluation of the chromosome 17q21.2 gene domain. Differentiation 72: 527-540.
7. 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.
8. Langbein, L., Rogers, M.A., Praetzel-Wunder, S., Helmke, B., Schirmacher, P. and Schweizer, J. 2006. K25 (K25irs1), K26 (K25irs2), K27 (K25irs3), and K28 (K25irs4) represent the type I inner root sheath keratins of the human hair follicle. J. Invest. Dermatol. 126: 2377-2386.

CHROMOSOMAL LOCATION

Genetic locus: KRT28 (human) mapping to 17q21.2.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PRODUCT

Keratin 28 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 28 shRNA Plasmid (h): sc-94189-SH and Keratin 28 shRNA (h) Lentiviral Particles: sc-94189-V as alternate gene silencing products.

For independent verification of Keratin 28 (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-94189A, sc-94189B and sc-94189C.

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 28 siRNA (h) is recommended for the inhibition of Keratin 28 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 28 gene expression knockdown using RT-PCR Primer: Keratin 28 (h)-PR: sc-94189-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

PROTOCOLS

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