SANTA CRUZ BIOTECHNOLOGY, INC.

GCC2 siRNA (h): sc-94505

BACKGROUND

GCC2 (GRIP and coiled-coil domain containing 2), also known as REN53, is a 1,583 amino acid protein that localizes to both the cytoplasm and the membrane of the Golgi apparatus and contains one GRIP domain. Expressed ubiquitously, GCC2 exists as two alternatively spliced isoforms and is thought to be involved in the maintenance of Golgi structure, as well as CD-MPR recycling and function. The gene encoding GCC2 maps to human chromosome 2, which houses over 1,400 genes and comprises nearly 8% of the human genome. Harlequin icthyosis, a rare and morbid skin deformity, is associated with mutations in the ABCA12 gene, while the lipid metabolic disorder sitosterolemia is associated with defects in the ABCG5 and ABCG8 genes. Additionally, an extremely rare recessive genetic disorder, Alström syndrome, is caused by mutations in the ALMS1 gene, which maps to chromosome 2.

REFERENCES

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2. Derby, M.C., et al. 2004. Mammalian GRIP domain proteins differ in their membrane binding properties and are recruited to distinct domains of the TGN. J. Cell Sci. 117: 5865-5874.
3. Luke, M.R., et al. 2005. The *trans*-Golgi network GRIP-domain proteins form α-helical homodimers. Biochem. J. 388: 835-841.
4. Ciccarelli, F.D., et al. 2005. Complex genomic rearrangements lead to novel primate gene function. Genome Res. 15: 343-351.
5. Reddy, J.V., et al. 2006. A functional role for the GCC185 golgin in mannose 6-phosphate receptor recycling. Mol. Biol. Cell 17: 4353-4363.
6. Derby, M.C., et al. 2007. The *trans*-Golgi network golgin, GCC185, is required for endosome-to-Golgi transport and maintenance of Golgi structure. Traffic 8: 758-773.
7. Burguete, A.S., et al. 2008. Rab and Arl GTPase family members cooperate in the localization of the golgin GCC185. Cell 132: 286-298.
8. Hayes, G.L., et al. 2009. Multiple Rab GTPase binding sites in GCC185 suggest a model for vesicle tethering at the *trans*-Golgi. Mol. Biol. Cell 20: 209-217.

CHROMOSOMAL LOCATION

Genetic locus: GCC2 (human) mapping to 2q12.3.

PRODUCT

GCC2 siRNA (h) 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 GCC2 shRNA Plasmid (h): sc-94505-SH and GCC2 shRNA (h) Lentiviral Particles: sc-94505-V as alternate gene silencing products.

For independent verification of GCC2 (h) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-94505A, sc-94505B and sc-94505C.

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

GCC2 siRNA (h) is recommended for the inhibition of GCC2 expression in human 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 GCC2 gene expression knockdown using RT-PCR Primer: GCC2 (h)-PR: sc-94505-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.