SANTA CRUZ BIOTECHNOLOGY, INC.

MIPOL1 siRNA (h): sc-92320

BACKGROUND

MIPOL1 (mirror-image polydactyly gene 1 protein) is a 442 amino acid protein that is expressed very weakly in skeletal muscle, heart, pancreas, kidney, liver and fetal kidney. Defects in the gene encoding MIPOL1 cause mirror-image polydactyly of hands and feet, a congenital anomaly that is characterized by mirror image duplication of digits. The MIPOL gene has also been implicated in a translocation event in which it rearranges with the PITX2 gene, resulting in a phenotype of mild craniofacial and acallosal central nervous system midline defects. Down-regulation of MIPOL1 expression is observed in a high percentage of nasopharyngeal carcinomas, suggesting that MIPOL1 is a tumor suppressor. There are three isoforms of MIPOL1 that are expressed as a result of alternative splicing events.

REFERENCES

1. Kondoh, S., Sugawara, H., Harada, N., Matsumoto, N., Ohashi, H., Sato, M., Kantaputra, P.N., Ogino, T., Tomita, H., Ohta, T., Kishino, T., Fukushima, Y., Niikawa, N. and Yoshiura, K. 2002. A novel gene is disrupted at a 14q13 breakpoint of t(2;14) in a patient with mirror-image polydactyly of hands and feet. J. Hum. Genet. 47: 136-139.
2. Kamnasaran, D., O'Brien, P.C., Zackai, E.H., Muenke, M., Ferguson-Smith, M.A. and Cox, D.W. 2003. Rearrangement in the PITX2 and MIPOL1 genes in a patient with a t(4;14) chromosome. Eur. J. Hum. Genet. 11: 315-324.
3. Online Mendelian Inheritance in Man, OMIM™. 2004. Johns Hopkins University, Baltimore, MD. MIM Number: 606850. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
4. Omi, M., Fisher, M., Maihle, N.J. and Dealy, C.N. 2005. Studies on epidermal growth factor receptor signaling in vertebrate limb patterning. Dev. Dyn. 233: 288-300.
5. Cheung, A.K., Lung, H.L., Ko, J.M., Cheng, Y., Stanbridge, E.J., Zabarovsky, E.R., Nicholls, J.M., Chua, D., Tsao, S.W., Guan, X.Y. and Lung, M.L. 2009. Chromosome 14 transfer and functional studies identify a candidate tumor suppressor gene, mirror image polydactyly 1, in nasopharyngeal carcinoma. Proc. Natl. Acad. Sci. USA 106: 14478-14483.

CHROMOSOMAL LOCATION

Genetic locus: MIPOL1 (human) mapping to 14q13.3.

PRODUCT

MIPOL1 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 MIPOL1 shRNA Plasmid (h): sc-92320-SH and MIPOL1 shRNA (h) Lentiviral Particles: sc-92320-V as alternate gene silencing products.

For independent verification of MIPOL1 (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-92320A, sc-92320B and sc-92320C.

RESEARCH USE

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

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

MIPOL1 siRNA (h) is recommended for the inhibition of MIPOL1 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 MIPOL1 gene expression knockdown using RT-PCR Primer: MIPOL1 (h)-PR: sc-92320-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.