




Rabbit Anti-PKA alpha + beta antibody

SL0520R

Product Name:	PKA alpha + beta
Chinese Name:	蛋白激酶A抗体
Alias:	PRKACA/PRKACB; PRKACA + PRKACB; PKA alpha + beta; PKA alpha; PKA beta; cAMP dependent protein kinase alpha catalytic subunit; cAMP dependent protein kinase beta catalytic subunit; cAMP dependent protein kinase catalytic subunit alpha; cAMP dependent protein kinase catalytic subunit beta; DKFZp781I2452; MGC102831; MGC41879; MGC48865; MGC9320; PKA C alpha; PKA C beta; PKACA; PKACB; PRKACA; PRKACB; Protein kinase A catalytic subunit alpha; Protein kinase A catalytic subunit; Protein kinase A catalytic subunit beta; Protein kinase cAMP dependent catalytic alpha; Protein kinase cAMP dependent catalytic beta; cAMP dependent protein kinase catalytic subunit alpha isoform 1; cAMP-dependent protein kinase catalytic subunit alpha; KAPCA_HUMAN; KAPCB_HUMAN; PKA C alpha; PKA C-alpha; PKACA; PRKACA; Protein kinase A catalytic subunit; Protein kinase cAMP dependent catalytic alpha.
文献引用 	<p>Specific References(3) SL0520R has been referenced in 3 publications.</p> <p>[IF=3.73]Haolong, Du, et al. "Enterovirus 71 VP1 Activates Calmodulin-Dependent Protein Kinase II and Results in the Rearrangement of Vimentin in Human Astrocyte Cells." PLoS One 8(9): e73900WB;Human. PubMed:24073199</p> <p>[IF=3.95]Yao, Gaoyi, et al. "Chronic SO₂ inhalation above environmental standard impairs neuronal behavior and represses glutamate receptor gene expression and memory-related kinase activation via neuroinflammation in rats." Environmental Research 137 (2015): 85-93.WB;Rat. PubMed:25498917</p> <p>[IF=5.58]Zhou, Zhiwen, et al. "Photoactivated adenylyl cyclase (PAC) reveals novel</p>

	mechanisms underlying cAMP-dependent axonal morphogenesis." Scientific Reports 5 (2016): 19679. Rat. PubMed:26795422
Organism Species:	Rabbit
Clonality:	Polyclonal
React Species:	Human,Mouse,Rat,
Applications:	WB=1:500-2000ELISA=1:500-1000IHC-P=1:400-800IHC-F=1:400-800IF=1:100-500 (Paraffin sections need antigen repair) not yet tested in other applications. optimal dilutions/concentrations should be determined by the end user.
Molecular weight:	40kDa
Cellular localization:	The nucleuscytoplasmicThe cell membrane
Form:	Lyophilized or Liquid
Concentration:	1mg/ml
immunogen:	KLH conjugated synthetic peptide derived from human PRKACA/PRKACB :17-100/351
Lsotype:	IgG
Purification:	affinity purified by Protein A
Storage Buffer:	0.01M TBS(pH7.4) with 1% BSA, 0.03% Proclin300 and 50% Glycerol.
Storage:	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
Product Detail:	<p>cAMP is a signaling molecule important for a variety of cellular functions. cAMP exerts its effects by activating the cAMP-dependent protein kinase, which transduces the signal through phosphorylation of different target proteins. The inactive kinase holoenzyme is a tetramer composed of two regulatory and two catalytic subunits. cAMP causes the dissociation of the inactive holoenzyme into a dimer of regulatory subunits bound to four cAMP and two free monomeric catalytic subunits. Four different regulatory subunits and three catalytic subunits have been identified in humans. The protein encoded by this gene is a member of the Ser/Thr protein kinase family and is a catalytic subunit of cAMP-dependent protein kinase. Alternatively spliced transcript variants encoding distinct isoforms have been observed. [provided by RefSeq, Jul 2008]</p> <p>Function: 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, TRPC1 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</p>

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 Ca(2+), leading to reduced amplitude and increased frequency of store overload-induced Ca(2+) release (SOICR) characterized by an increased rate of Ca(2+) release and propagation velocity of spontaneous Ca(2+) waves, despite reduced wave amplitude and resting cytosolic Ca(2+). TRPC1 activation by phosphorylation promotes Ca(2+) influx, essential for the increase in permeability induced by thrombin in confluent endothelial monolayers. PSMC5/RPT6 activation by phosphorylation stimulates proteasome. Regulates negatively tight junction (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. Isoform 2 phosphorylates and activates ABL1 in sperm flagellum to promote spermatozoa capacitation. 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.

Subunit:

A number of inactive tetrameric holoenzymes are produced by the combination of homo- or heterodimers of the different regulatory subunits associated with two catalytic subunits. cAMP causes the dissociation of the inactive holoenzyme into a dimer of regulatory subunits bound to four cAMP and two free monomeric catalytic subunits. The cAMP-dependent protein kinase catalytic subunit binds PJA2. Both isoforms 1 and 2 forms activate cAMP-sensitive PKAI and PKAII holoenzymes by interacting with regulatory subunit (R) of PKA, PRKAR1A/PKR1 and PRKAR2A/PKR2, respectively. Interacts with NFKB1, NFKB2 and NFKBIA in platelets; these interactions are disrupted by thrombin and collagen. Binds to ABL1 in spermatozoa and with CDC25B in oocytes. Interacts with APOBEC3G and AICDA.

Subcellular Location:

Cytoplasm. Cell membrane. Nucleus. Mitochondrion. Note=Translocates into the nucleus (monomeric catalytic subunit). The inactive holoenzyme is found in the cytoplasm. Distributed throughout the cytoplasm in meiotically incompetent oocytes. Associated to mitochondrion as meiotic competence is acquired. Aggregates around the germinal vesicles (GV) at the immature GV stage oocytes.

Tissue Specificity:

Isoform 1 is ubiquitous. Isoform 2 is sperm specific.

Post-translational modifications:

Asn-3 is partially deaminated to Asp giving rise to 2 major isoelectric variants, called

CB and CA respectively.

Autophosphorylated. Phosphorylation is enhanced by vitamin K(2). Phosphorylated on threonine and serine residues. Phosphorylation on Thr-198 is required for full activity. Phosphorylated at Tyr-331 by activated receptor tyrosine kinases EGFR and PDGFR; this increases catalytic efficiency.

Similarity:

Belongs to the protein kinase superfamily. AGC Ser/Thr protein kinase family. cAMP subfamily.

Contains 1 AGC-kinase C-terminal domain.

Contains 1 protein kinase domain.

SWISS:

P17612

Gene ID:

5566

Database links:

[Entrez Gene: 5566](#)Human

[Entrez Gene: 5567](#)Human

[Entrez Gene: 18747](#)Mouse

[Entrez Gene: 18749](#)Mouse

[Entrez Gene: 25636](#)Rat

[Omim: 176892](#)Human

[Omim: 601639](#)Human

[SwissProt: P17612](#)Human

[SwissProt: P22694](#)Human

[SwissProt: P05132](#)Mouse

[SwissProt: P05206](#)Mouse

[SwissProt: P27791](#)Rat

[Unigene: 487325](#)Human

[Unigene: 631630](#)Human

[Unigene: 16766](#)Mouse

[Unigene: 19111](#)Mouse

[Unigene: 103828](#)Rat

Important Note:

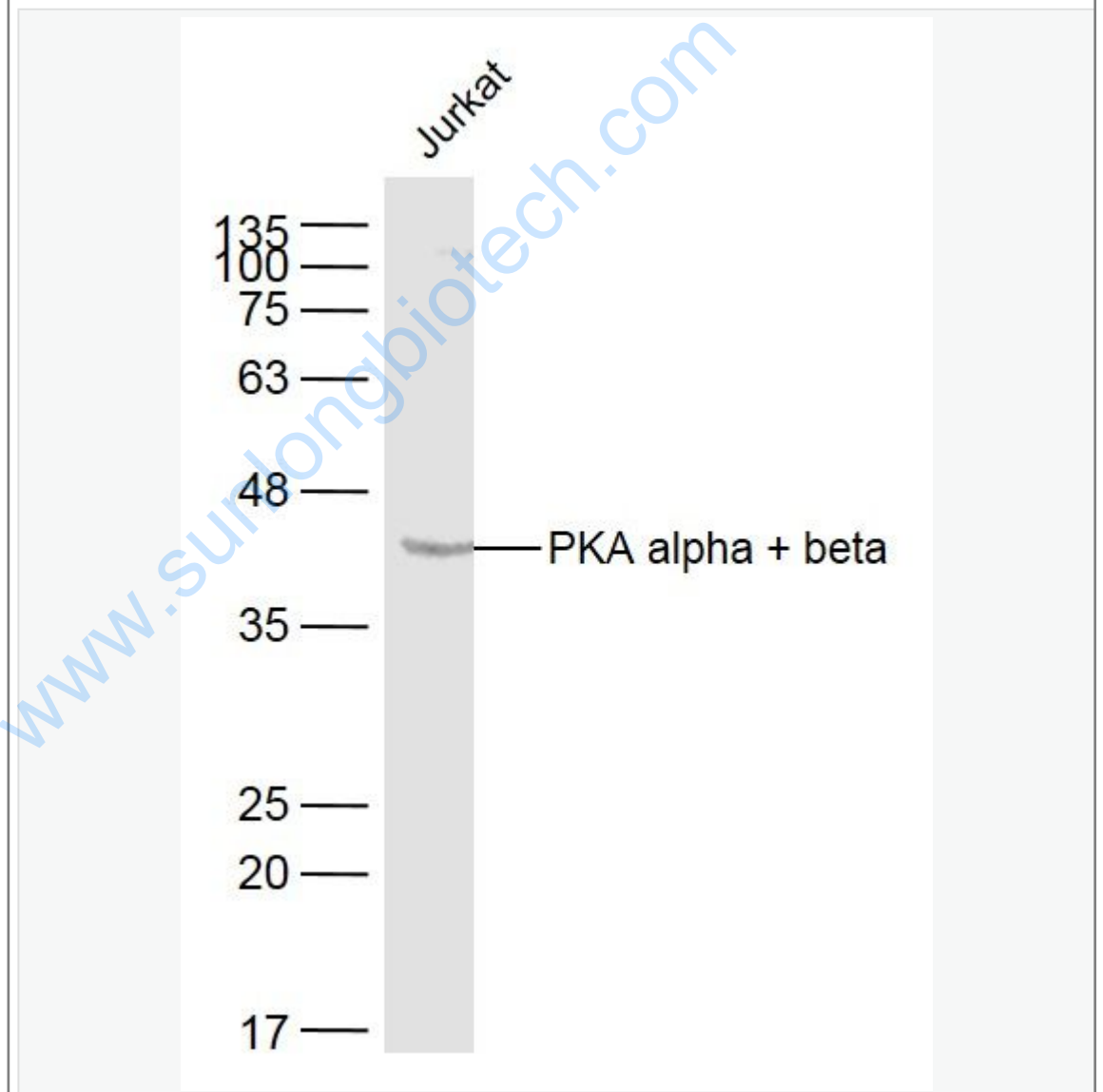
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Kinases and Phosphatases (Kinases and Phosphatases)

蛋白激酶 A (protein kinase A, PKA) 又称依赖于cAMP的蛋白激酶A (cyclic-AMP dependent protein kinase A), 是一种结构最简单、生化特性最清楚的蛋白激酶。

蛋白激酶A属于多功能丝氨酸和苏氨酸激酶,可使蛋白磷酸化,也可自身磷酸化。在调节细胞存活中起重要作用。

Picture:



Sample:

Jurkat(Human) Cell Lysate at 40 ug

Primary: Anti-PKA alpha + beta (SL0520R) at 1/300 dilution

Secondary: IRDye800CW Goat Anti-Rabbit IgG at 1/20000 dilution

Predicted band size: 40 kD

Observed band size: 40 kD

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