SANTA CRUZ BIOTECHNOLOGY, INC.

OSAP siRNA (h): sc-89071

BACKGROUND

OSAP (ovary-specific acidic protein), also known as HUMMR (hypoxia up-regulated mitochondrial movement regulator), CESP-1 (corneal endothelium-specific protein 1) or C4orf49 (chromosome 4 open reading frame 49), is a 240 amino acid single-pass membrane protein that localizes to mitochondria and is predominantly expressed in steroid-producing tissues, including ovary, adrenal gland, and testis. In Y-1 cells, loss of OSAP inhibits 8-bromoadenosine-cAMP-induced progesterone production. Down-regulation of OSAP leads to mitochondrial fragmentation and a decrease in the cellular content of mitochondrial DNA, suggesting that it is critically involved in steroidogenesis by maintaining mitochondrial abundance and morphology. OSAP is encoded by a gene located on human chromosome 4q31.1. Human chromosome 4 encodes nearly 6% of the human genome and has the largest gene deserts (regions of the genome with no protein encoding genes) of all of the human chromosomes.

REFERENCES

1. Omura, T., et al. 1995. Gene regulation of steroidogenesis. J. Steroid Biochem. Mol. Biol. 53: 19-25.
2. Hillier, L.W., et al. 2005. Generation and annotation of the DNA sequences of human chromosomes 2 and 4. Nature 434: 724-731
3. Kinouchi, R., et al. 2006. Distribution of CESP-1 protein in the corneal endothelium and other tissues. Invest. Ophthalmol. Vis. Sci. 47: 1397-1403.
4. Galligan, C.L., et al. 2007. Distinctive gene expression signatures in rheumatoid arthritis synovial tissue fibroblast cells: correlates with disease activity. Genes Immun. 8: 480-491.
5. Matsumoto, T., et al. 2009. Expression of ovary-specific acidic protein in steroidogenic tissues: a possible role in steroidogenesis. Endocrinology 150: 3353-3359.
6. Li, Y., et al. 2009. HUMMR, a hypoxia- and HIF-1α-inducible protein, alters mitochondrial distribution and transport. J. Cell Biol. 185: 1065-1081.
7. Li, Y. and Rempe, D.A. 2010. During hypoxia, HUMMR joins the mitochondrial dance. Cell Cycle 9: 50-57.

CHROMOSOMAL LOCATION

Genetic locus: MGARP (human) mapping to 4q31.1.

PRODUCT

OSAP 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 OSAP shRNA Plasmid (h): sc-89071-SH and OSAP shRNA (h) Lentiviral Particles: sc-89071-V as alternate gene silencing products.

For independent verification of OSAP (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-89071A, sc-89071B and sc-89071C.

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

OSAP siRNA (h) is recommended for the inhibition of OSAP 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 OSAP gene expression knockdown using RT-PCR Primer: OSAP (h)-PR: sc-89071-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.