

ANO5 siRNA (h): sc-97047

BACKGROUND

ANO5 (anoctamin 5), also known as GDD1 (gnathodiaphyseal dysplasia 1 protein) or TMEM16E (transmembrane protein 16E), is a 913 amino acid multi-pass membrane protein that localizes to the endoplasmic reticulum and cell membrane. Expressed at high levels in kidney, brain, heart, skeletal muscle and lung, with weaker expression in spleen, thymus, placenta, fetal liver and periodontal ligament cells, ANO5 is thought to play a role in embryonic development, specifically in the development of the musculoskeletal system. Defects in the gene encoding ANO5 are the cause of gnathodiaphyseal dysplasia (GDD), Limb-girdle muscular dystrophy 2L (LGMD2L) and Miyoshi muscular dystrophy 3 (MMD3). GDD, also known as osteogenesis imperfecta with unusual skeletal lesions or gnathodiaphyseal sclerosis, is a rare skeletal disorder characterized by frequent bone fractures, jaw infection and sclerosis of tubular bones. LGMD2L is an autosomal recessive disease that causes weakness and degeneration of the muscles in the legs and arms. MMD3 is a muscular disease that appears during early to mid-adulthood and is characterized by weakness of the lower limbs.

REFERENCES

1. Akasaka, Y., et al. 1969. Familial cases of a new systemic bone disease, hereditary gnathodiaphyseal sclerosis. *Nippon Seikeigeka Gakkai Zasshi* 43: 381-394.
2. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 608662. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
3. Tsutsumi, S., et al. 2004. The novel gene encoding a putative transmembrane protein is mutated in gnathodiaphyseal dysplasia (GDD). *Am. J. Hum. Genet.* 74: 1255-1261.
4. Katoh, M. and Katoh, M. 2004. GDD1 is identical to TMEM16E, a member of the TMEM16 family. *Am. J. Hum. Genet.* 75: 927-928.
5. Katoh, M. and Katoh, M. 2004. Identification and characterization of TMEM16E and TMEM16F genes in silico. *Int. J. Oncol.* 24: 1345-1349.
6. Mizuta, K., et al. 2007. Molecular characterization of GDD1/TMEM16E, the gene product responsible for autosomal dominant gnathodiaphyseal dysplasia. *Biochem. Biophys. Res. Commun.* 357: 126-132.

CHROMOSOMAL LOCATION

Genetic locus: ANO5 (human) mapping to 11p14.3.

PRODUCT

ANO5 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 ANO5 shRNA Plasmid (h): sc-97047-SH and ANO5 shRNA (h) Lentiviral Particles: sc-97047-V as alternate gene silencing products.

For independent verification of ANO5 (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-97047A, sc-97047B and sc-97047C.

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

ANO5 siRNA (h) is recommended for the inhibition of ANO5 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 ANO5 gene expression knockdown using RT-PCR Primer: ANO5 (h)-PR: sc-97047-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Song, H.Y., et al. 2019. Anoctamin 5 regulates cell proliferation and migration in pancreatic cancer. *Int. J. Clin. Exp. Pathol.* 12: 4263-4270.

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.