

Rabbit PKA alpha CAT Polyclonal Antibody | anti-PKAalphaCAT antibody

Phospho-PKA alpha CAT (Ser339) Antibody

CATALOG #	HOST	REACTIVITY	APPLICATIONS
AAA329624	Rabbit	Human, Mouse, Rat Predicted Reactivity: Pig (100%), Bovine (100%), Horse (100%), Sheep (100%), Dog (100%), Xenopus (85%)	ELISA, Immunohistochemistry, Western Blot

PRODUCT SYNONYMS

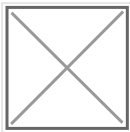
PKA alpha CAT; Polyclonal Antibody; Phospho-PKA alpha CAT (Ser339) Antibody; cAMP dependent protein kinase alpha catalytic subunit; cAMP dependent protein kinase beta catalytic subunit; cAMP dependent protein kinase catalytic beta subunit isoform 4ab; cAMP dependent protein kinase catalytic subunit alpha; isoform 1; cAMP dependent protein kinase catalytic subunit beta; cAMP-dependent protein kinase catalytic subunit alpha; KAPCA_HUMAN; PKA C alpha; PKA C beta; PKA C-alpha; PKACA; PKACB; PPNAD4; PRKACA; PRKACAA; PRKACB; Protein kinase A catalytic subunit alpha; Protein kinase A catalytic subunit; Protein kinase A catalytic subunit beta; Protein kinase; cAMP dependent; catalytic; alpha; beta; anti-PKAalphaCAT antibody

PRODUCT SPECIFICATIONS

Host	Rabbit
Reactivity	Human, Mouse, Rat Predicted Reactivity: Pig (100%), Bovine (100%), Horse (100%), Sheep (100%), Dog (100%), Xenopus (85%)
Clonality	Polyclonal
Isotype	Rabbit IgG
Specificity	Phospho-PKA alpha CAT (Ser339) Antibody detects endogenous levels of PKA alpha CAT only when phosphorylated at Ser339. Tissue Specificity: Isoform 1 is ubiquitous. Isoform 2 is sperm-specific and is enriched in pachytene spermatocytes but is not detected in round spermatids.
Purity/Purification	The antibody is from purified rabbit serum by affinity purification via sequential chromatography on phospho-peptide and non-phospho-peptide affinity columns.
Form/Format	Liquid. Rabbit IgG in phosphate buffered saline, pH7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol.
Concentration	1mg/ml (varies by lot)
Applicable Applications for anti-PKAalphaCAT antibody	ELISA (Peptide ELISA), IHC (Immunohistochemistry), WB (Western Blot)
Immunogen	A synthesized peptide derived from human PKAalpha CAT around the phosphorylation site of Ser339.
Conjugation	Unconjugated
Fragment	Fab fragment
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.

Subunit Structure	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. Interacts with RAB13; downstream effector of RAB13 involved in tight junction assembly. Found in a complex at least composed of MROH2B, PRKACA isoform 2 and TCP11 (By similarity). Interacts with MROH2B (By similarity). Isoform 2 interacts with TCP11 (By similarity). Interacts with HSF1.
Similarity	Belongs to the protein kinase superfamily. AGC Ser/Thr protein kinase family. cAMP subfamily.
Subcellular Location	Cytoplasm. Cell membrane. Nucleus. Mitochondrion. Membrane>Lipid-anchor. 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 (By similarity). Colocalizes with HSF1 in nuclear stress bodies (nSBs) upon heat shock (PubMed:21085490).Cell projection>Cilium>Flagellum. Cytoplasmic vesicle>Secretory vesicle>Acrosome. Note: Expressed in the midpiece region of the sperm flagellum (PubMed:10906071). Colocalizes with MROH2B and TCP11 on the acrosome and tail regions in round spermatids and spermatozoa regardless of the capacitation status of the sperm (By similarity).
Preparation and Storage	Store at -20 degree C. Stable for 12 months from date of receipt.

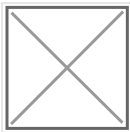
IMAGES



IHC (Immunohistochemistry)
At 1/200 staining Human liver cancer tissue sections by IHC-P. The tissue was formaldehyde fixed and a heat mediated antigen retrieval step in citrate buffer was performed. The tissue was then blocked and incubated with the antibody for 1.5 hours at 22 degree C. An HRP conjugated goat anti-rabbit antibody was used as the secondary antibody.



IHC (Immunohiostchemistry)
Staining Rat intestinal tissue sections by IHC-P. The tissue was formaldehyde fixed and a heat mediated antigen retrieval step in citrate buffer was performed. The tissue was then blocked and incubated with the antibody for 1.5 hours at 22 degree C. An HRP conjugated goat anti-rabbit antibody was used as the secondary antibody.



IHC (Immunohistochemisry)
At 1/200 staining Mouse heart tissue sections by IHC-P. The tissue was formaldehyde fixed and a heat mediated antigen retrieval step in citrate buffer was performed. The tissue was then blocked and incubated with the antibody for 1.5 hours at 22 degree C. An HRP conjugated goat anti-rabbit antibody was used as the secondary antibody.



WB (Western Blot)
Western blot analysis of PKAÎ± CAT (Phospho-Ser339) using Insulin treated 293 whole cell lysates. -/+ means absence or presence of N peptideî¼non-phospho peptide) and P peptide(phospho peptide).

ADDITIONAL INFORMATION

Related Product Information for anti- PKAalphaCAT antibody	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 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+). 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.
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NCBI AND UNIPROT INFORMATION

NCBI GI #	4506055
NCBI GeneID	5566
NCBI Accession #	NP_002721.1
NCBI GenBank Nucleotide #	NM_002730.3
UniProt Accession #	P17612; Q32P54; Q9H2Y0; Q9NRB4; Q9NRH9
Molecular Weight	351
NCBI Official Full Name	cAMP-dependent protein kinase catalytic subunit alpha isoform 1
NCBI Official Synonym Full Names	protein kinase, cAMP-dependent, catalytic, alpha
NCBI Official Symbol	PRKACA
NCBI Official Synonym Symbols	PKACA
NCBI Protein Information	cAMP-dependent protein kinase catalytic subunit alpha; PKA C-alpha; protein kinase A catalytic subunit; cAMP-dependent protein kinase catalytic subunit alpha, isoform 1
UniProt Protein Name	cAMP-dependent protein kinase catalytic subunit alpha
UniProt Gene Name	PRKACA
UniProt Synonym Gene Names	PKACA; PKA C-alpha
UniProt Entry Name	KAPCA_HUMAN

For Research Use Only. Not for use in diagnostic or therapeutic procedures. Small volumes of product may become entrapped in the seal of the vial during shipment and storage; if necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the cap.

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Online datasheet: <https://stage.aaabiotech.com/polyclonal/pka-alpha-cat-antibody-peptide-elisa-immunohistochemistry-western-blot-elisa/329624>