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SZABO-SCANDIC HandelsgmbH

Quellenstraße 110, A-1100 Wien

T. +43(0)1 489 3961-0

F. +43(0)1 489 3961-7

mail@szabo-scandic.com

www.szabo-scandic.com

[linkedin.com/company/szaboscandic](https://www.linkedin.com/company/szaboscandic) 

PLU-1 shRNA (h) Lentiviral Particles: sc-44522-V

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

- 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.
- Madsen, B., et al. 2002. Characterisation and developmental expression of mouse Plu-1, a homologue of a human nuclear protein (PLU-1) which is specifically up-regulated in breast cancer. *Mech. Dev.* 119S239-119S246.
- 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.
- Madsen, B., et al. 2003. PLU-1, a transcriptional repressor and putative testis-cancer antigen, has a specific expression and localisation pattern during meiosis. *Chromosoma* 112: 124-132.
- Catteau, A., et al. 2004. A short region of the promoter of the breast cancer associated PLU-1 gene can regulate transcription *in vitro* and *in vivo*. *Int. J. Oncol.* 25: 5-16.

CHROMOSOMAL LOCATION

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

PRODUCT

PLU-1 shRNA (h) Lentiviral Particles is a pool of concentrated, transduction-ready viral particles containing 3 target-specific constructs that encode 19-25 nt (plus hairpin) shRNA designed to knock down gene expression. Each vial contains 200 μ l frozen stock containing 1.0×10^6 infectious units of virus (IFU) in Dulbecco's Modified Eagle's Medium with 25 mM HEPES pH 7.3. Suitable for 10-20 transductions. Also see PLU-1 siRNA (h): sc-44522 and PLU-1 shRNA Plasmid (h): sc-44522-SH as alternate gene silencing products.

STORAGE

Store lentiviral particles at -80° C. Stable for at least one year from the date of shipment. Once thawed, particles can be stored at 4° C for up to one week. Avoid repeated freeze thaw cycles.

PROTOCOLS

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

APPLICATIONS

PLU-1 shRNA (h) Lentiviral Particles is recommended for the inhibition of PLU-1 expression in human cells.

SUPPORT REAGENTS

Control shRNA Lentiviral Particles: sc-108080. Available as 200 μ l frozen viral stock containing 1.0×10^6 infectious units of virus (IFU); contains an shRNA construct encoding a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA.

GENE EXPRESSION MONITORING

PLU-1 (H-180): sc-67035 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 (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

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 $55-60^{\circ}$ C and the extension temperature should be $68-72^{\circ}$ C.

BIOSAFETY

Lentiviral particles can be employed in standard Biosafety Level 2 tissue culture facilities (and should be treated with the same level of caution as with any other potentially infectious reagent). Lentiviral particles are replication-incompetent and are designed to self-inactivate after transduction and integration of shRNA constructs into genomic DNA of target cells.

RESEARCH USE

The purchase of this product conveys to the buyer the nontransferable right to use the purchased amount of the product and all replicates and derivatives for research purposes conducted by the buyer in his laboratory only (whether the buyer is an academic or for-profit entity). The buyer cannot sell or otherwise transfer (a) this product (b) its components or (c) materials made using this product or its components to a third party, or otherwise use this product or its components or materials made using this product or its components for Commercial Purposes.