

ORAOV1 siRNA (h): sc-96780

BACKGROUND

ORAOV1 (oral cancer-overexpressed protein 1), also known as TAOS1 (tumor-amplified and overexpressed sequence 1), is a 137 amino acid protein that belongs to the ORAOV1 family. While highly expressed in placenta, kidney and skeletal muscle, ORAOV1 is amplified in oral cancer cells. The gene that encodes ORAOV1 consists of more than 22,000 bases and maps to human chromosome 11q13.3. Chromosome 11, which comprises approximately 4% of the human genome, is considered a gene and disease association-dense chromosome. The chromosome 11 encoded Atm gene is important for regulation of cell cycle arrest and apoptosis following double strand DNA breaks. Atm mutation leads to the disorder known as ataxia-telangiectasia. The blood disorders Sickle cell anemia and thalassemia are caused by HBB gene mutations, while Wilms' tumors, WAGR syndrome and Denys-Drash syndrome are associated with mutations of the WT1 gene. Jervell and Lange-Nielsen syndrome, Jacobsen syndrome, Niemann-Pick disease, hereditary angioedema and Smith-Lemli-Opitz syndrome are also associated with defects in chromosome 11-encoded genes.

REFERENCES

1. Fabiani, J.E., Avigliano, A., Dupont, J.C. and Fabiana, J.E. 2000. Hereditary angioedema. Long-term follow-up of 88 patients. Experience of the Argentine Allergy and Immunology Institute. *Allergol. Immunopathol.* 28: 267-271.
2. Huang, X., Gollin, S.M., Raja, S. and Godfrey, T.E. 2002. High-resolution mapping of the 11q13 amplicon and identification of a gene, TAOS1, that is amplified and overexpressed in oral cancer cells. *Proc. Natl. Acad. Sci. USA* 99: 11369-11374.
3. Online Mendelian Inheritance in Man, OMIM[™]. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 607224. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
4. Jira, P.E., Waterham, H.R., Wanders, R.J., Smeitink, J.A., Sengers, R.C. and Wevers, R.A. 2003. Smith-Lemli-Opitz syndrome and the DHCR7 gene. *Ann. Hum. Genet.* 67: 269-280.
5. Schuchman, E.H. 2007. The pathogenesis and treatment of acid sphingomyelinase-deficient Niemann-Pick disease. *J. Inher. Metab. Dis.* 30: 654-663.
6. Salmon Hillbertz, N.H., Isaksson, M., Karlsson, E.K., Hellmen, E., Pielberg, G.R., Savolainen, P., Wade, C.M., von Euler, H., Gustafson, U., Hedhammar, A., Nilsson, M., Lindblad-Toh, K., Andersson, L. and Andersson, G. 2007. Duplication of FGF3, FGF4, FGF19 and ORAOV1 causes hair ridge and predisposition to dermoid sinus in Ridgeback dogs. *Nat. Genet.* 39: 1318-1320.
7. Siem, G., Früh, A., Leren, T.P., Heimdal, K., Teig, E. and Harris, S. 2008. Jervell and Lange-Nielsen syndrome in Norwegian children: aspects around cochlear implantation, hearing, and balance. *Ear Hear.* 29: 261-269.
8. Bhuiyan, Z.A., Momenah, T.S., Amin, A.S., Al-Khadra, A.S., Alders, M., Wilde, A.A. and Mannens, M.M. 2008. An intronic mutation leading to incomplete skipping of exon-2 in KCNQ1 rescues hearing in Jervell and Lange-Nielsen syndrome. *Prog. Biophys. Mol. Biol.* 98: 319-327.

CHROMOSOMAL LOCATION

Genetic locus: LTO1 (human) mapping to 11q13.3.

PRODUCT

ORAOV1 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see ORAOV1 shRNA Plasmid (h): sc-96780-SH and ORAOV1 shRNA (h) Lentiviral Particles: sc-96780-V as alternate gene silencing products.

For independent verification of ORAOV1 (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-96780A, sc-96780B and sc-96780C.

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 μ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNase-free water makes a 10 μ M solution in a 10 μ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

ORAOV1 siRNA (h) is recommended for the inhibition of ORAOV1 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 μ M in 66 μ l. 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 ORAOV1 gene expression knockdown using RT-PCR Primer: ORAOV1 (h)-PR: sc-96780-PR (20 μ l). 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.