Anti-AMPK alpha 1 Antibody [B1-E10]

M1409-1

Product Type:	Mouse monoclonal IgG1, primary antibodies
Species reactivity:	Human
Applications:	WB, IF-Cell
Molecular Wt:	Predicted band size: 64 kDa
Clone number:	B1-E10

Description: 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 it acts as a regulator of cellular polarity by remodeling the actin cytoskeleton; probably by indirectly activating myosin. AMPK also acts as a regulator of circadian rhythm by mediating phosphorylation of CRY1, leading to destabilize it. 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 AMPK phosphorylates CFTR, EEF2K, KLC1, NOS3 and SLC12A1.

Immunogen: Recombinant protein within Human AMPK alpha 1 aa 321-520 / 559.

Positive control: Hela, PANC-1

Subcellular location: Cytoplasm, nucleus

Database links: SwissProt: Q13131 Human

Recommended Dilutions:

IF-Cell	1:100-1:200
WB	1:1,000-1:2,000

Storage Buffer: 1*PBS (pH7.4), 0.2% BSA, 40% Glycerol. Preservative: 0.05% Sodium Azide.

Storage Instruction: Store at +4℃ after thawing. Aliquot store at -20℃ or -80℃. Avoid repeated freeze / thaw cycles.

Purity: Protein A affinity purified.

Images

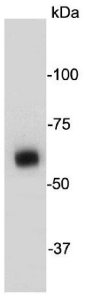

Fig1: Western blot analysis on Hela cell lysates using anti- AMPK alpha 1 mouse mAb.

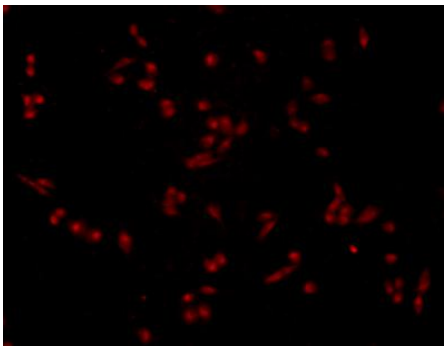

Fig2: ICC staining AMPK alpha 1 in PANC-1 cells (red). Cells were fixed in paraformaldehyde, permeabilised with 0.25% Triton X100/PBS.

Note: All products are "FOR RESEARCH USE ONLY AND ARE NOT INTENDED FOR DIAGNOSTIC OR THERAPEUTIC USE".

Background References

1. "LKB1 is a master kinase that activates 13 kinases of the AMPK subfamily, including MARK/PAR-1." Lizcano J.M., Goeransson O., Toth R., Deak M., Morrice N.A., Boudeau J., Hawley S.A., Udd L., Maekelae T.P., Hardie D.G., Alessi D.R. EMBO J. 23:833-843(2004)
2. "Folliculin encoded by the BHD gene interacts with a binding protein, FNIP1, and AMPK, and is involved in AMPK and mTOR signaling." Baba M., Hong S.-B., Sharma N., Warren M.B., Nickerson M.L., Iwamatsu A., Esposito D., Gillette W.K., Hopkins R.F. III, Hartley J.L., Furihata M., Oishi S., Zhen W., Burke T.R. Jr., Linehan W.M., Schmidt L.S., Zbar B. Proc. Natl. Acad. Sci. U.S.A. 103:15552-15557(2006)
3. "AMP-activated protein kinase regulates GLUT4 transcription by phosphorylating histone deacetylase 5." McGee S.L., van Denderen B.J., Howlett K.F., Mollica J., Schertzer J.D., Kemp B.E., Hargreaves M. Diabetes 57:860-867(2008)