SANTA CRUZ BIOTECHNOLOGY, INC.

GARNL1 siRNA (h): sc-92345

BACKGROUND

GARNL1 (GTPase activating Rap/Ran-GAP domain-like 1), also known as TULIP1 (tuberin-like protein1) or GRIPE (GAP-related-interacting partner to E12), contains one Rap-GAP domain. It is expressed during embryogenesis with E12. During development, GARNL1 expression decreases, persisting at high levels only in neurons of the adult brain. GARNL1 localizes to the cytoplasm where it may play a role regulating GTP hydrolysis of proteins such as Ran and Rap. GARNL1 is imported to the nucleus via dimerization with E12. GARNL1 interacts with the HLH region of E12 and may function to negatively regulate the transcription of E12-dependent downstream target genes. This suggests that at least a portion of the function of GARNL1 is dependent upon its association with E12. GARNL1 may also associate with other HLH proteins and influence a variety of HLH signaling cascades. In adult brain, GARNL1 activity does not involve E12 and therefore it may serve a different function in developed neural tissue.

REFERENCES

1. Nagase, T., et al. 1999. Prediction of the coding sequences of unidentified human genes. XI. The complete sequences of 100 new cDNA clones from brain which code for large proteins *in vitro*. DNA Res. 5: 277-286.
2. Heng, J.I. and Tan, S.S. 2002. Cloning and characterization of GRIPE, a novel interacting partner of the transcription factor E12 in developing mouse forebrain. J. Biol. Chem. 277: 43152-43159.
3. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 608884. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/

CHROMOSOMAL LOCATION

Genetic locus: GARNL1 (human) mapping to 14q13.2.

PRODUCT

GARNL1 siRNA (h) 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 GARNL1 shRNA Plasmid (h): sc-92345-SH and GARNL1 shRNA (h) Lentiviral Particles: sc-92345-V as alternate gene silencing products.

For independent verification of GARNL1 (h) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-92345A, sc-92345B and sc-92345C.

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

GARNL1 siRNA (h) is recommended for the inhibition of GARNL1 expression in human 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

GARNL1 (F-1): sc-376633 is recommended as a control antibody for monitoring of GARNL1 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 GARNL1 gene expression knockdown using RT-PCR Primer: GARNL1 (h)-PR: sc-92345-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Heppler, L.N., et al. 2022. The antimicrobial drug pyrimethamine inhibits STAT3 transcriptional activity by targeting the enzyme dihydrofolate reductase. J. Biol. Chem. 298: 101531.

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.