SANTA CRUZ BIOTECHNOLOGY, INC.

liver FBPase (G-7): sc-374396

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., et al. 1980. Purification of human liver fructose-1,6-bisphosphatase. Biochim. Biophys. Acta 614: 407-412.
2. Marcus, F., et al. 1987. Function, structure and evolution of fructose-1,6-bisphosphatase. Arch. Biol. Med. Exp. 20: 371-378.
3. Matsuura, T., et al. 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., et al. 2003. Different sensitivities of mutants and chimeric forms of human muscle and liver fructose-1,6-bisphosphatases towards AMP. Biol. Chem. 384: 51-58.

CHROMOSOMAL LOCATION

Genetic locus: FBP1 (human) mapping to 9q22.32; Fbp1 (mouse) mapping to 13 B3.

SOURCE

liver FBPase (G-7) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 209-239 within an internal region of liver FBPase of mouse origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

liver FBPase (G-7) is available conjugated to agarose (sc-374396 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-374396 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-374396 PE), fluorescein (sc-374396 FITC), Alexa Fluor® 488 (sc-374396 AF488), Alexa Fluor® 546 (sc-374396 AF546), Alexa Fluor® 594 (sc-374396 AF594) or Alexa Fluor® 647 (sc-374396 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-374396 AF680) or Alexa Fluor® 790 (sc-374396 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-374396 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

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APPLICATIONS

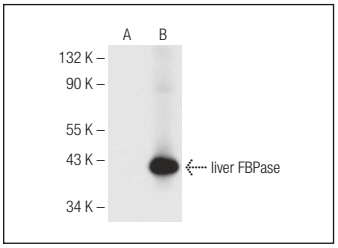
liver FBPase (G-7) is recommended for detection of liver FBPase of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution 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).

Suitable for use as control antibody for liver FBPase siRNA (h): sc-45235, liver FBPase siRNA (m): sc-45236, liver FBPase shRNA Plasmid (h): sc-45235-SH, liver FBPase shRNA Plasmid (m): sc-45236-SH, liver FBPase shRNA (h) Lentiviral Particles: sc-45235-V and liver FBPase shRNA (m) Lentiviral Particles: sc-45236-V.

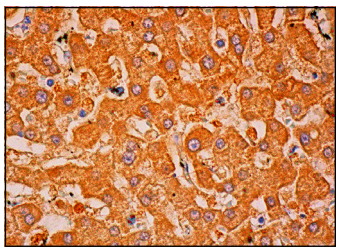
Molecular Weight of liver FBPase: 36 kDa.

Positive Controls: liver FBPase (m2): 293T Lysate: sc-121348 or mouse liver extract: sc-2256.

DATA



liver FBPase (G-7): sc-374396. Western blot analysis of liver FBPase expression in non-transfected: sc-117752 (**A**) and mouse liver FBPase transfected: sc-121348 (**B**) 293T whole cell lysates.



liver FBPase (G-7): sc-374396. Immunoperoxidase staining of formalin fixed, paraffin-embedded human liver tissue showing cytoplasmic staining of hepatocytes.

SELECT PRODUCT CITATIONS

1. Gupta, A.P., et al. 2019. Pancreastatin inhibitor activates AMPK pathway via GRP78 and ameliorates dexamethasone induced fatty liver disease in C57BL/6 mice. Biomed. Pharmacother. 116: 108959.
2. Zhang, G., et al. 2021. Toll-like receptor 3 ablation prevented high-fat diet-induced obesity and metabolic disorder. J. Nutr. Biochem. 95: 108761.

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.