10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

PKC iota Antibody (N-term)

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP7022a

Product Information

Application	WB, IHC-P, E
Primary Accession	P41743
Reactivity	Human, Rat, Mouse
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Calculated MW	68262
Antigen Region	176-207

Additional Information

Gene ID	5584
Other Names	Protein kinase C iota type, Atypical protein kinase C-lambda/iota, PRKC-lambda/iota, aPKC-lambda/iota, nPKC-iota, PRKCI, DXS1179E
Target/Specificity	This PKC iota antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 176-207 amino acids from the N-terminal region of human PKC iota.
Dilution	WB~~1:1000 IHC-P~~1:100~500 E~~Use at an assay dependent concentration.
Format	Purified monoclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is purified through a protein G column, followed by dialysis against PBS.
Storage	Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	PKC iota Antibody (N-term) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	PRKCI
Synonyms	DXS1179E
Function	Calcium- and diacylglycerol-independent serine/ threonine- protein kinase that plays a general protective role against apoptotic stimuli, is involved in NF-kappa-B activation, cell survival, differentiation and polarity, and

	contributes to the regulation of microtubule dynamics in the early secretory pathway. Is necessary for BCR-ABL oncogene-mediated resistance to apoptotic drug in leukemia cells, protecting leukemia cells against drug-induced apoptosis. In cultured neurons, prevents amyloid beta protein-induced apoptosis by interrupting cell death process at a very early step. In glioblastoma cells, may function downstream of phosphatidylinositol 3-kinase (PI(3)K) and PDPK1 in the promotion of cell survival by phosphorylating and inhibiting the pro-apoptotic factor BAD. Can form a protein complex in non-small cell lung cancer (NSCLC) cells with PARD6A and ECT2 and regulate ECT2 oncogenic activity by phosphorylation, which in turn promotes transformed growth and invasion. In response to nerve growth factor (NGF), acts downstream of SRC to phosphorylate and activate IRAK1, allowing the subsequent activation of NF-kappa-B and neuronal cell survival. Functions in the organization of the apical domain in epithelial cells by phosphorylating EZR. This step is crucial for activation and normal distribution of EZR at the early stages of intestinal epithelial cell differentiation. Forms a protein complex with LLGL1 and PARD6B independently of PARD3 to regulate epithelial cell polarity. Plays a role in microtubule dynamics in the early secretory pathway through interaction with RAB2A and GAPDH and recruitment to vesicular tubular clusters (VTCs). In human coronary artery endothelial cells (HCAEC), is activated by saturated fatty acids and mediates lipid-induced apoptosis. Involved in early synaptic long term potentiation phase in CA1 hippocampal cells and short term memory formation (By similarity).
Cellular Location	Cytoplasm. Membrane. Endosome Nucleus Note=Transported into the endosome through interaction with SQSTM1/p62 After phosphorylation by SRC, transported into the nucleus through interaction with KPNB1. Colocalizes with CDK7 in the cytoplasm and nucleus. Transported to vesicular tubular clusters (VTCs) through interaction with RAB2A.
Tissue Location	Predominantly expressed in lung and brain, but also expressed at lower levels in many tissues including pancreatic islets Highly expressed in non-small cell lung cancers

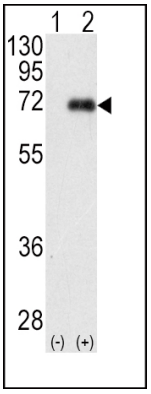
Background

PKC iota belongs to the protein kinase C (PKC) family of serine/threonine protein kinases. The PKC family comprises at least eight members, which are differentially expressed and are involved in a wide variety of cellular processes. This protein kinase is calcium-independent and phospholipid-dependent. It is not activated by phorbolesters or diacylglycerol. This kinase can be recruited to vesicle tubular clusters (VTCs) by direct interaction with the small GTPase RAB2, where this kinase phosphorylates glyceraldehydes-3-phosphate dehydrogenase (GAPD/GAPDH) and plays a role in microtubule dynamics in the early secretory pathway. This kinase is found to be necessary for BCL-ABL-mediated resistance to drug-induced apoptosis and therefore protects leukemia cells against drug-induced apoptosis.

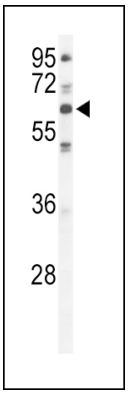
References

Zhang, J., et al., J. Biol. Chem. 279(21):22118-22123 (2004).
Roehrl, M.H., et al., J. Biomol. NMR 26(4):373-374 (2003).
Tisdale, E.J., J. Biol. Chem. 278(52):52524-52530 (2003).
Suzuki, A., et al., J. Biochem. 133(1):9-16 (2003).
Acevedo-Duncan, M., et al., Cell Prolif. 35(1):23-36 (2002).

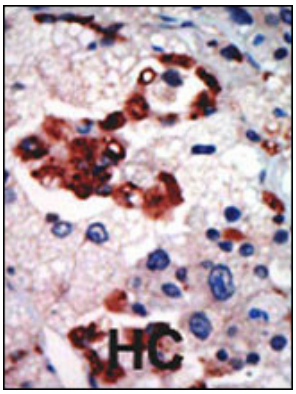
Images



Western blot analysis of PRKCI (arrow) using rabbit polyclonal PKC iota Antibody (N-term) (Cat.#AP7022a). 293 cell lysates (2 ug/lane) either nontransfected (Lane 1) or transiently transfected with the PRKCI gene (Lane 2) (Origene Technologies).



Western blot analysis of hPKC-iota-C181 (Cat.#AP7022a) in Hela cell line lysates (35ug/lane).PKC (arrow) was detected using the purified Pab.



Formalin-fixed and paraffin-embedded human cancer tissue reacted with the primary antibody, which was peroxidase-conjugated to the secondary antibody, followed by AEC staining. This data demonstrates the use of this antibody for immunohistochemistry; clinical relevance has not been evaluated. BC = breast carcinoma; HC = hepatocarcinoma.

Citations

- ACTIN INTERACTING PROTEIN 1 CONTROLS ASSEMBLY AND PERMEABILITY OF INTESTINAL EPITHELIAL APICAL JUNCTIONS.
- Significance and expression of atypical protein kinase C-iota in human hepatocellular carcinoma.
- Correlation of aPKC-iota and E-cadherin expression with invasion and prognosis of cholangiocarcinoma.