SANTA CRUZ BIOTECHNOLOGY, INC.

GOLPH3 siRNA (h): sc-91952

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The Power to Question

BACKGROUND

GOLPH3 (Golgi phosphoprotein 3), also known as GOPP1, GPP34 or MIDAS, is a 298 amino acid protein that localizes to both the cytoplasm and the Golgi stack membrane where it is thought to play a regulatory role in protein trafficking within the Golgi. GOLPH3 is subject to post-translational phosphorylation and is encoded by a gene which maps to human chromosome 5. Chromosome 5 contains 181 million base pairs and comprises nearly 6% of the human genome. Chromosome 5 is associated with Cockayne syndrome through the ERCC8 gene and familial adenomatous polyposis through the adenomatous polyposis coli (APC) tumor suppressor gene. Treacher Collins syndrome is also chromosome 5-associated and is caused by insertions or deletions within the TCOF1 gene. Deletion of the p arm of chromosome 5 leads to Cri du chat syndrome, while deletion of the q arm or of chromosome 5 altogether is common in therapy-related acute myelogenous leukemias and myelodysplastic syndrome.

REFERENCES

1. Dixon, M.J., et al. 1991. The gene for Treacher Collins syndrome maps to the long arm of chromosome 5. Am. J. Hum. Genet. 49: 17-22.
2. Saltman, D.L., et al. 1993. A physical map of 15 loci on human chromosome 5q23-q33 by two-color fluorescence *in situ* hybridization. Genomics 16: 726-732.
3. Bell, A.W., et al. 2001. Proteomics characterization of abundant Golgi membrane proteins. J. Biol. Chem. 276: 5152-5165.
4. Nakashima-Kamimura, N., et al. 2005. MIDAS/GPP34, a nuclear gene product, regulates total mitochondrial mass in response to mitochondrial dysfunction. J. Cell Sci. 118: 5357-5367.
5. South, S.T., et al. 2006. A new genomic mechanism leading to Cri du chat syndrome. Am. J. Med. Genet. A 140: 2714-2720.
6. Cleaver, J.E., et al. 2007. Cockayne syndrome exhibits dysregulation of p21 and other gene products that may be independent of transcription-coupled repair. Neuroscience 145: 1300-1308.

CHROMOSOMAL LOCATION

Genetic locus: GOLPH3 (human) mapping to 5p13.3.

PRODUCT

GOLPH3 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 GOLPH3 shRNA Plasmid (h): sc-91952-SH and GOLPH3 shRNA (h) Lentiviral Particles: sc-91952-V as alternate gene silencing products.

For independent verification of GOLPH3 (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-91952A, sc-91952B and sc-91952C.

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

GOLPH3 siRNA (h) is recommended for the inhibition of GOLPH3 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.

GENE EXPRESSION MONITORING

GOLPH3 (905CT9.1.1): sc-517333 is recommended as a control antibody for monitoring of GOLPH3 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).

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor GOLPH3 gene expression knockdown using RT-PCR Primer: GOLPH3 (h)-PR: sc-91952-PR (20 µl, 503 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Kunigou, O., et al. 2011. Role of GOLPH3 and GOLPH3L in the proliferation of human rhabdomyosarcoma. Oncol. Rep. 26: 1337-1342.
2. Li, X., et al. 2016. Golgi phosphoprotein 3 inhibits the apoptosis of human glioma cells in part by downregulating N-Myc downstream regulated gene 1. Med. Sci. Monit. 22: 3535-3543.

PROTOCOLS

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