# Rabbit (polyclonal) Anti-Human Protein Kinase C zeta ( PKC ζ )

## PRODUCT ANALYSIS SHEET

**Catalog Number:** AHO0772

**Lot Number:** See product label

**Quantity:** 50 µL

**Form of the Antibody:** Processed rabbit serum.

**Preservation:** 0.05% sodium azide (Caution: sodium azide is a poisonous and hazardous substance. Handle with care and dispose of properly.)

**Immunogen:** Synthetic peptide corresponding to amino acid residues 575 to 592 (FEGFEYINPLLLSTEESV) of the C terminal region of human PKC ζ.

**Specificity:** Protein kinase C (PKC) mediates a wide range of biological responses, including serotonin release from platelets, histamine release from mast cells, glycogen hydrolysis in the liver, fat synthesis by adipocytes, and many others.

PKC was described as a serine/threonine protein kinase activated by the presence of $Ca^{2+}$, phospholipids, and sn-1,2 diacylglycerol (Nishizuka, 1986). In humans, PKC is found as at least 11 different isoforms which vary in amino acid sequence, structure, subcellular localization, tissue distribution, substrate specificity, and responses to extracellular signals. The PKC isoforms can be grouped based on their requirements for $Ca^{2+}$, phospholipid, and diacylglycerol (DAG) for activation. The isoforms of group 1 (the classical or conventional PKC's) include PKC α, PKC βI, PKC βII, and PKC γ. Group 1 isoforms have a $Ca^{2+}$-dependent phospholipid binding site and a separate DAG (or phorbol ester) binding site. The Group 1 isoforms require $Ca^{2+}$, phospholipid, and DAG (or phorbol ester) for activation. The isoforms of group 2 (the novel PKC's) include PKC δ, PKC ε, PKC η, and PKC θ. Group 2 isoforms require DAG or phorbol ester for activation, but do not require the presence of $Ca^{2+}$. The isoforms of group 3 (the atypical PKC's) include PKC ζ, PKC µ, and PKC ι/λ. Group 3 isoforms are $Ca^{2+}$ independent and are not activated by the presence of diacylglycerol or by phorbol esters such as phorbol myristate acetate.

This antibody recognizes the group 3 isoform PKC ζ. PKC ζ is observed to be activated by PIP3. This form may be necessary for the activation of NF-κB by p21 ras.

**Species Reactivity:** Human. This antibody is expected to react with most mammalian species based on known homologies.

**Applications:** This antibody is suitable for use in Western blotting. For this application, a dilution of 1:1000 is recommended when used with a chemiluminescence detection method. This dilution provides 50 mL of working solution, which at 10 mL per blot allows 5 blots to be performed. The optimal concentration should be determined for each specific application.



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**Storage:** Store at 2-8°C for up to one month. For long term storage, apportion into working aliquots and store at ≤ –20°C. Avoid repeated freeze/thaw cycles to prevent denaturing the antibody.

**Expiration Date:** Expires one year from date of receipt when stored as instructed.

**References:**


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Nishizuka, Y. (1986) Studies and perspectives of protein kinase C. Science 233:305-312.

Wetsel, W.C., W.A. Khan, I. Merchenthaler, H. Rivera, A.E. Halpern, H.M. Phung, A. Negro-Vilar, and Y.A. Hannun (1992) Tissue and cellular distribution of the extended family of protein kinase C isoenzymes. J. Cell. Biol. 117(1):121-133.

Zhou, G., M.W. Wooten, and E.S. Coleman (1994) Regulation of atypical zeta-protein kinase C in cellular signaling. Exp. Cell Res. 214(1):1-11.





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