Anti-cAMP Protein Kinase Catalytic Subunit Rabbit Monoclonal Antibody

Introduction

Phosphorylates a large number of substrates in the cytoplasm and the nucleus. Regulates the abundance of compartmentalized pools of its regulatory subunits through phosphorylation of PJA2 which binds and ubiquitinates these subunits, leading to their subsequent proteolysis. Phosphorylates CDC25B, ABL1, NFKB1, CLDN3, PSMC5/RPT6, PJA2, RYR2, RORA and VASP. RORA is activated by phosphorylation. Required for glucose-mediated adipogenic differentiation increase and osteogenic differentiation inhibition from osteoblasts. Involved in the regulation of platelets in response to thrombin and collagen; maintains circulating platelets in a resting state by phosphorylating proteins in numerous platelet inhibitory pathways when in complex with NF-kappa-B (NFKB1 and NFKB2) and I-kappa-B-alpha (NFKBIA), but thrombin and collagen disrupt these complexes and free active PRKACA stimulates platelets and leads to platelet aggregation by phosphorylating VASP. Prevents the antiproliferative and anti-invasive effects of alpha-difluoromethylornithine in breast cancer cells when activated. RYR2 channel activity is potentiated by phosphorylation in presence of luminal Ca2+, leading to reduced amplitude and increased frequency of store overload-induced Ca2+ release (SOICR) characterized by an increased rate of Ca2+ release and propagation velocity of spontaneous Ca2+ waves, despite reduced wave amplitude and resting cytosolic Ca2+. PSMC5/RPT6 activation by phosphorylation stimulates proteasome. Negatively regulates tight junctions (TJs) in ovarian cancer cells via CLDN3 phosphorylation. NFKB1 phosphorylation promotes NF-kappa-B p50-p50 DNA binding. Involved in embryonic development by down-regulating the Hedgehog (Hh) signaling pathway that determines embryo pattern formation and morphogenesis. Prevents meiosis resumption in prophase-arrested oocytes via CDC25B inactivation by phosphorylation. May also regulate rapid eye movement (REM) sleep in the pedunculopontine tegmental (PPT). Phosphorylates APOBEC3G and AICDA. Isoform 2 phosphorylates and activates ABL1 in sperm flagellum to promote spermatozoa capacitation. Phosphorylates HSF1; this phosphorylation promotes HSF1 nuclear localization and transcriptional activity upon heat shock (PubMed:21085490).

Product parameters

Alternative Names	PKACA; PPNAD4
Gene ID	5566
Gene Name	PRKACA
SwissProt ID	P17612
Host	Rabbit
Reactivity	Human, Mouse, Rat

Molecular Weight	Calculated MW: 41 kDa; Observed MW: 41 kDa
Conjugation	Unconjugated
Ex	-
Em	-
Modification	Unmodified
Clonality	IgG
Isotype	Monoclonal Antibody
Clonality No.	AP-2D3A6
Form	Liquid
Concentration	See label
Carrier	Carrier Not Free
Immunogen	A synthetic peptide of human cAMP Protein Kinase Catalytic subunit
Purification	Affinity Purified
Buffer System	50mM Tris-Glycine (pH 7.4), 0.15M NaCl, 40% Glycerol, 0.01% Sodium azide and 0.05% BSA.
Application	WB, IHC-F, IHC-P, ICC/IF, IP
Dilution Ratio	WB: 1/500-1/1000 IHC: 1/50-1/100 IF: 1/50-1/200 IP: 1/20
Research Field	Signal Transduction
Product Categories	Primary antibody
Shipping	Blue ice
Storage	-20°C
Expiration Date	12 months
Note	Please avoid freeze-thaw cycles.

Protocol

Configure the product according to the application range and recommended dilution ratio.

***Note:** The primary antibody dilution buffer options: WB - Primary Antibody Dilution Buffer (Cat. #: K1200, Not for HRP/AP conjugated antibodies), Immunostaining - Immunol Staining Primary Antibody Dilution Solution (Cat. #: K4655).

Note

1. This product is for scientific research use only.

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