

PGK1 (14): sc-130335

BACKGROUND

Phosphoglycerate kinases 1/2 (PGK1/2, ATP:3-phospho-D-glycerate 1-phosphotransferase, EC 2.7.2.3) are somatically expressed, glycolytic enzymes that catalyze the transfer of a phosphoryl group from the acyl phosphate of 1,3-bisphosphoglycerate to ADP, thereby forming ATP and 3-phosphoglycerate. The human PGK gene is interrupted by 10 introns and spans 23 kilobases, and is X chromosome-linked at position Xq21.1, a region implicated in prostate cancer, androgen insensitivity, perineal hypospadias, and other genetic abnormalities. In addition to influencing glycolysis, the PGK1 is secreted by tumor cells and contributes to proliferative angiogenic processes as a disulfide reductase. PGK1 mediated reduction of disulphide bonds in the serine proteinase plasmin initiates the release of the tumor blood vessel inhibitor angiostatin, an event that is critical for blood vessel formation or angiogenesis in tumor expansion and metastasis.

CHROMOSOMAL LOCATION

Genetic locus: PGK1 (human) mapping to Xq21.1; Pkg1 (mouse) mapping to X D.

SOURCE

PGK1 (14) is a mouse monoclonal antibody raised against recombinant PGK1 of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

PGK1 (14) is available conjugated to agarose (sc-130335 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-130335 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-130335 PE), fluorescein (sc-130335 FITC), Alexa Fluor[®] 488 (sc-130335 AF488), Alexa Fluor[®] 546 (sc-130335 AF546), Alexa Fluor[®] 594 (sc-130335 AF594) or Alexa Fluor[®] 647 (sc-130335 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-130335 AF680) or Alexa Fluor[®] 790 (sc-130335 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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APPLICATIONS

PGK1 (14) is recommended for detection of PGK1 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)], 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 PGK1 siRNA (h): sc-36215, PGK1 siRNA (m): sc-36216, PGK1 shRNA Plasmid (h): sc-36215-SH, PGK1 shRNA Plasmid (m): sc-36216-SH, PGK1 shRNA (h) Lentiviral Particles: sc-36215-V and PGK1 shRNA (m) Lentiviral Particles: sc-36216-V.

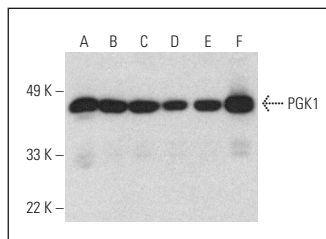
Molecular Weight of PGK1: 45 kDa.

Positive Controls: Hep G2 cell lysate: sc-2227, JAR cell lysate: sc-2276 or NCI-H1299 whole cell lysate: sc-364234.

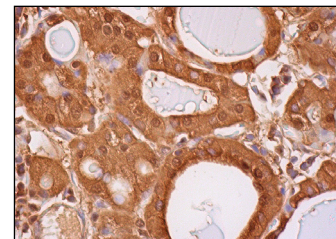
STORAGE

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

DATA



PGK1 (14) HRP: sc-130335 HRP. Direct western blot analysis of PGK1 expression in JAR (A), Hep G2 (B), NCI-H1299 (C), A-431 (D), Caco-2 (E) and HeLa (F) whole cell lysates.



PGK1 (14): sc-130335. Immunoperoxidase staining of formalin fixed, paraffin-embedded human thyroid gland tissue showing cytoplasmic and nuclear staining of glandular cells.

SELECT PRODUCT CITATIONS

- Schulz, D.M., et al. 2009. Identification of differentially expressed proteins in triple-negative breast carcinomas using DIGE and mass spectrometry. *J. Proteome Res.* 8: 3430-3438.
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- Zhang, W.J., et al. 2013. The expression and functional characterization associated with cell apoptosis and proteomic analysis of the novel gene MLLA-34 in U937 cells. *Oncol. Rep.* 29: 491-506.
- Ralhan, R., et al. 2015. Immunohistochemical subcellular localization of protein biomarkers distinguishes benign from malignant thyroid nodules: potential for fine-needle aspiration biopsy clinical application. *Thyroid* 25: 1224-1234.
- Liu, X.X., et al. 2016. Characteristics of testis-specific phosphoglycerate kinase 2 and its association with human sperm quality. *Hum. Reprod.* 31: 273-279.
- Cha, Y., et al. 2017. Metabolic control of primed human pluripotent stem cell fate and function by the miR-200c-SIRT2 axis. *Nat. Cell Biol.* 19: 445-456.
- Zhang, Y., et al. 2018. Macrophage-associated PGK1 phosphorylation promotes aerobic glycolysis and tumorigenesis. *Mol. Cell* 71: 201-215.
- Tam, A.S., et al. 2018. Selective defects in gene expression control genome instability in yeast splicing mutants. *Mol. Biol. Cell* 30: 191-200.
- Liang, J., et al. 2019. PGK1 depletion activates Nrf2 signaling to protect human osteoblasts from dexamethasone. *Cell Death Dis.* 10: 888.
- Rawal, C.C., et al. 2020. Senataxin ortholog Sen1 limits DNA:RNA hybrid accumulation at DNA double-strand breaks to control end resection and repair fidelity. *Cell Rep.* 31: 107603.

RESEARCH USE

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