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- Mindermengenzuschlag
- Trockeneiszuschlag
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SANTA CRUZ BIOTECHNOLOGY, INC.

NASP siRNA (m): sc-149837

BACKGROUND

Histones, the chief components of chromatin, are required for the formation of core nucleosomes around which DNA can wind and they play an essential role in DNA condensation and gene regulation. The transport of histones to the nucleus is crucial to ensuring proper nucleosome assembly and, ultimately, DNA replication. NASP (nuclear autoantigenic sperm protein) is a 788 amino acid protein that localizes to both the nucleus and the cytoplasm and contains three TPR repeats. Expressed as multiple alternatively-spliced isoforms, one of which is testis- and sperm-specific (tNASP) and the other expressed in somatic cells (sNASP), NASP functions as a Histone H1 binding protein that mediates histone transport to the nucleus and is required for normal cell cycle progression and cellular proliferation. Due to its testicular expression and important role in DNA replication and cell cycle events, NASP is necessary for spermatogenesis and normal development. Upon DNA damage, NASP may be phosphorylated by Atm or ATR.

REFERENCES

1. Batova, I. and O'Rand, M.G. 1996. Histone-binding domains in a human nuclear autoantigenic sperm protein. Biol. Reprod. 54: 1238-1244.
2. Batova, I.N., et al. 2000. Analysis of the autoimmune epitopes on human testicular NASP using recombinant and synthetic peptides. Clin. Exp. Immunol. 121: 201-209.
3. Richardson, R.T., et al. 2000. Characterization of the Histone H1-binding protein, NASP, as a cell cycle-regulated somatic protein. J. Biol. Chem. 275: 30378-30386.
4. Minami, N., et al. 2001. Analysis of gene expression in mouse 2-cell embryos using Fluorescein differential display: comparison of culture environments. Biol. Reprod. 64: 30-35.
5. Richardson, R.T., et al. 2001. Comparison of mouse and human NASP genes and expression in human transformed and tumor cell lines. Gene 274: 67-75.
6. Alekseev, O.M., et al. 2003. Overexpression of the linker histone-binding protein tNASP affects progression through the cell cycle. J. Biol. Chem. 278: 8846-8852.
7. Richardson, R.T., et al. 2006. Nuclear autoantigenic sperm protein (NASP), a linker histone chaperone that is required for cell proliferation. J. Biol. Chem. 281: 21526-21534.

CHROMOSOMAL LOCATION

Genetic locus: Nasp (mouse) mapping to 4 D1.

PRODUCT

NASP siRNA (m) is a target-specific 19-25 nt siRNA 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 NASP shRNA Plasmid (m): sc-149837-SH and NASP shRNA (m) Lentiviral Particles: sc-149837-V as alternate gene silencing 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 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

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

NASP (A-7): sc-514669 is recommended as a control antibody for monitoring of NASP 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-IgGκ BP-HRP: sc-516102 or m-IgGκ 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-IgGκ BP-FITC: sc-516140 or m-IgGκ 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 NASP gene expression knockdown using RT-PCR Primer: NASP (m)-PR: sc-149837-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.