

Nsg2 siRNA (m): sc-150077

BACKGROUND

HMP19, also known as NSG2 (neuron-specific protein family member 2), is a 171 amino acid single-pass membrane protein that belongs to the NSG family. HMP19 mainly localizes to Golgi stack, but is also found in small vacuolar organelles and multivesicular bodies. The HMP19 gene is conserved in chimpanzee, canine, bovine, mouse, rat, chicken and zebrafish, and maps to human chromosome 5q35.2. With 181 million base pairs encoding around 1,000 genes, chromosome 5 is about 6% of human genomic DNA. It 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. Deletion of 5q or chromosome 5 altogether is common in therapy-related acute myelogenous leukemias and myelodysplastic syndrome.

REFERENCES

1. Dixon, M.J., Read, A.P., Donnai, D., Colley, A., Dixon, J. and Williamson, R. 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., Dolganov, G.M., Warrington, J.A., Wasmuth, J.J. and Lovett, M. 1993. A physical map of 15 loci on human chromosome 5q23-q33 by two-color fluorescence *in situ* hybridization. *Genomics* 16: 726-732.
3. Saberan-Djoneidi, D., Marey-Semper, I., Picart, R., Studler, J.M., Tougaard, C., Glowinski, J. and Levi-Strauss, M. 1995. A 19-kDa protein belonging to a new family is expressed in the Golgi apparatus of neural cells. *J. Biol. Chem.* 270: 1888-1893.
4. Goehler, H., Lalowski, M., Stelzl, U., Waelter, S., Stroedicke, M., Worm, U., Droege, A., Lindenberg, K.S., Knoblich, M., Haenig, C., Herbst, M., Suopanki, J., Scherzinger, E., Abraham, C., Bauer, B., Hasenbank, R., et al. 2004. A protein interaction network links GIT1, an enhancer of huntingtin aggregation, to Huntington's disease. *Mol. Cell* 15: 853-865.
5. South, S.T., Swensen, J.J., Maxwell, T., Rope, A., Brothman, A.R. and Chen, Z. 2006. A new genomic mechanism leading to Cri du chat syndrome. *Am. J. Med. Genet. A* 140: 2714-2720.
6. Cleaver, J.E., Hefner, E., Laposa, R.R., Karentz, D. and Marti, T. 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: Nsg2 (mouse) mapping to 11 A4.

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.

PRODUCT

Nsg2 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Nsg2 shRNA Plasmid (m): sc-150077-SH and Nsg2 shRNA (m) Lentiviral Particles: sc-150077-V as alternate gene silencing products.

For independent verification of Nsg2 (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-150077A, sc-150077B and sc-150077C.

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 μ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNase-free water makes a 10 μ M solution in a 10 μ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

Nsg2 siRNA (m) is recommended for the inhibition of Nsg2 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 μ M in 66 μ 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 Nsg2 gene expression knockdown using RT-PCR Primer: Nsg2 (m)-PR: sc-150077-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.