abcam

Product datasheet

Anti-AMPK alpha 1 + AMPK alpha 2 antibody [34.2] ab80039

★★★★★ 5 Abreviews 77 References 3 图像

概述

产品名称	Anti-AMPK alpha 1 + AMPK alpha 2抗体[34.2]
描述	**小鼠单克隆抗体**[34.2] to AMPK alpha 1 + AMPK alpha 2
宿主	Mouse
经测试应用	**适用于:** WB
种属反应性	**与反应:** Rat, Human, Drosophila melanogaster **预测可用于:** Mouse
免疫原	Synthetic peptide corresponding to Drosophila melanogaster AMPK alpha 1 + AMPK alpha 2 (N terminal).
阳性对照	WB: Rat heart tissue lysate. Human brain tissue lysate. HEK-293 and HepG2 whole cell lysate.
常规说明	This antibody clone is manufactured by Abcam. If you require a custom buffer formulation or conjugation for your experiments, please contact **orders@abcam.com**. The Life Science industry has been in the grips of a reproducibility crisis for a number of years. Abcam is leading the way in addressing this with our range of recombinant monoclonal antibodies and knockout edited cell lines for gold-standard validation. Please check that this product meets your needs before purchasing. If you have any questions, special requirements or concerns, please send us an inquiry and/or contact our Support team ahead of purchase. Recommended alternatives for this product can be found below, along with publications, customer reviews and Q&As

性能

形式	Liquid
存放说明	Shipped at 4°C. Upon delivery aliquot and store at -20°C or -80°C. Avoid repeated freeze / thaw cycles.
存储溶液	pH: 7.40 Preservative: 0.02% Sodium azide Constituents: PBS, 6.97% L-Arginine
纯度	Protein G purified
克隆	单克隆
克隆编号	34.2

同种型	IgG2a

应用

The Abpromise guarantee **Abpromise™承诺保证使用ab80039于以下的经测试应用**

"应用说明"部分 下显示的仅为推荐的起始稀释度;实际最佳的稀释度/浓度应由使用者检定。

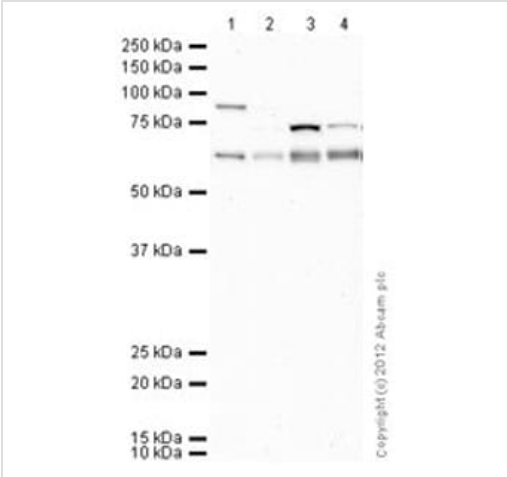
应用	Ab评论	说明
WB	★★★★★ (5)	Use a concentration of 1 µg/ml. Detects a band of approximately 62 kDa (predicted molecular weight: 62 kDa). Abcam recommends using 3% milk as the blocking agent.

靶标

功能	Catalytic subunit of AMP-activated protein kinase (AMPK), an energy sensor protein kinase that plays a key role in regulating cellular energy metabolism. In response to reduction of intracellular ATP levels, AMPK activates energy-producing pathways and inhibits energy-consuming processes: inhibits protein, carbohydrate and lipid biosynthesis, as well as cell growth and proliferation. AMPK acts via direct phosphorylation of metabolic enzymes, and by longer-term effects via phosphorylation of transcription regulators. Also acts as a regulator of cellular polarity by remodeling the actin cytoskeleton; probably by indirectly activating myosin. Regulates lipid synthesis by phosphorylating and inactivating lipid metabolic enzymes such as ACACA, ACACB, GYS1, HMGCR and LIPE; regulates fatty acid and cholesterol synthesis by phosphorylating acetyl-CoA carboxylase (ACACA and ACACB) and hormone-sensitive lipase (LIPE) enzymes, respectively. Regulates insulin-signaling and glycolysis by phosphorylating IRS1, PFKFB2 and PFKFB3. AMPK stimulates glucose uptake in muscle by increasing the translocation of the glucose transporter SLC2A4/GLUT4 to the plasma membrane, possibly by mediating phosphorylation of TBC1D4/AS160. Regulates transcription and chromatin structure by phosphorylating transcription regulators involved in energy metabolism such as CRTC2/TORC2, FOXO3, histone H2B, HDAC5, MEF2C, MLXIPL/ChREBP, EP300, HNF4A, p53/TP53, SREBF1, SREBF2 and PPARGC1A. Acts as a key regulator of glucose homeostasis in liver by phosphorylating CRTC2/TORC2, leading to CRTC2/TORC2 sequestration in the cytoplasm. In response to stress, phosphorylates 'Ser-36' of histone H2B (H2BS36ph), leading to promote transcription. Acts as a key regulator of cell growth and proliferation by phosphorylating TSC2, RPTOR and ATG1: in response to nutrient limitation, negatively regulates the mTORC1 complex by phosphorylating RPTOR component of the mTORC1 complex and by phosphorylating and activating TSC2. In response to nutrient limitation, promotes autophagy by phosphorylating and activating ULK1. AMPK also acts as a regulator of circadian rhythm by mediating phosphorylation of CRY1, leading to destabilize it. May regulate the Wnt signaling pathway by phosphorylating CTNNB1, leading to stabilize it. Also has tau-protein kinase activity: in response to amyloid beta A4 protein (APP) exposure, activated by CAMKK2, leading to phosphorylation of MAPT/TAU; however the relevance of such data remains unclear in vivo. Also phosphorylates CFTR, EEF2K, KLC1, NOS3 and SLC12A1.
序列相似性	Belongs to the protein kinase superfamily. CAMK Ser/Thr protein kinase family. SNF1 subfamily. Contains 1 protein kinase domain.
结构域	The AIS (autoinhibitory sequence) region some sequence similarity with the ubiquitin-associated domains and represses kinase activity.

翻译后修饰	Ubiquitinated. Phosphorylated at Thr-183 by STK11/LKB1 in complex with STE20-related adapter-alpha (STRADA) pseudo kinase and CAB39. Also phosphorylated at Thr-183 by CAMKK2; triggered by a rise in intracellular calcium ions, without detectable changes in the AMP/ATP ratio. CAMKK1 can also phosphorylate Thr-183, but at a much lower level. Dephosphorylated by protein phosphatase 2A and 2C (PP2A and PP2C). Phosphorylated by ULK1 and ULK2; leading to negatively regulate AMPK activity and suggesting the existence of a regulatory feedback loop between ULK1, ULK2 and AMPK.
细胞定位	Cytoplasm. Nucleus. In response to stress, recruited by p53/TP53 to specific promoters.

图片



Western blot - Anti-AMPK alpha 1 + AMPK alpha 2 antibody [34.2] (ab80039)

All lanes : Anti-AMPK alpha 1 + AMPK alpha 2 antibody [34.2] (ab80039) at 1 µg/ml

Lane 1 : Heart (Rat) Tissue Lysate
Lane 2 : Human brain tissue lysate - total protein (**ab29466**)
Lane 3 : HepG2 (Human hepatocellular liver carcinoma cell line) Whole Cell Lysate
Lane 4 : HEK293 (Human embryonic kidney cell line) Whole Cell Lysate

Lysates/proteins at 10 µg per lane.

Secondary
All lanes : Goat Anti-Mouse IgG H&L (HRP) preadsorbed (**ab97040**) at 1/10000 dilution

Developed using the ECL technique.

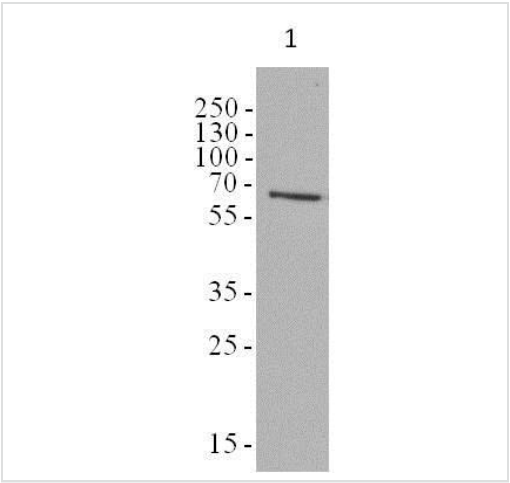
Performed under reducing conditions.

Predicted band size: 62 kDa
Observed band size: 62 kDa
Additional bands at: 75 kDa, 80 kDa. We are unsure as to the identity of these extra bands.

Exposure time: 20 minutes

Abcam recommends using milk as the blocking agent when running western blots of ab80039. This blot was produced using a 10% Bis-tris gel under the MOPS buffer system. The gel was run at 200V for

50 minutes before being transferred onto a Nitrocellulose membrane at 30V for 70 minutes. The membrane was then blocked for an hour using 3% milk before being incubated with ab80039 overnight at 4°C. Antibody binding was detected using an anti-mouse antibody conjugated to HRP, and visualised using ECL development solution.



Western blot - Anti-AMPK alpha 1 + AMPK alpha 2 antibody [34.2] (ab80039)

This image is courtesy of an Abreview submitted by Brandon d'Eon

Anti-AMPK alpha 1 + AMPK alpha 2 antibody [34.2] (ab80039) at 1/1000 dilution + Mouse 3T3-L1 adipocytes whole cell lysate at 25 µg

Secondary

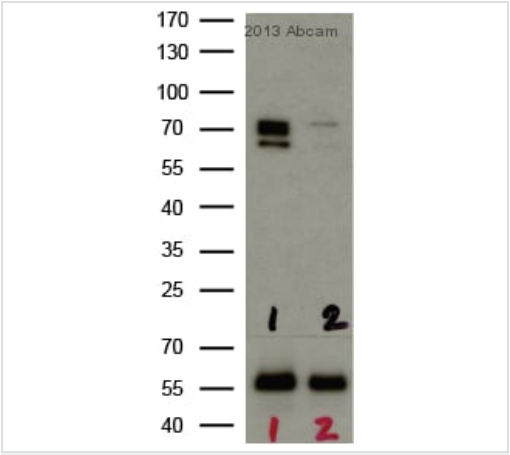
HRP-conjugated goat anti-mouse IgG (H+L) polyclonal at 1/5000 dilution

Developed using the ECL technique.

Performed under reducing conditions.

Predicted band size: 62 kDa
Observed band size: 65 kDa

Exposure time: 2 minutes



Western blot - Anti-AMPK alpha 1 + AMPK alpha 2 antibody [34.2] (ab80039)

Image courtesy of Richelle Sopko, Harvard University, U.S.A.

All lanes : Anti-AMPK alpha 1 + AMPK alpha 2 antibody [34.2] (ab80039) at 1/1000 dilution

Lane 1 : Lysate of 0-4 hour Drosophila embryos expressing control shRNA.
Lane 2 : Lysate of 0-4 hour Drosophila embryos expressing SNF1A shRNA.

Secondary

All lanes : Sheep anti-mouse IgG conjugated to HRP at 1/10000 dilution

Developed using the ECL technique.

Performed under reducing conditions.

Predicted band size: 62 kDa

Exposure time: 10 minutes

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