

Rabbit PKD1/PKC mu Polyclonal Antibody | anti-PRKD1 antibody

Phospho-PKD1/PKC mu (Tyr463) Antibody

CATALOG #	HOST	REACTIVITY	APPLICATIONS
AAA321733	Rabbit	Human, Mouse, Rat	ELISA, Immunocytochemistry, Immunofluorescence, Immunohistochemistry, Western Blot

PRODUCT SYNONYMS

PKD1/PKC mu; Polyclonal Antibody; Phospho-PKD1/PKC mu (Tyr463) Antibody; KPCD1_HUMAN; nPKC D1; nPKC mu; nPKC-D1; nPKC-mu; nPKCD1; nPKCmu; PKC; PKC MU; PKCM; PKCmu; PKD 1; PKD; PKD1; PRKCM; PRKD 1; Prkd1; Protein kinase C mu; Protein kinase C mu type; Protein kinase D; Protein kinase D1; Serine/threonine protein kinase D1; Serine/threonine-protein kinase D1; anti-PRKD1 antibody

PRODUCT SPECIFICATIONS

Host	Rabbit
Reactivity	Human, Mouse, Rat
Clonality	Polyclonal
Isotype	IgG
Specificity	Phospho-PKD1/PKC mu (Tyr463) antibody detects endogenous levels of PKD1/PKC mu only when phosphorylated at Tyrosine 463
Purity/Purification	From purified rabbit serum by affinity purification via sequential chromatography on phospho-and non-phospho-peptide affinity columns.
Form/Format	Liquid Phosphate buffered saline, pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol.
Concentration	1mg/ml (varies by lot)
Sequence Length	912
Applicable Applications for anti-PRKD1 antibody	ELISA, ICC (Immunocytochemistry), IF (Immunofluorescence), IHC (Immunohistochemistry), WB (Western Blot)
Immunogen	A synthesized peptide derived from human PKD1/PKC mu around the phosphorylation site of Tyrosine 463
Subcellular Location	Cytoplasm. Membrane. Translocation to the cell membrane is required for kinase activation.
Tissue Specificity	Up-regulated by the intestine-specific transcription factor CDX1 in an activated KRAS-dependent manner in colorectal cancer (CRC) cells (PubMed:24623306).
Predicted Cross Reactivity	Pig, Zebrafish, Bovine, Horse, Sheep, Rabbit, Dog, Chicken, Xenopus
Similarity	Pig (100%), Zebrafish (89%), Bovine (100%), Horse (100%), Sheep (100%), Rabbit (100%), Dog (100%), Chicken (89%), Xenopus (89%)
Conjugation	Unconjugated
Epitope	Phospho Tyr463
Preparation and Storage	Store at -20 degree C. Stable for 12 months from date of receipt.



IF (Immunofluorescence)

AAA321733 staining A431 cells by IF/ICC. The sample were fixed with PFA and permeabilized in 0.1% Triton X-100, then blocked in 10% serum for 45 minutes at 25 degree C. The primary antibody was diluted at 1/200 and incubated with the sample for 1 hour at 37 degree C. An Alexa Fluor 594 conjugated goat anti-rabbit IgG (H+L) antibody, diluted at 1/600, was used as secondary antibody.



WB (Western Blot)

Western blot analysis of PKD1/PKC mu phosphorylation expression in HepG2 whole cell lysates, The lane on the left is treated with the antigen-specific peptide.



IHC (Immunohistochemistry)

AF3112 at 1/200 staining CRC tissue sections by IHC-P.

ADDITIONAL INFORMATION

Related Product Information for anti-PRKD1 antibody	<p>Description: Members of the protein kinase C (PKC) family function in many extracellular receptor-mediated signal transduction pathways. See PRKCA (MIM 176960) for further background information.</p> <p>Function: Serine/threonine-protein kinase that converts transient diacylglycerol (DAG) signals into prolonged physiological effects downstream of PKC, and is involved in the regulation of MAPK8/JNK1 and Ras signaling, Golgi membrane integrity and trafficking, cell survival through NF-kappa-B activation, cell migration, cell differentiation by mediating HDAC7 nuclear export, cell proliferation via MAPK1/3 (ERK1/2) signaling, and plays a role in cardiac hypertrophy, VEGFA-induced angiogenesis, genotoxic-induced apoptosis and flagellin-stimulated inflammatory response. Phosphorylates the epidermal growth factor receptor (EGFR) on dual threonine residues, which leads to the suppression of epidermal growth factor (EGF)-induced MAPK8/JNK1 activation and subsequent JUN phosphorylation. Phosphorylates RIN1, inducing RIN1 binding to 14-3-3 proteins YWHAB, YWHAE and YWHAZ and increased competition with RAF1 for binding to GTP-bound form of Ras proteins (NRAS, HRAS and KRAS). Acts downstream of the heterotrimeric G-protein beta/gamma-subunit complex to maintain the structural integrity of the Golgi membranes, and is required for protein transport along the secretory pathway. In the trans-Golgi network (TGN), regulates the fission of transport vesicles that are on their way to the plasma membrane. May act by activating the lipid kinase phosphatidylinositol 4-kinase beta (PI4KB) at the TGN for the local synthesis of phosphorylated inositol lipids, which induces a sequential production of DAG, phosphatidic acid (PA) and lyso-PA (LPA) that are necessary for membrane fission and generation of specific transport carriers to the cell surface. Under oxidative stress, is phosphorylated at Tyr-463 via SRC-ABL1 and contributes to cell survival by activating IKK complex and subsequent nuclear translocation and activation of NFKB1. Involved in cell migration by regulating integrin alpha-5/beta-3 recycling and promoting its recruitment in newly forming focal adhesion. In osteoblast differentiation, mediates the bone morphogenetic protein 2 (BMP2)-induced nuclear export of HDAC7, which results in the inhibition of HDAC7 transcriptional repression of RUNX2. In neurons, plays an important role in neuronal polarity by regulating the biogenesis of TGN-derived dendritic vesicles, and is involved in the maintenance of dendritic arborization and Golgi structure in hippocampal cells. May potentiate mitogenesis induced by the neuropeptide bombesin or vasopressin by mediating an increase in the duration of MAPK1/3 (ERK1/2) signaling, which leads to accumulation of immediate-early gene products including FOS that stimulate cell cycle progression. Plays an important role in the proliferative response induced by low calcium in keratinocytes, through sustained activation of MAPK1/3 (ERK1/2) pathway. Downstream of novel PKC signaling, plays a role in cardiac hypertrophy by phosphorylating HDAC5, which in turn triggers XPO1/CRM1-dependent nuclear export of HDAC5, MEF2A transcriptional activation and induction of downstream target genes that promote myocyte hypertrophy and pathological cardiac remodeling. Mediates cardiac troponin I (TNNI3) phosphorylation at the PKA sites, which results in reduced myofilament calcium sensitivity, and accelerated crossbridge cycling kinetics. The PRKD1-HDAC5 pathway is also involved in angiogenesis by mediating VEGFA-induced specific subset of gene expression, cell migration, and tube formation. In response to VEGFA, is necessary and required for HDAC7 phosphorylation which induces HDAC7 nuclear export and endothelial cell proliferation and migration. During apoptosis induced by cytarabine and other genotoxic agents, PRKD1 is cleaved by caspase-3 at Asp-378, resulting in activation of its kinase function and increased sensitivity of cells to the cytotoxic effects of genotoxic agents. In epithelial cells, is required for transducing flagellin-stimulated inflammatory responses by binding and phosphorylating TLR5, which contributes to MAPK14/p38 activation and production of inflammatory cytokines. May play a role in inflammatory response by mediating activation of NF-kappa-B. May be involved in pain transmission by directly modulating TRPV1 receptor. Plays a role in activated KRAS-mediated stabilization of ZNF304 in colorectal cancer (CRC) cells (PubMed:24623306). Regulates nuclear translocation of transcription factor TFEB in macrophages upon live S.enterica infection (By similarity).</p> <p>Subunit Structure: Interacts (via N-terminus) with ADAP1/CENTA1 (PubMed:12893243). Interacts with MAPK13 (PubMed:19135240). Interacts with DAPK1 in an oxidative stress-regulated manner (PubMed:17703233). Interacts with USP28; the interaction induces phosphorylation of USP28 and activated KRAS-mediated stabilization of ZNF304 (PubMed:24623306). Interacts with AKAP13 (via C-terminal domain) (By similarity).</p> <p>Post-translational Modifications: Phosphorylated at Ser-397 and Ser-401 by MAPK13 during regulation of insulin secretion in pancreatic beta cells (PubMed:19135240). Phosphorylated by DAPK1 (PubMed:17703233). Phosphorylated at Tyr-95 and by ABL at Tyr-463, which primes the kinase in response to oxidative stress, and promotes a second step activating phosphorylation at Ser-738/Ser-742 by PKRD (PubMed:12637538, PubMed:15024053, PubMed:17804414). Phosphorylated on Ser-910 upon S.enterica infection in macrophages (By similarity).</p> <p>Similarity: Belongs to the protein kinase superfamily. CAMK Ser/Thr protein kinase family. PKD subfamily.</p>
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NCBI AND UNIPROT INFORMATION

NCBI GI #	115529463
NCBI GeneID	5587

NCBI Accession #	NP_002733.2
NCBI GenBank Nucleotide #	NM_002742.2
UniProt Accession #	Q15139; A6NL64; B2RAF6
Molecular Weight	Observed: 130 kDa Predicted: 102 kDa
NCBI Official Full Name	serine/threonine-protein kinase D1 isoform 2
NCBI Official Synonym Full Names	protein kinase D1
NCBI Official Symbol	PRKD1
NCBI Official Synonym Symbols	PKD; PKCM; CHDED; PRKCM; PKC-MU
NCBI Protein Information	serine/threonine-protein kinase D1
UniProt Protein Name	Serine/threonine-protein kinase D1
UniProt Gene Name	PRKD1
UniProt Synonym Gene Names	PKD; PKD1; PRKCM

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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