SANTA CRUZ BIOTECHNOLOGY, INC.

GNL3L siRNA (m): sc-145654

BACKGROUND

GTPases from the MMR1/HSR1 GTP-binding protein subfamily are circularly rearranged G-motifs that play a critical role in maintaining normal cell growth. Deletion of these genes results in severe growth defects with a marked reduction in mature rRNA species and a concomitant accumulation of the 35S pre-rRNA transcript. Deletion also causes the ribosomal protein Rpl25a to fail exportation from the nucleolus. Deletion of any of the G-domain motifs will result in a null phenotype and nuclear/nucleolar localization that lacks the nucleolar export of preribosomes and is accompanied by a distortion of the nucleolar structure. GNL3L (guanine nucleotide binding protein-like 3 (nucleolar)-like) is a 582 amino acid nuclear protein that belongs to the MMR1/HSR1 GTP-binding protein family. Containing one G (guanine nucleotide-binding) domain, GNL3L is required for normal processing of ribosomal pre-rRNA and for cell proliferation.

REFERENCES

1. Vernet, C., et al. 1993. Evolutionary study of multigenic families mapping close to the human MHC class I region. J. Mol. Evol. 37: 600-612.
2. Vernet, C., et al. 1994. Structure and evolution of a member of a new subfamily of GTP-binding proteins mapping to the human MHC class I region. Mamm. Genome 5: 100-105.
3. 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.
4. 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.

CHROMOSOMAL LOCATION

Genetic locus: Gnl3l (mouse) mapping to X F3.

PRODUCT

GNL3L 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 GNL3L shRNA Plasmid (m): sc-145654-SH and GNL3L shRNA (m) Lentiviral Particles: sc-145654-V as alternate gene silencing products.

For independent verification of GNL3L (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-145654A, sc-145654B and sc-145654C.

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

GNL3L siRNA (m) is recommended for the inhibition of GNL3L 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor GNL3L gene expression knockdown using RT-PCR Primer: GNL3L (m)-PR: sc-145654-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.