

PGM 3 (EC-13): sc-100410

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 (PGM 1 and PGM 3) 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.

CHROMOSOMAL LOCATION

Genetic locus: PGM3 (human) mapping to 6q14.1.

SOURCE

PGM 3 (EC-13) is a mouse monoclonal antibody raised against recombinant PGM 3 of human origin.

PRODUCT

Each vial contains 50 µg IgG₁ kappa light chain in 0.5 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

PGM 3 (EC-13) is recommended for detection of PGM 3 of 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), 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 shRNA Plasmid (h): sc-95517-SH and PGM 3 shRNA (h) Lentiviral Particles: sc-95517-V.

Molecular Weight of PGM 3: 60 kDa.

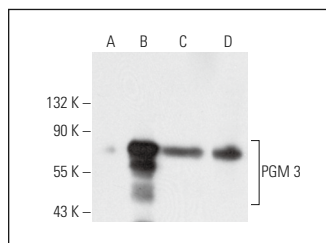
Positive Controls: HeLa whole cell lysate: sc-2200, PGM 3 (h): 293 Lysate: sc-110842 or K-562 whole cell lysate: sc-2203.

RECOMMENDED SUPPORT REAGENTS

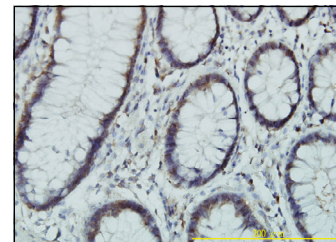
To ensure optimal results, the following support reagents are recommended:

- 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 (EC-13): sc-100410. Western blot analysis of PGM 3 expression in non-transfected 293: sc-110760 (A), human PGM 3 transfected 293: sc-110842 (B), HeLa (C) and K-562 (D) whole cell lysates.



PGM 3 (EC-13): sc-100410. Immunoperoxidase staining of formalin-fixed, paraffin-embedded human colon tissue showing cytoplasmic localization.

SELECT PRODUCT CITATIONS

1. Marchesini, M., et al. 2016. PML is required for telomere stability in non-neoplastic human cells. *Oncogene* 35: 1811-1821.
2. Marchesini, M., et al. 2016. PML is required for telomere stability in non-neoplastic human cells. *Oncogene* 35: 1876.
3. Andres, L.M., et al. 2017. Chemical modulation of protein O-GlcNAcylation via OGT inhibition promotes human neural cell differentiation. *ACS Chem. Biol.* 12: 2030-2039.
4. Lee, H., et al. 2022. Targeting PGM 3 as a novel therapeutic strategy in KRAS/LKB1 co-mutant lung cancer. *Cells* 11: 176.

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.

PROTOCOLS

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