

p-PFK-2 car (B-3): sc-373806

BACKGROUND

Phosphofructose kinase-2 (PFK-2) belongs to the phosphoglycerate mutase family and is required for the activation of cellular glycolysis. Within the glycolysis pathway, PFK-2 regulates the synthesis and degradation of fructose 2,6-bisphosphate (F2,6BP) by enzymatically catalyzing the phosphorylation of fructose-6-phosphate to form F2,6BP. F2,6BP functions as a potent activator of 6-phosphofructo-1-kinase that can then activate the glycolysis pathway. Various tissue-specific isoforms of PFK-2 are expressed and they are differentially regulated and function as homodimers. A unique isoform, iPFK-2, is induced following proinflammatory stimuli, and it is also constitutively expressed in a variety of carcinoma cell lines, where it leads to an accumulation of intracellular F2,6BP. Activation of PFK-2 cardiac (PFK-2 car) by Insulin results from Ser 466 and Ser 483 phosphorylation and requires a PDK-1-activated protein kinase other than PKB.

REFERENCES

1. Bruni, P., et al. 1983. Increase of the glycolytic rate in human resting fibroblasts following serum stimulation. The possible role of the fructose-2, 6- bisphosphate. FEBS Lett. 159: 39-42.
2. Algaier, J., et al. 1988. Molecular cloning, sequence analysis, and expression of a human liver cDNA coding for fructose-6-P₂-kinase/fructose-2, 6-bisphosphatase. Biochem. Biophys. Res. Commun. 153: 328-333.
3. Cifuentes, M.E., et al. 1991. Hormonal control of 6-phosphofructo-2-kinase/fructose-2,6-bisphosphatase gene expression in rat hepatoma cells. J. Biol. Chem. 266: 1557-1563.

CHROMOSOMAL LOCATION

Genetic locus: PFKFB2 (human) mapping to 1q32.2; Pfkfb2 (mouse) mapping to 1 E4.

SOURCE

p-PFK-2 car (B-3) is a mouse monoclonal antibody epitope corresponding to a short amino acid sequence containing Ser 483 phosphorylated PFK-2 car 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.

p-PFK-2 car (B-3) is available conjugated to agarose (sc-373806 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-373806 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-373806 PE), fluorescein (sc-373806 FITC), Alexa Fluor® 488 (sc-373806 AF488), Alexa Fluor® 546 (sc-373806 AF546), Alexa Fluor® 594 (sc-373806 AF594) or Alexa Fluor® 647 (sc-373806 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-373806 AF680) or Alexa Fluor® 790 (sc-373806 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-373806 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

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APPLICATIONS

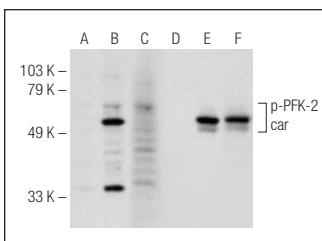
p-PFK-2 car (B-3) is recommended for detection of Ser 483 phosphorylated cardiac-type PFK-2 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000). p-PFK-2 car (B-3) is also recommended for detection of correspondingly phosphorylated cardiac-type PFK-2 in additional species, including equine, canine and bovine.

Suitable for use as control antibody for PFK-2 car siRNA (h): sc-44675, PFK-2 car siRNA (m): sc-44676, PFK-2 car shRNA Plasmid (h): sc-44675-SH, PFK-2 car shRNA Plasmid (m): sc-44676-SH, PFK-2 car shRNA (h) Lentiviral Particles: sc-44675-V and PFK-2 car shRNA (m) Lentiviral Particles: sc-44676-V.

Molecular Weight of p-PFK-2 car: 55 kDa.

Positive Controls: PFK-2 car (m): 293T Lysate: sc-122507.

DATA



Western blot analysis of PFK-2 car phosphorylation in non-transfected: sc-117752 (A,D), untreated mouse PFK-2 car transfected: sc-122507 (B,E) and lambda protein phosphatase (sc-200312A) treated mouse PFK-2 car transfected: sc-122507 (C,F) 293T whole cell lysates. Antibodies tested include p-PFK-2 car (B-3): sc-373806 (A,B,C) and PFK-2 car (Y-13): sc-50956 (D,E,F).

SELECT PRODUCT CITATIONS

1. Lou, P.H., et al. 2020. Lipid emulsion containing high amounts of n3 fatty acids (omegaven) as opposed to n6 fatty acids (intralipid) preserves Insulin signaling and glucose uptake in perfused rat hearts. Anesth. Analg. 130: 37-48.

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.