SANTA CRUZ BIOTECHNOLOGY, INC.

DRG1 siRNA (m): sc-62241

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The Power to Question

BACKGROUND

DRG1 (developmentally regulated GTP binding protein 1), also known as NEDD3 (neural precursor cell expressed developmentally down-regulated protein 3), is a 367 amino acid protein that localizes to the cytoplasm and belongs to the GTP1/OBG family. Expressed at high levels in heart, kidney and skeletal muscle and at lower levels in brain, liver, placenta, lung, colon and spleen, DRG1 binds to TAL1 and TAL2 and is thought to play a role in cell proliferation and differentiation, as well as in apoptosis, suggesting a role in tumor formation and metastasis. DRG1 is subject to polyubiquitination and sumoylation, the former of which induces proteolytic degradation. The gene encoding DRG1 maps to human chromosome 22q12.2, which houses over 500 genes and is the second smallest human chromosome. Mutations in several of the genes that map to chromosome 22 are involved in the development of Phelan-McDermid syndrome, Neurofibromatosis type 2, autism and schizophrenia.

REFERENCES

1. Sazuka, T., et al. 1992. DRG: a novel developmentally regulated GTP-binding protein. Biochem. Biophys. Res. Commun. 189: 363-370.
2. Sazuka, T., et al. 1992. Expression of DRG during murine embryonic development. Biochem. Biophys. Res. Commun. 189: 371-377.
3. Schenker, T., et al. 1994. A novel GTP-binding protein which is selectively repressed in SV40 transformed fibroblasts. J. Biol. Chem. 269: 25447-25453.
4. Mahajan, M.A., et al. 1996. Association of a novel GTP binding protein, DRG, with TAL oncogenic proteins. Oncogene 12: 2343-2350.
5. Li, B., et al. 2000. DRG represents a family of two closely related GTP-binding proteins. Biochim. Biophys. Acta 1491: 196-204.
6. Bandyopadhyay, S., et al. 2003. The DRG1 gene suppresses tumor metastasis in prostate cancer. Cancer Res. 63: 1731-1736.
7. Bandyopadhyay, S., et al. 2004. Role of the putative tumor metastasis suppressor gene DRG1 in breast cancer progression. Oncogene 23: 5675-5681.

CHROMOSOMAL LOCATION

Genetic locus: Drg1 (mouse) mapping to 11 A1.

PRODUCT

DRG1 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 DRG1 shRNA Plasmid (m): sc-62241-SH and DRG1 shRNA (m) Lentiviral Particles: sc-62241-V as alternate gene silencing products.

For independent verification of DRG1 (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-62241A, sc-62241B and sc-62241C.

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

DRG1 siRNA (m) is recommended for the inhibition of DRG1 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

DRG1 (E-2): sc-390030 is recommended as a control antibody for monitoring of DRG1 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 DRG1 gene expression knockdown using RT-PCR Primer: DRG1 (m)-PR: sc-62241-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.