SANTA CRUZ BIOTECHNOLOGY, INC.

ANO6 siRNA (h): sc-96071

BACKGROUND

ANO6 (anoctamin 6), also known as TMEM16F, SCTS or BDPLT7, is a 910 amino acid multi-pass membrane protein that is expressed in retinal tissue, embryonic stem cells and fetal liver, as well as in intestinal cancer and chronic myologenous leukemia. Scott syndrome (SCTS) is a mild bleeding disorder that is caused by a defect in ANO6. Due to its expression in cancerous tissues, ANO6 may also be involved in tumorigenesis. The gene encoding ANO6 maps to chromosome 12q12. Encoding over 1,100 genes within 132 million bases, chromosome 12 makes up about 4.5% of the human genome. A number of skeletal deformities are linked to chromosome 12, including hypochondrogenesis, achondrogenesis and Kniest dysplasia. Noonan syndrome, which is characterized by heart and facial developmental defects, is caused by a mutant form of the PTPN11 gene product, SH-PTP2. Chromosome 12 is also home to a homeobox gene cluster which encodes crucial transcription factors for morphogenesis, and the natural killer complex gene cluster encoding C-type lectin proteins which mediate the NK cell response to MHC I interaction.

REFERENCES

1. Katoh, M., et al. 2003. FLJ10261 gene, located within the CCND1-EMS1 locus on human chromosome 11q13, encodes the eight-transmembrane protein homologous to C12orf3, C11orf25 and FLJ34272 gene products. Int. J. Oncol. 22: 1375-1381.
2. Katoh, M., et al. 2004. Identification and characterization of TMEM16E and TMEM16F genes in silico. Int. J. Oncol. 24: 1345-1349.
3. Zumkeller, W., et al. 2004. Genotype/phenotype analysis in a patient with pure and complete trisomy 12p. Am. J. Med. Genet. A 129A: 261-264.
4. Kelley, J., et al. 2005. Comparative genomics of natural killer cell receptor gene clusters. PLoS Genet. 1: e27.
5. Nishimura, G., et al. 2005. The phenotypic spectrum of COL2A1 mutations. Hum. Mutat. 26: 36-43.
6. Segel, R., et al. 2006. The natural history of trisomy 12p. Am. J. Med. Genet. A 140: 695-703.
7. Stein, R. 2007. Genetics of Noonan syndrome—a new gene, and the search is still on. Clin. Genet. 72: 402-404.

CHROMOSOMAL LOCATION

Genetic locus: ANO6 (human) mapping to 12q12.

PRODUCT

ANO6 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 ANO6 shRNA Plasmid (h): sc-96071-SH and ANO6 shRNA (h) Lentiviral Particles: sc-96071-V as alternate gene silencing products.

For independent verification of ANO6 (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-96071A, sc-96071B and sc-96071C.

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

ANO6 siRNA (h) is recommended for the inhibition of ANO6 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 ANO6 gene expression knockdown using RT-PCR Primer: ANO6 (h)-PR: sc-96071-PR (20 µl, 600 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Banerjee, J., et al. 2017. Regulatory roles of anoctamin-6 in human trabecular meshwork cells. Invest. Ophthalmol. Vis. Sci. 58: 492-501.
2. Li, B., et al. 2022. Significance of anoctamin 6 in progression and prognostic prediction of gastric adenocarcinoma. Histol. Histopathol. E-published.

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.