Fatty Acid and Lipid Metabolism Antibody Sampler Kit

Product Includes

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

For Research Use Only. Not for Use in Diagnostic Procedures.

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 synthetase 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 gluconeogenesis (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).

References


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