SANTA CRUZ BIOTECHNOLOGY, INC.

PGAM1 (6): sc-130334

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Members of the PGAM (phosphoglycerate mutase) family of proteins are important components of glucose and 2,3-BPGA (2,3-bisphosphoglycerate) metabolism. They are responsible for catalyzing the transfer of phospho groups between the carbon atoms of phosphoglycerates. In mammals there are two types of PGAM isozymes: PGAM1 (also known as PGAMB) and PGAM2 (also known as PGAMA). In the cell, PGAM1 and PGAM2 exist as either homodimers or heterodimers and are responsible for the interconversion of 3-phosphoglycerate and 2-phosphoglycerate. PGAM2 homodimers are expressed in skeletal muscle, mature sperm cells and heart; PGAM1 homodimers are found in most other tissues; and PGAM1/PGAM2 heterodimers are found exclusively in the heart. PGAM4, also known as PGAM3, is a protein formerly considered to be specific to humans. Initially the PGAM4 gene was described as a pseudogene but it is now known to encode a functional protein at least 25 million years old. The gene encoding PGAM4 is believed to have originated by retrotransposition, with the original copy being the PGAM1 gene.

REFERENCE

1. Zhang, J., et al. 2001. Mouse phosphoglycerate mutase M and B isozymes: cDNA cloning, enzyme activity assay and mapping. Gene 264: 273-279.
2. Betrán, E., et al. 2002. Evolution of the phosphoglycerate mutase processed gene in human and chimpanzee revealing the origin of a new primate gene. Mol. Biol. Evol. 19: 654-663.

CHROMOSOMAL LOCATION

Genetic locus: PGAM1 (human) mapping to 10q24.1; Pgam1 (mouse) mapping to 19 C3.

SOURCE

PGAM1 (6) is a mouse monoclonal antibody raised against recombinant PGAM1 of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

PGAM1 (6) is available conjugated to agarose (sc-130334 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-130334 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-130334 PE), fluorescein (sc-130334 FITC), Alexa Fluor® 488 (sc-130334 AF488), Alexa Fluor® 546 (sc-130334 AF546), Alexa Fluor® 594 (sc-130334 AF594) or Alexa Fluor® 647 (sc-130334 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-130334 AF680) or Alexa Fluor® 790 (sc-130334 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

STORAGE

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

APPLICATIONS

PGAM1 (6) is recommended for detection of PGAM1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

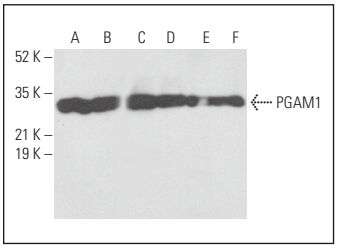
Suitable for use as control antibody for PGAM1 siRNA (h): sc-62781, PGAM1 siRNA (m): sc-62782, PGAM1 shRNA Plasmid (h): sc-62781-SH, PGAM1 shRNA Plasmid (m): sc-62782-SH, PGAM1 shRNA (h) Lentiviral Particles: sc-62781-V and PGAM1 shRNA (m) Lentiviral Particles: sc-62782-V.

Molecular Weight of PGAM1 monomer: 29 kDa.

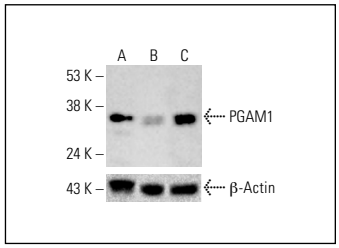
Molecular Weight of PGAM4 monomer: 29 kDa.

Positive Controls: WI-38 whole cell lysate: sc-364260, F9 cell lysate: sc-2245 or Jurkat whole cell lysate: sc-2204.

DATA



PGAM1 (6): sc-130334. Western blot analysis of PGAM1 expression in Jurkat (**A**), WI-38 (**B**), RAW 264.7 (**C**) and F9 (**D**) whole cell lysates and rat heart (**E**) and rat liver (**F**) tissue extracts.



PGAM1 (6): sc-130334. Western blot analysis of PGAM1 expression in HeLa (**A**), untreated HCT-116 (**B**) and chemically-treated HCT-116 (**C**) whole cell lysates. β-Actin (C4): sc-47778 used as loading control. Detection reagent used: m-IgG Fc BP-HRP: sc-525409.

SELECT PRODUCT CITATIONS

1. Hamelin, C., et al. 2011. Identification and verification of heat shock protein 60 as a potential serum marker for colorectal cancer. FEBS J. 278: 4845-4859.
2. Maddocks, O.D., et al. 2013. Serine starvation induces stress and p53-dependent metabolic remodelling in cancer cells. Nature 493: 542-546.
3. Zhang, J., et al. 2018. S-glutathionylation of estrogen receptor α affects dendritic cell function. J. Biol. Chem. 293: 4366-4380.
4. Huang, K., et al. 2019. A novel allosteric inhibitor of phosphoglycerate mutase 1 suppresses growth and metastasis of non-small-cell lung cancer. Cell Metab. 30: 1107-1119.
5. Park, M.K., et al. 2021. NEAT1 is essential for metabolic changes that promote breast cancer growth and metastasis. Cell Metab. 33: 2380-2397.e9.
6. Hou, Y., et al. 2023. METTL14 modulates glycolysis to inhibit colorectal tumorigenesis in p53-wild-type cells. EMBO Rep. 24: e56325.

RESEARCH USE

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