

# PCMT1 (D-24): sc-133894

## BACKGROUND

PCMT1 (protein-L-isoaspartate (D-aspartate) O-methyltransferase), also known as PIMT, is a member of the L-isoaspartyl/D-aspartyl protein methyltransferase family and is highly expressed in brain. Functioning as a monomer, PCMT1 localizes to the cytoplasm and participates in the degradation and/or repair of damaged proteins. More specifically, PCMT1 recognizes isomerized Asp or Asn residues in peptides and proteins and catalyzes the conversion of abnormal L-isoaspartyl and D-aspartyl residues to methyl esters that may then spontaneously hydrolyze to re-form normal aspartyl residues. In congruence with this reaction, PCMT1 converts the methyl donor S-adenosylmethionine (AdoMet) to S-adenosylhomocysteine (AdoHcy). In mice lacking PCMT1, damaged proteins accumulate in a variety of tissues and the ratio between AdoMet and AdoHcy is increased in brain tissue. The phenotypic result is progressive epilepsy and death at an early age.

## REFERENCES

1. MacLaren, D.C., et al. 1992. The L-isoaspartyl/D-aspartyl protein methyltransferase gene (PCMT1) maps to human chromosome 6q22.3-6q24 and the syntenic region of mouse chromosome 10. *Genomics* 14: 852-856.
2. MacLaren, D.C., et al. 1992. Alternative splicing of the human isoaspartyl protein carboxyl methyltransferase RNA leads to the generation of a C-terminal-RDEL sequence in isozyme II. *Biochem. Biophys. Res. Commun.* 185: 277-283.
3. DeVry, C.G. and Clarke, S. 1999. Assignment of the protein L-isoaspartate (D-aspartate) O-methyltransferase gene (PCMT1) to human chromosome bands 6q24 → q25 with radiation hybrid mapping. *Cytogenet. Cell Genet.* 84: 130-131.
4. DeVry, C.G. and Clarke, S. 1999. Polymorphic forms of the protein L-isoaspartate (D-aspartate) O-methyltransferase involved in the repair of age-damaged proteins. *J. Hum. Genet.* 44: 275-288.
5. Farrar, C. and Clarke, S. 2002. Altered levels of S-adenosylmethionine and S-adenosylhomocysteine in the brains of L-isoaspartyl (D-Aspartyl) O-methyltransferase-deficient mice. *J. Biol. Chem.* 277: 27856-27863.
6. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 176851. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
7. Farrar, C.E. and Clarke, S. 2005. Diet-dependent survival of protein repair-deficient mice. *J. Nutr. Biochem.* 16: 554-561.

## CHROMOSOMAL LOCATION

Genetic locus: PCMT1 (human) mapping to 6q25.1; Pcm1 (mouse) mapping to 10 A1.

## SOURCE

PCMT1 (D-24) is a Protein A purified rabbit polyclonal antibody raised against synthetic PCMT1 peptide of human origin.

## RESEARCH USE

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

## PRODUCT

Each vial contains 100 µg IgG in 1.0 ml PBS with < 0.1% sodium azide, 0.1% gelatin and < 0.02% sucrose.

## APPLICATIONS

PCMT1 (D-24) is recommended for detection of PCMT1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for PCMT1 siRNA (h): sc-95544, PCMT1 siRNA (m): sc-152112, PCMT1 shRNA Plasmid (h): sc-95544-SH, PCMT1 shRNA Plasmid (m): sc-152112-SH, PCMT1 shRNA (h) Lentiviral Particles: sc-95544-V and PCMT1 shRNA (m) Lentiviral Particles: sc-152112-V.

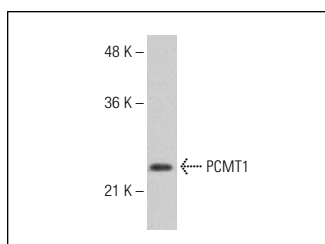
Molecular Weight of PCMT1: 25 kDa.

Positive Controls: Hep G2 cell lysate: sc-2227 or HeLa whole cell lysate: sc-2200.

## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

## DATA



PCMT1 (D-24): sc-133894. Western blot analysis of PCMT1 expression in Hep G2 whole cell lysate.

## CHROMOSOMAL LOCATION

1. Lee, J.C., et al. 2012. Protein L-isoaspartyl methyltransferase regulates p53 activity. *Nat. Commun.* 3: 927.

## 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.