SANTA CRUZ BIOTECHNOLOGY, INC.

NUFIP1 siRNA (h): sc-105367

BACKGROUND

NUFIP1 (nuclear fragile X mental retardation-interacting protein 1) is a 495 amino acid protein that localizes to the nucleus and can interact with FMR1 (fragile X mental retardation protein) and BRCA1, a breast and ovarian-specific tumor suppressor. Through its interaction with FMR1, NUFIP1 is thought to shuttle specific mRNPs to active neuronal synapses, thereby regulating the translation of synaptic plasticity-related mRNA. The close interaction of NUFIP1 with FMR1, a protein that is essential for proper dendritic spine maturation, suggests close involvement in neuronal development. Interaction of NUFIP1 with BRCA1 results in the formation of a complex which binds the positive elongation factor P-TEFb, thus stimulating RNA polymerase II (pol II) transcription. When associated with BRAC1, NUFIP1 acts as a transcriptional activator contributing to tumor suppressor gene expression. NUFIP1 contains one C_2H_2-type zinc finger and is expressed throughout the body.

REFERENCES

1. Bardoni, B., et al. 2000. A novel RNA-binding nuclear protein that interacts with the fragile X mental retardation (FMR1) protein. Hum. Mol. Genet. 8: 2557-2566.
2. Bardoni, B., et al. 2000. Assignment of NUFIP1 (nuclear FMRP interacting protein 1) gene to chromosome 13q14 and assignment of a pseudogene to chromosome 6q12. Cytogenet. Cell Genet. 89: 11-13.
3. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 604354. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
4. Bardoni, B., et al. 2003. NUFIP1 (nuclear FMRP interacting protein 1) is a nucleocytoplasmic shuttling protein associated with active synaptoneurosomes. Exp. Cell Res. 289: 95-107.
5. Cabart, P., et al. 2004. BRCA1 cooperates with NUFIP and P-TEFb to activate transcription by RNA polymerase II. Oncogene 23: 5316-5329.
6. McKeegan, K.S., et al. 2007. A dynamic scaffold of pre-snoRNP factors facilitates human box C/D snoRNP assembly. Mol. Cell. Biol. 27: 6782-6793.

CHROMOSOMAL LOCATION

Genetic locus: NUFIP1 (human) mapping to 13q14.12.

PRODUCT

NUFIP1 siRNA (h) 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 NUFIP1 shRNA Plasmid (h): sc-105367-SH and NUFIP1 shRNA (h) Lentiviral Particles: sc-105367-V as alternate gene silencing products.

For independent verification of NUFIP1 (h) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-105367A, sc-105367B and sc-105367C.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

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

NUFIP1 siRNA (h) is recommended for the inhibition of NUFIP1 expression in human 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

NUFIP1 (2662C1a): sc-81567 is recommended as a control antibody for monitoring of NUFIP1 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).

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor NUFIP1 gene expression knockdown using RT-PCR Primer: NUFIP1 (h)-PR: sc-105367-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

PROTOCOLS

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