

#8660 Store at -20°C

PPAR γ Regulated Fatty Acid Metabolism Antibody Sampler Kit

1 Kit (7 x 20 microliters)



Cell Signaling
TECHNOLOGY®

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

| Product Includes | Product # | Quantity | Mol. Wt | Isotype/Source |
|--|-----------|-------------|------------|----------------|
| Phospho-AMPK α (Thr172) (40H9) Rabbit mAb | 2535 | 20 μ l | 62 kDa | Rabbit IgG |
| AMPK α (D5A2) Rabbit mAb | 5831 | 20 μ l | 62 kDa | Rabbit IgG |
| CBP (D6C5) Rabbit mAb | 7389 | 20 μ l | 300 kDa | Rabbit IgG |
| GCN5L2 (C26A10) Rabbit mAb | 3305 | 20 μ l | 94 kDa | Rabbit IgG |
| PPAR γ (C26H12) Rabbit mAb | 2435 | 20 μ l | 53, 57 kDa | Rabbit IgG |
| SirT1 (C14H4) Rabbit mAb | 2496 | 20 μ l | 120 kDa | Rabbit |
| RXR α (D6H10) Rabbit mAb | 3085 | 20 μ l | 53 kDa | Rabbit IgG |
| Anti-rabbit IgG, HRP-linked Antibody | 7074 | 100 μ l | | Goat |

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

Description

PPAR γ Regulated Fatty Acid Metabolism Antibody Sampler Kit provides an economical means to evaluate PPAR γ and related proteins involved in lipid metabolism. This kit contains enough primary antibody to perform two western blots per primary.

Storage

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

Background

AMPK is a heterotrimeric complex composed of a catalytic α subunit and regulatory β and γ subunits, each of which is encoded by two or three distinct genes (α 1, 2; β 1, 2; γ 1, 2, 3) (1). The kinase is activated by an elevated AMP/ATP ratio due to cellular and environmental stress, such as heat shock, hypoxia, and ischemia (1). The tumor suppressor LKB1 phosphorylates AMPK α at Thr172 in the activation loop, and this phosphorylation is required for AMPK activation (2-4). Accumulating evidence indicates that AMPK not only regulates the metabolism of fatty acids and glycogen, but also modulates protein synthesis and cell growth through EF2 and TSC2/mTOR pathways, as well as blood flow via eNOS/nNOS (5).

CBP (CREB-binding protein) is a transcriptional co-activator that associates with PPAR γ (6,7). CBP also contains histone acetyltransferase (HAT) activity, allowing it to acetylate histones and other proteins (7). General Control of Amino Acid Synthesis Yeast Homolog Like 2 (GCN5L2) is a transcription adaptor protein and a histone acetyltransferase (HAT) that functions as the catalytic subunit of the STAGA and TFTC transcription coactivator complexes (8). GCN5L2 is 73% homologous to the p300/CBP-associated factor PCAF, another HAT protein found in similar complexes (9). GCN5L2 acetylates non-histone proteins such as the transcription co-activator PGC1- α (10).

Peroxisome proliferator-activated receptor γ (PPAR γ) is a member of the ligand-activated nuclear receptor superfamily and functions as a transcriptional activator (11). PPAR γ is preferentially expressed in adipocytes as well as in vascular smooth muscle cells and macrophage (12).

The Silent Information Regulator (SIR2) family of genes is a highly conserved group of genes that encode nicotinamide adenine dinucleotide (NAD)-dependent protein deacetylases, also known as class III histone deacetylases (13). SirT1, the mammalian ortholog of Sir2, is a nuclear protein implicated in the regulation of many cellular processes, including apoptosis, cellular senescence, endocrine signaling, glucose homeostasis, aging, and longevity. Targets of SirT1 include PPAR γ (14), and the PPAR γ coactivator-1 α (PGC-1 α) protein (15). Deacetylation of PPAR γ and PGC-1 α regulates the gluconeogenic/glycolytic pathways in the liver and fat mobilization in white adipocytes in response to fasting (14,15).

The human retinoid X receptors (RXRs) are type-II nuclear hormone receptors encoded by three distinct genes (RXR α , RXR β , and RXR γ) and bind selectively and with high affinity to the vitamin A derivative, 9-*cis*-retinoic acid. Nuclear RXRs form heterodimers with PPAR to help regulate transcription during lipid metabolism (16).

Background References

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