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# PRODUCT INFORMATION



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

Item No. 64924

**Formal Name:** 1-(1,2R-dihexadecanoylphosphatidyl) inositol-4,5-bisphosphate, triammonium salt

**Synonyms:** DPPI-4,5-P<sub>2</sub>, Phosphatidylinositol-4,5-diphosphate C-16

**MF:** C<sub>41</sub>H<sub>78</sub>O<sub>19</sub>P<sub>3</sub> • 3NH<sub>4</sub><sup>+</sup>

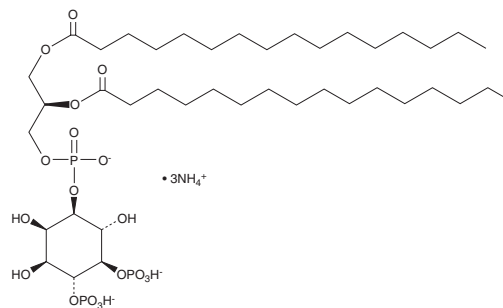
**FW:** 1,022.1

**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-(4,5)-P<sub>2</sub> (1,2-dipalmitoyl) (ammonium salt) is supplied as a lyophilized powder. For biological experiments, we suggest that organic solvent-free aqueous solutions of PtdIns-(4,5)-P<sub>2</sub> (1,2-dipalmitoyl) (ammonium salt) be prepared by directly dissolving the lyophilized powder in aqueous buffers. The solubility of PtdIns-(4,5)-P<sub>2</sub> (1,2-dipalmitoyl) (ammonium salt) in PBS, pH 7.2, is approximately 1 mg/ml, but the solution will be opaque. PtdIns-(4,5)-P<sub>2</sub> (1,2-dipalmitoyl) (ammonium salt) is also soluble in 50 mM HEPES, pH 7.0, containing 5 mM EGTA with 16 mg/ml sodium deoxycholate and CHCl<sub>3</sub>:CH<sub>3</sub>OH:H<sub>2</sub>O (3:2:1) at a concentration of approximately 8 and 10 mg/ml, respectively. 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.<sup>1,2</sup> PtdIns-(4,5)-P<sub>2</sub> incorporated into membrane lipids can bind to important proteins such as Group IV cPLA<sub>2</sub> and PLCΔ<sub>1</sub>, enhancing their adherence to the membrane and increasing the rate of substrate hydrolysis.<sup>3</sup> PtdIns-(4,5)-P<sub>2</sub> can be further phosphorylated to give triphosphates such as PtdIns-(3,4,5)-P<sub>3</sub>. It can also be cleaved by PI-specific PLC to give inositol triphosphates. The diacyl glycerol and IP<sub>3</sub> generated by this PLC-cleavage are also part of a complex biochemical and signal transduction cascade which has not been entirely elucidated. For some additional reading, please see references 2, 4, and 5.

### References

1. Lapetina, E.G., Billah, M.M., and Cuatrecasas, P. The phosphatidylinositol cycle and the regulation of arachidonic acid production. *Nature* **292**, 367-369 (1981).
2. Majerus, P.W. Inositol phosphate biochemistry. *Annu. Rev. Biochem.* **61**, 225-250 (1992).
3. Mosior, M., Six, D.A., and Dennis, E.A. Group IV cytosolic phospholipase A<sub>2</sub> binds with high affinity and specificity to phosphatidylinositol 4,5-bisphosphate resulting in dramatic increases in activity. *J. Biol. Chem.* **273**, 2184-2191 (1998).
4. Pike, L.J. and Casey, L. Localization and turnover of phosphatidylinositol 4,5-bisphosphate in caveolin-enriched membrane domains. *J. Biol. Chem.* **271**, 26453-26456 (1996).
5. Berridge, M.J. Inositol trisphosphate and calcium signalling. *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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