SANTA CRUZ BIOTECHNOLOGY, INC.

PCMT1 (D-E7): sc-100977

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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, PCMT 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-andenosylhomocysteine (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., et al. 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., et al. 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., et al. 2002. Altered levels of S-adenosylmethionine and S-adenosylhomocysteine in the brains of L-isoaspartyl (D-Aspartyl) O-meth-yltransferase-deficient mice. J. Biol. Chem. 277: 27856-27863.

CHROMOSOMAL LOCATION

Genetic locus: PCMT1 (human) mapping to 6q25.1; Pcmt1 (mouse) mapping to 10 A1.

SOURCE

PCMT1 (D-E7) is a mouse monoclonal antibody raised against recombinant PCMT1 of human origin.

PRODUCT

Each vial contains 100 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

STORAGE

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

APPLICATIONS

PCMT1 (D-E7) 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) and immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)].

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.

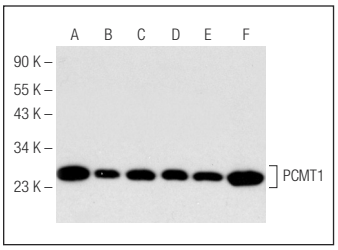
Molecular Weight of PCMT1: 25 kDa.

Positive Controls: PC-12 cell lysate: sc-2250, HEK293 whole cell lysate: sc-45136 or Hep G2 cell lysate: sc-2227.

RECOMMENDED SUPPORT REAGENTS

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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

DATA



PCMT1 (D-E7): sc-100977. Western blot analysis of PCMT1 expression in PC-12 (**A**), Jurkat (**B**), Hep G2 (**C**), RAW 264.7 (**D**), NIH/3T3 (**E**) and HEK293 (**F**) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Lee, J.C., et al. 2012. Protein L-isoaspartyl methyltransferase regulates p53 activity. Nat. Commun. 3: 927.
2. Erdozain, A.M., et al. 2014. Alcohol-related brain damage in humans. PLoS ONE 9: e93586.
3. Shi, L., et al. 2017. PCMT1 ameliorates neuronal apoptosis by inhibiting the activation of MST1 after subarachnoid hemorrhage in rats. Transl. Stroke Res. E-published.
4. Simko, V., et al. 2020. PIMT binding to C-terminal Ala459 of CAIX is involved in inside-out signaling necessary for its catalytic activity. Int. J. Mol. Sci. 21: E8545.

RESEARCH USE

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