

PGM 1 (C-15): sc-50656

BACKGROUND

Phosphoglucomutase, which belongs to the phosphohexose mutase family, plays a role in glycogen catabolism (glycogenolysis) as well as in the process of glycogen synthesis (glycogenesis). During glycogenolysis, PGM converts glucose-1-phosphate to glucose-6-phosphate, 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 three structural loci: PGM1, PGM2 and PGM3. These three genetic forms of PGM differ in amino acid sequences but catalyze the same reactions, therefore indicating that they are isozymes. PGM 1, a 562 amino acid protein, is highly polymorphic; three mutations and four intragenic recombination events between the three mutation sites generates eight protein variants. All phosphoglucomutases act as monomers and bind one magnesium ion per subunit.

REFERENCES

1. Takahashi, N., et al. 1983. A phylogeny for the principal alleles of the human phosphoglucomutase-1 locus. *Proc. Natl. Acad. Sci. USA* 79: 6636-6640.
2. Takahashi, N., et al. 1993. Intragenic recombination at the human phosphoglucomutase 1 locus: predictions fulfilled. *Proc. Natl. Acad. Sci. USA* 90: 10725-10729.
3. Yip, S.P., et al. 2000. Mapping recombination hotspots in human phosphoglucomutase (PGM 1). *Hum. Mol. Genet.* 8: 1699-1706.
4. Bro, C., et al. 2005. Improvement of galactose uptake in *Saccharomyces cerevisiae* through overexpression of phosphoglucomutase: example of transcript analysis as a tool in inverse metabolic engineering. *Appl. Environ. Microbiol.* 71: 6465-6472.
5. Howard, S.C., et al. 2005. Increased phosphoglucomutase activity suppresses the galactose growth defect associated with elevated levels of Ras signaling in *S. cerevisiae*. *Curr. Genet.* 49: 1-6.

CHROMOSOMAL LOCATION

Genetic locus: PGM1 (human) mapping to 1p31.3; Pgm1 (mouse) mapping to 5 C3.1.

SOURCE

PGM 1 (C-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of PGM 1 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.

Blocking peptide available for competition studies, sc-50656 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

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

APPLICATIONS

PGM 1 (C-15) is recommended for detection of PGM 1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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).

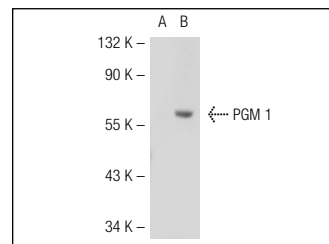
PGM 1 (C-15) is also recommended for detection of PGM 1 (phosphoglucomutase-1) in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for PGM 1 siRNA (h): sc-61332, PGM 1 siRNA (m): sc-61333, PGM 1 shRNA Plasmid (h): sc-61332-SH, PGM 1 shRNA Plasmid (m): sc-61333-SH, PGM 1 shRNA (h) Lentiviral Particles: sc-61332-V and PGM 1 shRNA (m) Lentiviral Particles: sc-61333-V.

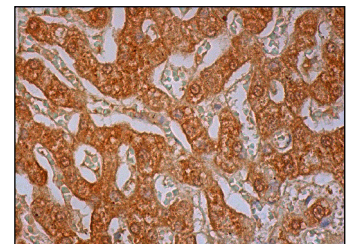
Molecular Weight of PGM 1: 61 kDa.

Positive Controls: PGM 1 (h): 293T Lysate: sc-114029, Jurkat whole cell lysate: sc-2204 or HeLa whole cell lysate: sc-2200.

DATA



PGM 1 (C-15): sc-50656. Western blot analysis of PGM 1 expression in non-transfected: sc-117752(A) and human PGM 1 transfected: sc-114029 (B) 293T whole cell lysates.



PGM 1 (C-15): sc-50656. Immunoperoxidase staining of formalin fixed, paraffin-embedded human liver tissue showing cytoplasmic and nuclear staining of hepatocytes.

RESEARCH USE

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

PROTOCOLS

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



Try **PGM 1 (D-8): sc-373796** or **PGM 1 (Y-173): sc-100411**, our highly recommended monoclonal alternatives to PGM 1 (C-15).