SANTA CRUZ BIOTECHNOLOGY, INC.

# mucolipin 3 siRNA (m): sc-106265

## BACKGROUND

The mucolipins are a family of cation channel proteins designated mucolipin 1, mucolipin 2 and mucolipin 3. Mucolipins are predominantly expressed within the endocytic pathway and may regulate membrane traffic and/or degradation. Mucolipin 3, also known as TRPML3, TRP-ML3 or MCOLN3, is a 553 amino acid multi-pass membrane protein that belongs to the Polycystin family of transient receptors and localizes to lysosomes. Also expressed in hair celsl, mucolipin 3 may play a critical role at the ankle-link region during hair-bundle growth. Mutations in mucolipin 3 have been linked to hair cell degeneration leading to hearing loss and balance disorders. Defects in mucolipin 3 may be associated with mucolipidosis type IV, an autosomal recessive lysosomal storage disorder that causes severe neurodegeneration, achlorhydria and visual impairments. Two isoforms exists due to alternative splicing events.

## REFERENCES


1. Song, Y., et al. 2006. TRPML cation channels regulate the specialized lysosomal compartment of vertebrate B-lymphocytes. Eur. J. Cell Biol. 85: 1253-1264.
2. Venkatachalam, K., et al. 2006. Lysosomal localization of TRPML3 depends on TRPML2 and the mucolipidosis-associated protein TRPML1. J. Biol. Chem. 281: 17517-17527.
3. Cuajungco, M.P., et al. 2007. TRP channels as candidates for hearing and balance abnormalities in vertebrates. Biochim. Biophys. Acta 1772: 1022-1027.
4. Atiba-Davies, M., et al. 2007. TRPML3 and hearing loss in the varitint-waddler mouse. Biochim. Biophys. Acta 1772: 1028-1031.
5. Kim, H.J., et al. 2007. Gain-of-function mutation in TRPML3 causes the mouse varitint-waddler phenotype. J. Biol. Chem. 282: 36138-36142.
6. Karacsonyi, C., et al. 2007. Mucolipin-2 localizes to the Arf6-associated pathway and regulates recycling of GPI-APs. Traffic 8: 1404-1414.
7. van Aken, A.F., et al. 2008. TRPML3 mutations cause impaired mechano-electrical transduction and depolarization by an inward-rectifier cation current in auditory hair cells of varitint-waddler mice. J. Physiol. 586: 5403-5418.


## CHROMOSOMAL LOCATION

Genetic locus: Mcoln3 (mouse) mapping to 3 H2.

## PRODUCT

mucolipin 3 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see mucolipin 3 shRNA Plasmid (m): sc-106265-SH and mucolipin 3 shRNA (m) Lentiviral Particles: sc-106265-V as alternate gene silencing products.

For independent verification of mucolipin 3 (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-106265A, sc-106265B and sc-106265C.

## 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

mucolipin 3 siRNA (m) is recommended for the inhibition of mucolipin 3 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 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 mucolipin 3 gene expression knockdown using RT-PCR Primer: mucolipin 3 (m)-PR: sc-106265-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.