



Product Information

L- α -Phosphatidylinositol 4,5-diphosphate sodium salt from bovine brain

Product Number **P 9763**

Storage Temperature -0 °C

Product Description

A molecular weight of 1092 is estimated based on stearyl and arachidonoyl fatty acid residues as the main substituents.

Synonyms: 1,2-Diacyl-sn-glycero-3-phospho-(1-D-myo-inositol 4,5-bisphosphate); Triphosphoinositide; TPI; PtdIns(4,5)P₂; 4,5 PIP₂

The literature on phosphatidylinositol 4,5-diphosphate is extensive. A short summary of information from some of the many articles¹⁻⁶ indicates that PtdIns(4,5)P₂ along with PtdIns4P are the most abundant phosphorylated derivatives of phosphatidylinositol in mammalian cells. PtdIns(4,5)P₂ is synthesized from PtdIns4P in the plasma membrane, secretory vesicles, Golgi apparatus, and nuclei. It is the key phosphoinositide and the shared substrate of two widespread receptor-activated signaling pathways. One is the phospholipase C catalyzed hydrolysis of PtdIns(4,5)P₂ that generates D-myo-inositol 1,4,5 trisphosphate and diacylglycerol. The second is the synthesis of the membrane associated messenger molecule phosphatidylinositol 3,4,5-trisphosphate by Class I phosphoinositide-3-kinases.

Synthetic analogs of Product No. P 9763 with different fatty acid residues are available. Examples include the dipalmitoyl analog (P 8707) and the dioctanoyl analog (P 3584). Phosphatidylinositol with saturated fatty acids is an effective substrate for phosphatidylinositol 3-kinase reactions.⁷

Precautions and Disclaimer

For Laboratory Use Only. Not for drug, household or other uses.

Preparation Instructions

The product is soluble (10 mg/ml) in chloroform:methanol:water:1N HCl (20:10:1:1, v/v/v/v). It is also soluble in water (5 mg/ml), yielding a slightly hazy, faint yellow solution, indicating that 5 mg/ml is near the upper limits of solubility in water.

Storage/Stability

Solutions in water or solvent should be stable for 1 - 2 days at 4 - 8 °C. Room temperature storage is not recommended. It is recommended to freeze in aliquots in deoxygenated solvents for longer term storage. Oxidation of the arachidonic acid present in this product is the limiting factor for stability.

References

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7. Morisaki, N., et al., Phosphorylation of unnatural phosphatidylinositols with phosphatidylinositol 3-kinase. *Tetrahedron*, **56**, 2603-2614 (2000).

RLG/NSB 9/03

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