SANTA CRUZ BIOTECHNOLOGY, INC.

coilin siRNA (m): sc-37571

BACKGROUND

Coilin is the primary protein of nuclear coiled (Cajal) bodies. Cajal bodies are small nuclear organelles and contain many proteins involved in RNA transcription and processing. Coilin is a self-associating protein with a nucleolar localization signal. It is essential for the proper formation of Cajal bodies and for the recruitment of snRNP and survival motor neuron (SMN) complex proteins to Cajal bodies. Coilin directly binds SMN proteins in the recruitment process and competes with SmB' for SMN interactions. In the developing organism, Cajal bodies play a role in the assembly of the nucleolus. While the N-terminus of coilin contains the self-associating domain, the C-terminus of coilin regulates the number of Cajal bodies present in the cell.

REFERENCES

1. Andrade, L.E., et al. 1991. Human autoantibody to a novel protein of the nuclear coiled body: immunological characterization and cDNA cloning of p80-coilin. J. Exp. Med. 173: 1407-1419.
2. Chan, E.K., et al. 1994. Structure, expression and chromosomal localization of human p80-coilin gene. Nucleic Acids Res. 22: 4462-4469.
3. Gall, J.G. 2000. Cajal bodies: the first 100 years. Annu. Rev. Cell Dev. Biol. 16: 273-300.
4. Hebert, M.D., et al. 2000. Self-association of coilin reveals a common theme in nuclear body localization. Mol. Biol. Cell 11: 4159-4171.
5. Tucker, K.E., et al. 2001. Residual Cajal bodies in coilin knockout mice fail to recruit Sm snRNPs and SMN, the spinal muscular atrophy gene product. J. Cell Biol. 154: 293-307.
6. Hebert, M.D., et al. 2001. Coilin forms the bridge between Cajal bodies and SMN, the spinal muscular atrophy protein. Genes Dev. 15: 2720-2729.
7. Zatsepina, O., et al. 2004. The step-wise assembly of a functional nucleolus in preimplantation mouse embryos involves the Cajal (coiled) body. Dev. Biol. 253: 66-83.
8. Shpargel, K.B., et al. 2004. Control of Cajal body number is mediated by the coilin C-terminus. J. Cell Sci. 116: 303-312.

CHROMOSOMAL LOCATION

Genetic locus: Coil (mouse) mapping to 11 C.

PRODUCT

coilin 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 coilin shRNA Plasmid (m): sc-37571-SH and coilin shRNA (m) Lentiviral Particles: sc-37571-V as alternate gene silencing products.

For independent verification of coilin (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-37571A, sc-37571B and sc-37571C.

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

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

GENE EXPRESSION MONITORING

coilin (F-7): sc-55594 is recommended as a control antibody for monitoring of coilin 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-IgGλ BP-HRP: sc-516132 or m-IgGλ BP-HRP (Cruz Marker): sc-516132-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-IgGλ BP-FITC: sc-516185 or m-IgGλ BP-PE: sc-516186 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

SELECT PRODUCT CITATIONS

1. Boskovic, A., et al. 2020. Control of noncoding RNA production and histone levels by a 5' tRNA fragment. Genes Dev. 34: 118-131.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor coilin gene expression knockdown using RT-PCR Primer: coilin (m)-PR: sc-37571-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.