



Rabbit Anti-PKC zeta antibody

SL10399R

Product Name PKC zeta**Chinese Name** 蛋白激酶 C zeta 抗体**Alias** AI098070; aPKCzeta; C80388; EC 2.7.11.13; KPCZ_HUMAN; nPKC zeta; nPKC-zeta; OTTHUMP00000001368; OTTHUMP00000044160; PKC 2; PKC ZETA; PKC2; Pkcz; PKCZE included; PRKCZ; Protein kinase C zeta; Protein kinase C zeta form; Protein kinase C zeta type; R74924; zetaPKC; PKC-ZETA; PKC2; nPKC-zeta.**Research Area** Cell biology immunology Neurobiology Signal transduction transcriptional regulatory factor Kinases Phosphatases**Immunogen Species** Rabbit**Clonality** Polyclonal**React Species** (predicted: Human, Mouse, Rat, Dog, Pig, Cow, Horse, Rabbit, Sheep,)
WB=1:500-2000,IHC-P=1:100-500,IHC-F=1:100-500,ICC/IF=1:100-500,IF=1:100-500,ELISA
(Paraffin sections need antigen repair)**Applications** not yet tested in other applications.
optimal dilutions/concentrations should be determined by the end user.**Theoretical molecular weight** 66kDa**Cellular localization** cytoplasmic**Form** Liquid**Concentration** 1mg/ml**immunogen** KLH conjugated synthetic peptide derived from human PKC zeta: 61-160/592**Lsotype** IgG**Purification** affinity purified by Protein A**Buffer Solution** 1M TBS(pH7.4) with 1% BSA, 3% Proclin300 and 50% Glycerol.**Storage** Shipped at 4°C. Store at -20 °C for one year. Avoid repeated freeze/thaw cycles.**Attention** This product as supplied is intended for research use only, not for use in human, therapeutic or diagnostic applications.

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Protein kinase C (PKC) zeta is a member of the PKC family of serine/threonine kinases which are involved in a variety of cellular processes such as proliferation, differentiation and secretion. Unlike the classical PKC isoenzymes which are calcium-dependent, PKC zeta exhibits a kinase activity which is independent of calcium and diacylglycerol but not of phosphatidylserine. Furthermore, it is insensitive to typical PKC inhibitors and cannot be activated by phorbol ester. Unlike the classical PKC isoenzymes, it has only a single zeta domain module. These structural and biochemical properties indicate that the zeta subspecies is related to PKC but distinct from other isoenzymes of PKC. Alternative splicing results in multiple transcript variants encoding different isoforms. [provided by RefSeq, Jul 2008].

Function:

Calcium- and diacylglycerol-independent serine/threonine-protein kinase that functions in phosphatidylinositol 3-kinase (PI3K) pathway and mitogen-activated protein (MAP) kinase cascade, and is involved in cell growth, activation, mitogenic signaling, cell proliferation, cell polarity, inflammatory response and mainly in long-term potentiation (LTP). Upon lipopolysaccharide (LPS) treatment in macrophages, or following various stimuli, functions downstream of PI3K to activate MAP2K1/MEK1-MAPK1/ERK2 signaling cascade independently of RAF1 activation. Required for insulin-dependent activation of AKT3, but may act as an adaptor rather than a direct activator. Upon insulin treatment may act as a downstream effector or may contribute to the activation of translocation of the glucose transporter SLC2A4/GLUT4 and substrate transport in adipocytes. In EGF-induced cells, binds and activates MAP2K5/MEK5-MAPK7/ERK7 independently of its kinase activity and can activate JUN promoter through MEF2C. Through binding to SQSTM1/p62, functions in interleukin-1 signaling and activation of NF-kappa-B with the specificity of RIPK1 and TRAF6. Participates in TNF-dependent transactivation of NF-kappa-B by phosphorylation of IKBKB kinase, which in turn leads to the degradation of NF-kappa-B inhibitors. In macrophages and astrocytes, forms a cytoplasmic complex with PARD6A and is recruited by CDC42 to function in the establishment of cell polarity along with the microtubule motor and dynein. In association with F-actin, promotes neuronal differentiation in PC12 cells. In inflammatory response, is required for the Th2 (T-helper 2) cell differentiation process, including interleukins production, efficient activation of JAK1 and the subsequent phosphorylation and nuclear translocation of STAT6. May be involved in development of allergic inflammation (asthma), a process dependent on Th2 immune response. In NF-kappa-B-mediated inflammatory response, can relieve the SETD6-dependent repression of NF-kappa-B target genes by phosphorylation of the RELA subunit at 'Ser-311'. Is necessary and sufficient for LTP maintenance in hippocampal CA1 cells.

Product Detail

Subunit:

Forms a ternary complex with SQSTM1 and KCNAB2. Forms another ternary complex with SQSTM1 and GABRR3. Forms a complex with SQSTM1 and MAP2K5 (By similarity). Interacts with PARD6A, PARD6G and SQSTM1. Part of a complex with PARD3, PARD6A or PARD6B or PARD6G and PAK1 and RAC1. Interacts with ADAP1/CENTA1. Forms a ternary complex composed of SQSTM1 and PAK1 and directly with SQSTM1 (Probable). Interacts with IKBKB. Interacts (via the protein kinase domain) with IKBKB. Forms a tripartite complex with WWC1 and DDR1, but predominantly in the absence of collagen. Part of the Par polarity complex, composed of at least phosphorylated PRKCZ, PARD3 and TIAM1. Interacts with PDPK1 (via N-terminus region).

Subcellular Location:

Cytoplasm. Endosome. Cell junction. Note=In the retina, localizes in the terminals of the rod bipolar cell. Associates with endosomes. Presence of KRIT1, CDH5 and RAP1B is required for its localization at cell-cell junction.

Tissue Specificity:

Expressed in brain, and to a lesser extent in lung, kidney and testis.

Post-translational modifications:

CDH5 is required for its phosphorylation at Thr-410. Phosphorylated by protein kinase PDK1; phosphorylation is inhibited by the apoptotic C-terminus cleavage product of PKN2. Phosphorylation at Thr-410 activates the kinase.

Similarity:

Belongs to the protein kinase superfamily. AGC Ser/Thr protein kinase family. PKC subfamily. Contains 1 AGC-kinase C-terminal domain. Contains 1 OPR domain. Contains 1 phorbol-ester/DAG-type zinc finger. Contains 1 protein kinase domain.

SWISS:

Q05513

Gene ID:

5590

Database links:

[Entrez Gene: 5590](#) Human

[Entrez Gene: 18762](#) Mouse

[Entrez Gene: 25522](#) Rat

[Omim: 176982](#) Human

[SwissProt: Q05513](#) Human

[SwissProt: Q02956](#) Mouse

[SwissProt: P09217](#) Rat

[Unigene: 496255](#) Human

[Unigene: 28561](#) Mouse

[Unigene: 1109](#) Rat



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