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### SZABO-SCANDIC HandelsgmbH

Quellenstraße 110, A-1100 Wien

T. +43(0)1 489 3961-0

F. +43(0)1 489 3961-7

[mail@szabo-scandic.com](mailto:mail@szabo-scandic.com)

[www.szabo-scandic.com](http://www.szabo-scandic.com)

[linkedin.com/company/szaboscandic](https://www.linkedin.com/company/szaboscandic) 

# ANO2 siRNA (m): sc-154400

## BACKGROUND

ANO2 (anoctamin 2), also known as TMEM16B or C12orf3, is a 1,003 amino acid multi-pass membrane protein that shares 54% sequence similarity with TMEM16A, a related family member in the anoctamin family. ANO2 is expressed in retina (especially in the photoreceptor synaptic terminals) and functions as a calcium-activated chloride channel (CaCC) that may be involved in light perception amplification. Defects in the gene encoding ANO2 may be associated with von Willebrand disease type 3, an inherited autosomal recessive disorder that is characterized by errors in platelet adhesion. The gene encoding ANO2 maps to chromosome 12, which encodes over 1,100 genes and comprises approximately 4.5% of the human genome. Chromosome 12 is associated with a variety of diseases and afflictions, including hypochondrogenesis, achondrogenesis, Kniest dysplasia, Noonan syndrome and Trisomy 12p, which causes facial developmental defects and seizure disorders. Two isoforms of ANO2 exist due to alternative splicing events.

## REFERENCES

1. Katoh, M. and Katoh, M. 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. and Katoh, M. 2004. Identification and characterization of TMEM16E and TMEM16F genes in silico. *Int. J. Oncol.* 24: 1345-1349.
3. Segel, R., Peter, I., Demmer, L.A., Cowan, J.M., Hoffman, J.D. and Bianchi, D.W. 2006. The natural history of Trisomy 12p. *Am. J. Med. Genet. A* 140: 695-703.
4. Schneppenheim, R., Castaman, G., Federici, A.B., Kreuz, W., Marschalek, R., Oldenburg, J., Oyen, F. and Budde, U. 2007. A common 253 kb deletion involving VWF and TMEM16B in German and Italian patients with severe von Willebrand disease type 3. *J. Thromb. Haemost.* 5: 722-728.
5. Rock, J.R. and Harfe, B.D. 2008. Expression of TMEM16 paralogs during murine embryogenesis. *Dev. Dyn.* 237: 2566-2574.

## CHROMOSOMAL LOCATION

Genetic locus: Ano2 (mouse) mapping to 6 F3.

## PRODUCT

ANO2 siRNA (m) 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  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see ANO2 shRNA Plasmid (m): sc-154400-SH and ANO2 shRNA (m) Lentiviral Particles: sc-154400-V as alternate gene silencing products.

For independent verification of ANO2 (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-154400A, sc-154400B and sc-154400C.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.

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

## APPLICATIONS

ANO2 siRNA (m) is recommended for the inhibition of ANO2 expression in mouse 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  $\mu$ M in 66  $\mu$ 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 ANO2 gene expression knockdown using RT-PCR Primer: ANO2 (m)-PR: sc-154400-PR (20  $\mu$ 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.