SANTA CRUZ BIOTECHNOLOGY, INC.

nm23-H5 siRNA (h): sc-91797

BACKGROUND

The nm23 gene family is implicated in a variety of biological processes, including cell proliferation, differentiation and development, signal transduction, G protein-coupled receptor endocytosis, and gene expression. Members of the nm23 family are putative metastasis suppressor genes that encode nucleoside diphosphate kinases (NDPK). NDPKs form oligomers that play a role in the synthesis of nucleoside triphosphates other than ATP. Nm23-H1, nm23-H2 and nm23-H3 are indicators of a poor prognosis in human hematopoietic malignancies, as high expression levels of nm23-H1 and -H2 are positively correlated with histological differentiation. Nm23-H5 is specifically expressed in germinal cells of testis, where it plays a critical role in spermiogenesis by increasing the cellular levels of GPX-5 to eliminate reactive oxygen species.

REFERENCES

1. Watanabe, J., et al. 1995. Expression of nm23-H1 and nm23-H2 protein in endometrial carcinoma. Br. J. Cancer 72: 1469-1473.
2. Munier, A., et al. 1998. A new human nm23 homologue (nm23-H5) specifically expressed in testis germinal cells. FEBS Lett. 434: 289-294.
3. Venturelli, D., et al. 2000. The nucleoside diphosphate kinase activity of DRnm23 is not required for inhibition of differentiation and induction of apoptosis in 32Dcl3 myeloid precursor cells. Exp. Cell Res. 257: 265-271.
4. Hwang, K.C., et al. 2003. Cloning, sequencing, and characterization of the murine nm23-M5 gene during mouse spermatogenesis and spermiogenesis. Biochem. Biophys. Res. Commun. 306: 198-207.
5. Munier, A., et al. 2003. Nm23/NDP kinases in human male germ cells: role in spermiogenesis and sperm motility? Exp. Cell Res. 289: 295-306.
6. Choi, Y.J., et al. 2009. Nm23-M5 mediates round and elongated spermatid survival by regulating GPX-5 levels. FEBS Lett. 583: 1292-1298.

CHROMOSOMAL LOCATION

Genetic locus: NME5 (human) mapping to 5q31.2.

PRODUCT

nm23-H5 siRNA (h) 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 nm23-H5 shRNA Plasmid (h): sc-91797-SH and nm23-H5 shRNA (h) Lentiviral Particles: sc-91797-V as alternate gene silencing products.

For independent verification of nm23-H5 (h) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-91797A, sc-91797B and sc-91797C.

PROTOCOLS

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

nm23-H5 siRNA (h) is recommended for the inhibition of nm23-H5 expression in human 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 nm23-H5 gene expression knockdown using RT-PCR Primer: nm23-H5 (h)-PR: sc-91797-PR (20 µl, 523 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Li, F., et al. 2012. Identification of NME5 as a contributor to innate resistance to gemcitabine in pancreatic cancer cells. FEBS J. 279: 1261-1273.

RESEARCH USE

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