

# Product Information



## PtdIns-(3,4,5)-P<sub>3</sub> (1,2-dihexanoyl) (ammonium salt)

Item No. 10008390

CAS Registry No.: 799268-62-5

Formal Name: 1-(1,2R-dihexanoylphosphatidyl)  
inositol-3,4,5-triphosphate,  
tetraammonium salt

Synonyms: DHPI-3,4,5-P<sub>3</sub>, Phosphatidylinositol-  
3,4,5-triphosphate C-6, PIP3C-16

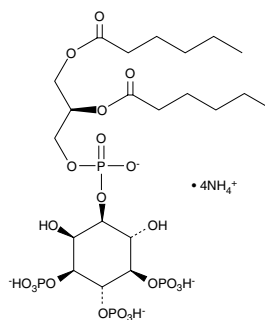
MF: C<sub>21</sub>H<sub>54</sub>N<sub>4</sub>O<sub>22</sub>P<sub>4</sub> • 4NH<sub>4</sub><sup>+</sup>

FW: 838.6

Purity: ≥98%

Stability: ≥1 year at -20°C

Supplied as: A lyophilized powder



### Laboratory Procedures

For long term storage, we suggest that PtdIns-(3,4,5)-P<sub>3</sub> (1,2-dihexanoyl) (ammonium salt) be stored as supplied at -20°C. It should be stable for at least one year.

PtdIns-(3,4,5)-P<sub>3</sub> (1,2-dihexanoyl) (ammonium salt) is supplied as a lyophilized powder. PtdIns-(3,4,5)-P<sub>3</sub> (1,2-dihexanoyl) (ammonium salt) is sparingly soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide.

For biological experiments, we suggest that organic solvent-free aqueous solutions of PtdIns-(3,4,5)-P<sub>3</sub> (1,2-dihexanoyl) (ammonium salt) be prepared by directly dissolving the lyophilized powder in aqueous buffers. The solubility of PtdIns-(3,4,5)-P<sub>3</sub> (1,2-dihexanoyl) (ammonium salt) in water is approximately 10 mg/ml. We do not recommend storing the aqueous solution for more than one day.

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.<sup>1,2</sup> PtdIns-(3,4,5)-P<sub>3</sub>, also known as PIP<sub>3</sub>, is resistant to cleavage by PI-specific phospholipase C (PLC).<sup>3</sup> Thus, it is likely to function in signal transduction as a modulator in its own right, rather than as a source of inositol tetraphosphates. PIP<sub>3</sub> can serve as an anchor for the binding of signal transduction proteins bearing pleckstrin homology (PH) domains.<sup>4,5</sup> Protein binding to PIP<sub>3</sub> is important for cytoskeletal rearrangement and membrane trafficking.<sup>6</sup> PtdIns-(3,4,5)-P<sub>3</sub> (1,2-dihexanoyl) is a synthetic analog of natural PIP<sub>3</sub> with C6:0 fatty acids at the *sn*-1 and *sn*-2 positions. The compound features the same inositol and diacylglycerol (DAG) stereochemistry as that of the natural compound. The short fatty acid chains of this analog give it different physical properties from naturally-occurring PIP<sub>3</sub>, including higher solubility in aqueous media.

### References

1. Guan, X. and Wenk, M.R. *Frontiers in Bioscience* **13**, 3239-3251 (2008).
2. Kashiwada, M., Lu, P., and Rothman, P.B. *Immunol. Res.* **39**, 194-224 (2007).
3. Serunian, L.A., Haber, M.T., Fukui, T., et al. *J. Biol. Chem.* **264**(30), 17809-17815 (1989).
4. Tanaka, K., Imajoh-Ohmi, S., Sawada, T., et al. *Eur. J. Biochem.* **245**, 512-519 (1997).
5. Yang, X., Rudolf, M., Carew, M.A., et al. *J. Biol. Chem.* **274**, 18973-18980 (1999).
6. Hamaguchi, N., Ihara, S., Ohdaira, T., et al. *Biochem. Biophys. Res. Commun.* **361**, 270-275 (2007).

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