

Nrdp1 siRNA (m): sc-75957

BACKGROUND

The RING-type zinc finger motif is present in a number of viral and eukaryotic proteins and is made of a conserved cysteine-rich domain that is able to bind two zinc atoms. Proteins that contain this conserved domain are generally involved in the ubiquitination pathway of protein degradation. Nrdp1, also known as RNF41 (RING finger protein 41), SBBIO3 or FLRF, is a 317 amino acid protein that contains one RING-type zinc finger and one SIAH-type zinc finger. Expressed in testis, ovary and prostate, Nrdp1 functions as an E3 ubiquitin-protein ligase that, characteristic of E3 ligase proteins, accepts ubiquitin (in the form of a thioester) from an E2 ubiquitin-conjugating enzyme and transfers that ubiquitin residue to substrates targeted for degradation. Specifically, Nrdp1 interacts with ErbB-3 and UBPY, thereby targeting them for proteasomal degradation.

REFERENCES

1. Abdullah, J.M., et al. 2001. FLRF, a novel evolutionarily conserved RING finger gene, is differentially expressed in mouse fetal and adult hematopoietic stem cells and progenitors. *Blood Cells Mol. Dis.* 27: 320-333.
2. Diamonti, A.J., et al. 2002. An RBCC protein implicated in maintenance of steady-state neuregulin receptor levels. *Proc. Natl. Acad. Sci. USA* 99: 2866-2871.
3. Qiu, X.B., et al. 2002. Nrdp1/FLRF is a ubiquitin ligase promoting ubiquitination and degradation of the epidermal growth factor receptor family member, ErbB3. *Proc. Natl. Acad. Sci. USA* 99: 14843-14848.
4. Qiu, X.B., et al. 2004. Nrdp1-mediated degradation of the gigantic IAP, BRUCE, is a novel pathway for triggering apoptosis. *EMBO J.* 23: 800-810.
5. Wu, X., et al. 2004. Stabilization of the E3 ubiquitin ligase Nrdp1 by the deubiquitinating enzyme USP8. *Mol. Cell. Biol.* 24: 7748-7757.
6. Avvakumov, G.V., et al. 2006. Amino-terminal dimerization, NRDP1-rho-danese interaction, and inhibited catalytic domain conformation of the ubiquitin-specific protease 8 (USP8). *J. Biol. Chem.* 281: 38061-38070.
7. Cao, Z., et al. 2007. Neuregulin-induced ErbB3 downregulation is mediated by a protein stability cascade involving the E3 ubiquitin ligase Nrdp1. *Mol. Cell. Biol.* 27: 2180-2188.

CHROMOSOMAL LOCATION

Genetic locus: Rnf41 (mouse) mapping to 10 D3.

PRODUCT

Nrdp1 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 Nrdp1 shRNA Plasmid (m): sc-75957-SH and Nrdp1 shRNA (m) Lentiviral Particles: sc-75957-V as alternate gene silencing products.

For independent verification of Nrdp1 (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-75957A, sc-75957B and sc-75957C.

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

Nrdp1 siRNA (m) is recommended for the inhibition of Nrdp1 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

Nrdp1 (A-6): sc-365622 is recommended as a control antibody for monitoring of Nrdp1 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 Nrdp1 gene expression knockdown using RT-PCR Primer: Nrdp1 (m)-PR: sc-75957-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.