SANTA CRUZ BIOTECHNOLOGY, INC.

CTDSPL siRNA (m): sc-142615

BACKGROUND

The family of small CTD phosphatases preferentially catalyze the dephosphorylation of Ser5 within a concensus repeat. As a member of this family, CTDSPL (CTD small phosphatase-like protein), also known as nuclear LIM interactor-interacting factor 1, RBSP3 or protein YA22, is a 276 amino acid nuclear protein that is ubiquitously expressed. There are two isoforms of CTDSPL that exist as a result of alternative splicing events. Since both of these isoforms reduce the level of phosphorylated Rb protein when transfected into mammary carcinoma cells, CTDSPL functions primarily as a phosphatase. The gene encoding CTDSPL is deleted in 15% of major epithelial cancers, suggesting that CTDSPL plays a role in tumor suppression. Due to evidence showing that inactive small CTD phosphatases interfere with the repressor element 1-silencing transcription factor/neuron-restrictive silencer factor (REST/NRSF) complex, therefore promoting neuronal differentiation, it is suspected that CTDSPL may function as a transcription regulator that acts to silence neuronal genes.

REFERENCES

1. Ishikawa, S., et al. 1997. Sequence analysis of a 685-kb genomic region on chromosome 3p22-p21.3 that is homozygously deleted in a lung carcinoma cell line. DNA Res. 4: 35-43.
2. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 608592. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
3. Yeo, M., et al. 2003. A novel RNA polymerase II C-terminal domain phosphatase that preferentially dephosphorylates serine 5. J. Biol. Chem. 278: 26078-26085.
4. Kashuba, V.I., et al. 2004. RBSP3 (HYA22) is a tumor suppressor gene implicated in major epithelial malignancies. Proc. Natl. Acad. Sci. USA 101: 4906-4911.
5. Yeo, M., et al. 2005. Small CTD phosphatases function in silencing neuronal gene expression. Science 307: 596-600.
6. Murabito, J.M., et al. 2007. A genome-wide association study of breast and prostate cancer in the NHLBI's Framingham Heart Study. BMC Med. Genet. 8: S6.

CHROMOSOMAL LOCATION

Genetic locus: Ctdspl (mouse) mapping to 9 F3.

PRODUCT

CTDSPL 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 CTDSPL shRNA Plasmid (m): sc-142615-SH and CTDSPL shRNA (m) Lentiviral Particles: sc-142615-V as alternate gene silencing products.

For independent verification of CTDSPL (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-142615A, sc-142615B and sc-142615C.

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

CTDSPL siRNA (m) is recommended for the inhibition of CTDSPL 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor CTDSPL gene expression knockdown using RT-PCR Primer: CTDSPL (m)-PR: sc-142615-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.