

SEN15 siRNA (m): sc-153335

BACKGROUND

SEN15, also known as TSEN15 (tRNA-splicing endonuclease subunit Sen15) or C1orf19, is a nuclear protein that plays a role in tRNA splicing. Widely expressed with highest expression in testis and uterus, SEN15 is a non-catalytic subunit of the multi-protein tRNA-splicing endonuclease complex. The endonuclease complex is responsible for identifying and cleaving pre-tRNA at both 5' and 3' splice sites, thereby releasing introns and free tRNA molecules with 2',3' cyclic phosphates and 5'-OH termini. In addition to its role in pre-tRNA splicing, the endonuclease complex participates in mRNA processing and, via its association with pre-mRNA processing factors, is thought to link pre-tRNA and pre-mRNA splicing events. As a subunit of the complex, SEN15 participates in protein expression and, ultimately, cell growth and division.

REFERENCES

1. Sood, R., Bonner, T.I., Makalowska, I., Stephan, D.A., Robbins, C.M., Connors, T.D., Morgenbesser, S.D., Su, K., Faruque, M.U., Pinkett, H., Graham, C., Baxevanis, A.D., Klinger, K.W., Landes, G.M., et al. 2001. Cloning and characterization of 13 novel transcripts and the human RGS8 gene from the 1q25 region encompassing the hereditary prostate cancer (HPC1) locus. *Genomics* 73: 211-222.
2. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 608756. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
3. Paushkin, S.V., Patel, M., Furia, B.S., Peltz, S.W. and Trotta, C.R. 2004. Identification of a human endonuclease complex reveals a link between tRNA splicing and pre-mRNA 3' end formation. *Cell* 117: 311-321.
4. Trotta, C.R., Paushkin, S.V., Patel, M., Li, H. and Peltz, S.W. 2006. Cleavage of pre-tRNAs by the splicing endonuclease requires a composite active site. *Nature* 441: 375-377.
5. Song, J. and Markley, J.L. 2007. Three-dimensional structure determined for a subunit of human tRNA splicing endonuclease (SEN15) reveals a novel dimeric fold. *J. Mol. Biol.* 366: 155-164.

CHROMOSOMAL LOCATION

Genetic locus: Tsen15 (mouse) mapping to 1 G3.

PRODUCT

SEN15 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see SEN15 shRNA Plasmid (m): sc-153335-SH and SEN15 shRNA (m) Lentiviral Particles: sc-153335-V as alternate gene silencing products.

For independent verification of SEN15 (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-153335A, sc-153335B and sc-153335C.

RESEARCH USE

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

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

SEN15 siRNA (m) is recommended for the inhibition of SEN15 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 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.

GENE EXPRESSION MONITORING

SEN15 (F-4): sc-374083 is recommended as a control antibody for monitoring of SEN15 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-IgG κ BP-HRP: sc-516102 or m-IgG κ 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-IgG κ BP-FITC: sc-516140 or m-IgG κ 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 SEN15 gene expression knockdown using RT-PCR Primer: SEN15 (m)-PR: sc-153335-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.