



hDcp2 siRNA (h): sc-44388

BACKGROUND

The major pathway of eukaryotic mRNA decay involves deadenylation-dependent decapping followed by 5' to 3' exonucleolytic degradation. Human decapping enzyme 2 (hDcp2) is an mRNA decapping enzyme which contains intrinsic decapping activity. In nonsense-mediated decay, the human decapping complex, made up of hDcp1 and hDcp2, may be recruited to mRNAs containing premature termination codons by nonsense-mediated decay factor (Upf) proteins. The decapping activator complex (Lsm1p-7p) is also involved in the recruitment of the decapping complex, indicated by data showing that Lsm1p-7p enhances the coimmunoprecipitation of the complex with mRNA. Dcp2 specifically hydrolyzes methylated capped RNA to release m⁷GDP, thereby aiding in mRNA degradation. Both Dcp1 and Dcp2 colocalize in the cytoplasm, which is consistent with their role in mRNA decay.

REFERENCES

1. Tharun, S., et al. 2001. Targeting an mRNA for decapping: displacement of translation factors and association of the Lsm1p-7p complex on deadenylated yeast mRNAs. *Mol. Cell* 8: 1075-1083.
2. Wang, Z., et al. 2002. The hDcp2 protein is a mammalian mRNA decapping enzyme. *Proc. Natl. Acad. Sci. USA* 99: 12663-12668.
3. Lykke-Andersen, J. 2002. Identification of a human decapping complex associated with hUpf proteins in nonsense-mediated decay. *Mol. Cell Biol.* 22: 8114-8121.
4. Van Dijk, E., et al. 2002. Human Dcp2: a catalytically active mRNA decapping enzyme located in specific cytoplasmic structures. *EMBO J.* 21: 6915-6924.
5. Entrez-Protein. (NP_689837). World Wide Web URL: <http://www.ncbi.nlm.nih.gov/entrez/query>

CHROMOSOMAL LOCATION

Genetic locus: DCP2 (human) mapping to 5q22.2.

PRODUCT

hDcp2 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see hDcp2 shRNA Plasmid (h): sc-44388-SH and hDcp2 shRNA (h) Lentiviral Particles: sc-44388-V as alternate gene silencing products.

For independent verification of hDcp2 (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-44388A, sc-44388B and sc-44388C.

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.

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

hDcp2 siRNA (h) is recommended for the inhibition of hDcp2 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 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor hDcp2 gene expression knockdown using RT-PCR Primer: hDcp2 (h)-PR: sc-44388-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.