SANTA CRUZ BIOTECHNOLOGY, INC.

PFKFB3 (3F3): sc-293477

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Phosphofructosekinase-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 for 6-phosphofructo-1-kinase that can then activate the glycolysis pathway. Various tissue-specific isoforms of PFK-2 are expressed, including the PFK-2 specific to the brain (br), the liver (liv) and the placenta (pl), and they are also differentially regulated and function as homodimers. A unique isoform, iPFK-2, is induced following proinflammatory stimuli, and it is also constituitively expressed in a variety of carcinoma cell lines, where it leads to an accumation of intracellular F2,6BP. In addition, the expression of iPFK-2 correlates to increases in DNA sysnthesis, suggesting that iPFK-2 may contribute to cellular transformation of cells and enhanced cellular proliferation.

REFERENCES

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4. Hirata, T., et al. 1998. Expression of human placental-type 6-phosphofructo-2-kinase/fructose 2,6-bisphosphatase in various cells and cell lines. Biochem. Biophys. Res. Commun. 242: 680-684.
5. Bruni, P., et al. 1999. Expression and regulation of 6-phosphofructo-2-kinase/fructose-2,6-bisphosphatase isozymes in white adipose tissue. Eur. J. Biochem. 259: 756-761.
6. Watanabe, F., et al. 1999. Tissue-specific alternative splicing of rat brain fructose 6-phosphate 2-kinase/fructose 2,6-bisphosphatase. FEBS Lett. 458: 304-308.
7. Chesney, J., et al. 1999. An inducible gene product for 6-phosphofructo-2-kinase with an AU-rich instability element: role in tumor cell glycolysis and the Warburg effect. Proc. Natl. Acad. Sci. USA 96: 3047-3052.

CHROMOSOMAL LOCATION

Genetic locus: PFKFB3 (human) mapping to 10p15.1.

SOURCE

PFKFB3 (3F3) is a mouse monoclonal antibody raised against amino acids 412-520 representing partial length PFKFB3 of human origin.

PRODUCT

Each vial contains 100 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

PFKFB3 (3F3) is recommended for detection of PFKFB3 of 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)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

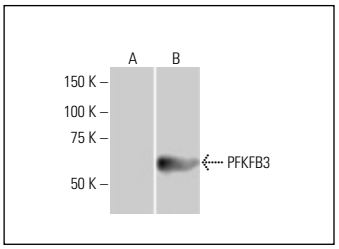
Suitable for use as control antibody for PFKFB3 siRNA (h): sc-44011, PFKFB3 shRNA Plasmid (h): sc-44011-SH and PFKFB3 shRNA (h) Lentiviral Particles: sc-44011-V.

Positive Controls: PFKFB3 transfected 293T whole cell lysate.

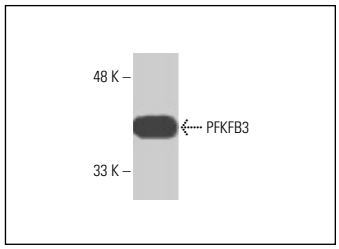
RECOMMENDED SUPPORT REAGENTS

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. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

DATA



PFKFB3 (3F3): sc-293477. Western blot analysis of PFKFB3 expression in non-transfected (**A**) and PFKFB3 transfected (**B**) 293T whole cell lysates.



PFKFB3 (3F3): sc-293477. Western blot analysis of human recombinant PFKFB3 fusion protein.

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.