ProductInformation

ANTI-PHOSPHOLIPASE Cγ1 (PLCγ1),
Developed in Rabbit
Affinity Isolated Antibody

Product Number **P8104**

Product Description

Anti-Phospholipase Cγ1 (PLCγ1) is developed in rabbit using a synthetic peptide (K-REGSFEARYQQPFEDFR) corresponding to the C-terminal region of bovine PLCγ1 (amino acids 1246-1262 with N-terminally added lysine), conjugated to KLH as immunogen. This sequence is identical in rat PLCγ1 and highly conserved (single amino acid substitution) in human PLCγ1. Antiserum to PLCγ1 is affinity isolated using the immunogenic peptide immobilized on agarose.

Anti-PLCγ1 recognizes PLCγ1 (148 kD) by immunoblotting and immunoprecipitation. The antibody may also detect PLC γ1 degradation products as additional weaker bands at 35-47 kD. By immunoblotting, staining of PLCγ1 is specifically inhibited with the PLCγ1 immunizing peptide (bovine PLCγ1, amino acids 1246-1262 with N-terminally added lysine).

Phospholipid metabolism and recruitment of active signaling molecules into multiprotein complexes are some of the early key signaling events during the response of cells to stimulation by hormones, growth factors, chemokines and neurotransmitters. Phospholipase C (PLC, 60-154 kD), a key enzyme in many signal transduction pathways, catalyzes the hydrolysis of phosphatidylinositol-4,5,- diphosphate to generate two key intracellular second messengers, inositol-1,4,5-triphosphate (IP3) and 1,2-diacylycerol (DAG).[1,2] IP3 mediates the release of Ca^{2+} from intracellular stores and DAG is required for the activation of protein kinase C (PKC). PLC is present in most cell types and is composed of a family of at least three distinct types of enzymes: PLCβ, PLCγ and PLCδ.[1,3-5] To date, at least 10 different PLC isoforms have been identified: PLCβ1-4, PLCγ1, PLCγ2 and PLCδ1-4. PLCγ isozymes and in particular PLCγ1 are essential in tyrosine kinase-dependent signaling pathways leading to mitogenesis, cell migration and transformation.[1,2] PLCγ1 (148 kD) is ubiquitously expressed, whereas PLCγ2 is found predominantly in B-lymphocytes.[2,6] Tyrosine kinase receptors (i.e. EGFR, PDGFR, Trk, TCR/CD3) phosphorylate and directly activate PLCγ1.[1,7] PLCγ1 contains two SH2 domains that mediate association with autophosphorylation sites on activated receptor protein tyrosine kinases and a SH3 domain. PLCγ1 is over-expressed in several forms of cancer.[8,9] PLCγ1 activation is not required for proliferation, differentiation and survival of all cell types (e.g. fibroblasts, myoblasts, PC12 cells), but appears to be crucial in certain cell types that are essential for normal embryonic development.[10,11] PLCγ1 null mice show retarded embryo growth and development and early embryonic lethality.[11]

Reagents

The product is provided as affinity isolated antibody in 0.01 M phosphate buffered saline, pH 7.4, containing 1% BSA and 15 mM sodium azide (see MSDS)* as a preservative.

Precautions and Disclaimer

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

Storage/Stability

For continuous use, store at 2-8°C for up to one month. For extended storage, freeze in working aliquots. Repeated freezing and thawing is not recommended. Storage in "frost-free" freezers is not recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use. Working dilution samples should be discarded if not used within 12 hours.

Product Profile

A minimum working dilution of 1:5,000 is determined by immunoblotting using a whole cell extract from the human T-cell leukemia Jurkat cell line.

The antibody may be used in immunoprecipitation of PLCγ1 using 5 µg of antibody with Protein A-agarose and 250 µg of lysate from mouse NIH3T3 fibroblasts.

Note: In order to obtain best results and assay sensitivity in different techniques and preparations we recommend determining optimal working dilutions by titration.

References

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