

## PRODUCT DATA SHEET

### Lecithin, egg

**Catalog number:** 1044

**Common Name:** Phosphatidylcholine; PC

**Source:** natural, chicken, egg

**Solubility:** chloroform, ethyl ether, ethanol

**CAS number:** 8002-43-5

**Molecular Formula:** C<sub>44</sub>H<sub>84</sub>NO<sub>8</sub>P

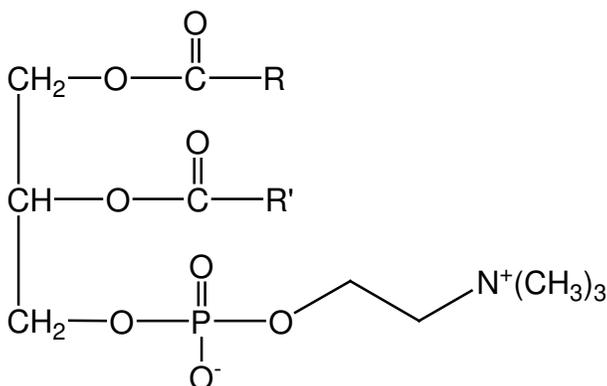
**Molecular Weight:** 787 (oleoyl)

**Storage:** -20°C

**Purity:** TLC >98%

**TLC System:** chloroform/methanol/DI water,  
(65:25:4 by vol.)

**Appearance:** liquid



### **Application Notes:**

This product is a high purity phosphatidylcholine (PC) containing a natural mixture of fatty acids acylated to the sn-1 and sn-2 positions. PC is a major component of biological membranes, especially in the outer leaflet, often composing almost 50% of the total phospholipids.<sup>1</sup> It is a vital component in membrane bilayers and is the main phospholipid circulating in plasma. PC plays an important role in membrane-mediated cell signaling by generating diacylglycerols and phospholipids.<sup>2</sup> Phospholipase D is an enzyme that cleaves off the choline head group, converting PC to phosphatidic acid, while phospholipase C cleaves off the phosphate group leaving diacylglycerol. PC is the biosynthetic precursor of sphingomyelin, phosphatidylethanolamine, lyso-phosphatidylcholine, and platelet-activating factor. The choline headgroup is an essential nutrient in animals although it can be synthesized by methylating phosphatidylethanolamine to phosphatidylcholine and then cleaving the headgroup with phospholipase D.<sup>3</sup> Tumor cells appear to have increased synthesis of PC and this may be a potential target for cancer therapy. Another function of PC is the activation of enzymes such as the enzyme 3-hydroxybutyrate dehydrogenase which must be bound to phosphatidylcholine before it can function optimally.

### **Selected References:**

1. M. Billah and J. Anthes "The regulation and cellular functions of phosphatidylcholine hydrolysis" *Biochemistry Journal*, Vol. 269 pp. 281-291, 1990
2. J. Exton "Signaling through Phosphatidylcholine Breakdown" *The Journal of Biological Chemistry*, Vol. 265(1) pp. 1-4, 1990
3. Z. Li and D. Vance "Phosphatidylcholine and choline homeostasis" *Journal of Lipid Research*, Vol. 49 pp. 1187-1194, 2008

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