SANTA CRUZ BIOTECHNOLOGY, INC.

UNR siRNA (h): sc-76808

BACKGROUND

UNR, also known as CSDE1 (cold shock domain containing E1, RNA-binding) or NRU, is a 798 amino acid protein that localizes to the cytoplasm and contains nine CDS (cold shock) domains. Existing as a component of the multiprotein autoregulatory ribonucleoprotein complex (ARC), UNR functions as an RNA-binding protein that is required for the initiation of rhinovirus RNA translation and is thought to be involved in translationally coupled mRNA turnover. UNR is expressed as two isoforms, designated long and short, and shares over 98% amino acid identity with its rat counterpart, suggesting a conserved role between species. The gene encoding UNR maps to human chromosome 1, which spans 260 million base pairs, contains over 3,000 genes and comprises nearly 8% of the human genome.

REFERENCES

1. Jeffers, M., Paciucci, R. and Pellicer, A. 1990. Characterization of UNR; a gene closely linked to N-Ras. Nucleic Acids Res. 18: 4891-4899.
2. Hunt, S.L., Hsuan, J.J., Totty, N. and Jackson, R.J. 1999. unr, a cellular cytoplasmic RNA-binding protein with five cold-shock domains, is required for internal initiation of translation of human rhinovirus RNA. Genes Dev. 13: 437-448.
3. Grosset, C., Chen, C.Y., Xu, N., Sonenberg, N., Jacquemin-Sablon, H. and Shyu, A.B. 2000. A mechanism for translationally coupled mRNA turnover: interaction between the poly(A) tail and a c-Fos RNA coding determinant via a protein complex. Cell 103: 29-40.
4. Chang, T.C., Yamashita, A., Chen, C.Y., Yamashita, Y., Zhu, W., Durdan, S., Kahvejian, A., Sonenberg, N. and Shyu, A.B. 2004. UNR, a new partner of poly(A)-binding protein, plays a key role in translationally coupled mRNA turnover mediated by the c-Fos major coding-region determinant. Genes Dev. 18: 2010-2023.
5. Cornelis, S., Tinton, S.A., Schepens, B., Bruynooghe, Y. and Beyaert, R. 2005. UNR translation can be driven by an IRES element that is negatively regulated by polypyrimidine tract binding protein. Nucleic Acids Res. 33: 3095-3108.
6. Patel, G.P., Ma, S. and Bag, J. 2005. The autoregulatory translational control element of poly(A)-binding protein mRNA forms a heteromeric ribonucleoprotein complex. Nucleic Acids Res. 33: 7074-7089.
7. Schepens, B., Tinton, S.A., Bruynooghe, Y., Parthoens, E., Haegman, M., Beyaert, R. and Cornelis, S. 2007. A role for hnRNP C1/C2 and UNR in internal initiation of translation during mitosis. EMBO J. 26: 158-169.
8. Anderson, E.C., Hunt, S.L. and Jackson, R.J. 2007. Internal initiation of translation from the human rhinovirus-2 internal ribosome entry site requires the binding of UNR to two distinct sites on the 5' untranslated region. J. Gen. Virol. 88: 3043-3052.
9. Online Mendelian Inheritance in Man, OMIM™. 2007. Johns Hopkins University, Baltimore, MD. MIM Number: 191510. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/

CHROMOSOMAL LOCATION

Genetic locus: CSDE1 (human) mapping to 1p13.2.

PRODUCT

UNR 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 UNR shRNA Plasmid (h): sc-76808-SH and UNR shRNA (h) Lentiviral Particles: sc-76808-V as alternate gene silencing products.

For independent verification of UNR (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-76808A, sc-76808B and sc-76808C.

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

UNR siRNA (h) is recommended for the inhibition of UNR 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 UNR gene expression knockdown using RT-PCR Primer: UNR (h)-PR: sc-76808-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.