SANTA CRUZ BIOTECHNOLOGY, INC.

NARG1 siRNA (m): sc-149832

BACKGROUND

NARG1 (NMDA (N-methyl-d-aspartate) receptor-regulated gene 1), also known as NATH (N-terminal acetyltransferase), TBDN100 (tubedown-1) or Ga19 (gastric cancer antigen Ga19), is a cytoplasmic protein that contains eight TPR repeats. NARG1 is expressed at high levels in dividing tissues such as bone marrow, testis and embryonal brain and it is overexpressed in papillary thyroid carcinomas. NARG1 interacts with ARD1 or ARD2 forming a complex that exhibits N-terminal (α) acetyltransferase activity. The complex interacts with ribosomal subunits functioning in cotranslational acetylation. During apoptosis, both NARG1 and ARD1 are cleaved by caspases which results in decreased acetyltransferase activity. Knockdown of NARG1 in HeLa cells leads to apoptosis, indicating that properly functioning NARG1 is essential for cell viability. In addition, this suggests NARG1 as a potential target in cancer therapy.

REFERENCES

1. Sugiura, N., et al. 2001. N-methyl-d-aspartate receptors regulate a group of transiently expressed genes in the developing brain. J. Biol. Chem. 276: 14257-14263.
2. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 608000. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
3. Fluge, O., et al. 2002. NATH, a novel gene overexpressed in papillary thyroid carcinomas. Oncogene 21: 5056-5068.
4. Sugiura, N., et al. 2003. An evolutionarily conserved N-terminal acetyltransferase complex associated with neuronal development. J. Biol. Chem. 278: 40113-40120.
5. Asaumi, M., et al. 2005. Interaction of N-terminal acetyltransferase with the cytoplasmic domain of β-amyloid precursor protein and its effect on A β secretion. J. Biochem. 137: 147-155.
6. Arnesen, T., et al. 2005. Identification and characterization of the human ARD1-NATH protein acetyltransferase complex. Biochem. J. 386: 433-443.
7. Arnesen, T., et al. 2005. Expression of N-acetyl transferase human and human Arrest defective 1 proteins in thyroid neoplasms. Thyroid 15: 1131-1136.

CHROMOSOMAL LOCATION

Genetic locus: Naa15 (mouse) mapping to 3 C.

PRODUCT

NARG1 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 NARG1 shRNA Plasmid (m): sc-149832-SH and NARG1 shRNA (m) Lentiviral Particles: sc-149832-V as alternate gene silencing products.

For independent verification of NARG1 (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-149832A, sc-149832B and sc-149832C.

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

NARG1 siRNA (m) is recommended for the inhibition of NARG1 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

NARG1 (D-7): sc-365931 is recommended as a control antibody for monitoring of NARG1 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) Immunofluorescence: 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 NARG1 gene expression knockdown using RT-PCR Primer: NARG1 (m)-PR: sc-149832-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.