SANTA CRUZ BIOTECHNOLOGY, INC.

muscle FBPase (G-1): sc-271799

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.

CHROMOSOMAL LOCATION

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

SOURCE

muscle FBPase (G-1) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 287-317 near the C-terminus of muscle FBPase of human origin.

PRODUCT

Each vial contains 200 µg IgG_3 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-271799 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

RESEARCH USE

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

APPLICATIONS

muscle FBPase (G-1) 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), 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).

muscle FBPase (G-1) is also recommended for detection of muscle FBPase in additional species, including equine and 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.

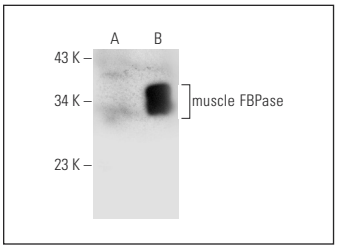
Molecular Weight of muscle FBPase: 37 kDa.

Positive Controls: muscle FBPase (m): 293T Lysate: sc-121871.

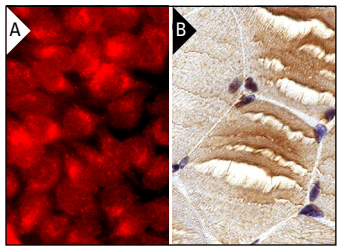
RECOMMENDED SUPPORT REAGENTS

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



muscle FBPase (G-1): sc-271799. Western blot analysis of muscle FBPase expression in non-transfected: sc-117752 (**A**) and mouse muscle FBPase transfected: sc-121871 (**B**) 293T whole cell lysates.



muscle FBPase (G-1): sc-271799. Immunofluorescence staining of methanol-fixed HeLa cells showing nuclear and cytoplasmic localization (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human skeletal muscle tissue showing cytoplasmic staining of myocytes (**B**).

SELECT PRODUCT CITATIONS

1. Duda, P., et al. 2020. The reverse Warburg effect is associated with FBP2-dependent Hif1α regulation in cancer cells stimulated by fibroblasts. Cells 9: 205.
2. Hajka, D., et al. 2020. Expression of Fbp2, a newly discovered constituent of memory formation mechanisms, is regulated by astrocyte-neuron crosstalk. Int. J. Mol. Sci. 21: 6903.

STORAGE

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

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.