

PMPCA (B-8): sc-390471

BACKGROUND

PMPCA (peptidase (mitochondrial processing) α), also known as α -MPP, P-55, INPP5E or MPPA, is a 525 amino acid protein that belongs to the peptidase M16 family and exists as a heterodimer of α and β subunits. Localizing to mitochondrial matrix, PMPCA cleaves transit peptides from mitochondrial protein precursors. PMPCA is encoded by a gene that maps to human chromosome 9, which houses over 900 genes and comprises nearly 4% of the human genome. Hereditary hemorrhagic telangiectasia, which is characterized by harmful vascular defects, and Familial dysautonomia, are both associated with chromosome 9. Notably, chromosome 9 encompasses the largest interferon family gene cluster.

REFERENCES

1. Nagase, T., et al. 1995. Prediction of the coding sequences of unidentified human genes. III. The coding sequences of 40 new genes (KIAA0081-KIAA0120) deduced by analysis of cDNA clones from human cell line KG-1. *DNA Res.* 2: 37-43.
2. Luciano, P., et al. 1997. Functional cooperation of the mitochondrial processing peptidase subunits. *J. Mol. Biol.* 272: 213-225.

CHROMOSOMAL LOCATION

Genetic locus: PMPCA (human) mapping to 9q34.3; Pmpca (mouse) mapping to 2 A3.

SOURCE

PMPCA (B-8) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 215-229 within an internal region of PMPCA of human origin.

PRODUCT

Each vial contains 200 μ g IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

PMPCA (B-8) is available conjugated to agarose (sc-390471 AC), 500 μ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-390471 HRP), 200 μ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-390471 PE), fluorescein (sc-390471 FITC), Alexa Fluor® 488 (sc-390471 AF488), Alexa Fluor® 546 (sc-390471 AF546), Alexa Fluor® 594 (sc-390471 AF594) or Alexa Fluor® 647 (sc-390471 AF647), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-390471 AF680) or Alexa Fluor® 790 (sc-390471 AF790), 200 μ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-390471 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

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STORAGE

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

APPLICATIONS

PMPCA (B-8) is recommended for detection of PMPCA of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

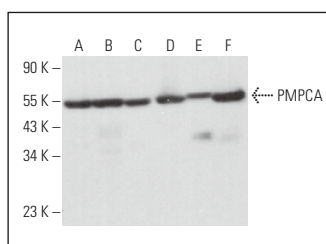
PMPCA (B-8) is also recommended for detection of PMPCA in additional species, including canine.

Suitable for use as control antibody for PMPCA siRNA (h): sc-92579, PMPCA siRNA (m): sc-152350, PMPCA shRNA Plasmid (h): sc-92579-SH, PMPCA shRNA Plasmid (m): sc-152350-SH, PMPCA shRNA (h) Lentiviral Particles: sc-92579-V and PMPCA shRNA (m) Lentiviral Particles: sc-152350-V.

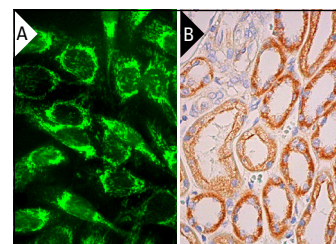
Molecular Weight of PMPCA: 58 kDa.

Positive Controls: SW480 cell lysate: sc-2219, K-562 whole cell lysate: sc-2203 or A549 cell lysate: sc-2413.

DATA



PMPCA (B-8): sc-390471. Western blot analysis of PMPCA expression in K-562 (A), SW480 (B), A549 (C), T-47D (D), BYDP (E) and Hep G2 (F) whole cell lysates.



PMPCA (B-8): sc-390471. Immunofluorescence staining of formalin-fixed SW480 cells showing mitochondrial localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human kidney tissue showing cytoplasmic staining of cells in tubules (B).

SELECT PRODUCT CITATIONS

1. Li, G.B., et al. 2017. Polyphyllin I induces mitophagic and apoptotic cell death in human breast cancer cells by increasing mitochondrial PINK1 levels. *Oncotarget* 8: 10359-10374.
2. Li, G.B., et al. 2018. Mitochondrial fission and mitophagy depend on Cofilin-mediated Actin depolymerization activity at the mitochondrial fission site. *Oncogene* 37: 1485-1502.
3. Chen, C., et al. 2019. A unique SUMO-interacting motif of Trx2 is critical for its mitochondrial presequence processing and anti-oxidant activity. *Front. Physiol.* 10: 1089.
4. Zheng, J.F., et al. 2019. PMPCB silencing sensitizes HCC tumor cells to sorafenib therapy. *Mol. Ther.* 27: 1784-1795.

RESEARCH USE

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