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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](mailto:mail@szabo-scandic.com)

[www.szabo-scandic.com](http://www.szabo-scandic.com)

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

# Calcyclin siRNA (h): sc-43655

## 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.
5. Hoyaux, D., et al. 2000. S100A6, a calcium- and zinc-binding protein, is overexpressed in SOD1 mutant mice, a model for amyotrophic lateral sclerosis. *Biochim. Biophys. Acta* 1498: 264-272.
6. Nowotny, M., et al. 2000. Characterization of the interaction of Calcyclin (S100A6) and calcyclin-binding protein. *J. Biol. Chem.* 275: 31178-31182.
7. Lesniak, W., et al. 2000. Regulation of cell specific expression of Calcyclin (S100A6) in nerve cells and other tissues. *Acta Neurobiol. Exp.* 60: 569-575.

## CHROMOSOMAL LOCATION

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

## PRODUCT

Calcyclin 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  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Calcyclin shRNA Plasmid (h): sc-43655-SH and Calcyclin shRNA (h) Lentiviral Particles: sc-43655-V as alternate gene silencing products.

For independent verification of Calcyclin (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-43655A, sc-43655B and sc-43655C.

## 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  $\mu$ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330  $\mu$ l of RNase-free water makes a 10  $\mu$ M solution in a 10  $\mu$ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

## APPLICATIONS

Calcyclin siRNA (h) is recommended for the inhibition of Calcyclin 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  $\mu$ M in 66  $\mu$ 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

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 reagents are recommended: 1) Western Blotting: use m-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker<sup>™</sup> Molecular Weight Standards: sc-2035, UltraCruz<sup>®</sup> Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgG $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz<sup>®</sup> Mounting Medium: sc-24941 or UltraCruz<sup>®</sup> Hard-set Mounting Medium: sc-359850.

## 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° 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](http://www.scbt.com) for detailed protocols and support products.