

GNL2 siRNA (m): sc-62686

BACKGROUND

GNL2 (also known as autoantigen NGP-1, NOG2 or nucleolar GTP-binding protein 2) is a nucleolar guanosine-triphosphate binding protein that is ubiquitously expressed at low levels in almost all tissues. GNL2 is involved in the crucial process of trafficking proteins out of the nucleus. Specifically, it is a GTPase that interacts with the 60S preribosomal subunit in the nucleus and facilitates export of the subunit into the cytoplasm. GTPases are responsible for the hydrolysis of GTP by way of a protein region dubbed the G domain. GTPases are often involved in the translocating proteins through membranes glean energy for the activity by hydrolyzing GTP. GNL2 shares G domain homology and some functionality with nucleostemin (GNL3), another nuclear GTPase. Highest expression of GNL2 is found in testis.

REFERENCES

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2. Stage-Zimmermann, T., et al. 2000. Factors affecting nuclear export of the 60S ribosomal subunit *in vivo*. *Mol. Biol. Cell* 11: 3777-3789.
3. Saveanu, C., et al. 2001. Nog2p, a putative GTPase associated with pre-60S subunits and required for late 60S maturation steps. *EMBO J.* 20: 6475-6484.
4. Bassler, J., et al. 2001. Identification of a 60S preribosomal particle that is closely linked to nuclear export. *Mol. Cell* 8: 517-529.
5. De Angelis, P.M., et al. 2006. Cellular response to 5-fluorouracil (5-FU) in 5-FU-resistant colon cancer cell lines during treatment and recovery. *Mol. Cancer* 5: 20.
6. Du, X., et al. 2006. The homologous putative GTPases Grn1p from fission yeast and the human GNL3L are required for growth and play a role in processing of nucleolar pre-rRNA. *Mol. Biol. Cell* 17: 460-474.
7. Rao, M.R., et al. 2006. A novel lysine-rich domain and GTP binding motifs regulate the nucleolar retention of human guanine nucleotide binding protein, GNL3L. *J. Mol. Biol.* 364: 637-654.
8. Yasumoto, H., et al. 2007. GNL3L inhibits activity of estrogen-related receptor γ by competing for coactivator binding. *J. Cell Sci.* 120: 2532-2543.

CHROMOSOMAL LOCATION

Genetic locus: Gnl2 (mouse) mapping to 4 D2.2.

PRODUCT

GNL2 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 GNL2 shRNA Plasmid (m): sc-62686-SH and GNL2 shRNA (m) Lentiviral Particles: sc-62686-V as alternate gene silencing products.

For independent verification of GNL2 (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-62686A, sc-62686B and sc-62686C.

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

GNL2 siRNA (m) is recommended for the inhibition of GNL2 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.

GENE EXPRESSION MONITORING

GNL2 (B-8): sc-514050 is recommended as a control antibody for monitoring of GNL2 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-IgG κ BP-HRP: sc-516102 or m-IgG κ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz MarkerTM Molecular Weight Standards: sc-2035, UltraCruz[®] Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgG κ BP-FITC: sc-516140 or m-IgG κ 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 GNL2 gene expression knockdown using RT-PCR Primer: GNL2 (m)-PR: sc-62686-PR (20 μ l). 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.