

# PGAM1/4 (E-14): sc-67756

## 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 homodimers 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.

## REFERENCES

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- Betrán, E., et al. 2002. Evolution of the phosphoglycerate mutase processed gene in human and chimpanzee revealing the origin of a new primate gene. *Mol. Biol. Evol.* 19: 654-663.
- Shalom-Barak, T. and Knaus, U.G. 2002. A p21-activated kinase-controlled metabolic switch upregulates phagocyte NADPH oxidase. *J. Biol. Chem.* 277: 40659-40665.
- Saavedra, E., et al. 2005. Glycolysis in *Entamoeba histolytica*. Biochemical characterization of recombinant glycolytic enzymes and flux control analysis. *FEBS J.* 272: 1767-1783.
- Evans, M.J., et al. 2005. Target discovery in small-molecule cell-based screens by *in situ* proteome reactivity profiling. *Nat. Biotechnol.* 23: 1303-1307.
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- Huang, L.J., et al. 2006. Proteomic analysis of secreted proteins of non-small cell lung cancer. *Ai Zheng* 25: 1361-1367.

## 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 (E-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of PGAM1 of human origin.

## RESEARCH USE

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

## 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-67756 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

PGAM1/4 (E-14) is recommended for detection of PGAM1 of mouse, rat and human origin, and PGAM4 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

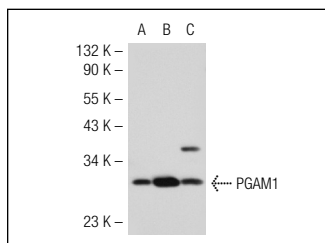
PGAM1/4 (E-14) is also recommended for detection of PGAM1 and PGAM4 in additional species, including equine, canine, bovine and porcine.

Molecular Weight of PGAM1 monomer: 29 kDa.

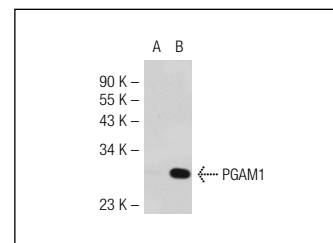
Molecular Weight of PGAM4 monomer: 29 kDa.

Positive Controls: HeLa nuclear extract: sc-2120, PGAM1 (h): 293T Lysate: sc-111400 or PGAM1 (m2): 293T Lysate: sc-122512.

## DATA



PGAM1/4 (E-14): sc-67756. Western blot analysis of PGAM1 expression in non-transfected 293T: sc-117752 (A) and human PGAM1 transfected 293T: sc-111400 (B) whole cell lysates and HeLa nuclear extract (C).



PGAM1/4 (E-14): sc-67756. Western blot analysis of PGAM1 expression in non-transfected: sc-117752 (A) and mouse PGAM1 transfected: sc-122512 (B) 293T whole cell lysates.

## SELECT PRODUCT CITATIONS

- Okuda, H., et al. 2012. A single nucleotide polymorphism within the novel sex-linked testis-specific retrotransposed PGAM4 gene influences human male fertility. *PLoS ONE* 7: e35195.

## STORAGE

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


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Try **PGAM1/4 (D-5): sc-365677** or **PGAM1/4 (C-5): sc-376638**, our highly recommended monoclonal alternatives to PGAM1/4 (E-14).