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Product Information



PtdIns-(4,5)-P₂ (1,2-dipalmitoyl)-d₆₂ (sodium salt)

Item No. 10005615

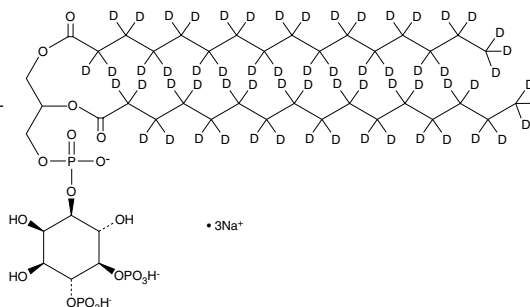
Formal Name: 1-(1,2-dihexadecanoyl(2,2',3,3',4,4',5,5',6,6',7,7',8,8',9,9',10,10',11,11',12,12',13,13',14,14',15,16,16-d₃₁)phosphatidyl)inositol-4,5-bisphosphate, trisodium salt

Synonyms: DPPI-4,5-P₂-d₆₂, Phosphatidylinositol-4,5-diphosphate C16-d₆₂

MF: C₄₁H₁₆D₆₂O₁₉P₃ • 3Na

FW: 1,099.3

Chemical Purity: ≥98% PtdIns-(4,5)-P₂ (1,2-dipalmitoyl) (sodium salt)



Deuterium Incorporation: ≥99% deuterated forms (d₁-d₆₂); ≤1% d₀

Stability: ≥1 year at -20°C

Supplied as: A lyophilized powder

Laboratory Procedures

PtdIns-(4,5)-P₂ (1,2-dipalmitoyl)-d₆₂ (sodium salt) contains 62 deuterium atoms at the 2, 2', 3, 3', 4, 4', 5, 5', 6, 6', 7, 7', 8, 8', 9, 9', 10, 10', 11, 11', 12, 12', 13, 13', 14, 14', 15, 15', 16, 16, and 16 positions of each fatty acyl chain. It is intended for use as an internal standard for the quantification of PtdIns-(4,5)-P₂ (1,2-dipalmitoyl) (sodium salt) by GC- or LC-mass spectrometry (MS). For long term storage, we suggest that PtdIns-(4,5)-P₂ (1,2-dipalmitoyl) (sodium salt) be stored as supplied at -20°C. It should be stable for at least one year.

PtdIns-(4,5)-P₂ (1,2-dipalmitoyl) (sodium salt) is supplied as a lyophilized powder. A stock solution may be made by dissolving the PtdIns-(4,5)-P₂ (1,2-dipalmitoyl) (sodium salt) in an organic solvent purged with an inert gas. PtdIns-(4,5)-P₂ (1,2-dipalmitoyl) (sodium salt) is soluble in organic solvent such as chloroform:methanol:water (4:3:1). The solubility of PtdIns-(4,5)-P₂ (1,2-dipalmitoyl) (sodium salt) in this solvent is at least 1 mg/ml. PtdIns-(4,5)-P₂ (1,2-dipalmitoyl) (sodium salt) will not be stable in aqueous solutions for more than 24 hours.

PtdIns-(4,5)-P₂ (1,2-dipalmitoyl) (sodium salt) is used as an internal standard for the quantification of PtdIns-(4,5)-P₂ (1,2-dipalmitoyl) (sodium salt) by stable isotope dilution MS. The accuracy of the sample weight in this vial is between 5% over and 2% under the amount shown on the vial. If better precision is required, the deuterated standard should be quantitated against a more precisely weighed unlabeled standard by constructing a standard curve of peak intensity ratios (deuterated *versus* unlabeled).

The phosphatidylinositol (PtdIns) phosphates represent a small percentage of total membrane phospholipids. However, they play a critical role in the generation and transmission of cellular signals.^{1,2} PtdIns-4,5-P₂-(1,2-dipalmitoyl)-d₆₂ is a synthetic analog of natural PtdIns containing deuterated C16:0 fatty acids at the *sn*-1 and *sn*-2 positions. This synthetic standard features the same inositol and diacyl glycerol (DAG) stereochemistry as that of the natural compound. The natural compound is the product of phosphatidylinositol 4-phosphate 5-kinase acting on PtdIns-(4)-P₁. Hydrolysis of PtdIns-(4,5)-P₂ by phosphoinositide (PI)-specific phospholipase C generates inositol triphosphate (IP₃) and DAG which are key second messengers in an intricate biochemical signal transduction cascade.

References

1. Exton, J.H. *Annu. Rev. Pharmacol. Toxicol.* **36**, 481-509 (1996).
2. Majerus, P.W. *Annu. Rev. Biochem.* **61**, 225-250 (1992).

Related Products

For a list of related products please visit: www.caymanchem.com/catalog/10005615

WARNING: THIS PRODUCT IS FOR LABORATORY RESEARCH ONLY: NOT FOR ADMINISTRATION TO HUMANS. NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

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