Camp-Dependent Protein Kinase Catalytic Subunit Alpha (PRKACA) Sheep Recombinant Protein

PRODUCT OVERVIEW

Product Name	cAMP-dependent protein kinase catalytic subunit alpha (PRKACA), Recombinant Protein
Full Product Name	Recombinant Sheep cAMP-dependent protein kinase catalytic subunit alpha (PRKACA)
Product Gene Name	PRKACA recombinant protein
Product Synonym Gene Name	PRKACA
Sequence	GNAAAAKKGS EQESVKEFLA KAKEDFLKKW ENPAQNTAHL DQFERIKTLG TGSFGRVMLV KHTETGNHYA MKILDKQKVV KLKQIEHTLN EKRILQAVNF PFLVKLEFSF KDNSNLYMVM EYVPGGEMFS HLRRIGRFSE PHARFYAAQI VLTFEYLHSL DLIYRDLKPE NLLIDQQGYI QVTDFGFAKR VKGRTWTLCG TPEYLAPEII LSKGYNKAVD WWALGVLIYE MAAGYPPFFA DQPIQIYEKI VSGKVRFPSH FSSDLKDLLR NLLQVDLTKR FGNLKNGVND IKNHKWFATT DWIAIYQRKV EAPFIPKFKG PGDTSNFDDY EEEEIRVSIN EKCGKEFSEF
Host	E Coli or Yeast or Baculovirus or Mammalian Cell
Form/Format	Lyophilized or liquid (Format to be determined during the manufacturing process)
Purity/Purification	Greater or equal to 85% purity as determined by SDS-PAGE. (lot specific)
Preparation and Storage	Store at -20 degrees C. For long-term storage, store at -20 degrees C or -80 degrees C. Store working aliquots at 4 degrees C for up to one week. Repeated freezing and thawing is not recommended.
Molecular Weight	39,859 Da
Sequence Positions	2-351, Full length protein
Tag Information	This protein contains an N-terminal tag and may also contain a C-terminal tag. Tag types are determined by various factors including tag-protein stability, please inquire for tag information.
Sterility	Sterile filter available upon request.
Endotoxin	Low endotoxin available upon request.
3D Structure	ModBase 3D Structure for Q9MZD9
Species	Sheep
ISO Certification	Manufactured in an ISO 9001:2015 Certified Laboratory.
Related Product Information for PRKACA recombinant protein	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. This protein 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.
Other Notes	Small volumes of PRKACA recombinant protein vial(s) may occasionally become entrapped in the seal of the product vial during shipment and storage. If necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the container`s cap. Certain products may require to ship with dry ice and additional dry ice fee may apply.
Searchable Terms for PRKACA purchase	MBS1479371 is a recombinant protein targeting PRKACA. Also known as Recombinant Sheep cAMP-dependent protein kinase catalytic subunit alpha (PRKACA). Host: E Coli or Yeast or Baculovirus or Mammalian Cell.

ADDITIONAL DETAILS

NCBI/Uniprot data below describe general gene information for PRKACA. It may not necessarily be applicable to this product.

NCBI GI #	57163971
NCBI GeneID	443094
NCBI Accession #	NP_001009234.1
UniProt Primary Accession #	Q9MZD9
UniProt Secondary Accession #	Q9MZD8
UniProt Related Accession #	Q9MZD9
GenBank Nucleotide #	NM_001009234.1
NCBI Official Full Name	cAMP-dependent protein kinase catalytic subunit alpha
NCBI Official Symbol	PRKACA
NCBI Official Synonym Symbols	Calpha
UniProt Protein Name	cAMP-dependent protein kinase catalytic subunit alpha
Protein Family	cAMP-dependent protein kinase
UniProt Gene Name	PRKACA
UniProt Synonym Gene Names	PKA C-alpha
NCBI Protein Information	cAMP-dependent protein kinase catalytic subunit alpha
UniProt Comments for PRKACA	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. 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. 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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