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# Calcyon shRNA (h) Lentiviral Particles: sc-43656-V

## BACKGROUND

Calcyon is a single transmembrane protein that interacts with D1 dopamine receptors. Dopamine is a neurotransmitter that regulates synaptic transmission involved in learning and memory. D1 receptors, the most abundant dopamine receptor in the central nervous system, appear to modulate the activity of D2 dopamine receptors, mediate various behavioural responses, and regulate neuron growth and differentiation. Calcyon is present in neuronal cell bodies and processes of the cortex and hippocampus, and it is especially abundant in pyramidal neurons. Interaction of calcyon with D1 receptors results in a release of intracellular calcium.

## REFERENCES

1. Zhou, Q.Y., et al. 1990. Cloning and expression of human and rat D1 dopamine receptors. *Nature* 347: 76-80.
2. Huang, Y.Y., et al. 1995. D1/D5 receptor agonists induce a protein synthesis-dependent late potentiation in the CA1 region of the hippocampus. *Proc. Natl. Acad. Sci. USA* 92: 2446-2450.
3. Ogawa, N. 1995. Molecular and chemical neuropharmacology of dopamine receptor subtypes. *Acta Med. Okayama* 49: 1-11.
4. Schmidt, U., et al. 1998. Differentiative effects of dopamine on striatal neurons involve stimulation of the cAMP/PKA pathway. *Mol. Cell. Neurosci.* 11: 9-18.
5. Lezcano, N., et al. 2000. Dual signaling regulated by calcyon, a D1 dopamine receptor interacting protein. *Science* 287: 1660-1664.
6. Undie, A.S., et al. 2000. Dopaminergic behaviors and signal transduction mediated through adenylate cyclase and phospholipase C pathways. *Neuropharmacol* 39: 75-78.

## CHROMOSOMAL LOCATION

Genetic locus: CALY (human) mapping to 10q26.3.

## PRODUCT

Calcyon shRNA (h) Lentiviral Particles are concentrated, transduction-ready viral particles containing a target-specific construct that encodes a 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 Calcyon siRNA (h): sc-43656 and Calcyon shRNA Plasmid (h): sc-43656-SH as alternate gene silencing products.

## STORAGE

Store lentiviral particles at  $-80^\circ$  C. Stable for at least one year from the date of shipment. Once thawed, particles can be stored at  $4^\circ$  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

Calcyon shRNA (h) Lentiviral Particles is recommended for the inhibition of Calcyon 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

Calcyon (G-8): sc-271004 is recommended as a control antibody for monitoring of Calcyon 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 Calcyon gene expression knockdown using RT-PCR Primer: Calcyon (h)-PR: sc-43656-PR (20  $\mu$ l, 463 bp). 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.