

PGM 3 (D-4): sc-390239

BACKGROUND

Phosphoglucomutase (PGM), which belongs to the hexose-phosphate mutase family, plays an essential role in glycogen catabolism (glycogenolysis) as well as in the process of glycogen synthesis (glycogenesis). During glycogenolysis, PGM converts glucose-1-phosphate (Glc-1-P) to glucose-6-phosphate (Glc-6-P), thus promoting glycolysis and the pentose phosphate pathway. During glycogenesis, PGM functions in the opposite manner, converting glucose-6-phosphate into glucose-1-phosphate, to facilitate glycogen synthesis. PGM has five structural loci: PGM 1, PGM 2, PGM 3, PGM 4 and Aciculin. These five genetic forms of PGM differ in amino acid sequences but catalyze the same reactions, therefore indicating that they are isozymes. PGM 3 is a 542 amino acid protein expressed ubiquitously with the exception of lung tissue. Highest level of expression is found in heart, liver, pancreas and placenta tissue. All phosphoglucomutases act as monomers and bind one magnesium ion per subunit.

REFERENCES

1. Lamm, L.U., et al. 1970. Linkage and association studies of two phosphoglucomutase loci (PGM1 and PGM3) to eighteen other markers. Analysis of the segregation at the marker loci. *Hum. Hered.* 20: 305-318.
2. Takahashi, N., et al. 1982. A phylogeny for the principal alleles of the human phosphoglucomutase-1 locus. *Proc. Natl. Acad. Sci. USA* 79: 6636-6640.
3. Whitehouse, D.B., et al. 1992. Phosphoglucomutase 1: complete human and rabbit mRNA sequences and direct mapping of this highly polymorphic marker on human chromosome 1. *Proc. Natl. Acad. Sci. USA* 89: 411-415.

CHROMOSOMAL LOCATION

Genetic locus: PGM3 (human) mapping to 6q14.1; Pgm3 (mouse) mapping to 9 E3.1.

SOURCE

PGM 3 (D-4) is a mouse monoclonal antibody raised against amino acids 243-542 mapping at the C-terminus of PGM 3 of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

PGM 3 (D-4) is available conjugated to agarose (sc-390239 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-390239 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-390239 PE), fluorescein (sc-390239 FITC), Alexa Fluor® 488 (sc-390239 AF488), Alexa Fluor® 546 (sc-390239 AF546), Alexa Fluor® 594 (sc-390239 AF594) or Alexa Fluor® 647 (sc-390239 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-390239 AF680) or Alexa Fluor® 790 (sc-390239 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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RESEARCH USE

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

APPLICATIONS

PGM 3 (D-4) is recommended for detection of PGM 3 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), 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).

Suitable for use as control antibody for PGM 3 siRNA (h): sc-95517, PGM 3 siRNA (m): sc-152192, PGM 3 shRNA Plasmid (h): sc-95517-SH, PGM 3 shRNA Plasmid (m): sc-152192-SH, PGM 3 shRNA (h) Lentiviral Particles: sc-95517-V and PGM 3 shRNA (m) Lentiviral Particles: sc-152192-V.

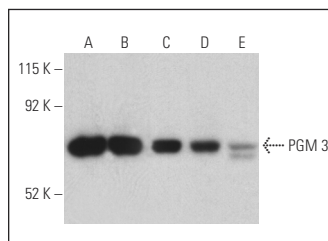
Molecular Weight of PGM 3: 60 kDa.

Positive Controls: Hep G2 cell lysate: sc-2227, HeLa whole cell lysate: sc-2200 or K-562 whole cell lysate: sc-2203.

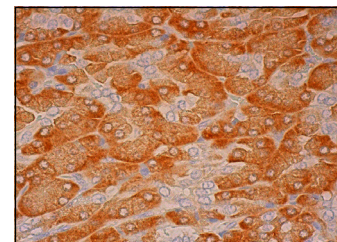
RECOMMENDED SUPPORT REAGENTS

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. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



PGM 3 (D-4): sc-390239. Western blot analysis of PGM 3 expression in K-562 (A), Hep G2 (B), HeLa (C), Caco-2 (D) and c4 (E) whole cell lysates. Detection reagent used: m-IgG₁ BP-HRP: sc-525408.



PGM 3 (D-4): sc-390239. Immunoperoxidase staining of formalin fixed, paraffin-embedded human pancreas tissue showing cytoplasmic staining of exocrine glandular cells.

SELECT PRODUCT CITATIONS

1. Feinberg, D., et al. 2022. Inhibition of O-GlcNAcylation decreases the cytotoxic function of natural killer cells. *Front. Immunol.* 13: 841299.

STORAGE

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