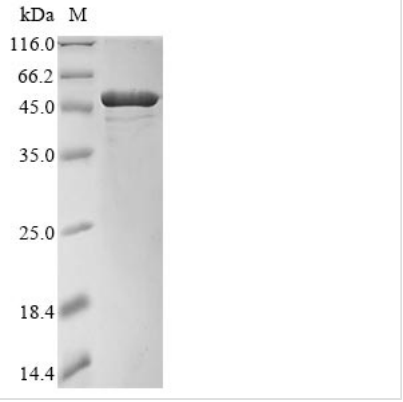
Recombinant Clostridium perfringens Phospholipase C (plc)

Product Code	CSB-EP314672CMB
Abbreviation	Recombinant Clostridium perfringens Phospholipase C protein
Storage	The shelf life is related to many factors, storage state, buffer ingredients, storage temperature and the stability of the protein itself. Generally, the shelf life of liquid form is 6 months at -20°C/-80°C. The shelf life of lyophilized form is 12 months at -20°C/-80°C.
Uniprot No.	P0C216
Form	Liquid or Lyophilized powder
Storage Buffer	If the delivery form is liquid, the default storage buffer is Tris/PBS-based buffer, 5%-50% glycerol. If the delivery form is lyophilized powder, the buffer before lyophilization is Tris/PBS-based buffer, 6% Trehalose.
Product Type	Recombinant Protein
Immunogen Species	Clostridium perfringens (strain 13 / Type A)
Purity	Greater than 85% as determined by SDS-PAGE.
Sequence	WDGKIDGTGTHAMIVTQGVSILENDLSKNEPESVRKNLEILKENMHELQLGSTY PDYDKNAYDLYQDHFWDPDTDNNFSKDNSWYLAYSIPDTGESQIRKFSALAR YEWQRGNYKQATFYLGEAMHYFGDIDTPYHPANVTAVDSAGHVKFETFAEER KEQYKINTAGCKTNEDFYADILKNKDFNAWSKEYARGFAKTGKSIYYSHASMS HSWDDWDYAAKVTLANSQKGTAGYIYRFLHDVSEGNDPSVGKNVKELVAYIS TSGEKDAGTDDYMYFGIKTKDGKTQEWEMDNPGNDFMTGSKDTYTFKLKDE NLKIDDIQNMWIRKRKYTAFPDAYKPENIKIIANGKVVVDKDINEWISGNSTYNIK
Research Area	Signal Transduction
Source	E.coli
Target Names	plc
Expression Region	29-398aa
Notes	Repeated freezing and thawing is not recommended. Store working aliquots at 4°C for up to one week.
Tag Info	N-terminal 6xHis-tagged
Mol. Weight	48.5 kDa
Protein Length	Full Length of Mature Protein
Image	



(Tris-Glycine gel) Discontinuous SDS-PAGE (reduced) with 5% enrichment gel and 15% separation gel.

Description

Constructing a plasmid encoding the Clostridium perfringens perfringens Phospholipase C (PLC) protein (29-398aa) and the N-terminal 6xHis-tag is the initial step in the general approach to express the recombinant Clostridium perfringens PLC protein. The plasmid is then transformed into E.coli cells. Positive E.coli cells are selected and cultured, protein expression is induced, and cells are lysed. The resulting recombinant Clostridium perfringens PLC protein is then purified through affinity purification, and SDS-PAGE analysis is carried out to verify the presence and assess the purity of the protein. Its purity exceeds 85%.

PLC is a crucial enzyme that helps cells communicate, especially when they're responding to hormones, neurotransmitters, or chemical signals. When activated by these signals, PLC breaks down a molecule called phosphatidylinositol 4,5-bisphosphate (PIP2) into two important substances: inositol 1,4,5-trisphosphate (InsP3) and diacylglycerol (DAG) [1]. These substances are like messengers inside cells and help control things like calcium levels, secretion, cell growth, and changes in cell function [1]. PLC gets switched on by special proteins called G protein-coupled receptors (GPCRs), which also control other parts of the cell [2]. Besides its role in cell signaling, PLC is involved in various other cell activities, like turning on enzymes and affecting how certain substances interact with cell membranes [3][4][5].

Scientists have found PLC in different tiny organisms, like certain bacteria and yeast, suggesting it might help these organisms cause diseases [6][7]. The activity of PLC is influenced by other cell components, such as Na+/H+ exchanger regulatory factor 2 and protein kinase C, showing how complex the control of PLC can be [8][5]. Also, researchers have figured out the detailed structure of PLC from a bacteria called Listeria monocytogenes, which gives us more insights into how this enzyme works in disease-causing bacteria [9].

References:
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[9] J. Moser, B. Gerstel, J. Meyer, T. Chakraborty, J. Wehland, & D. Heinz, Crystal structure of the phosphatidylinositol-specific phospholipase c from the human pathogen listeria monocytogenes, Journal of Molecular Biology, vol. 273, no. 1, p. 269-282, 1997. https://doi.org/10.1006/jmbi.1997.1290

Reconstitution

We recommend that this vial be briefly centrifuged prior to opening to bring the contents to the bottom. Please reconstitute protein in deionized sterile water to a concentration of 0.1-1.0 mg/mL.We recommend to add 5-50% of glycerol (final concentration) and aliquot for long-term storage at -20°C/-80°C. Our default final concentration of glycerol is 50%. Customers could use it as reference.

Shelf Life

The shelf life is related to many factors, storage state, buffer ingredients, storage temperature and the stability of the protein itself.
Generally, the shelf life of liquid form is 6 months at -20°C/-80°C. The shelf life of lyophilized form is 12 months at -20°C/-80°C.