SANTA CRUZ BIOTECHNOLOGY, INC.

PEPCK-M (62-W): sc-130388

SANTA CRUZ BIOTECHNOLOGY
The Power to Question

BACKGROUND

Normal adjustment to changes in blood glucose levels depends on Insulin signaling as well as enzymes involved in the regulation of gluconeogenesis. Pathological changes to this process are central to the type 2 diabetes phenotype. Phosphoenolpyruvate carboxykinase (PEPCK) plays an important role in this process by stimulating hepatic glucose production. PEPCK expression increases in response to glucagon and glucocorticoids, while Insulin suppresses expression. Modulation of the signals governing PEPCK levels present a potential therapeutic approach to the treatment of Insulin resistance and consequently obesity. The cytosolic form of PEPCK, known as PEPCK-C, and the mitochondrial form, known as PEPCK-M, are encoded by two different nuclear genes in mouse, human and chicken.

REFERENCES

1. Beale, E.G., et al. 1986. Insulin decreases H4IIE cell PEPCK mRNA by a mechanism that does not involve cAMP. Diabetes 35: 546-549.
2. O'Brien, R.M., et al. 1990. Identification of a sequence in the PEPCK gene that mediates a negative effect of Insulin on transcription. Science 249: 533-537.
3. Wang, Y. and Taub, M. 1991. Insulin and other regulatory factors modulate the growth and the phosphoenolpyruvate carboxykinase (PEPCK) activity of primary rabbit kidney proximal tubule cells in serum free medium. J. Cell. Physiol. 147: 374-382.
4. Barthel, A., et al. 2003. Novel concepts in Insulin regulation of hepatic gluconeogenesis. Am. J. Physiol. Endocrinol. Metab. 285: E685-E692.

CHROMOSOMAL LOCATION

Genetic locus: PCK2 (human) mapping to 14q11.2.

SOURCE

PEPCK-M (62-W) is a mouse monoclonal antibody raised against recombinant PEPCK-M 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

PEPCK-M (62-W) is recommended for detection of PEPCK-M of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)].

Suitable for use as control antibody for PEPCK-M siRNA (h): sc-44912, PEPCK-M shRNA Plasmid (h): sc-44912-SH and PEPCK-M shRNA (h) Lentiviral Particles: sc-44912-V.

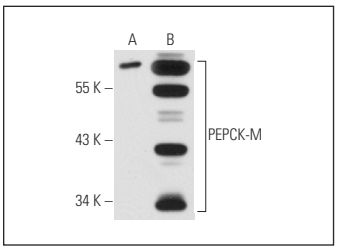
Molecular Weight of PEPCK-M isoforms 1/2/3: 71/48/56.

Positive Controls: ZR-75-1 cell lysate: sc-2241, Hep G2 cell lysate: sc-2227 or A-431 whole cell lysate: sc-2201.

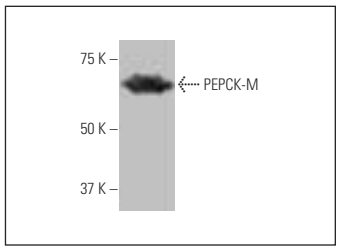
RECOMMENDED SUPPORT REAGENTS

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



PEPCK-M (62-W): sc-130388. Western blot analysis of PEPCK-M expression in 293T (**A**) and Hep G2 (**B**) whole cell lysates.



PEPCK-M (62-W): sc-130388. Western blot analysis of PEPCK-M expression in A-431 whole cell lysate.

SELECT PRODUCT CITATIONS

1. Kim, S., et al. 2014. Arsenite-induced changes in hepatic protein abundance in cynomolgus monkeys *(Macaca fascicularis)*. Proteomics 14: 1833-1843.
2. Jia, Y., et al. 2019. Effective gene delivery of shBMP-9 using polyethyleneimine-based core-shell nanoparticles in an animal model of Insulin resistance. Nanoscale 11: 2008-2016.
3. Geng, S., et al. 2021. Effective and safe delivery of GLP-1AR and FGF-21 plasmids using amino-functionalized dual-mesoporous silica nanoparticles *in vitro* and *in vivo*. Biomaterials 271: 120763.

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.

CONJUGATES

See **PEPCK (F-3): sc-271029** for PEPCK antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.