10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.622.0609

PRKACA Antibody (N-term K82) Blocking Peptide

Synthetic peptide
Catalog # BP6822a

Specification

PRKACA Antibody (N-term K82) Blocking Peptide - Product Information

Primary Accession P17612

PRKACA Antibody (N-term K82) Blocking Peptide - Additional Information

Gene ID 5566

Other Names
cAMP-dependent protein kinase catalytic subunit alpha, PKA C-alpha, PRKACA, PKACA

Target/Specificity
The synthetic peptide sequence used to generate the antibody AP6822a was selected from the N-term region of human PRKACA. A 10 to 100 fold molar excess to antibody is recommended. Precise conditions should be optimized for a particular assay.

Format
Peptides are lyophilized in a solid powder format. Peptides can be reconstituted in solution using the appropriate buffer as needed.

Storage
Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C.

Precautions
This product is for research use only. Not for use in diagnostic or therapeutic procedures.

PRKACA Antibody (N-term K82) Blocking Peptide - Protein Information

Name PRKACA

Synonyms PKACA

PRKACA Antibody (N-term K82) Blocking Peptide - Background

PRKACA phosphorylates a large number of substrates in the cytoplasm and the nucleus.

PRKACA Antibody (N-term K82) Blocking Peptide - References

Sugiyama,H., et.al., J. Biol. Chem. 267 (35), 25256-25263 (1992)

Function

Phosphorylates a large number of substrates in the cytoplasm and the nucleus (PubMed:15642694, PubMed:15905176, PubMed:16387847, PubMed:17333334, PubMed:17565987, PubMed:17693412, PubMed:18836454, PubMed:19949837, PubMed:20356841, PubMed:21085490, PubMed:21514275, PubMed:21812984). Phosphorylates CDC25B, ABL1, NFKB1, CLDN3, PSMC5/RPT6, PJA2, RYR2, RORA, SOX9 and VASP (PubMed:15642694, PubMed:15905176, PubMed:16387847, PubMed:17333334, PubMed:17565987, PubMed:<a href="http://www.uniprot.org/ci

tations/17693412"
target="_blank">17693412,
PubMed:<a href="http://www.uniprot.org/ci
tations/18836454"
target="_blank">18836454,
PubMed:<a href="http://www.uniprot.org/ci
tations/19949837"
target="_blank">19949837,
PubMed:<a href="http://www.uniprot.org/ci
tations/20356841"
target="_blank">20356841,
PubMed:<a href="http://www.uniprot.org/ci
tations/21085490"
target="_blank">21085490,
PubMed:<a href="http://www.uniprot.org/ci
tations/21514275"
target="_blank">21514275,
PubMed:<a href="http://www.uniprot.org/ci
tations/21812984"
target="_blank">21812984).
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 (PubMed:<a href="http://www.u
niprot.org/citations/21423175"
target="_blank">21423175). RORA is
activated by phosphorylation (PubMed:<a h
ref="http://www.uniprot.org/citations/21514
275" target="_blank">21514275).
Required for glucose- mediated adipogenic
differentiation increase and osteogenic
differentiation inhibition from osteoblasts
(PubMed:<a href="http://www.uniprot.org/c
itations/19949837"
target="_blank">19949837). Involved
in chondrogenesis by mediating
phosphorylation of SOX9 (By similarity).
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
(PubMed:<a href="http://www.uniprot.org/c
itations/15642694"
target="_blank">15642694,
PubMed:<a href="http://www.uniprot.org/ci
tations/20356841"
target="_blank">20356841). Prevents
the antiproliferative and anti-invasive

effects of alpha- difluoromethylornithine in breast cancer cells when activated (PubMed:17333334). 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+) (PubMed:17693412). PSMC5/RPT6 activation by phosphorylation stimulates proteasome (PubMed:17565987). Negatively regulates tight junctions (TJs) in ovarian cancer cells via CLDN3 phosphorylation (PubMed:15905176). NFKB1 phosphorylation promotes NF-kappa-B p50-p50 DNA binding (PubMed:15642694). 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 (By similarity). May also regulate rapid eye movement (REM) sleep in the pedunculopontine tegmental (PPT) (By similarity). Phosphorylates APOBEC3G and AICDA (PubMed:16387847, PubMed:18836454). Phosphorylates HSF1; this phosphorylation promotes HSF1 nuclear localization and transcriptional activity upon heat shock (PubMed:21085490).

Cellular 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). {ECO:0000250, ECO:0000269|PubMed:21085490}

Tissue Location
Isoform 1 is ubiquitous. Isoform 2 is sperm-specific and is enriched in pachytene spermatocytes but is not detected in round spermatids.

PRKACA Antibody (N-term K82) Blocking Peptide - Protocols

Provided below are standard protocols that you may find useful for product applications.

- Blocking Peptides