SANTA CRUZ BIOTECHNOLOGY, INC.

muscle FBPase (E-11): sc-390209

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 is 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., 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.

CHROMOSOMAL LOCATION

Genetic locus: FBP2 (human) mapping to 9q22.32; Fbp2 (mouse) mapping to 13 B3.

SOURCE

muscle FBPase (E-11) is a mouse monoclonal antibody raised against a peptide mapping at the C-terminus of muscle 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.

muscle FBPase (E-11) is available conjugated to agarose (sc-390209 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-390209 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-390209 PE), fluorescein (sc-390209 FITC), Alexa Fluor® 488 (sc-390209 AF488), Alexa Fluor® 546 (sc-390209 AF546), Alexa Fluor® 594 (sc-390209 AF594) or Alexa Fluor® 647 (sc-390209 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-390209 AF680) or Alexa Fluor® 790 (sc-390209 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-390209 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

STORAGE

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

APPLICATIONS

muscle FBPase (E-11) is recommended for detection of muscle 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

muscle FBPase (E-11) is also recommended for detection of muscle FBPase in additional species, including bovine.

Suitable for use as control antibody for muscle FBPase siRNA (h): sc-45239, muscle FBPase siRNA (m): sc-45240, muscle FBPase shRNA Plasmid (h): sc-45239-SH, muscle FBPase shRNA Plasmid (m): sc-45240-SH, muscle FBPase shRNA (h) Lentiviral Particles: sc-45239-V and muscle FBPase shRNA (m) Lentiviral Particles: sc-45240-V.

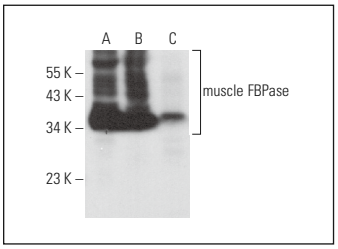
Molecular Weight of muscle FBPase: 37 kDa.

Positive Controls: rat skeletal muscle extract: sc-364810, mouse heart extract: sc-2254 or human heart extract: sc-363763.

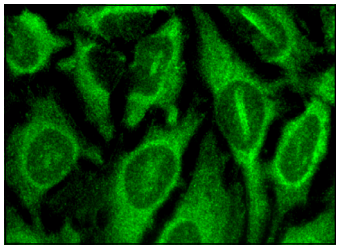
RECOMMENDED SUPPORT REAGENTS

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.

DATA



muscle FBPase (E-11): sc-390209. Western blot analysis of muscle FBPase expression in human heart (**A**), rat skeletal muscle (**B**) and mouse heart (**C**) tissue extracts.



muscle FBPase (E-11): sc-390209. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization.

SELECT PRODUCT CITATIONS

1. Ichhaporia, V.P., et al. 2018. SIL1, the endoplasmic-reticulum-localized BiP co-chaperone, plays a crucial role in maintaining skeletal muscle proteostasis and physiology. Dis. Model. Mech. 11: dmm033043.

RESEARCH USE

For research use only, not for use in diagnostic procedures.