

SECp43 siRNA (m): sc-153319

BACKGROUND

SECp43, also known as tRNA (Sec) selenocysteine 1-associated protein 1 or TRNAU1AP, is a 287 amino acid member of the RRM TRSPAP protein family. Localized to the nucleus and cytoplasm, yet found more abundantly in the nucleus, SECp43 contains two RRM (RNA recognition motif) domains. The RRM domain contains two highly conserved regions: a six amino acid, hydrophobic motif (RNP-2) and an octapeptide motif (RNP-1). SECp43 is involved in the early stages of selenocysteine biosynthesis and tRNA charging. It is also involved in the later stages of the cotranslational incorporation of selenocysteine into selenoproteins. Possibly involved in the methylation of tRNA, SECp43 associates with mRNP, SELB, SBP-2 and tRNA. Two isoforms of SECp43 exist as a result of alternative splicing events.

REFERENCES

1. Low, S.C. and Berry, M.J. 1996. Knowing when not to stop: selenocysteine incorporation in eukaryotes. *Trends Biochem. Sci.* 21: 203-208.
2. Ding, F. and Grabowski, P.J. 1999. Identification of a protein component of a mammalian tRNA^{Sec} complex implicated in the decoding of UGA as selenocysteine. *RNA* 5: 1561-1569.
3. Krol, A. 2002. Evolutionarily different RNA motifs and RNA-protein complexes to achieve selenoprotein synthesis. *Biochimie* 84: 765-774.
4. Lescure, A., Fagegaltier, D., Carbon, P. and Krol, A. 2002. Protein factors mediating selenoprotein synthesis. *Curr. Protein Pept. Sci.* 3: 143-151.
5. Xu, X.M., Mix, H., Carlson, B.A., Grabowski, P.J., Gladyshev, V.N., Berry, M.J. and Hatfield, D.L. 2005. Evidence for direct roles of two additional factors, SECp43 and soluble liver antigen, in the selenoprotein synthesis machinery. *J. Biol. Chem.* 280: 41568-41575.
6. Small-Howard, A., Morozova, N., Stoytcheva, Z., Forry, E.P., Mansell, J.B., Harney, J.W., Carlson, B.A., Xu, X.M., Hatfield, D.L. and Berry, M.J. 2006. Supramolecular complexes mediate selenocysteine incorporation *in vivo*. *Mol. Cell. Biol.* 26: 2337-2346.
7. Hoffmann, P.R., Höge, S.C., Li, P.A., Hoffmann, F.W., Hashimoto, A.C. and Berry, M.J. 2007. The selenoproteome exhibits widely varying, tissue-specific dependence on selenoprotein P for selenium supply. *Nucleic Acids Res.* 35: 3963-3973.

CHROMOSOMAL LOCATION

Genetic locus: TrnaU1ap (mouse) mapping to 4 D2.3.

PRODUCT

SECp43 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 SECp43 shRNA Plasmid (m): sc-153319-SH and SECp43 shRNA (m) Lentiviral Particles: sc-153319-V as alternate gene silencing products.

For independent verification of SECp43 (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-153319A, sc-153319B and sc-153319C.

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

SECp43 siRNA (m) is recommended for the inhibition of SECp43 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

SECp43 (E-7): sc-377448 is recommended as a control antibody for monitoring of SECp43 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 SECp43 gene expression knockdown using RT-PCR Primer: SECp43 (m)-PR: sc-153319-PR (20 μ l). 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.