SANTA CRUZ BIOTECHNOLOGY, INC.

# PARL siRNA (m): sc-61296

## BACKGROUND

Presenilins associated rhombiod-like protein (PARL) is a mitochondrial intramembrane-cleaving protease belonging to the S54 family of proteins. PARL is involved in intramembrane regulated proteolysis as its catalytic activity involves the cleaving of signaling proteins at intracellular membranes to release active fragments in signal transduction cascades. Using a triad of histidine, serine and asparagine, PARL cleaves type-1 transmembrane domains. PARL is a multi-pass membrane protein localizing to the inner and outer mitochondrial membranes, but it can also be detected in the nucleus following proteolytical processing of P-β. PARL co-localizes with the presenilins PSEN1 and PSEN2, the familial Alzheimer disease products.

## REFERENCES


1. Pellegrini, L., et al. 2001. PAMP and PARL, two novel putative metalloproteases interacting with the COOH-terminus of Presenilin 1 and 2. J. Alzheimers Dis. 3: 181-190.
2. Koonin, E.V., et al. 2003. The rhomboids: a nearly ubiquitous family of intramembrane serine proteases that probably evolved by multiple ancient horizontal gene transfers. Genome Biol. 4: R19.
3. Sik, A., et al. 2004. Self-regulated cleavage of the mitochondrial intramembrane-cleaving protease PARL yields P-β, a nuclear-targeted peptide. J. Biol. Chem. 279: 15323-15329.
4. Walder, K., et al. 2005. The mitochondrial rhomboid protease PSARL is a new candidate gene for type 2 diabetes. Diabetologia 48: 459-468.
5. Reuter-Lorenz, P.A., et al. 2005. A split-brain model of Alzheimer's disease? Behavioral evidence for comparable intra and interhemispheric decline. Neuropsychologia 43: 1307-1317.
6. Gottlieb, E., et al. 2006. OPA1 and PARL keep a lid on apoptosis. Cell 126: 27-29.
7. Cipolat, S., et al. 2006. Mitochondrial rhomboid PARL regulates cytochrome c release during apoptosis via OPA1-dependent cristae remodeling. Cell 126: 163-175.


## CHROMOSOMAL LOCATION

Genetic locus: Parl (mouse) mapping to 16 A3.

## PRODUCT

PARL siRNA (m) 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see PARL shRNA Plasmid (m): sc-61296-SH and PARL shRNA (m) Lentiviral Particles: sc-61296-V as alternate gene silencing products.

For independent verification of PARL (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-61296A, sc-61296B and sc-61296C.

## RESEARCH USE

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

## 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 µl of the RNAse-free water provided. Resuspension of the siRNA duplex in 330 µl of RNAse-free water makes a 10 µM solution in a 10 µM Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

## APPLICATIONS

PARL siRNA (m) is recommended for the inhibition of PARL expression in mouse 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 µM in 66 µl. 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

PARL (F-3): sc-514836 is recommended as a control antibody for monitoring of PARL 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-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor PARL gene expression knockdown using RT-PCR Primer: PARL (m)-PR: sc-61296-PR (20 µl, 435 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

## PROTOCOLS

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