

# PARL (K-15): sc-47312

## BACKGROUND

Presenilins associated rhomboid-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- $\beta$ . PARL co-localizes with the presenilins PSEN1 and PSEN2, the familial Alzheimer disease products.

## REFERENCES

- 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.
- 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.
- Sik, A., et al. 2004. Self-regulated cleavage of the mitochondrial intramembrane-cleaving protease PARL yields P- $\beta$ , a nuclear-targeted peptide. *J. Biol. Chem.* 279: 15323-15329.
- Walder, K., et al. 2005. The mitochondrial rhomboid protease PSARL is a new candidate gene for type 2 diabetes. *Diabetologia* 48: 459-468.
- 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.
- Gottlieb, E., et al. 2006. OPA1 and PARL keep a lid on apoptosis. *Cell* 126: 27-29.
- 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: PSARL (human) mapping to 3q27.1; Psarl (mouse) mapping to 16 A3.

## SOURCE

PARL (K-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of PARL of human origin.

## STORAGE

Store at 4° C, **\*\*DO NOT FREEZE\*\***. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## PROTOCOLS

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

## PRODUCT

Each vial contains 200  $\mu$ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-47312 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

PARL (K-15) is recommended for detection of PARL of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000); PARL isoforms 1 and 2.

PARL (K-15) is also recommended for detection of PARL in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for PARL siRNA (h): sc-61295, PARL siRNA (m): sc-61296, PARL shRNA Plasmid (h): sc-61295-SH, PARL shRNA Plasmid (m): sc-61296-SH, PARL shRNA (h) Lentiviral Particles: sc-61295-V and PARL shRNA (m) Lentiviral Particles: sc-61296-V.

Molecular Weight of PARL: 40 kDa.

Positive Controls: MCF7 whole cell lysate: sc-2206 or Jurkat whole cell lysate: sc-2204.

## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (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 donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

## RESEARCH USE

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