SANTA CRUZ BIOTECHNOLOGY, INC.

# PIEZO2 siRNA (m): sc-140502

## BACKGROUND

PIEZO2 (piezo-type mechanosensitive ion channel component 2), also known as C18orf30, C18orf58 or FAM38B, is a 2,752 amino acid multi-pass membrane protein containing 37 transmembrane domains. Four isoforms of PIEZO2 exist produced by alternative splicing. PIEZO2 is a component of mechanically-activated cation channels, which quickly adapt mechanically activated currents in somatosensory neurons. This mechanotransduction is important for light-touch mechanosensation. Defects in the PIEZO2 gene results in Gordon syndrome, a rare autosomal-dominant disorder characterized by congenital contractors of the hands and feet and cleft palate, Marden-Walker syndrome, characterized by blepharophimosis and other facial phenotypes, and distal arthrogryposis type 5. The PIEZO2 gene is widely conserved, including in mouse, rat, canine, bovine, chicken, zebrafish, *Drosophila* and *C. elegans*.

## REFERENCES


1. Xiao, R. and Xu, X.Z. 2010. Mechanosensitive channels: in touch with Piezo. Curr. Biol. 20: R936-R938.
2. Coste, B., et al. 2010. Piezo1 and Piezo2 are essential components of distinct mechanically activated cation channels. Science 330: 55-60.
3. Coste, B. 2011. Feeling the pressure? Identification of two proteins activated by mechanical forces. Med. Sci. 27: 17-19.
4. Dubin, A.E., et al. 2012. Inflammatory signals enhance piezo2-mediated mechanosensitive currents. Cell Rep. 2: 511-517.
5. Coste, B., et al. 2013. Gain-of-function mutations in the mechanically activated ion channel PIEZO2 cause a subtype of distal arthrogryposis. Proc. Natl. Acad. Sci. USA 110: 4667-4672.
6. McMillin, M.J., et al. 2014. Mutations in PIEZO2 cause Gordon syndrome, Marden-Walker syndrome, and distal arthrogryposis type 5. Am. J. Hum. Genet. 94: 734-744.
7. Schrenk-Siemens, K., et al. 2015. PIEZO2 is required for mechanotransduction in human stem cell-derived touch receptors. Nat. Neurosci. 18: 10-16.


## CHROMOSOMAL LOCATION

Genetic locus: Piezo2 (mouse) mapping to 18 E1.

## PRODUCT

PIEZO2 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 PIEZO2 shRNA Plasmid (m): sc-140502-SH and PIEZO2 shRNA (m) Lentiviral Particles: sc-140502-V as alternate gene silencing products.

For independent verification of PIEZO2 (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-140502A, sc-140502B and sc-140502C.

## PROTOCOLS

See our web site at 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 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

PIEZO2 siRNA (m) is recommended for the inhibition of PIEZO2 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 PIEZO2 gene expression knockdown using RT-PCR Primer: PIEZO2 (m)-PR: sc-140502-PR (20 µl, 464 bp). 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.