

# Cyclophilin J siRNA (h): sc-94419

## BACKGROUND

Cyclophilins are conserved, ubiquitous and abundant cytosolic peptidyl-prolyl *cis-trans* isomerases that accelerate the isomerization of XaaPro peptide bonds and the refolding of proteins. Human cyclophilin A (CyPA), an intracellular protein of 165 amino acids, is the target of cyclosporin A (CsA) and is encoded by a single unique gene conserved between yeast and humans. Cyclophilin B (CyPB) is secreted in biological fluids such as blood and milk, and binds to a specific receptor present on human peripheral blood lymphocytes and is expressed in Jurkat cells, a line of human lymphoblasts. Cyclophilin D (CyPD) is a widely expressed cytoplasmic protein that catalyzes the *cis-trans* isomerization of proline imidic peptide bonds in oligopeptides. Cyclophilin J (CYPJ), also known as PP1L3 (peptidylprolyl isomerase (cyclophilin)-like 3), is a 161 amino acid ubiquitously expressed member of the cyclophilin-type PPIase family that may be involved in pre-mRNA splicing. Cyclophilin J exists as two alternatively spliced isoforms.

## REFERENCES

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3. Baines, C.P., et al. 2005. Loss of Cyclophilin D reveals a critical role for mitochondrial permeability transition in cell death. *Nature* 434: 658-662.
4. Hu, P., et al. 2007. Ontogeny of rdh9 (Crad3) expression: ablation causes changes in retinoid and steroid metabolizing enzymes, but RXR and androgen signaling seem normal. *Biochim. Biophys. Acta* 1770: 694-705.
5. Naga, K.K., et al. 2007. High Cyclophilin D content of synaptic mitochondria results in increased vulnerability to permeability transition. *J. Neurosci.* 27: 7469-7475.
6. Du, H., et al. 2008. Cyclophilin D deficiency attenuates mitochondrial and neuronal perturbation and ameliorates learning and memory in Alzheimer's disease. *Nat. Med.* 14: 1097-1105.
7. Luvisetto, S., et al. 2008. Enhancement of anxiety, facilitation of avoidance behavior, and occurrence of adult-onset obesity in mice lacking mitochondrial cyclophilin D. *Neuroscience* 155: 585-596.
8. Halestrap, A.P. and Pasdois, P. 2009. The role of the mitochondrial permeability transition pore in heart disease. *Biochim. Biophys. Acta* 1787: 1402-1415.
9. Li, V., et al. 2009. Role of cyclophilin D-dependent mitochondrial permeability transition in glutamate-induced calcium deregulation and excitotoxic neuronal death. *Exp. Neurol.* 218: 171-182.

## CHROMOSOMAL LOCATION

Genetic locus: PP1L3 (human) mapping to 2q33.1.

## PROTOCOLS

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

## PRODUCT

Cyclophilin J 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 Cyclophilin J shRNA Plasmid (h): sc-94419-SH and Cyclophilin J shRNA (h) Lentiviral Particles: sc-94419-V as alternate gene silencing products.

For independent verification of Cyclophilin J (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-94419A, sc-94419B and sc-94419C.

## 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

Cyclophilin J siRNA (h) is recommended for the inhibition of Cyclophilin J 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.

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Cyclophilin J gene expression knockdown using RT-PCR Primer: Cyclophilin J (h)-PR: sc-94419-PR (20  $\mu$ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

## SELECT PRODUCT CITATIONS

1. Simón Serrano, S., et al. 2022. Synergistic effects of sanglifehrin-based cyclophilin inhibitor NV651 with cisplatin in hepatocellular carcinoma. *Cancers* 14: 4553.

## RESEARCH USE

For research use only, not for use in diagnostic procedures.