

PGAM1 (m): 293T Lysate: sc-122511

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

1. Zhang, J., Yu, L., Fu, Q., Gao, J., Xie, Y., Chen, J., Zhang, P., Liu, Q. and Zhao, S. 2001. Mouse phosphoglycerate mutase M and B isozymes: cDNA cloning, enzyme activity assay and mapping. *Gene* 264: 273-279.
2. Betrán, E., Wang, W., Jin, L. and Long, M. 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.
3. 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.
4. Saavedra, E., Encalada, R., Pineda, E., Jasso-Chávez, R. and Moreno-Sánchez, R. 2005. Glycolysis in *Entamoeba histolytica*. Biochemical characterization of recombinant glycolytic enzymes and flux control analysis. *FEBS J.* 272: 1767-1783.
5. Evans, M.J., Saghatelian, A., Sorensen, E.J. and Cravatt, B.F. 2005. Target discovery in small-molecule cell-based screens by *in situ* proteome reactivity profiling. *Nat. Biotechnol.* 23: 1303-1307.
6. de Aauri, P., Repiso, A., Oliva, B., Vives-Corrons, J.L., Climent, F. and Carreras, J. 2005. Characterization of the first described mutation of human red blood cell phosphoglycerate mutase. *Biochim. Biophys. Acta* 1740: 403-410.
7. Huang, L.J., Chen, S.X., Luo, W.J., Jiang, H.H., Zhang, P.F. and Yi, H. 2006. Proteomic analysis of secreted proteins of non-small cell lung cancer. *Ai Zheng* 25: 1361-1367.
8. Su, H.X., Xu, D.Z., Zhang, Y.H., Men, K., Zhao, X.N., Li, D., Zhang, L., Zhang, J.X. and Yan, Y.P. 2007. Screening cellular proteins binding to the core region of hepatitis C virus RNA genome with digoxin-labeled nucleic acids. *Intervirology* 50: 303-309.
9. Evans, M.J., Morris, G.M., Wu, J., Olson, A.J., Sorensen, E.J. and Cravatt, B.F. 2007. Mechanistic and structural requirements for active site labeling of phosphoglycerate mutase by spiroepoxides. *Mol. Biosyst.* 3: 495-506.

CHROMOSOMAL LOCATION

Genetic locus: Pgam1 (mouse) mapping to 19 C3.

PRODUCT

PGAM1 (m): 293T Lysate represents a lysate of mouse PGAM1 transfected 293T cells and is provided as 100 µg protein in 200 µl SDS-PAGE buffer.

APPLICATIONS

PGAM1 (m): 293T Lysate is suitable as a Western Blotting positive control for mouse reactive PGAM1 antibodies. Recommended use: 10-20 µl per lane.

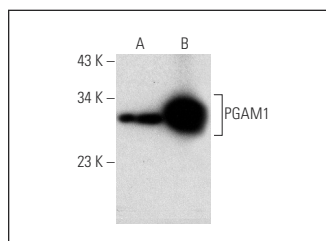
Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

PGAM1/4 (D-5): sc-365677 is recommended as a positive control antibody for Western Blot analysis of enhanced mouse PGAM1 expression in PGAM1 transfected 293T cells (starting dilution 1:100, dilution range 1:100-1:1,000).

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.

DATA



PGAM1/4 (D-5): sc-365677. Western blot analysis of PGAM1 expression in non-transfected: sc-117752 (A) and mouse PGAM1 transfected: sc-122511 (B) 293T whole cell lysates.

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. 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.