

PFKFB2 (m): 293T Lysate: sc-122507

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 and 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, and 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-bisphosphatase activity that catalyzes the degradation of fructose-2,6-bisphosphate. PFK-2 is dimeric and 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. Tsubota, 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.
7. Martin, S.R., et al. 2004. Interaction of calmodulin with the phosphofructokinase target sequence. *FEBS Lett.* 577: 284-288.
8. Yamada, S., et al. 2004. Novel testis- and embryo-specific isoforms of the phosphofructokinase-1 muscle type gene. *Biochem. Biophys. Res. Commun.* 316: 580-587.
9. Vallejo, J., et al. 2005. Expression of caveolin-1 in lymphocytes induces caveolae formation and recruitment of phosphofructokinase to the plasma membrane. *FASEB J.* 19: 586-587.

CHROMOSOMAL LOCATION

Genetic locus: Pfkfb2 (mouse) mapping to 1 E4.

PRODUCT

PFKFB2 (m): 293T Lysate represents a lysate of mouse PFKFB2 transfected 293T cells and is provided as 100 µg protein in 200 µl SDS-PAGE buffer.

APPLICATIONS

PFKFB2 (m): 293T Lysate is suitable as a Western Blotting positive control for mouse reactive PFKFB2 antibodies. Recommended use: 10-20 µl per lane.

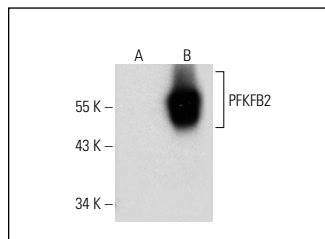
Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

PFKFB2 (D-1): sc-377416 is recommended as a positive control antibody for Western Blot analysis of enhanced mouse PFKFB2 expression in PFKFB2 transfected 293T cells (starting dilution 1:100, dilution range 1:100-1:1,000).

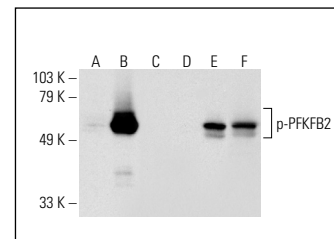
RECOMMENDED SUPPORT REAGENTS

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



PFKFB2 (D-1): sc-377416. Western blot analysis of PFKFB2 expression in non-transfected: sc-117752 (A) and mouse PFKFB2 transfected: sc-122507 (B) 293T whole cell lysates.



Western blot analysis of PFKFB2 phosphorylation in non-transfected: sc-117752 (A, D), untreated mouse PFKFB2 transfected: sc-122507 (B, E) and lambda protein phosphatase (sc-200312A) treated mouse PFKFB2 transfected: sc-122507 (C, F) 293T whole cell lysates. Antibodies tested include p-PFKFB2 (Ser 483): sc-32967 (A, B, C) and PFKFB2 (Y-13): sc-50956 (D, E, F).

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.