

# COG7 siRNA (m): sc-142455

## BACKGROUND

The structure and function of the Golgi apparatus is controlled by a number of multi-protein complexes that are involved in glycosylation reactions and vesicular transport. The conserved oligomeric Golgi (COG) complex consists of three subcomplexes, termed LDLC, SEC34 and GTT (Golgi transport complex), all of which contain proteins necessary for proper Golgi operation. COG7 (Conserved oligomeric Golgi complex component 7), also known as CDG2E, is a 770 amino acid peripheral membrane protein. One of several members of the COG complex, COG7 is necessary for normal golgi function, namely maintaining Golgi structure and mediating vesicle docking and fusion. Defects in the gene encoding COG7 are the cause of congenital disorder of glycosylation type 2E (CDG2E), an inherited defect in N-glycosylation that results in underglycosylated serum proteins and is characterized by psychomotor retardation, hypotonia, coagulation disorders and immunodeficiency.

## REFERENCES

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3. Wu, X., et al. 2004. Mutation of the COG complex subunit gene COG7 causes a lethal congenital disorder. *Nat. Med.* 10: 518-523.
4. Oka, T., et al. 2005. Genetic analysis of the subunit organization and function of the conserved oligomeric golgi (COG) complex: studies of COG5- and COG7-deficient mammalian cells. *J. Biol. Chem.* 280: 32736-32745.
5. Steet, R., et al. 2006. COG-7-deficient human fibroblasts exhibit altered recycling of Golgi proteins. *Mol. Biol. Cell* 17: 2312-2321.
6. Shestakova, A., et al. 2006. COG complex-mediated recycling of Golgi glycosyltransferases is essential for normal protein glycosylation. *Traffic* 7: 191-204.
7. Morava, E., et al. 2007. A common mutation in the COG7 gene with a consistent phenotype including microcephaly, adducted thumbs, growth retardation, VSD and episodes of hyperthermia. *Eur. J. Hum. Genet.* 15: 638-645.

## CHROMOSOMAL LOCATION

Genetic locus: Cog7 (mouse) mapping to 7 F2.

## PRODUCT

COG7 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 COG7 shRNA Plasmid (m): sc-142455-SH and COG7 shRNA (m) Lentiviral Particles: sc-142455-V as alternate gene silencing products.

For independent verification of COG7 (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-142455A, sc-142455B and sc-142455C.

## 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

COG7 siRNA (m) is recommended for the inhibition of COG7 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 COG7 gene expression knockdown using RT-PCR Primer: COG7 (m)-PR: sc-142455-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.

## PROTOCOLS

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