SANTA CRUZ BIOTECHNOLOGY, INC.

PGM 3 (H-300): sc-292939

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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.
4. Pang, H., et al. 2002. Identification of human phosphoglucomutase 3 (PGM3) as N-acetylglucosamine-phosphate mutase (AGM1). Ann. Hum. Genet. 66: 139-144.
5. Penha, L.L., et al. 2005. Cloning and characterization of the phosphoglucomutase of *Trypanosoma cruzi* and functional complementation of a *Saccharomyces cerevisiae* PGM null mutant. Glycobiology 15: 1359-1367.
6. McCarthy, T.R., et al. 2005. Overexpression of *Mycobacterium tuberculosis* manB, a phosphomannomutase that increases phosphatidylinositol mannoside biosynthesis in *Mycobacterium smegmatis* and mycobacterial association with human macrophages. Mol. Microbiol. 58: 774-790.

CHROMOSOMAL LOCATION

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

SOURCE

PGM 3 (H-300) is a rabbit polyclonal antibody raised against amino acids 243-542 mapping at the C-terminus of PGM 3 of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

PGM 3 (H-300) is recommended for detection of PGM 3 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)], 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).

PGM 3 (H-300) is also recommended for detection of PGM 3 in additional species, including equine, canine, bovine and porcine.

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.

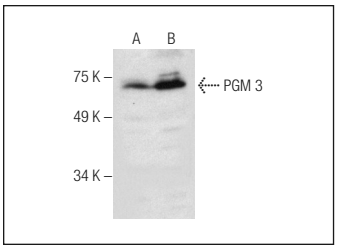
Molecular Weight of PGM 3: 60 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200 or K-562 whole cell lysate: sc-2203.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 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 goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



PGM 3 (H-300): sc-292939. Western blot analysis of PGM 3 expression in HeLa (**A**) and K-562 (**B**) 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.