

## Product Information

### Phospholipase C from *Bacillus cereus*

Catalog Number **P6621**  
Storage Temperature  $-20\text{ }^{\circ}\text{C}$

CAS RN 9001-86-9  
EC 3.1.4.3  
Synonyms: Lecithinase C; Lipophosphodiesterase I;  
Phosphatidylcholine cholinephosphohydrolase; PC-PLC

#### Product Description

Phospholipase C hydrolyzes the phosphate bond on phosphatidylcholine yielding diacylglycerol and phosphorylcholine. Phospholipase C from *Bacillus cereus* will also hydrolyze phosphatidylethanolamine and phosphatidylserine in deoxycholate-mixed micelles, and will hydrolyze the phosphate bonds of cardiolipin, sphingomyelin, choline plasmalogen, and ceramide phospholipids.

Molecular mass:

28.4 kDa (Sequence)<sup>1</sup>

23–27 kDa (SDS-PAGE)<sup>2,3</sup>

Phospholipase C is a monomeric protein, which contains two tightly bound  $\text{Zn}^{2+}$  ions. Free  $\text{Zn}^{2+}$  ions in solution are not required for optimal activity; however, removal of the bound  $\text{Zn}^{2+}$  results in inactivation of the enzyme. Phospholipase C activity is inhibited by EDTA and 1,10-phenanthroline.<sup>4</sup>

The secondary structure of the enzyme consists of 30–36%  $\alpha$ -helix and 24–30%  $\beta$  structure.

Optimal pH range: 6.6–8.0

The product is supplied as a lyophilized powder containing ~10% protein with phosphate buffer salts, zinc sulfate, and trehalose.

Specific activity:  $\geq 200$  units/mg protein  
(egg yolk phosphatidylcholine as the substrate)

Unit definition: One unit will liberate 1.0  $\mu\text{mole}$  of water soluble organic phosphorus from L- $\alpha$ -phosphatidylcholine per minute at pH 7.3 at  $37\text{ }^{\circ}\text{C}$ .

#### Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

#### Preparation Instructions

Reconstitution with water (1 mg/ml) will yield a slightly hazy to hazy solution.

#### Storage/Stability

Store the product at  $-20\text{ }^{\circ}\text{C}$ . The product, as supplied, remains active for at least 2 years when stored properly.

#### References

1. Kuzmin, N.P. et al., Bioorg. Khim., **19**, 133-138 (1993).
2. Little, C., Meth. Enzymol., **71, Part C**, 725-730 (1981).
3. Imamura, S., and Horiuti, Y., J. Lipid Research, **20**, 519-524 (1979).
4. Handbook of Enzyme Inhibitors, 2nd ed., Part A, Zollner, H., VCH (New York, NY: 1993), pp. 387.
5. Zwaal, R.F.A., and Roelofsen, B., Meth. Enzymol., **32, Part B**, 154-61 (1974).
6. Dennis, E. A., in The Enzymes, 3rd ed., Vol. XVI, Boyer, P. D., Ed., Academic Press (New York, NY: 1983), pp. 320-322.

EM,NDH,PHC,MAM 07/08-1

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