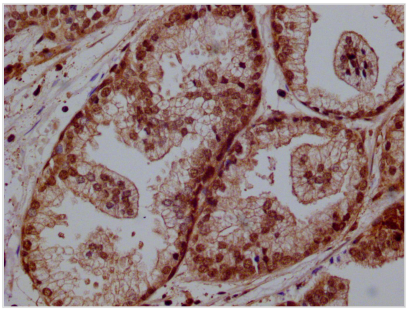
PRKAG1 Recombinant Monoclonal Antibody

Product Code	CSB-RA161743A0HU
Storage	Upon receipt, store at -20°C or -80°C. Avoid repeated freeze.
Uniprot No.	P54619
Immunogen	A synthesized peptide derived from human PRKAG1
Species Reactivity	Human
Tested Applications	ELISA, IHC; Recommended dilution: IHC:1:50-1:200
Relevance	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. {ECO:0000269|PubMed:21680840}.
Form	Liquid
Conjugate	Non-conjugated
Storage Buffer	Rabbit IgG in phosphate buffered saline, pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol.
Purification Method	Affinity-chromatography
Isotype	Rabbit IgG
Clonality	Monoclonal
Product Type	Recombinant Antibody
Immunogen Species	Homo sapiens (Human)
Research Area	Cancer; Cardiovascular; Metabolism; Signal transduction
Gene Names	PRKAG1
Clone No.	5E5
Image	



IHC image of CSB-RA161743A0HU diluted at 1:100 and staining in paraffin-embedded human Prostate cancer performed on a Leica BondTM system. After dewaxing and hydration, antigen retrieval was mediated by high pressure in a citrate buffer (pH 6.0). Section was blocked with 10% normal goat serum 30min at RT. Then primary antibody (1% BSA) was incubated at 4°C overnight. The primary is detected by a Goat anti-rabbit polymer IgG labeled by HRP and visualized using 0.05% DAB.

Description

The PRKAG1 recombinant monoclonal antibody is meticulously produced to ensure its exceptional quality and specificity. The process begins by isolating B cells from an immunized animal using the synthesized peptide derived from human PRKAG1 as the immunogen. Total RNA is extracted from these B cells and converted into cDNA through reverse transcription. The PRKAG1 antibody genes are then amplified using specific primers designed for the antibody constant regions and inserted into an expression vector. Through transfection, the vector is introduced into host cells to enable the production of the PRKAG1 recombinant monoclonal antibody. Following cell culture, the antibody is harvested from the supernatant and purified using affinity chromatography, resulting in a highly purified form suitable for further applications. To ensure its reliability, the antibody undergoes extensive characterization assays, including ELISA and IHC analysis, to validate its specificity and functionality in recognizing human PRKAG1 protein.