SANTA CRUZ BIOTECHNOLOGY, INC.

SSU72 siRNA (m): sc-76579

BACKGROUND

SSU72, also known as HSPC182 or PNAS-120, is a 194 amino acid protein that localizes to both the nucleus and the cytoplasm and contains one coiled coil domain. Existing as multiple alternatively spliced isoforms, SSU72 interacts with TFIIB, Rb and DNAM-1 and functions to catalyze the dephosphorylation of target proteins, possibly playing a role in RNA processing and termination via dephosphorylation of Pol II. SSU72, the mammalian homolog of Ssu72, is encoded by a gene that maps to human chromosome 1p36.33, which spans 260 million base pairs, contains over 3,000 genes and comprises nearly 8% of the human genome. Chromosome 1 houses a large number of disease-associated genes, including those that are involved in familial adenomatous polyposis, Stickler syndrome, Parkinson's disease, Gaucher disease, schizophrenia and Usher syndrome. Aberrations in chromosome 1 are found in a variety of cancers, including head and neck cancer, malignant melanoma and multiple myeloma.

REFERENCES

1. Dichtl, B., et al. 2002. A role for SSU72 in balancing RNA polymerase II transcription elongation and termination. Mol. Cell 10: 1139-1150.
2. Meinhart, A., et al. 2003. The mRNA transcription/processing factor SSU72 is a potential tyrosine phosphatase. J. Biol. Chem. 278: 15917-15921.
3. Krishnamurthy, S., et al. 2004. SSU72 is an RNA polymerase II CTD phosphatase. Mol. Cell 14: 387-394.
4. St-Pierre, B., et al. 2005. Conserved and specific functions of mammalian SSU72. Nucleic Acids Res. 33: 464-477.
5. Ganem, C., et al. 2006. Kinase Cak1 functionally interacts with the PAF1 complex and phosphatase SSU72 via kinases Ctk1 and Bur1. Mol. Genet. Genomics 275: 136-147.
6. Singh, B.N. and Hampsey, M. 2007. A transcription-independent role for TFIIB in gene looping. Mol. Cell 27: 806-816.
7. Reyes-Reyes, M. and Hampsey, M. 2007. Role for the SSU72 C-terminal domain phosphatase in RNA polymerase II transcription elongation. Mol. Cell. Biol. 27: 926-936.

CHROMOSOMAL LOCATION

Genetic locus: Ssu72 (mouse) mapping to 4 E2.

PRODUCT

SSU72 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see SSU72 shRNA Plasmid (m): sc-76579-SH and SSU72 shRNA (m) Lentiviral Particles: sc-76579-V as alternate gene silencing products.

For independent verification of SSU72 (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-76579A, sc-76579B and sc-76579C.

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

SSU72 siRNA (m) is recommended for the inhibition of SSU72 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 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 SSU72 gene expression knockdown using RT-PCR Primer: SSU72 (m)-PR: sc-76579-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.