

Product No. P-3203

Lot 084H4825

Anti-Protein Kinase C β_2 (PKC β_2)

Developed in Rabbit

Affinity Isolated Antigen Specific Antibody

Anti-Protein Kinase C β_2 (PKC β_2) is developed in rabbit using a synthetic peptide (Cys-Ser-Phe-Val-Asn-Ser-Glu-Phe-Leu-Lys-Pro-Glu-Val-Lys-Ser) conjugated to maleimide-activated KLH as the immunogen. The peptide corresponds to the C-terminal variable (V5) region (amino acids 660-673) of PKC β_2 . The antibody is isolated from antiserum by immunospecific methods of purification. Antigen specific affinity isolation removes essentially all rabbit serum proteins, including immunoglobulins which do not specifically bind to protein kinase C β_2 . The product is provided as a solution in 0.01 M phosphate buffered saline, pH 7.4, containing 1% BSA and 0.1% sodium azide (see MSDS)* as a preservative.

Specificity

Anti-Protein Kinase C β_2 recognizes PKC β_2 (80 kD polypeptide) from rat brain extract in immunoblotting. The antibody does not react with PKC peptides corresponding to C-terminal sequences from PKC β_1 (658-671) and PKC γ (660-673) conjugated to BSA.

Working Dilutions

1. A working dilution of 1:1,000 was determined by direct dot blot immunoassay using PKC β_2 peptide conjugated to BSA (0.25 - 0.5 μ g/dot).
2. A working dilution of 1:8,000 was determined by indirect immunoblotting using rat brain extract.

In order to obtain best results, it is recommended that each individual user determine their optimal working dilution by titration assay.

Description

Protein Kinase C (PKC, 76-93 kD) is a family of serine/threonine (Ser/Thr) specific protein kinases. These are key enzymes considered to play a crucial role in signal transduction leading to cellular regulation, cell growth and differentiation, oncogenesis and modulation of neurotransmission.¹ PKC is a phospholipid-dependent enzyme activated by the lipid 1,2-diacylglycerol (DAG), an intracellular second messenger produced as a result of the hydrolysis of inositol phospholipids, in response to a variety of hormones, growth factors and neurotransmitters.¹⁻³ PKC is the major cellular receptor for the tumor-promoting phorbol esters. PKC action is thought to be mediated through the phosphorylation of several cellular substrates.⁴⁻⁶ Proteolysis of PKC *in vivo* is thought to be mediated by calpains I and II. Calpains cleave PKC in the V3 hinge region to produce two distinct fragments, one comprising the N-terminal regulatory domain (30 kD) and the other fragment containing the C-terminal kinase domain (50 kD) that is catalytically active.^{7,8} Molecular cloning has established that the PKC family of isoenzymes consists of at least 9 subtypes that can be subdivided into two major classes based on their primary domain structure and activation requirements: conventional (cPKC) isoforms (α , β_1 , β_2 and γ) and novel (nPKC) isoforms (δ , ϵ , ζ , η (L), and θ). The cPKC isoforms have four conserved regions (C1 to C4) separated by five variable regions (V1 to V5) and require Ca^{2+} , DAG and phosphatidylserine (PtdSer) for activity. The nPKC isoforms lack the C2 region, presumably involved in Ca^{2+} binding, and thus do not require Ca^{2+} for activity but do require either DAG or PtdSer. PKC β_1 and PKC β_2 isoforms are encoded by the same gene but diverge at the C-terminal (V5) region as a result of differential mRNA splicing. The PKC β_1/β_2 isoenzymes appear to be widely expressed, e.g. in the brain, lung, liver, spleen, thymus, skeletal muscle and skin but not in kidney or rat and mouse

fibroblasts.^{3,9,10} PKC β_2 is reported to be expressed in a wider variety of tissues and cell lines and at higher levels than PKC β_1 .^{1,3,11} Antibodies that react specifically with PKC isoenzymes are useful for the study of the differential tissue expression and intracellular and subcellular localization of these isoenzymes.

Uses

Anti-Protein Kinase C β_2 may be used for the detection of PKC β_2 using various immunochemical methods including immunoblotting, immunoprecipitation and immunohistology.

Storage

For continuous use, store at 0-5°C. For extended storage, solution may be frozen in working aliquots. Repeated freezing and thawing is **not** recommended. If slight turbidity occurs upon prolonged storage, clarify by centrifugation before use.

*Due to the sodium azide content a material safety data sheet (MSDS) for this product has been sent to the attention of the safety officer of your institution. Consult the MSDS for information regarding hazards and safe handling practices.

References

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