SANTA CRUZ BIOTECHNOLOGY, INC.

nm23-H3 siRNA (m): sc-61206

BACKGROUND

The nm23 gene (metastasis inhibition factor nm23), a potential suppressor of metastasis, is expressed at a much lower level in highly metastatic cells than in cells with lower metastatic potential. Based on sequence analysis, nm23, also designated nucleoside diphosphate kinase A (NDK A) or tumor metastatic process-associated protein, appears to be highly related to nucleotide diphosphate kinases (NDP). NDP kinases A and B are identical to two isotypes of human nm23 homologs, nm23-H1 and nm23-H2, respectively. nm23-H2 is also identical in sequence to PuF, a transcription factor that binds to nuclease-hypersensitive elements at positions 142 to 115 of the human c-Myc promoter. nm23-H3 and nm23-H4 are important for the synthesis of nucleoside triphosphates and may play a role in apoptosis induction and hematopoiesis. nm23-H3 is a 168 amino acid polypeptide. It is preferentially expressed during early stages of myeloid differentiation of highly purified $CD34^+$ cells.

REFERENCES

1. Venturelli, D., et al. 1995. Overexpression of DR-nm23, a protein encoded by a member of the nm23 gene family, inhibits granulocyte differentiation and induces apoptosis in 32Dc13 myeloid cells. Proc. Natl. Acad. Sci. USA 92: 7435-7439.
2. Martinez, R., et al. 1997. Gene structure, promoter activity, and chromosomal location of the DR-nm23 gene, a related member of the nm23 gene family. Cancer Res. 57: 1180-1187.
3. Willems, R., et al. 1998. Decrease in nucleoside diphosphate kinase (NDPK/nm23) expression during hematopoietic maturation. J. Biol. Chem. 273: 13663-13668.
4. Daniels, R.J., et al. 2001. Sequence, structure and pathology of the fully annotated terminal 2 Mb of the short arm of human chromosome 16. Hum. Mol. Genet. 10: 339-352.
5. Masse, K., et al. 2002. Characterization of the nm23-M2, nm23-M3 and nm23-M4 mouse genes: comparison with their human orthologs. Gene 296: 87-97.
6. Willems, R., et al. 2002. Extracellular nucleoside diphosphate kinase NM23/NDPK modulates normal hematopoietic differentiation. Exp. Hematol. 30: 640-648.

CHROMOSOMAL LOCATION

Genetic locus: Nme3 (mouse) mapping to 17 A3.3.

PRODUCT

nm23-H3 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 nm23-H3 shRNA Plasmid (m): sc-61206-SH and nm23-H3 shRNA (m) Lentiviral Particles: sc-61206-V as alternate gene silencing products.

For independent verification of nm23-H3 (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-61206A, sc-61206B and sc-61206C.

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-H3 siRNA (m) is recommended for the inhibition of nm23-H3 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 nm23-H3 gene expression knockdown using RT-PCR Primer: nm23-H3 (m)-PR: sc-61206-PR (20 µl, 434 bp). 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.