SANTA CRUZ BIOTECHNOLOGY, INC.

NVL siRNA (m): sc-106323

BACKGROUND

Valosin containing protein (VCP), also designated TERA (for transitional endoplasmic reticulum ATPase), is a member of the AAA family of ATPases, which are involved in a variety of cellular activities. VCP is involved in a variety of membrane functions and in the regulation of the cell cycle. VCP associates with ubiquitinated IκB-α as well as with the 26S proteosome, indicating a potential role for VCP in the proteosome-mediated degradation of IκB-α. NVL (nuclear valosin-containing protein-like), also known as NVLp, is an 856 amino acid nuclear protein belonging to the AAA ATPase family. Implicated in ATP-dependent nuclear processes and ribosome synthesis, NVL exists as three alternatively spliced isoforms designated NVL isoform 1 (NVLp.2), NVL isoform 2 (NVLp.1) and NVL isoform 3. Widely expressed, NVL is found at highest levels in pancreas, retina, heart, skeletal muscle and placenta.

REFERENCES

1. Egerton, M., et al. 1992. VCP, the mammalian homolog of cdc48, is tyrosine phosphorylated in response to T cell antigen receptor activation. EMBO J. 11: 3533-3540.
2. Germain-Lee, E.L., et al. 1997. NVL: a new member of the AAA family of ATPases localized to the nucleus. Genomics 44: 22-34.
3. Online Mendelian Inheritance in Man, OMIM™. 1998. Johns Hopkins University, Baltimore, MD. MIM Number: 602426. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
4. Zhang, S.H., et al. 1999. Identification of the cell cycle regulator VCP (p97/CDC48) as a substrate of the band 4.1-related protein-tyrosine phosphatase PTPH1. J. Biol. Chem. 274: 17806-17812.
5. Scherl, A., et al. 2002. Functional proteomic analysis of human nucleolus. Mol. Biol. Cell 13: 4100-4109.
6. Nagahama, M., et al. 2004. NVL2 is a nucleolar AAA-ATPase that interacts with ribosomal protein L5 through its nucleolar localization sequence. Mol. Biol. Cell 15: 5712-5723.

CHROMOSOMAL LOCATION

Genetic locus: Nvl (mouse) mapping to 1 H4.

PRODUCT

NVL 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 NVL shRNA Plasmid (m): sc-106323-SH and NVL shRNA (m) Lentiviral Particles: sc-106323-V as alternate gene silencing products.

For independent verification of NVL (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-106323A, sc-106323B and sc-106323C.

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

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

NVL (G-10): sc-393047 is recommended as a control antibody for monitoring of NVL 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 NVL gene expression knockdown using RT-PCR Primer: NVL (m)-PR: sc-106323-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.