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PRODUCT INFORMATION



PtdIns-(3,4,5)-P₃ (1,2-dipalmitoyl) (sodium salt)

Item No. 64920

CAS Registry No.: 1628353-02-5
Formal Name: D-*myo*-inositol 1-[(2R)-2,3-bis[(1-oxohexadecyl)oxy]propyl hydrogen phosphate] 3,4,5-tris(dihydrogen phosphate), tetrasodium salt

Synonyms: DPPI-3,4,5-P₃, Phosphatidylinositol-3,4,5-triphosphate C-16

MF: C₄₁H₇₈O₂₂P₄ • 4Na

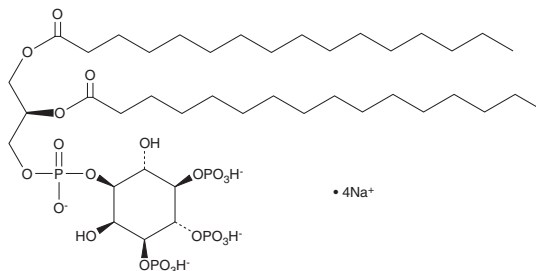
FW: 1,138.9

Purity: ≥98%

Supplied as: A lyophilized powder

Storage: -20°C

Stability: ≥1 year



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

PtdIns-(3,4,5)-P₃ (1,2-dipalmitoyl) (sodium salt) is supplied as a lyophilized powder. A stock solution may be made by dissolving the PtdIns-(3,4,5)-P₃ (1,2-dipalmitoyl) (sodium salt) in the solvent of choice, which should be purged with an inert gas. PtdIns-(3,4,5)-P₃ (1,2-dipalmitoyl) (sodium salt) has a solubility of approximately 3.8 mg/ml in a 2.5:3:1 solution of chloroform:methanol:water.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. Organic solvent-free aqueous solutions of PtdIns-(3,4,5)-P₃ (1,2-dipalmitoyl) (sodium salt) can be prepared by directly dissolving the lyophilized powder in aqueous buffers. The solubility of PtdIns-(3,4,5)-P₃ (1,2-dipalmitoyl) (sodium salt) in PBS, pH 7.2, is approximately 10 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

The phosphatidylinositol 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-(3,4,5)-P₃ can serve as an anchor for the binding of signal transduction proteins bearing pleckstrin homology (PH) domains. Centaurin α and the Akt-family of GTPase activating proteins are examples of PtdIns-(3,4,5)-P₃-binding proteins.^{3,4} Protein-binding to PtdIns-(3,4,5)-P₃ is important for cytoskeletal rearrangements and membrane trafficking. PtdIns-(3,4,5)-P₃ is resistant to cleavage by PI-specific phospholipase C (PLC). Thus, it is likely to function in signal transduction as a modulator in its own right, rather than as a source of inositol tetraphosphates. For further reading on inositol phospholipids, see also references 5 and 6.

References

1. Lapetina, E.G., Billah, M.M., and Cuatrecasas, P. *Nature* **292**, 367-369 (1981).
2. Majerus, P.W. *Annu. Rev. Biochem.* **61**, 225-250 (1992).
3. Tanaka, K., Imajoh-Ohmi, S., Sawada, T., et al. *Eur. J. Biochem.* **245**, 512-519 (1997).
4. Yang, X., Rudolf, M., Carew, M.A., et al. *J. Biol. Chem.* **274**, 18973-18980 (1999).
5. Pike, L.J. and Casey, L. *J. Biol. Chem.* **271**, 26453-26456 (1996).
6. Berridge, M.J. *Nature* **361**, 315-325 (1993).

WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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