SANTA CRUZ BIOTECHNOLOGY, INC.

PARN siRNA (h): sc-61297

BACKGROUND

Exonucleolytic degradation of the poly(A) tail often initiates the first step in the decay of eukaryotic mRNAs. Poly(A)-specific ribonuclease (PARN), a highly poly(A)-specific 3'-exoribonuclease, efficiently degrades mRNA poly(A) tails. PARN, which also may be designated deadenylating nuclease, may also be involved in nonsense-mediated mRNA decay, a critical process of selective degradation of mRNAs that contain premature stop codons, and in the degradation of inherently unstable mRNAs that contain au-rich elements (AREs) in their 3' untranslated regions. PARN, which can form a homodimer, interacts with KHSRP and can be found in a mRNA decay complex with RENT1, RENT2 and RENT3B.It localizes mainly to the nucleus (may be detected in the nucleolus), but may also localize to the cytoplasm.

REFERENCES

1. Buiting, K., et al. 2000. The human gene has a truncated copy in the Prader-Willi/Angelman syndrome region on 15q11-q13. Cytogenet. Cell Genet. 87: 125-131.
2. Martinez, J., et al. 2000. A 54-kDa fragment of the poly(A)-specific ribonuclease is an oligomeric, processive, and cap-interacting poly(A)-specific 3' exonuclease. J. Biol. Chem. 275: 24222-24230.
3. Scherl, A., et al. 2002. Functional proteomic analysis of human nucleolus. Mol. Biol. Cell 13: 4100-4109.
4. Ren, Y.G., et al. 2004. Coordination of divalent metal ions in the active site of poly(A)-specific ribonuclease. J. Biol. Chem. 279: 48702-48706.
5. Seal, R., et al. 2005. Serum-deprivation stimulates cap-binding by PARN at the expense of eIF4E, consistent with the observed decrease in mRNA stability. Nucleic Acids Res. 33: 376-387.
6. Wu, M., et al. 2005. Structural insight into poly(A) binding and catalytic mechanism of human PARN. EMBO J. 24: 4082-4093.

CHROMOSOMAL LOCATION

Genetic locus: PARN (human) mapping to 16p13.12.

PRODUCT

PARN 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 PARN shRNA Plasmid (h): sc-61297-SH and PARN shRNA (h) Lentiviral Particles: sc-61297-V as alternate gene silencing products.

For independent verification of PARN (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-61297A, sc-61297B and sc-61297C.

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

PARN siRNA (h) is recommended for the inhibition of PARN 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor PARN gene expression knockdown using RT-PCR Primer: PARN (h)-PR: sc-61297-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. Miller, T.E., et al. 2017. A feedback mechanism between PLD and deadenylase PARN for the shortening of eukaryotic poly(A) mRNA tails that is deregulated in cancer cells. Biol. Open 6: 176-186.

RESEARCH USE

For research use only, not for use in diagnostic procedures.