SANTA CRUZ BIOTECHNOLOGY, INC.

SCML2 siRNA (h): sc-90912

BACKGROUND

In *Drosophila,* the Polycomb (PcG) gene family encodes chromatin proteins that are required for the repression of homeotic loci in embryonic development. PcG proteins work in conjunction with the trithorax-group (trxG), which activate homeobox gene expression during embryonic development. SCM (sex comb on midleg) is an important *Drosophila* PcG protein involved in transcriptional repression. SCML2 (sex comb on midleg-like 2) is a human homolog of this *Drosophila* protein. SCML2 is a ubiquitously expressed protein with predominant expression in placenta, testis and thymus. Upon DNA damage, SCML2 may be phosphorylated by ATR or ATM. Due to alternative splicing, two isoforms exist for this protein.

REFERENCES

1. Montini, E., et al. 1999. Identification of SCML2, a second human gene homologous to the *Drosophila* sex comb on midleg (Scm): a new gene cluster on Xp22. Genomics 58: 65-72.
2. Tomotsune, D., et al. 2000. A novel member of murine Polycomb-group proteins, Sex comb on midleg homolog protein, is highly conserved, and interacts with RAE28/mph1 *in vitro*. Differentiation 65: 229-239.
3. Toutain, A., et al. 2002. Refinement of the NHS locus on chromosome Xp22.13 and analysis of five candidate genes. Eur. J. Hum. Genet. 10: 516-520.
4. Sathyamurthy, A., et al. 2003. Crystal structure of the malignant brain tumor (MBT) repeats in sex comb on midleg-like 2 (SCML2). J. Biol. Chem. 278: 46968-46973.
5. Peterson, A.J., et al. 2004. Requirement for sex comb on midleg protein interactions in *Drosophila* Polycomb group repression. Genetics 167: 1225-1239.
6. Kim, C.A., Sawaya, M.R., Cascio, D., Kim, W. and Bowie, J.U. 2005. Structural organization of a sex-comb-on-midleg/polyhomeotic copolymer. J. Biol. Chem. 280: 27769-27775.

CHROMOSOMAL LOCATION

Genetic locus: SCML2 (human) mapping to Xp22.13.

PRODUCT

SCML2 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 SCML2 shRNA Plasmid (h): sc-90912-SH and SCML2 shRNA (h) Lentiviral Particles: sc-90912-V as alternate gene silencing products.

For independent verification of SCML2 (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-90912A, sc-90912B and sc-90912C.

PROTOCOLS

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

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

SCML2 siRNA (h) is recommended for the inhibition of SCML2 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

SCML2 (F-7): sc-271097 is recommended as a control antibody for monitoring of SCML2 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 SCML2 gene expression knockdown using RT-PCR Primer: SCML2 (h)-PR: sc-90912-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.