Revision 1

Store at -20C

#8335

Fatty Acid and Lipid Metabolism Antibody Sampler Kit

1 Kit (8 x 20 microliters)

Cell Signaling TECHNOLOGY®

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Product Includes	Product #	Quantity	Mol. Wt	Isotype/Source
AceCS1 (D19C6) Rabbit mAb	3658	20 µl	78 kDa	Rabbit IgG
Phospho-Acetyl-CoA Carboxylase (Ser79) (D7D11) Rabbit mAb	11818	20 µl	280 kDa	Rabbit IgG
Acetyl-CoA Carboxylase (C83B10) Rabbit mAb	3676	20 µl	280 kDa	Rabbit IgG
ATP-Citrate Lyase Antibody	4332	20 µl	125 kDa	Rabbit
Phospho-ATP-Citrate Lyase (Ser455) Antibody	4331	20 µl	125 kDa	Rabbit
Fatty Acid Synthase (C20G5) Rabbit mAb	3180	20 µl	273 kDa	Rabbit IgG
Lipin 1 (D2W9G) Rabbit mAb	14906	20 µl	130 kDa	Rabbit IgG
ACSL1 (D2H5) Rabbit mAb	9189	20 µl	78 kDa	Rabbit IgG
Anti-rabbit IgG, HRP-linked Antibody	7074	100 µl		Goat

Please visit cellsignal.com for individual component applications, species cross-reactivity, dilutions, protocols, and additional product information.

Description

The Fatty Acid and Lipid Metabolism Antibody Sampler Kit provides an economical means to evaluate key proteins involved in fatty acid and lipid metabolism. This kit includes enough primary antibody to perform two western miniblot experiments with each primary antibody.

Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at –20°C. Do not aliquot the antibody.

Background

The processes of fatty acid and lipid metabolism are vital for cellular nutrient and energy maintenance. Cytoplasmic acetyl-CoA synthetase (AceCS1) catalyzes the conversion of acetate and CoA to acetyl-CoA. Acetyl-CoA synthesized by AceCS1 is used for fatty acid and lipid biosynthesis (1,2). Acetyl-CoA carboxylase (ACC) catalyzes the pivotal step of the fatty acid synthesis pathway. Phosphorylation by AMPK at Ser79 or by PKA at Ser1200 inhibits the enzymatic activity of ACC (3). Mammalian long-chain acyl-CoA synthetase (ACSL) catalyzes the ligation of the fatty acid to CoA to form fatty acyl-CoA in a two-step reaction (4). ATP-citrate lyase (ACL) is a homotetramer that catalyzes the formation of acetyl-CoA and oxaloacetate (OAA) in the cytosol, which is the key step for the biosynthesis of fatty acids, cholesterol, and acetylcholine, as well as for glucogenesis (5). Phosphorylation of ACL at Ser455 abolishes the homotropic allosteric regulation by citrate and enhances the catalytic activity of the enzyme (6). Fatty acid synthase (FASN) catalyzes the synthesis of long-chain fatty acids from acetyl-CoA and malonyl-CoA (7). Lipin 1 plays a role in lipid metabolism in various tissues and cell types including liver, muscle, adipose tissues, and neuronal cell lines (8-10). It has dual functions at the molecular level: Lipin 1 serves as a transcriptional coactivator in the liver and a phosphatidate phosphatase in triglyceride and phospholipid biosynthesis pathways (11).

Background References

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