SANTA CRUZ BIOTECHNOLOGY, INC.

PFKL (YT4): sc-100542

BACKGROUND

Phosphofructokinases (PFKs) are regulatory glycolytic enzymes that catalyze the irreversible conversion of fructose-6-phosphate to fructose-1,6-bisphosphate. Mammalian PFK is a tetramer made up of diverse combinations of three isoenzymes: muscle (PFK-1), liver (PFKL) and platelet (PFKP). PFKL (phosphofructokinase, liver), also referred to as PFK-B (phosphofructo-1-kinase isozyme B), phosphofructokinase 1 or phosphohexokinase, predominates in organs with active gluconeogenesis, such as liver and kidney. Overexpression of PFKL in transgenic mice results in a diminished glucose-induced Insulin response, which suggests that PFKL may play a role in glucose-induced Insulin secretion. PFKL is expressed at high levels in Down's syndrome (DS) patients, suggesting a possible role for PFKL in the pathogenesis of DS.

REFERENCES

1. Vora, S. and Francke, U. 1981. Assignment of the human gene for liver-type 6-phosphofructokinase isozyme (PFKL) to chromosome 21 by using somatic cell hybrids and monoclonal anti-L antibody. Proc. Natl. Acad. Sci. USA 78: 3738-3742.
2. Levanon, D., et al. 1986. Genomic clones of the human liver-type phosphofructokinase. Biochem. Biophys. Res. Commun. 141: 374-380.
3. Levanon, D., et al. 1987. Construction of a cDNA clone containing the entire coding region of the human liver-type phosphofructokinase. Biochem. Biophys. Res. Commun. 147: 1182-1187.
4. Elson, A., et al. 1994. Overexpression of liver-type phosphofructokinase (PFKL) in transgenic-PFKL mice: implication for gene dosage in trisomy 21. Biochem. J. 299: 409-415.
5. Knobler, H., et al. 1997. Impaired glucose-induced Insulin response in transgenic mice overexpressing the L-phosphofructokinase gene. Diabetes 46: 1414-1418.
6. Peled-Kamar, M., et al. 1998. Altered brain glucose metabolism in transgenic-PFKL mice with elevated L-phosphofructokinase: *in vivo* NMR studies. Brain Res. 810: 138-145.
7. Wang, Q., et al. 2005. Rapid prenatal detection of Down syndrome by homologous gene quantitative PCR. Zhonghua Yi Xue Yi Chuan Xue Za Zhi 22: 209-211.

CHROMOSOMAL LOCATION

Genetic locus: PFKL (human) mapping to 21q22.3; Pfkl (mouse) mapping to 10 C1.

SOURCE

PFKL (YT4) is a mouse monoclonal antibody raised against recombinant PFKL 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

PFKL (YT4) is recommended for detection of liver type PFKL of mouse, rat and 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 PFKL siRNA (h): sc-106400, PFKL siRNA (m): sc-152180, PFKL shRNA Plasmid (h): sc-106400-SH, PFKL shRNA Plasmid (m): sc-152180-SH, PFKL shRNA (h) Lentiviral Particles: sc-106400-V and PFKL shRNA (m) Lentiviral Particles: sc-152180-V.

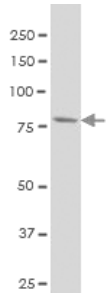
Molecular Weight of PFKL: 80 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200 or Hep G2 cell lysate: sc-2227.

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



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.