

PLU-1 siRNA (h): sc-44522

BACKGROUND

PLU-1 is a large (1,544 amino acid) nuclear protein that interacts with brain factor-1 (BF-1) and paired box 9 (PAX9), both of which are developmental transcription factors. PLU-1 belongs to the testis-cancer antigen group of proteins and is a member of the ARID family of DNA binding proteins. It is a multi-domain protein with strong transcriptional repression properties. PLU-1 shows restricted expression in adult tissues, with high expression in testis and transient expression in the pregnant mammary gland. Both the PLU-1 gene and the PLU-1 protein product are specifically upregulated in breast cancer. PLU-1 may be important in meiotic transcription because of its apparent association with chromatin.

REFERENCES

1. Lu, P.J., et al. 1999. A novel gene (PLU-1) containing highly conserved putative DNA/chromatin binding motifs is specifically up-regulated in breast cancer. *J. Biol. Chem.* 274: 15633-15645.
2. Madsen, B., et al. 2002. Characterisation and developmental expression of mouse Plu-1, a homolog of a human nuclear protein (PLU-1) which is specifically upregulated in breast cancer. *Gene Expr. Patterns* 2: 275-282.
3. Tan, K., et al. 2003. Human PLU-1 has transcriptional repression properties and interacts with the developmental transcription factors BF-1 and PAX9. *J. Biol. Chem.* 278: 20507-20513.
4. Madsen, B., et al. 2003. PLU-1, a transcriptional repressor and putative testis-cancer antigen, has a specific expression and localization pattern during meiosis. *Chromosoma* 112: 124-132.

CHROMOSOMAL LOCATION

Genetic locus: KDM5B (human) mapping to 1q32.1.

PRODUCT

PLU-1 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see PLU-1 shRNA Plasmid (h): sc-44522-SH and PLU-1 shRNA (h) Lentiviral Particles: sc-44522-V as alternate gene silencing products.

For independent verification of PLU-1 (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-44522A, sc-44522B and sc-44522C.

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

PLU-1 siRNA (h) is recommended for the inhibition of PLU-1 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 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

PLU-1 (7H3D7): sc-517291 is recommended as a control antibody for monitoring of PLU-1 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 PLU-1 gene expression knockdown using RT-PCR Primer: PLU-1 (h)-PR: sc-44522-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Wang, J., et al. 2018. JARID1B modulates breast cancer cell apoptosis by regulating p53 expression. *Int. J. Clin. Exp. Pathol.* 11: 4529-4536.
2. Tortelli, T.C., et al. 2021. Metformin-induced chemosensitization to cisplatin depends on P53 status and is inhibited by Jarid1b overexpression in non-small cell lung cancer cells. *Aging* 13: 21914-21940.

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.