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Product datasheet for TA392509S

Rabbit Polyclonal Antibody

Product data:

Product Type:	Primary Antibodies
Applications:	WB
Recommended Dilution:	WB: 1:2000~1:5000
Reactivity:	Human, Rat, Mouse
Host:	Rabbit
Isotype:	IgG
Clonality:	Polyclonal
Immunogen:	Synthetic peptide, corresponding to Human AMPKα1/2.
Specificity:	AMPKα1/2 (T174/T172) polyclonal antibody detects endogenous levels of AMPKα1/2 protein.
Formulation:	Rabbit IgG, 1mg/ml in PBS with 0.02% sodium azide, 50% glycerol, pH7.2.
Concentration:	1mg/ml
Conjugation:	Unconjugated
Storage:	Store at 4°C short term. Aliquot and store at -20°C long term. Avoid freeze-thaw cycles.
Stability:	1 year
Predicted Protein Size:	~ 65 kDa
Database Link:	Q13131/P54646

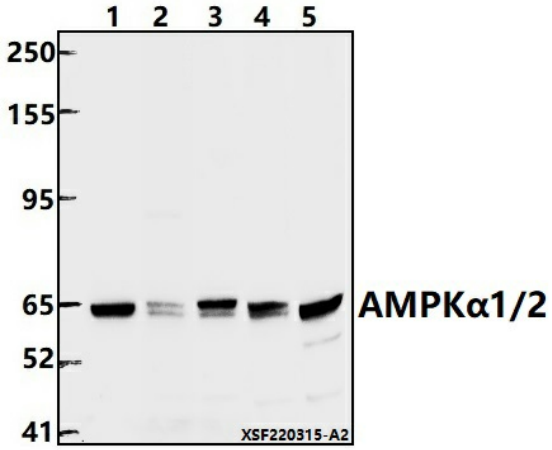
View online »

Background: AMP-activated protein kinase (AMPK) is highly conserved from yeast to plants and animals and plays a key role in the regulation of energy homeostasis. 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 (α1, 2; β1, 2; γ1, 2, 3). The kinase is activated by an elevated AMP/ATP ratio due to cellular and environmental stress, such as heat shock, hypoxia, and ischemia. The tumor suppressor LKB1, in association with accessory proteins STRAD and MO25, phosphorylates AMPKα at Thr172 in the activation loop, and this phosphorylation is required for AMPK activation. AMPKα is also phosphorylated at Thr258 and Ser485 (for α1; Ser491 for α2). The upstream kinase and the biological significance of these phosphorylation events have yet to be elucidated. The β1 subunit is post-translationally modified by myristoylation and multi-site phosphorylation including Ser24/25, Ser96, Ser101, Ser108, and Ser182. Phosphorylation at Ser108 of the β1 subunit seems to be required for AMPK activation, while phosphorylation at Ser24/25 and Ser182 affects AMPK localization. Several mutations in AMPKγ subunits have been identified, most of which are located in the putative AMP/ATP binding sites (CBS or Bateman domains). Mutations at these sites lead to reduction of AMPK activity and cause glycogen accumulation in heart or skeletal muscle. 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.

Synonyms: 5'-AMP-activated protein kinase catalytic subunit alpha-1; 5'-AMP-activated protein kinase catalytic subunit alpha-2; ACACA kinase; Acetyl-CoA carboxylase kinase; AMPK; AMPK1; AMPK2; AMPK subunit alpha-1; AMPK subunit alpha-2; HMGCR kinase; Hydroxymethylglutaryl-CoA reductase kinase; PRKAA1; PRKAA2; Tau-protein kinase PRKAA1

Note: For research use only, not for use in diagnostic procedure.

Product images:



Western blot (WB) analysis of AMPKα1/2 (T174/T172) polyclonal antibody at 1:2000 dilution Lane1:Hela whole cell lysate(40ug) Lane2:PC3 whole cell lysate(40ug) Lane3:A549 whole cell lysate(40ug) Lane4:CT-26 whole cell lysate(40ug) Lane5:PC12 whole cell lysate(40ug)