

PPA1 (m): 293T Lysate: sc-122727

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., Turner, B.M., Dorkin, H.L. and Harris, H. 1974. Studies on human erythrocyte inorganic pyrophosphatase. *Ann. Hum. Genet.* 37: 341-353.
2. Fisher, R.A., Putt, W. and Harris, H. 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.
3. McAlpine, P.J., Mohandas, T., Ray, M., Wang, H. and Hamerton, J.L. 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., Lundin, M. and Baltscheffsky, H. 1992. Computer modeling of two inorganic pyrophosphatases. *Biochem. Biophys. Res. Commun.* 186: 122-128.
6. Fairchild, T.A. and Patejunas, G. 1999. Cloning and expression profile of human inorganic pyrophosphatase. *Biochim. Biophys. Acta* 1447: 133-136.
7. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 179030. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
8. Thoma, I., Loeffler, C., Sinha, A.K., Gupta, M., Kriskche, M., Steffan, B., Roitsch, T. and Mueller, M.J. 2003. Cyclopentenone isoprostanes induced by reactive oxygen species trigger defense gene activation and phytoalexin accumulation in plants. *Plant J.* 34: 363-375.
9. Curbo, S., Lagier-Tourenne, C., Carrozzo, R., Palenzuela, L., Lucoli, S., Hirano, M., Santorelli, F., Arenas, J., Karlsson, A. and Johansson, M. 2006. Human mitochondrial pyrophosphatase: cDNA cloning and analysis of the gene in patients with mtDNA depletion syndromes. *Genomics* 87: 410-416.

CHROMOSOMAL LOCATION

Genetic locus: Ppa1 (mouse) mapping to 10 B4.

PRODUCT

PPA1 (m): 293T Lysate represents a lysate of mouse PPA1 transfected 293T cells and is provided as 100 µg protein in 200 µl SDS-PAGE buffer.

APPLICATIONS

PPA1 (m): 293T Lysate is suitable as a Western Blotting positive control for mouse reactive PPA1 antibodies. Recommended use: 10-20 µl per lane.

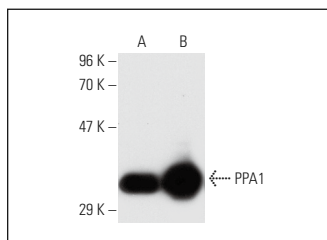
Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

PPA1 (42K-7): sc-100823 is recommended as a positive control antibody for Western Blot analysis of enhanced mouse PPA1 expression in PPA1 transfected 293T cells (starting dilution 1:100, dilution range 1:100-1:1,000).

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.

DATA



PPA1 (42K-7): sc-100823. Western blot analysis of PPA1 expression in non-transfected: sc-117752 (A) and mouse PPA1 transfected: sc-122727 (B) 293T whole cell lysates.

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.