Product name:	PLCE1 Rabbit Polyclonal Antibody
Cat number:	ABN16256
Conjugate:	Unconjugated
Size:	100μL
Clone:	Polyclonal
Concentration:	1mg/ml
Host:	Rabbit
Isotype:	IgG
Immunogen:	Synthesized peptide derived from part region of human protein
Reactivity:	Human,Rat,Mouse
Applications:	IHC 1:50-1:300,ICC/IF 1:50-1:200
Molecular Weight:	253kDa
Purification:	Affinity purification
Form:	Liquid
Buffer:	Liquid in PBS containing 50% glycerol, and 0.02% New type preservative N.
Storage:	Store at 4°C short term. Aliquot and store at -20°C for 12 months. Avoid freeze/thaw cycles.

Background:

This gene encodes a phospholipase enzyme that catalyzes the hydrolysis of phosphatidylinositol-4,5-bisphosphate to generate two second messengers: inositol 1,4,5-triphosphate (IP3) and diacylglycerol (DAG). These second messengers subsequently regulate various processes affecting cell growth, differentiation, and gene expression. This enzyme is regulated by small monomeric GTPases of the Ras and Rho families and by heterotrimeric G proteins. In addition to its phospholipase C catalytic activity, this enzyme has an N-terminal domain with guanine nucleotide exchange (GEF) activity. Mutations in this gene cause early-onset nephrotic syndrome; characterized by proteinuria, edema, and diffuse mesangial sclerosis or focal and segmental glomerulosclerosis. Alternative splicing results in multiple transcript variants encoding distinct isoforms.[provided by RefSeq, Sep 2009],catalytic activity:1-phosphatidyl-1D-myo-inositol 4,5-bisphosphate + H(2)O = 1D-myo-inositol 1,4,5-trisphosphate + diacylglycerol.,cofactor:Calcium.,disease:Defects in PLCE1 are the cause of nephrotic syndrome type 3 (NPHS3) [MIM:610725]; also called early-onset nephrotic syndrome type 3. Nephrotic syndrome, a malfunction of the kidney glomerular filter, leads to proteinuria, hypoalbuminemia, edema. End-stage kidney disease is observed in steroid-resistant nephrotic syndrome.,domain:The Ras-associating domain 1 is degenerated and may not bind HRAS. The Ras-associating domain 2 mediates interaction with GTP-bound HRAS, RAP1A, RAP2A and RAP2B and recruitment of HRAS to the cell membrane.,domain:The Ras-GEF domain has a GEF activity towards HRAS and RAP1A. Mediates activation of the mitogen-activated protein kinase pathway.,enzyme regulation:Activated by the heterotrimeric G-protein subunits GNA12, GNA13 and GNB1-GNG2. Activated by HRAS, RAP1A, RHOA, RHOB, RHOC, RRAS and RRAS2. Activated by the G(s)-coupled GPCRs ADRB2, PTGER1 and CHRM3 through cyclic-AMP formation and RAP2B activation. Inhibited by G(i)-coupled GPCRs.,function:The production of the second messenger molecules diacylglycerol (DAG) and inositol 1,4,5-trisphosphate (IP3) is mediated by activated phosphatidylinositol-specific phospholipase C enzymes. PLCE1 is a bifunctional enzyme which also regulates small GTPases of the Ras superfamily through its Ras guanine-exchange factor (RasGEF) activity. As an effector of heterotrimeric and small G-protein, it may play a role in cell survival, cell growth, actin organization and T-cell activation.,induction:Overexpressed during heart failure.,similarity:Contains 1 C2 domain.,similarity:Contains 1 PI-PLC X-box domain.,similarity:Contains 1 PI-PLC Y-box domain.,similarity:Contains 1 Ras-GEF domain.,similarity:Contains 2 Ras-associating domains.,subcellular location:Recruited to plasma membrane by activated HRAS and RAP2. Recruited to perinuclear membrane by activated RAP1A. Isoform 1 and isoform 2 associates with Golgi membranes.,subunit:Interacts with RHOA (By similarity). Interacts with IQGAP1, HRAS, RAP1A, RAP2A, RAP2B and RRAS.,tissue specificity:Widely expressed. Isoform 1 is broadly expressed and only absent in peripheral blood leukocytes. Isoform 2 is specifically expressed in placenta, lung and spleen.,