

# PMPCA (B-8): sc-390471

## BACKGROUND

PMPCA (peptidase (mitochondrial processing)  $\alpha$ ), also known as  $\alpha$ -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  $\alpha$  and  $\beta$  subunits. Localizing to mitochondrial matrix, PMPCA cleaves transit peptides from mitochondrial protein precursors. PMPCA is encoded by a gene that maps to human chromosome 9q34.3, 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.
3. Zhuang, H., et al. 2006. Lupus-like disease and high interferon levels corresponding to trisomy of the type I interferon cluster on chromosome 9p. *Arthritis Rheum.* 54: 1573-1579.

## 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  $\mu$ g IgG<sub>2b</sub> 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  $\mu$ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-390471 HRP), 200  $\mu$ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-390471 PE), fluorescein (sc-390471 FITC), Alexa Fluor<sup>®</sup> 488 (sc-390471 AF488), Alexa Fluor<sup>®</sup> 546 (sc-390471 AF546), Alexa Fluor<sup>®</sup> 594 (sc-390471 AF594) or Alexa Fluor<sup>®</sup> 647 (sc-390471 AF647), 200  $\mu$ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor<sup>®</sup> 680 (sc-390471 AF680) or Alexa Fluor<sup>®</sup> 790 (sc-390471 AF790), 200  $\mu$ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

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

## 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  $\mu$ g per 100-500  $\mu$ 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).

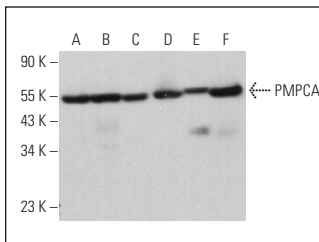
PMPCA (B-8) is also recommended for detection of PMPCA in additional species, including canine.

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.

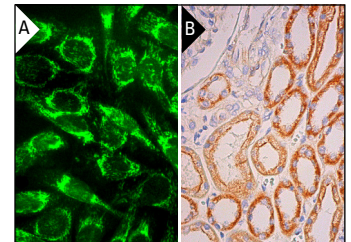
Molecular Weight of PMPCA: 58 kDa.

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.

## RESEARCH USE

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

## PROTOCOLS

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

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