SANTA CRUZ BIOTECHNOLOGY, INC.

# C20orf54 siRNA (m): sc-141873

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*The Power to Question*

## BACKGROUND

C20orf54, also known as SLC52A3 (solute carrier family 52 (riboflavin transporter), member 3) or RTF2 (riboflavin transporter 2), is a multi-pass membrane protein that is highly expressed in testis, small intestine and prostate. C20orf54 belongs to the riboflavin transporter family and likely plays a role in riboflavin absorption in the intestine. Defects in the gene encoding C20orf54 are associated with Brown-Vialetto-Van Laere syndrome (BVVLS1) and Fazio-Londe disease (FALOND). BVVLS1 is a rare disease characterized by nerve problems, particularly hearing loss. FALOND is a another rare neurological disease that is characterized by progressive cranial nerve dysfunction with respiratory failure. C20orf54 exists as two isoforms due to alternative splicing events and is encoded by a gene which maps to chromosome 20p13.

## REFERENCES


1. Yamamoto, S., et al. 2009. Identification and functional characterization of rat riboflavin transporter 2. J. Biochem. 145: 437-443.
2. Green, P., et al. 2010. Brown-Vialetto-Van Laere syndrome, a ponto-bulbar palsy with deafness, is caused by mutations in C20orf54. Am. J. Hum. Genet. 86: 485-489.
3. Yao, Y., et al. 2010. Identification and comparative functional characterization of a new human riboflavin transporter hRFT3 expressed in the brain. J. Nutr. 140: 1220-1226.
4. Subramanian, V.S., et al. 2011. Role of cysteine residues in cell surface expression of the human riboflavin transporter-2 (hRFT2) in intestinal epithelial cells. Am. J. Physiol. Gastrointest. Liver Physiol. 301: G100-G109.
5. Bosch, A.M., et al. 2011. Brown-Vialetto-Van Laere and Fazio Londe syndrome is associated with a riboflavin transporter defect mimicking mild MADD: a new inborn error of metabolism with potential treatment. J. Inherit. Metab. Dis. 34: 159-164.
6. Yoshimatsu, H., et al. 2014. Functional involvement of RFVT3/SLC52A3 in intestinal riboflavin absorption. Am. J. Physiol. Gastrointest. Liver Physiol. 306: G102-G110.


## CHROMOSOMAL LOCATION

Genetic locus: Slc52a3 (mouse) mapping to 2 G3.

## PRODUCT

C20orf54 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 C20orf54 shRNA Plasmid (m): sc-141873-SH and C20orf54 shRNA (m) Lentiviral Particles: sc-141873-V as alternate gene silencing products.

For independent verification of C20orf54 (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-141873A, sc-141873B and sc-141873C.

## RESEARCH USE

For research use only, not for use in diagnostic procedures.

## 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

C20orf54 siRNA (m) is recommended for the inhibition of C20orf54 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 C20orf54 gene expression knockdown using RT-PCR Primer: C20orf54 (m)-PR: sc-141873-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

## PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.