

# PPA1 (B-8): sc-377081

## BACKGROUND

PPA1 (pyrophosphate phospho-hydrolase 1), also known as IOPPP (inorganic pyrophosphatase), PP1, PP or PPase, belongs to the PPase family of inorganic pyrophosphatases. Inorganic pyrophosphatases catalyze the intracellular conversion of pyrophosphate to inorganic phosphate, a key reaction for phosphate metabolism in cells. PPA1 is a ubiquitously expressed protein that localizes to the cytoplasm and is required for cell growth. It exists as a homodimer exhibiting magnesium dependent activity. The binding of two magnesium ions is required to stimulate PPA1 activity; however, both subunits in the homodimer are capable of binding four magnesium ions. The additional ions are useful in forming complexes with substrates and products. In addition, the activity of PPA1 can be inhibited by calcium.

## REFERENCES

1. Fisher, R.A., et al. 1974. Further studies on erythrocyte inorganic pyrophosphatase: an examination of different mammalian species and human-Chinese hamster hybrid cells. *Ann. Hum. Genet.* 38: 171-178.
2. Fisher, R.A., et al. 1974. Studies on human erythrocyte inorganic pyrophosphatase. *Ann. Hum. Genet.* 37: 341-353.
3. McAlpine, P.J., et al. 1976. Assignment of the inorganic pyrophosphatase gene locus (PP) to chromosome 10 in man. *Cytogenet. Cell Genet.* 16: 201-203.
4. Chern, C.J. 1976. Localization of the structural genes for hexokinase-1 and inorganic pyrophosphatase on region (pter→q24) of human chromosome 10. *Cytogenet. Cell Genet.* 17: 338-342.
5. Vihinen, M., et al. 1992. Computer modeling of two inorganic pyrophosphatases. *Biochem. Biophys. Res. Commun.* 186: 122-128.
6. Fairchild, T.A., et al. 1999. Cloning and expression profile of human inorganic pyrophosphatase. *Biochim. Biophys. Acta* 1447: 133-136.

## CHROMOSOMAL LOCATION

Genetic locus: PPA1 (human) mapping to 10q22.1; Ppa1 (mouse) mapping to 10 B4.

## SOURCE

PPA1 (B-8) is a mouse monoclonal antibody raised against amino acids 228-289 mapping at the C-terminus of PPA1 of human origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

PPA1 (B-8) is available conjugated to agarose (sc-377081 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-377081 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-377081 PE), fluorescein (sc-377081 FITC), Alexa Fluor® 488 (sc-377081 AF488), Alexa Fluor® 546 (sc-377081 AF546), Alexa Fluor® 594 (sc-377081 AF594) or Alexa Fluor® 647 (sc-377081 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-377081 AF680) or Alexa Fluor® 790 (sc-377081 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

## APPLICATIONS

PPA1 (B-8) is recommended for detection of PPA1 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], 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).

Suitable for use as control antibody for PPA1 siRNA (h): sc-62850, PPA1 siRNA (m): sc-62851, PPA1 shRNA Plasmid (h): sc-62850-SH, PPA1 shRNA Plasmid (m): sc-62851-SH, PPA1 shRNA (h) Lentiviral Particles: sc-62850-V and PPA1 shRNA (m) Lentiviral Particles: sc-62851-V.

Molecular Weight of PPA1 monomer: 36 kDa.

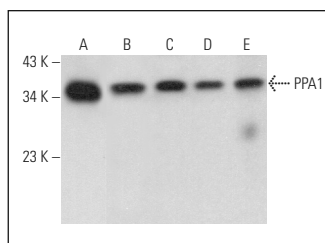
Molecular Weight of PPA1 homodimer: 70 kDa.

Positive Controls: C6 whole cell lysate: sc-364373, Hep G2 cell lysate: sc-2227 or A-431 whole cell lysate: sc-2201.

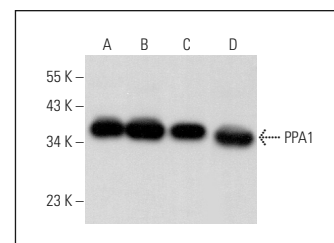
## RECOMMENDED SUPPORT REAGENTS

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). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

## DATA



PPA1 (B-8): sc-377081. Western blot analysis of PPA1 expression in Hep G2 (A), NIH/3T3 (B), RAW 264.7 (C) and C6 (D) whole cell lysates and rat testis tissue extract (E).



PPA1 (B-8): sc-377081. Western blot analysis of PPA1 expression in A-431 (A), HT-29 (B), ZR-75-1 (C) and IMR-32 (D) whole cell lysates.

## STORAGE

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

## RESEARCH USE

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

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