SANTA CRUZ BIOTECHNOLOGY, INC.

PFK-2 car (P-17): sc-50954

SANTA CRUZ BIOTECHNOLOGY
The Power to Question

BACKGROUND

Phosphofructokinases (PFK) are regulatory glycolytic enzymes that convert fructose 6-phosphate and ATP into fructose 1,6-bisphosphate (through PFK-1), fructose 2,6-bisphosphate (through PFK-2) and ADP. Human PFK-1 is tetrameric; isoenzymes include PFK-1 muscle (PFKM, PFK-A), PFK-1 liver (PFKL, PFK-B) and PFK-1 platelet (PFKP, PFK-C, PFKF). PFK-1 is inhibited by ATP and citrate (from the tricarboxylic acid cycle). PFK-1 undergoes activation in the presence of elevated AMP. The most potent activator is fructose-2,6-bisphosphate, which is produced by PFK-2 from the same substrate, fructose 6-phosphate. PFK-2 is bifunctional and a key regulator for PFK-1. PFK-2 catalyzes the synthesis of fructose-2,6-bisphosphate, and contains fructose-2,6-biphosphatase activity that catalyzes the degradation of fructose-2,6-bisphosphate. PFK-2 is dimeric; isoenzymes include PFK-2 liver (PFKFB1, PFRX), PFK-2 cardiac (PFKFB2), PFK-2 placental (PFKFB3, inducible PFK-2) and PFK-2 testis (PFKFB4).

REFERENCES

1. Tsuura, Y., et al. 1998. Endogenous nitric oxide inhibits glucose-induced Insulin secretion by suppression of phosphofructokinase activity in pancreatic islets. Biochem. Biophys. Res. Commun. 252: 34-38.
2. Chang, S.H., et al. 2002. Role of Ser 530, Arg 292, and His 662 in the allosteric behavior of rabbit muscle phosphofructokinase. Biochem. Biophys. Res. Commun. 290: 670-675.
3. Zeitschel, U., et al. 2002. Changes in activity and expression of phosphofructokinase in different rat brain regions after basal forebrain cholinergic lesion. J. Neurochem. 83: 371-380.
4. Su, Y., et al. 2003. The α subunit of the V-type H^+-ATPase interacts with phosphofructokinase-1 in humans. J. Biol. Chem. 278: 20013-20018.
5. Sotgia, F., et al. 2003. Phosphofructokinase muscle-specific isoform requires caveolin-3 expression for plasma membrane recruitment and caveolar targeting: implications for the pathogenesis of caveolin-related muscle diseases. Am. J. Pathol. 163: 2619-2634.
6. Haller, R.G., et al. 2004. No spontaneous second wind in muscle phosphofructokinase deficiency. Neurology 62: 82-86.

CHROMOSOMAL LOCATION

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

SOURCE

PFK-2 car (P-17) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of PFK-2 car of human origin.

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-50954 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

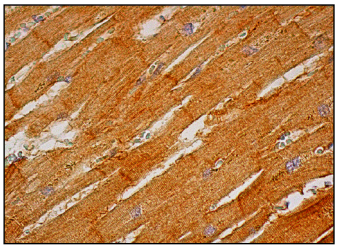
PFK-2 car (P-17) is recommended for detection of PFK-2 car of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

PFK-2 car (P-17) is also recommended for detection of PFK-2 car in additional species, including equine, canine, bovine, porcine and avian.

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 PFK-2 car: 58 kDa.

DATA



PFK-2 car (P-17): sc-50954. Immunoperoxidase staining of formalin fixed, paraffin-embedded human heart muscle tissue showing cytoplasmic staining of myocytes.

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 or our catalog for detailed protocols and support products.