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# Calcyclin shRNA (h) Lentiviral Particles: sc-43655-V

## BACKGROUND

Calcyclin, also known as Prolactin receptor-associated protein (PRA), growth factor-inducible protein 2A9, S-100 calcium-binding protein A6 (S-100A6) or MLN 4, is a homodimeric member of the S-100 calcium-binding protein family whose expression is upregulated in proliferating and differentiating cells. Calcyclin is inducible by growth factors and overexpressed in acute myeloid leukemias. It is expressed in a cell-specific manner in subpopulations of neurons and astrocytes and in epithelial cells and fibroblasts. Calcyclin is a specific target of S-100B protein *in vivo*. The binding of Calcyclin to S-100B is stabilized by S-100B-bound calcium and zinc. Calcyclin associates with both Annexin XI and CacyBP (calcyclin-binding protein). It functions to activate several processes along the calcium signal transduction pathway including the regulation of cell growth, proliferation, secretion and exocytosis.

## REFERENCES

1. Calabretta, B., et al. 1986. Molecular cloning of the cDNA for a growth factor-inducible gene with strong homology to S-100, a calcium-binding protein. *J. Biol. Chem.* 261: 12628-12632.
2. Gabius, H.J., et al. 1989. Identification of a cell cycle-dependent gene product as a sialic acid-binding protein. *Biochem. Biophys. Res. Commun.* 163: 506-512.
3. Yamashita, N., et al. 1999. Distribution of a specific calcium-binding protein of the S100 protein family, S100A6 (calcyclin), in subpopulations of neurons and glial cells of the adult rat nervous system. *J. Comp. Neurol.* 404: 235-257.
4. Komatsu, K., et al. 2000. Increased expression of S100A6 (calcyclin), a calcium-binding protein of the S100 family, in human colorectal adenocarcinomas. *Clin. Cancer Res.* 6: 172-177.

## CHROMOSOMAL LOCATION

Genetic locus: S100A6 (human) mapping to 1q21.3.

## PRODUCT

Calcyclin 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  $\mu$ l frozen stock containing  $1.0 \times 10^6$  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 Calcyclin siRNA (h): sc-43655 and Calcyclin shRNA Plasmid (h): sc-43655-SH as alternate gene silencing products.

## STORAGE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.

## APPLICATIONS

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

## SUPPORT REAGENTS

Control shRNA Lentiviral Particles: sc-108080. Available as 200  $\mu$ l frozen viral stock containing  $1.0 \times 10^6$  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

Calcyclin (F-1): sc-271396 is recommended as a control antibody for monitoring of Calcyclin 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-mouse IgG-HRP: sc-2005 (dilution range: 1:2000-1:32,000) or Cruz Marker™ compatible goat anti-mouse IgG-HRP: sc-2031 (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-mouse IgG-FITC: sc-2010 (dilution range: 1:100-1:400) or goat anti-mouse IgG-TR: sc-2781 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Calcyclin gene expression knockdown using RT-PCR Primer: Calcyclin (h)-PR: sc-43655-PR (20  $\mu$ l, 215 bp). Annealing temperature for the primers should be  $55-60^\circ\text{C}$  and the extension temperature should be  $68-72^\circ\text{C}$ .

## 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.