SANTA CRUZ BIOTECHNOLOGY, INC.

PGAM1/4 (D-5): sc-365677

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 homo-dimers 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.

CHROMOSOMAL LOCATION

Genetic locus: PGAM1 (human) mapping to 10q24.1, PGAM4 (human) mapping to Xq21.1; Pgam1 (mouse) mapping to 19 C3.

SOURCE

PGAM1/4 (D-5) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 116-147 within an internal region of PGAM1 of human origin.

PRODUCT

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

PGAM1/4 (D-5) is available conjugated to agarose (sc-365677 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-365677 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-365677 PE), fluorescein (sc-365677 FITC), Alexa Fluor® 488 (sc-365677 AF488), Alexa Fluor® 546 (sc-365677 AF546), Alexa Fluor® 594 (sc-365677 AF594) or Alexa Fluor® 647 (sc-365677 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-365677 AF680) or Alexa Fluor® 790 (sc-365677 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-365677 P, (100 µg 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.

PROTOCOLS

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

APPLICATIONS

PGAM1/4 (D-5) is recommended for detection of PGAM1 of mouse, rat and human origin and PGAM4 of 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).

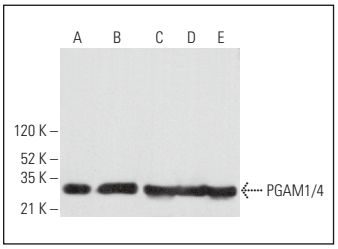
PGAM1/4 (D-5) is also recommended for detection of PGAM1 and PGAM4 in additional species, including canine and bovine.

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

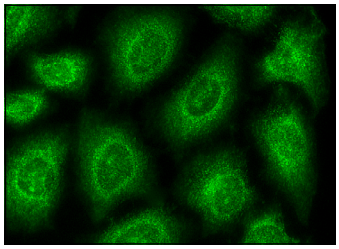
Molecular Weight of PGAM1/4 monomer: 29 kDa.

Positive Controls: HeLa nuclear extract: sc-2120, Jurkat whole cell lysate: sc-2204 or HL-60 whole cell lysate: sc-2209.

DATA



PGAM1/4 (D-5): sc-365677. Western blot analysis of PGAM1/4 expression in HeLa nuclear extract (**A**) and HL-60 (**B**), Jurkat (**C**), F9 (**D**) and WI-38 (**E**) whole cell lysates.



PGAM1/4 (D-5): sc-365677. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization.

SELECT PRODUCT CITATIONS

1. Santos, F.M., et al. 2018. iTRAQ quantitative proteomic analysis of vitreous from patients with retinal detachment. Int. J. Mol. Sci. 19: 1157.
2. Brandão, B.B., et al. 2020. Dynamic changes in DICER levels in adipose tissue control metabolic adaptations to exercise. Proc. Natl. Acad. Sci. USA 117: 23932-23941.
3. Albanesi, J., et al. 2020. Transcriptional and metabolic dissection of ATRA-induced granulocytic differentiation in NB4 acute promyelocytic leukemia cells. Cells 9: 2423.
4. Tsutsumi, R., et al. 2023. Endocytic vesicles act as vehicles for glucose uptake in response to growth factor stimulation. bioRxiv. E-published.
5. Tsutsumi, R., et al. 2024. Endocytic vesicles act as vehicles for glucose uptake in response to growth factor stimulation. Nat. Commun. 15: 2843.

RESEARCH USE

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