SANTA CRUZ BIOTECHNOLOGY, INC.

COG1 siRNA (m): sc-142450

BACKGROUND

COG1 (conserved oligomeric Golgi complex subunit 1) is a 980 amino acid protein that is a component of a complex that is required for normal function of the Golgi apparatus. Localized to the cytosolic side of the Golgi membrane, the COG peripheral membrane complex influences Golgi morphology and localization and may also act as a retrograde vesicle tethering factor in intra-Glogi trafficking. Protein components of the COG complex consist of COG1-8 and are distributed into two lobes, Lobe A and Lobe B. Mutations and mal-function of the complex are interfere with glycosylation, protein sorting and Golgi integrity. Specifically, defects in the gene encoding COG1 are the cause of congenital disorder of glycosylation type 2G, an inherited disease caused by a defect in glycoprotein biosynthesis leading to under-glycosylated serum glycoproteins. Clinical features of this multisystem disease include immuno-deficiency, dysmorphic features, coagulation disorders, psycomotor retardation and hypotonia.

REFERENCES

1. Ungar, D., et al. 2002. Characterization of a mammalian Golgi-localized protein complex, COG, that is required for normal Golgi morphology and function. J. Cell Biol. 157: 405-415.
2. Park, D.H., et al. 2003. The *Arabidopsis* COG1 gene encodes a Dof domain transcription factor and negatively regulates phytochrome signaling. Plant J. 34: 161-171.
3. Vasile, E., et al. 2006. IntraGolgi distribution of the conserved oligomeric Golgi (COG) complex. Exp. Cell Res. 312: 3132-3141.
4. Foulquier, F., et al. 2006. Conserved oligomeric Golgi complex subunit 1 deficiency reveals a previously uncharacterized congenital disorder of glycosylation type II. Proc. Natl. Acad. Sci. USA 103: 3764-3769.
5. Smith, R.D. and Lupashin, V.V. 2008. Role of the conserved oligomeric Golgi (COG) complex in protein glycosylation. Carbohydr. Res. 343: 2024-2031.

CHROMOSOMAL LOCATION

Genetic locus: Cog1 (mouse) mapping to 11 E2.

PRODUCT

COG1 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 COG1 shRNA Plasmid (m): sc-142450-SH and COG1 shRNA (m) Lentiviral Particles: sc-142450-V as alternate gene silencing products.

For independent verification of COG1 (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-142450A, sc-142450B and sc-142450C.

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

COG1 siRNA (m) is recommended for the inhibition of COG1 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.

GENE EXPRESSION MONITORING

COG1 (44): sc-136179 is recommended as a control antibody for monitoring of COG1 gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluo-rescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor COG1 gene expression knockdown using RT-PCR Primer: COG1 (m)-PR: sc-142450-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.