SANTA CRUZ BIOTECHNOLOGY, INC.

PFKP (F-7): sc-514824

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Phosphofructokinases (PFKs) are regulatory glycolytic enzymes which catalyze the irreversible conversion of fructose-6-phosphate to fructose-1,6-bisphosphate, an intermediate in the pathway of glycolysis. Mammalian PFK is a tetramer made of three subunits, namely muscle (PFK-1), liver (PFKL) and platelet (PFKP) phosphofructokinase. PFKP (phosphofructokinase, platelet), also known as PFKF or PFK-C, is a 784 amino acid subunit of the PFK complex. Using magnesium as a cofactor, PFKP functions as an allosteric enzyme that, together with other PFK subunits, catalyzes the ATP-dependent phosphorylation of fructose-6-phosphate. Defects in the gene encoding PFKP may lead to an increased risk of obesity, as PFKP plays a crucial role in carbohydrate metabolism.

CHROMOSOMAL LOCATION

Genetic locus: PFKP (human) mapping to 10p15.2; Pfkp (mouse) mapping to 13 A1.

SOURCE

PFKP (F-7) is a mouse monoclonal antibody raised against amino acids 131-174 mapping within an internal region of PFKP of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

PFKP (F-7) is available conjugated to agarose (sc-514824 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-514824 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-514824 PE), fluorescein (sc-514824 FITC), Alexa Fluor® 488 (sc-514824 AF488), Alexa Fluor® 546 (sc-514824 AF546), Alexa Fluor® 594 (sc-514824 AF594) or Alexa Fluor® 647 (sc-514824 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-514824 AF680) or Alexa Fluor® 790 (sc-514824 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

PFKP (F-7) is recommended for detection of PFKP of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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).

Suitable for use as control antibody for PFKP siRNA (h): sc-106401, PFKP siRNA (m): sc-152181, PFKP shRNA Plasmid (h): sc-106401-SH, PFKP shRNA Plasmid (m): sc-152181-SH, PFKP shRNA (h) Lentiviral Particles: sc-106401-V and PFKP shRNA (m) Lentiviral Particles: sc-152181-V.

Molecular Weight of PFKP: 86 kDa.

Positive Controls: MCF7 whole cell lysate: sc-2206, A549 cell lysate: sc-2413 or Ramos cell lysate: sc-2216.

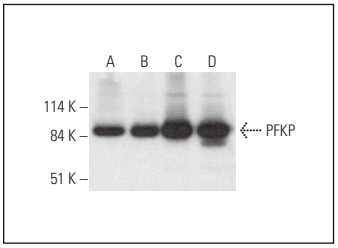
RESEARCH USE

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

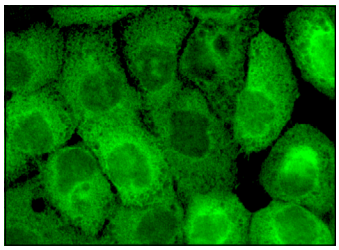
STORAGE

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

DATA



PFKP (F-7): sc-514824. Western blot analysis of PFKP expression in Ramos (**A**), MES-SA/Dx5 (**B**), A549 (**C**) and MCF7 (**D**) whole cell lysates.



PFKP (F-7): sc-514824. Immunofluorescence staining of formalin-fixed A-431 cells showing cytoplasmic and membrane localization.

SELECT PRODUCT CITATIONS

1. Zhu, W., et al. 2019. Dihydroartemisinin suppresses glycolysis of LNCaP cells by inhibiting PI3K/Akt pathway and downregulating HIF-1α expresion. Life Sci. 233: 116730.
2. Li, X., et al. 2021. PFKP facilitates ATG4B phosphorylation during amino acid deprivation-induced autophagy. Cell. Signal. 82: 109956.
3. Chen, J., et al. 2022. PFKP alleviates glucose starvation-induced metabolic stress in lung cancer cells via AMPK-ACC2 dependent fatty acid oxidation. Cell Discov. 8: 52.
4. Perez, M., et al. 2022. Conditional covalent lethality driven by oncometabolite accumulation. ACS Chem. Biol. 17: 2789-2800.
5. Hou, Y., et al. 2023. METTL14 modulates glycolysis to inhibit colorectal tumorigenesis in p53-wild-type cells. EMBO Rep. 24: e56325.
6. Bolaños-Suárez, V., et al. 2023. The mRNA and protein levels of the glycolytic enzymes lactate dehydrogenase A (LDHA) and phosphofructokinase platelet (PFKP) are good predictors of survival time, recurrence, and risk of death in cervical cancer patients. Cancer Med. 12: 15632-15649.
7. Zhang, X., et al. 2024. Ubiquitin-specific protease 14 targets PFKL-mediated glycolysis to promote the proliferation and migration of oral squamous cell carcinoma. J. Transl. Med. 22: 193.
8. Peng, Z.M., et al. 2024. PFKP deubiquitination and stabilization by USP5 activate aerobic glycolysis to promote triple-negative breast cancer progression. Breast Cancer Res. 26: 10.
9. Hu, P., et al. 2024. Fructose-1,6-diphosphate inhibits viral replication by promoting the lysosomal degradation of HMGB1 and blocking the binding of HMGB1 to the viral genome. PLoS Pathog. 20: e1012782.

PROTOCOLS

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