腺苷单磷酸活化蛋白激酶γ2抗体

产品货号： mlR9446

英文名称： PRKAG2

中文名称： 腺苷单磷酸活化蛋白激酶γ2抗体

别　　名： 5''-AMP-activated protein kinase subunit gamma-2; AAKG; AAKG2; AAKG2_HUMAN; AMPK gamma2; AMPKgamma2; AMPK subunit gamma 2; AMPK subunit gamma-2; CMH6; H91620p; Prkag2; Protein kinase AMP activated gamma 2 non catalytic subunit; WPWS.

研究领域： 肿瘤　心血管　细胞生物　信号转导

抗体来源： Rabbit

克隆类型： Polyclonal

交叉反应： Human, Mouse, Rat, Chicken, Dog, Pig, Cow, Horse,

产品应用： WB=1:500-2000 ELISA=1:500-1000 IHC-P=1:400-800 IHC-F=1:400-800 ICC=1:100-500 IF=1:50-200（石蜡切片需做抗原修复）

not yet tested in other applications.

optimal dilutions/concentrations should be determined by the end user.

分 子 量： 63kDa

细胞定位： 细胞核 细胞浆

性　　状： Lyophilized or Liquid

浓　　度： 1mg/ml

免 疫 原： KLH conjugated synthetic peptide derived from human PRKAG2:265-370/569

亚　　型： IgG

纯化方法： affinity purified by Protein A

储 存 液： 0.01M TBS(pH7.4) with 1% BSA, 0.03% Proclin300 and 50% Glycerol.

保存条件： Store at -20 ˚C for one year. Avoid repeated freeze/thaw cycles. The lyophilized antibody is stable at room temperature for at least one month and for greater than a year when kept at -20˚C. When reconstituted in sterile pH 7.4 0.01M PBS or diluent of antibody the antibody is stable for at least two weeks at 2-4 ˚C.

PubMed： **PubMed**

产品介绍 ： AMPK is a heterotrimeric complex comprising a catalytic a subunit and regulatory b and g subunits. It protects cells from stresses that cause ATP depletion by switching off ATP-consuming biosynthetic pathways. AMPK is activated by high AMP and low ATP through a mechanism involving allosteric regulation, promotion of phosphorylation by an upstream protein kinase known as AMPK kinase and inhibition of dephosphorylation. Activated AMPK can phosphorylate and regulate in vivo hydroxy-methylglutaryl-CoA reductase and acetyl-CoA carboxylase, which are key regulatory enzymes of sterol synthesis and fatty acid synthesis, respectively. The human AMPKa1 and AMPKa2 genes encode 548 amino acid and 552 amino acid proteins, respectively. Human AMPKb1 encodes a 271 amino acid protein and human AMPKb2 encodes a 272 amino acid protein. The human AMPKg1 gene encodes a 331 amino acid protein. Human AMPKg2 and AMPKg3, which are 569 and 492 amino acid proteins, respectively, contain unique N-terminal domains and may participate directly in the binding of AMP within the AMPK complex.

Function:

AMP/ATP-binding 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. Gamma non-catalytic subunit mediates binding to AMP, ADP and ATP, leading to activate or inhibit AMPK: AMP-binding results in allosteric activation of alpha catalytic subunit (PRKAA1 or PRKAA2) both by inducing phosphorylation and preventing dephosphorylation of catalytic subunits. ADP also stimulates phosphorylation, without stimulating already phosphorylated catalytic subunit. ATP promotes dephosphorylation of catalytic subunit, rendering the AMPK enzyme inactive.

Subunit:

AMPK is a heterotrimer of an alpha catalytic subunit (PRKAA1 or PRKAA2), a beta (PRKAB1 or PRKAB2) and a gamma non-catalytic subunits (PRKAG1, PRKAG2 or PRKAG3). Interacts with FNIP1 and FNIP2.

Subcellular Location:

Cytoplasmic and Nuclear

Tissue Specificity:

Isoform B is ubiquitously expressed except in liver and thymus. The highest level is detected in heart with abundant expression in placenta and testis.

Post-translational modifications:

Phosphorylated by ULK1; leading to negatively regulate AMPK activity and suggesting the existence of a regulatory feedback loop between ULK1 and AMPK. Phosphorylated upon DNA damage, probably by ATM or ATR.

DISEASE:

Defects in PRKAG2 are the cause of cardiomyopathy, familial hypertrophic type 6 (CMH6) [MIM:600858]. A hereditary heart disorder characterized by ventricular hypertrophy, which is usually asymmetric and often involves the interventricular septum. The symptoms include dyspnea, syncope, collapse, palpitations, and chest pain. They can be readily provoked by exercise. The disorder has inter- and intrafamilial variability ranging from benign to malignant forms with high risk of cardiac failure and sudden cardiac death. CMH6 patients present Wolff-Parkinson-White ventricular preexcitation, enlarged myocytes without myofiber disarray, and glycogen-containing cytosolic vacuoles within cardiomyocytes.

Defects in PRKAG2 are a cause of glycogen storage disease of heart lethal congenital (GSDH) [MIM:261740]; also known as phosphorylase kinase deficiency of heart or congenital nonlysosomal cardiac glycogenosis. GSDH is a rare disease which leads to death within a few weeks to a few months after birth, through heart failure and respiratory compromise.

Similarity:

Belongs to the 5'-AMP-activated protein kinase gamma subunit family.

Contains 4 CBS domains.

SWISS:

Q9UGJ0

Gene ID:

51422

Important Note:

This product as supplied is intended for research use only, not for use in human, therapeutic or diagnostic applications.

产品图片