SANTA CRUZ BIOTECHNOLOGY, INC.

Sur-8 siRNA (h): sc-76615

BACKGROUND

Sur-8, also known as SHOC2 (soc-2 suppressor of clear homolog *(C. elegans)*) or SOC-2, is a 582 amino acid protein and a member of the SHOC2 family that translocates from cytoplasm to nucleus upon growth factor stimulation. Existing as 2 alternatively spliced isoforms, Sur-8 contains 20 leucine-rich repeats (LRR) and positively modulates Ras-MAPK signal flow. Aberrantly acquired N-myristoylation of SHOC2 is the cause of Noonan-like syndrome with loose anagen hair, a disorder characterized by slow-growing, easily pluckable, thin and sparse hair. Children with Noonan-like syndrome with loose anagen hair exhibit low-set and posteriorly rotated ears, high forehead, palpebral ptosis, hypertelorism, macrocephaly, pectus anomalie along with short and webbed neck. The gene encoding Sur-8 maps to human chromosome 10q25.2 and murine chromosome 19 D2.

REFERENCES

1. Sieburth, D.S., et al. 1998. Sur-8, a conserved Ras-binding protein with leucine-rich repeats, positively regulates Ras-mediated signaling in *C. elegans*. Cell 94: 119-130.
2. Selfors, L.M., et al. 1998. Soc-2 encodes a leucine-rich repeat protein implicated in fibroblast growth factor receptor signaling. Proc. Natl. Acad. Sci. USA 95: 6903-6908.
3. Li, W., et al. 2000. The leucine-rich repeat protein Sur-8 enhances MAP kinase activation and forms a complex with Ras and Raf. Genes Dev. 14: 895-900.
4. Dai, P., et al. 2006. Erbin inhibits RAF activation by disrupting the Sur-8-Ras-Raf complex. J. Biol. Chem. 281: 927-933.
5. Rodriguez-Viciana, P., et al. 2006. A phosphatase holoenzyme comprised of Shoc2/Sur-8 and the catalytic subunit of PP1 functions as an M-Ras effector to modulate Raf activity. Mol. Cell 22: 217-230.
6. Cordeddu, V., et al. 2009. Mutation of SHOC2 promotes aberrant protein N-myristoylation and causes Noonan-like syndrome with loose anagen hair. Nat. Genet. 41: 1022-1026.
7. Online Mendelian Inheritance in Man, OMIM™. 2009. Johns Hopkins University, Baltimore, MD. MIM Number: 602775. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/

CHROMOSOMAL LOCATION

Genetic locus: SHOC2 (human) mapping to 10q25.2.

PRODUCT

Sur-8 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 Sur-8 shRNA Plasmid (h): sc-76615-SH and Sur-8 shRNA (h) Lentiviral Particles: sc-76615-V as alternate gene silencing products.

For independent verification of Sur-8 (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-76615A, sc-76615B and sc-76615C.

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

Sur-8 siRNA (h) is recommended for the inhibition of Sur-8 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.

GENE EXPRESSION MONITORING

Sur-8 (D-8): sc-514779 is recommended as a control antibody for monitoring of Sur-8 gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Sur-8 gene expression knockdown using RT-PCR Primer: Sur-8 (h)-PR: sc-76615-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.