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SANTA CRUZ BIOTECHNOLOGY, INC.

S-100A3 siRNA (m): sc-153188

BACKGROUND

The S-100 protein family consists of a group of calcium-binding proteins that are exclusively expressed in vertebrates and exhibit cell and tissue-specific expression. The expression levels of its members differ in various pathological conditions. The extracellular functions of the S-100 family may include the ability to enhance neurite outgrowth, involvement in inflammation and motility of tumor cells. S-100A3 (S100 calcium binding protein A3), also known as S100E, is a 101 amino acid cysteine-rich protein that belongs to the S-100 family of proteins. Expressed specifically at the inner endocuticle of hair fibers, S-100A3 contains two EF-hand domains and exists as a multimer. S-100A3 binds calcium with low affinity and zinc with high affinity and is believed to play a role in the calcium-dependent differentiation of cuticle cells and in the formation of hair shafts.

REFERENCES

1. Engelkamp, D., et al. 1993. Six S100 genes are clustered on human chromosome 1q21: identification of two genes coding for the two previously unreported calcium-binding proteins S-100D and S-100E. Proc. Natl. Acad. Sci. USA 90: 6547-6551.
2. Schäfer, B.W., et al. 1995. Isolation of a YAC clone covering a cluster of nine S-100 genes on human chromosome 1q21: rationale for a new nomenclature of the S-100 calcium-binding protein family. Genomics 25: 638-643.
3. Mittl, P.R., et al. 2002. Metal-free MIRAS phasing: structure of apo-S-100A3. Acta Crystallogr. D Biol. Crystallogr. 58: 1255-1261.
4. Kizawa, K., et al. 2002. Characterization of the cysteine-rich calcium-binding S-100A3 protein from human hair cuticles. Biochem. Biophys. Res. Commun. 299: 857-862.
5. Fritz, G., et al. 2002. The crystal structure of metal-free human EF-hand protein S-100A3 at 1.7-A resolution. J. Biol. Chem. 277: 33092-33098.
6. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 176992. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/

CHROMOSOMAL LOCATION

Genetic locus: S100a3 (mouse) mapping to 3 F1.

PRODUCT

S-100A3 siRNA (m) is a pool of 2 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 S-100A3 shRNA Plasmid (m): sc-153188-SH and S-100A3 shRNA (m) Lentiviral Particles: sc-153188-V as alternate gene silencing products.

For independent verification of S-100A3 (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-153188A and sc-153188B.

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

S-100A3 siRNA (m) is recommended for the inhibition of S-100A3 expression in mouse 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 S-100A3 gene expression knockdown using RT-PCR Primer: S-100A3 (m)-PR: sc-153188-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.

PROTOCOLS

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