SANTA CRUZ BIOTECHNOLOGY, INC.

FBPase (F-9): sc-166097

SANTA CRUZ BIOTECHNOLOGY
The Power to Question

BACKGROUND

Fructose-1,6-bisphosphatase (FBPase) mediates the key reaction of carbohydrate metabolism. It catalyzes the splitting of fructose-1,6-bisphosphate into fructose-6-phosphate and inorganic phosphate. FBPase is encoded by two genes, FBP1 and FBP2, which express the liver and muscle isoforms, respectively. FBPase appears to be present in all living organisms and is regulated by AMP inhibition in most species. Inhibition of FBPase by AMP affects the turnover of bound substrate and not its affinity for substrate. The liver FBPase isoform is composed of four identical subunits. Mutations in the FBP1 gene are inherited as an autosomal recessive disorder that leads to a deficiency of FBPase, which is associated with hypoglycemia and metabolic acidosis. Muscle FBPase is located on both sides of the z-line.

REFERENCES

1. Dzugaj, A. and Kochman, M. 1980. Purification of human liver fructose-1,6-bisphosphatase. Biochim. Biophys. Acta 614: 407-412.
2. Marcus, F., Rittenhouse, J., Gontero, B. and Harrsch, P.B. 1987. Function, structure and evolution of fructose-1,6-bisphosphatase. Arch. Biol. Med. Exp. 20: 371-378.
3. Matsuura, T., Chinen, Y., Arashiro, R., Katsuren, K., Tamura, T., Hyakuna, N. and Ohta, T. 2002. Two newly identified genomic mutations in a Japanese female patient with fructose-1,6-bisphosphatase (FBPase) deficiency. Mol. Genet. Metab. 76: 207-210.
4. Rakus, D., Tillmann, H., Wysocki, R., Ulaszewski, S., Eschrich, K. and Dzugaj, A. 2003. Different sensitivities of mutants and chimeric forms of human muscle and liver fructose-1,6-bisphosphatases towards AMP. Biol. Chem. 384: 51-58.
5. Rakus, D., Pasek, M., Krotkiewski, H. and Dzugaj, A. 2004. Interaction between muscle aldolase and muscle fructose-1,6-bisphosphatase results in the substrate channeling. Biochemistry 43: 14948-14957.
6. Gizak, A., Rakus, D. and Dzugaj, A. 2005. Nuclear localization of fructose-1,6-bisphosphatase in smooth muscle cells. J. Mol. Histol. 36: 243-248.

CHROMOSOMAL LOCATION

Genetic locus: FBP1/FBP2 (human) mapping to 9q22.32.

SOURCE

FBPase (F-9) is a mouse monoclonal antibody raised against amino acids 1-300 mapping at the N-terminus of liver FBPase of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

APPLICATIONS

FBPase (F-9) is recommended for detection of liver and muscle FBPase of 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), 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).

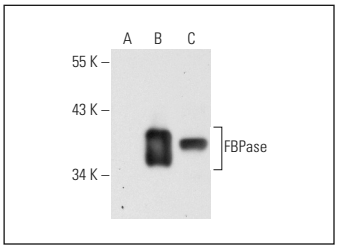
Molecular Weight of FBPase: 36 kDa.

Positive Controls: FBPase (h): 293T Lysate: sc-113796 or HL-60 whole cell lysate: sc-2209.

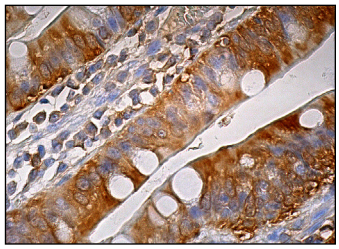
RECOMMENDED SUPPORT REAGENTS

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). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



FBPase (F-9): sc-166097. Western blot analysis of FBPase expression in non-transfected 293T: sc-117752 (**A**), human FBPase transfected 293T: sc-113796 (**B**) and HL-60 (**C**) whole cell lysates.



FBPase (F-9): sc-166097. Immunoperoxidase staining of formalin fixed, paraffin-embedded human small intestine tissue showing cytoplasmic staining of glandular cells.

SELECT PRODUCT CITATIONS

1. Banon-Maneus, E., Rovira, J., Ramirez-Bajo, M.J., Moya-Rull, D., Hierro-Garcia, N., Takenaka, S., Diekmann, F., Eickelberg, O., Königshoff, M. and Campistol, J.M. 2014. Wnt pathway activation in long term remnant rat model. Biomed. Res. Int. 2014: 324713.

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.