SANTA CRUZ BIOTECHNOLOGY, INC.

NIPP1 siRNA (m): sc-62690

BACKGROUND

NIPP1 (nuclear inhibitor of protein phosphatase 1) is a putative transcription regulator that may be involved in pre-mRNA splicing and cell proliferation. NIPP1 contains a nuclear signaling region named FHA (forkhead-associated) domain. The FHA domain has been associated with protein kinases and transcription factors. The NIPP1 locus encodes for three different isoforms termed α, β and γ due to alternative splicing events. The isoforms exhibit RNA binding activity and also act as phophatase inhibitors. The γ isoform is believed to be a magnesium-dependent endoribonuclease that is responsible for cleaving RNA strands. It is mainly found in B cells and T lymphocytes. The α and β isoforms are localized in the brain and kidney. Inactivation of NIPP1 is accomplished by the phosphorylation of Ser 199 or Ser 204. NIPP1 interacts with proteins CDc5L, SAP 155, MELK and EED.

REFERENCES

1. Van Eynde, A., et al. 1996. Molecular cloning of NIPP1, a nuclear inhibitor of protein phosphatase 1, reveals homology with polypeptides involved in RNA processing. J. Biol. Chem. 270: 28068-28074.
2. Van Eynde, A., et al. 1999. Organization and alternate splice products of the gene encoding nuclear inhibitor of protein phosphatase 1 (NIPP1). Eur. J. Biochem. 261: 291-300.
3. Boudrez, A., et al. 2002. Phosphorylation-dependent interaction between the splicing factors SAP 155 and NIPP1. J. Biol. Chem. 277: 31834-31841.
4. Parker, L., et al. 2002. Functional interaction between nuclear inhibitor of protein phosphatase type 1 (NIPP1) and protein phosphatase type 1 (PP1) in *Drosophila:* consequences of over-expression of NIPP1 in flies and suppression by co-expression of PP1. Biochem. J. 368: 789-797.
5. Vulsteke, V., et al. 2004. Inhibition of spliceosome assembly by the cell cycle-regulated protein kinase MELK and involvement of splicing factor NIPP1. J. Biol. Chem. 279: 8642-8647.
6. Van Eynde, A., et al. 2004. The nuclear scaffold protein NIPP1 is essential for early embryonic development and cell proliferation. Mol. Cell. Biol. 24: 5863-5874.

CHROMOSOMAL LOCATION

Genetic locus: Ppp1r8 (mouse) mapping to 4 D2.3.

PRODUCT

NIPP1 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 NIPP1 shRNA Plasmid (m): sc-62690-SH and NIPP1 shRNA (m) Lentiviral Particles: sc-62690-V as alternate gene silencing products.

For independent verification of NIPP1 (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-62690A, sc-62690B and sc-62690C.

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

NIPP1 siRNA (m) is recommended for the inhibition of NIPP1 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

NIPP1 (A-11): sc-393991 is recommended as a control antibody for monitoring of NIPP1 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 NIPP1 gene expression knockdown using RT-PCR Primer: NIPP1 (m)-PR: sc-62690-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.

PROTOCOLS

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