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PRKD2 / PKD2 Antibody (Internal)
Rabbit Polyclonal Antibody
Catalog # ALS10908

Specification

PRKD2 / PKD2 Antibody (Internal) - Product Information

Application	**IHC**
Primary Accession	Q9BZL6
Reactivity	**Human, Monkey**
Host	**Rabbit**
Clonality	**Polyclonal**
Calculated MW	**97kDa KDa**

PRKD2 / PKD2 Antibody (Internal) - Additional Information

Gene ID 25865

Other Names
Serine/threonine-protein kinase D2, 2.7.11.13, nPKC-D2, PRKD2, PKD2

Target/Specificity
Human PRKD2. BLAST analysis of the peptide immunogen showed no homology with other human proteins, except DNM2 (50%).

Reconstitution & Storage
Long term: -70°C; Short term: +4°C

Precautions
PRKD2 / PKD2 Antibody (Internal) is for research use only and not for use in diagnostic or therapeutic procedures.

PRKD2 / PKD2 Antibody (Internal) - Protein Information

Name PRKD2

Synonyms PKD2

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 cell proliferation via MAPK1/3 (ERK1/2) signaling, oxidative stress-induced NF-kappa-B activation, inhibition of HDAC7 transcriptional repression, signaling downstream of T-cell antigen receptor (TCR) and cytokine production, and plays a role in Golgi membrane trafficking, angiogenesis, secretory granule release and cell adhesion (PubMed:15604256, PubMed:14743217, PubMed:17077180, PubMed:16928771, PubMed:<a href="http://www.uniprot.org/citations/17962809"

target="_blank">17962809, PubMed:17951978, PubMed:18262756, PubMed:19192391, PubMed:19001381, PubMed:23503467, PubMed:28428613). May potentiate mitogenesis induced by the neuropeptide bombesin 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 (By similarity). In response to oxidative stress, is phosphorylated at Tyr-438 and Tyr-717 by ABL1, which leads to the activation of PRKD2 without increasing its catalytic activity, and mediates activation of NF-kappa-B (PubMed:15604256, PubMed:28428613). In response to the activation of the gastrin receptor CCKBR, is phosphorylated at Ser-244 by CSNK1D and CSNK1E, translocates to the nucleus, phosphorylates HDAC7, leading to nuclear export of HDAC7 and inhibition of HDAC7 transcriptional repression of NR4A1/NUR77 (PubMed:17962809). Upon TCR stimulation, is activated independently of ZAP70, translocates from the cytoplasm to the nucleus and is required for interleukin-2 (IL2) promoter up-regulation (PubMed:17077180). During adaptive immune responses, is required in peripheral T-lymphocytes for the production of the effector cytokines IL2 and IFNG after TCR engagement and for optimal induction of antibody responses to antigens (By similarity). In epithelial cells stimulated with lysophosphatidic acid (LPA), is activated through a PKC-dependent pathway and mediates LPA-stimulated interleukin-8 (IL8) secretion via a NF-kappa-B-dependent pathway (PubMed:16928771). During TCR-induced T- cell activation, interacts with and is activated by the tyrosine kinase LCK, which results in the activation of the NFAT transcription factors (PubMed:19192391). In the trans-Golgi network (TGN), regulates the fission of transport vesicles that are on their way to the plasma membrane and in polarized cells is involved in the transport of proteins from the TGN to the basolateral membrane (PubMed:14743217). Plays an important role in endothelial cell proliferation and migration prior to angiogenesis, partly through modulation of the expression of KDR/VEGFR2 and FGFR1, two key growth factor receptors involved in angiogenesis (PubMed:19001381). In secretory pathway, is required for the release of chromogranin-A (CHGA)-containing secretory granules from the TGN (PubMed:18262756). Downstream of PRKCA, plays important roles in angiotensin-2-induced monocyte adhesion to endothelial cells (PubMed:17951978). Plays a regulatory role in angiogenesis and tumor growth by phosphorylating a downstream mediator CIB1 isoform 2, resulting in vascular endothelial growth factor A (VEGFA) secretion (PubMed:23503467).

Cellular Location
Cytoplasm. Cell membrane {ECO:0000250|UniProtKB:Q15139}. Nucleus. Golgi apparatus, trans-Golgi network. Note=Translocation to the cell membrane is required for kinase activation. Accumulates in the nucleus upon CK1- mediated phosphorylation after activation of G-protein-coupled receptors. Nuclear accumulation is regulated by blocking nuclear export of active PRKD2 rather than by increasing import

Tissue Location
Widely expressed..

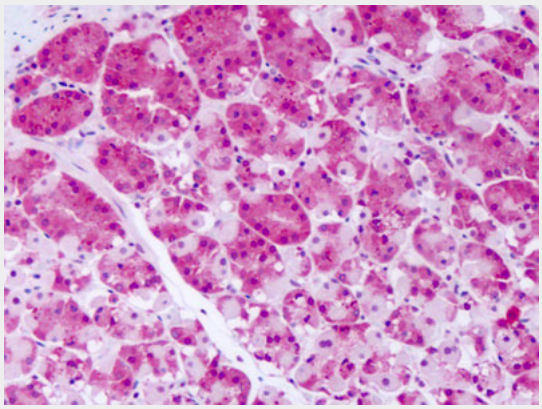
Volume
50 µl

PRKD2 / PKD2 Antibody (Internal) - Protocols

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

- Western Blot
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

PRKD2 / PKD2 Antibody (Internal) - Images



Anti-PRKD2 antibody IHC of human stomach.

PRKD2 / PKD2 Antibody (Internal) - Background

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PRKD2 / PKD2 Antibody (Internal) - References

Sturany S.,et al.J. Biol. Chem. 276:3310-3318(2001).
Ota T.,et al.Nat. Genet. 36:40-45(2004).
Grimwood J.,et al.Nature 428:529-535(2004).
Bechtel S.,et al.BMC Genomics 8:399-399(2007).
Zhang Q.-H.,et al.Genome Res. 10:1546-1560(2000).