

Product Information

L- α -Phosphatidylcholine

Catalog Number **P5394**

Storage Temperature $-20\text{ }^{\circ}\text{C}$

CAS 8002-43-5

Synonyms: L- α -Lecithin, 3-*sn*-Phosphatidylcholine

Product Description

Typical lots of purified egg yolk phosphatidylcholine have fatty acid contents of approximately 33% C16:0 (palmitic), 13% C18:0 (stearic), 31% C18:1(oleic), and 15% C18:2 (linoleic) (other fatty acids being minor contributors), which would give an average molecular weight of approximately 768.

Product No. P 5394 is essentially a crude organic extract of egg yolk which contains not less than 60% phosphatidylcholine. The remaining 40% consists of mostly phosphatidylethanolamine plus other phospholipids as well as traces of triglycerides and cholesterol. This product is prepared by extraction and precipitation procedures.

The crystalline transition temperature (gel-to-liquid) for pure phosphatidylcholine from egg is $-15\text{ }^{\circ}\text{C}$ for the heating curve and $-7\text{ }^{\circ}\text{C}$ for the cooling curve.^{1,2}

Phosphatidylcholine is the major membrane phospholipid in eukaryotic cells. In addition to being the major structural component of cellular membranes, phosphatidylcholine serves as a reservoir for several lipid messengers. It is the source of the bioactive lipids lysophosphatidylcholine, phosphatidic acid, diacylglycerol, lysophosphatidylcholine, platelet-activating factor, and arachidonic acid.³ An understanding of the control and regulation of the several metabolic pathways involved in the formation of these bioactive lipids is an ongoing science.

Phosphatidylcholine is used for preparation of vesicle suspensions commonly called liposomes or as monolayers. There have been several books published on liposomes and their applications.^{4,5} Monolayers have been formed using a solution of 1% soybean phosphatidylcholine in hexane.⁶

Valinomycin induced changes in membrane potentials of red blood cell and phospholipid (phosphatidylcholine from egg yolk plus cholesterol) vesicle suspensions have been measured using positively-charged, cyanine dyes that fluorimetrically responded to the change in potential.⁷ Purified rhodopsin has been incorporated into soybean phosphatidylcholine vesicles.⁸

A procedure for determination of the amount of oxidation of egg phosphatidylcholine in a liposome preparation by measurement of the oxidation index has been published.⁹ The oxidation index is the ratio of the absorbance at 233 nm to the absorbance at 215 nm. The latter wavelength was chosen since there is little contribution of the fatty acid carbonyl to the absorbance at this wavelength, allowing Beer's Law to be followed. A method of determining choline content has been published.¹⁰

Precautions and Disclaimer

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

Preparation Instructions

Purified egg L- α -phosphatidylcholine is soluble (100 mg/ml) at room temperature in chloroform, ethanol, and hexane containing 3% ethanol. These solubility characteristics should generally apply to other purified natural product phosphatidylcholine products such as from egg, soybean, and brain that contain unsaturated fatty acids. Product No. P 5394 will give a clear to hazy dark yellow solution in chloroform (100 mg/ml).

Storage/Stability

Store the product at $-20\text{ }^{\circ}\text{C}$.

References

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