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NMD3 siRNA (m): sc-150008

BACKGROUND

Ribosomal subunits are synthesized in the nucleus and mature 40S and 60S subunits are exported stoichiometrically into the cytoplasm. Together these subunits are composed of four RNA species and approximately 80 structurally distinct proteins. Ribosomal proteins have the ability to pass through the nuclear envelope in the native state, making them the largest of the structures accommodated by the nuclear pore complexes. Nuclear export of the 60S ribosomal subunit depends on the adapter protein NMD3, which contains a CRM-1-dependent leucine-rich nuclear export signal (NES) and a complex, dispersed nuclear localization signal (NLS). The gene encoding NMD3 is located on human chromosome 3, which encodes over 1,100 genes and contains a variety of human cancer related loci.

REFERENCES

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2. Johnson, A.W., et al. 2002. Nuclear export of ribosomal subunits. *Trends Biochem. Sci.* 27: 580-585.
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4. Thomas, F. and Kutay, U. 2003. Biogenesis and nuclear export of ribosomal subunits in higher eukaryotes depend on the CRM1 export pathway. *J. Cell Sci.* 116: 2409-2419.
5. Braga, E.A., et al. 2003. New tumor suppressor genes in hot spots of human chromosome 3: new methods of identification. *Mol. Biol.* 37: 194-211.
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7. Muzny, D.M., et al. 2006. The DNA sequence, annotation and analysis of human chromosome 3. *Nature* 440: 1194-1198.
8. West, M., et al. 2007. Novel interaction of the 60S ribosomal subunit export adapter NMD3 at the nuclear pore complex. *J. Biol. Chem.* 282: 14028-14037.

CHROMOSOMAL LOCATION

Genetic locus: Nmd3 (mouse) mapping to 3 E1.

PRODUCT

NMD3 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see NMD3 shRNA Plasmid (m): sc-150008-SH and NMD3 shRNA (m) Lentiviral Particles: sc-150008-V as alternate gene silencing products.

For independent verification of NMD3 (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-150008A, sc-150008B and sc-150008C.

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 μ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNase-free water makes a 10 μ M solution in a 10 μ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

NMD3 siRNA (m) is recommended for the inhibition of NMD3 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 μ M in 66 μ l. 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

NMD3 (A-5): sc-515426 is recommended as a control antibody for monitoring of NMD3 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-IgG κ BP-HRP: sc-516102 or m-IgG κ 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-IgG κ BP-FITC: sc-516140 or m-IgG κ 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 NMD3 gene expression knockdown using RT-PCR Primer: NMD3 (m)-PR: sc-150008-PR (20 μ l). 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.