SANTA CRUZ BIOTECHNOLOGY, INC.

p-ATP-citrate synthase (A-12): sc-374647

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The Power to Question

BACKGROUND

ATP-citrate synthase, also designated ATP-citrate lyase or citrate cleavage enzyme, is a cytoplasmic homotetramer belonging to the succinate/malate CoA ligase family. The gene coding for this protein maps against chromosome 17q21.2. ATP-citrate synthase catalyses the formation of acetyl-CoA and oxaloacetate from citrate and CoA. This product, acetyl-CoA, is necessary for both fatty acid and cholesterol biosynthesis. ATP citrate-lyase is important in the biosynthesis of acetylcholine in nervous tissue.

REFERENCES

1. Lord, K.A., et al. 1997. Variant cDNA sequences of human ATP:citrate lyase: cloning, expression, and purification from baculovirus-infected insect cells. Protein Expr. Purif. 9: 133-141.
2. Sato, R., et al. 2000. Transcriptional regulation of the ATP citrate-lyase gene by sterol regulatory element-binding proteins. J. Biol. Chem. 275: 12497-12502.
3. Moon, Y.A., et al. 2002. Characterization of *cis*-acting elements in the rat ATP citrate-lyase gene promoter. Exp. Mol. Med. 34: 60-68.

CHROMOSOMAL LOCATION

Genetic locus: ACLY (human) mapping to 17q21.2; Acly (mouse) mapping to 11 D.

SOURCE

p-ATP-citrate synthase (A-12) is a mouse monoclonal antibody epitope corresponding to a short amino acid sequence containing Ser 455 phosphorylated ATP-citrate synthase 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-374647 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

p-ATP-citrate synthase (A-12) is recommended for detection of Ser 455 phosphorylated ATP-citrate synthase 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).

Suitable for use as control antibody for ATP-citrate synthase siRNA (h): sc-45206, ATP-citrate synthase siRNA (m): sc-45207, ATP-citrate synthase shRNA Plasmid (h): sc-45206-SH, ATP-citrate synthase shRNA Plasmid (m): sc-45207-SH, ATP-citrate synthase shRNA (h) Lentiviral Particles: sc-45206-V and ATP-citrate synthase shRNA (m) Lentiviral Particles: sc-45207-V.

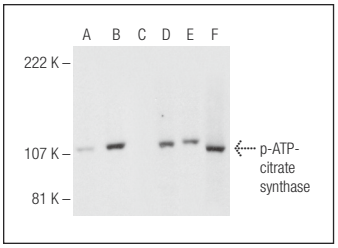
Molecular Weight of p-ATP-citrate synthase: 120 kDa.

Positive Controls: Jurkat + Calyculin A cell lysate: sc-2277.

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, TBS Blotto B Blocking Reagent: sc-2335 (use 50 mM NaF, sc-24988, as diluent), Lambda Phosphatase: sc-200312A 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



Western blot analysis of ATP-citrate synthase phosphorylation in untreated (**A**,**D**), calyculin A treated (**B**,**E**) and calyculin A and lambda protein phosphatase (sc-200312A) treated (**C**,**F**) Jurkat whole cell lysates. Antibodies tested include p-ATP-citrate synthase (A-12): sc-374647 (**A**,**B**,**C**) and ATP-citrate synthase (C-20): sc-30538 (**D**,**E**,**F**).

SELECT PRODUCT CITATIONS

1. Zhang, X., et al. 2020. Smurf1 aggravates non-alcoholic fatty liver disease by stabilizing SREBP-1c in an E3 activity-independent manner. FASEB J. 34: 7631-7643.
2. Shirai, T., et al. 2021. Effect of endurance exercise duration on muscle hypertrophy induced by functional overload. FEBS Open Bio 11: 85-94.
3. Ippolito, L., et al. 2022. Lactate rewires lipid metabolism and sustains a metabolic-epigenetic axis in prostate cancer. Cancer Res. 82: 1267-1282.

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.