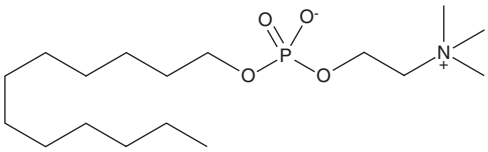
PRODUCT INFORMATION

Dodecylphosphocholine

Item No. 25629

CAS Registry No.: 29557-51-5
Formal Name: 2-[[(dodecyloxy) hydroxyphosphinyl]oxy]-N,N,N-trimethyl-ethanaminium, inner salt
Synonym: n-Dodecylphosphocholine
MF: $C_{17}H_{38}NO_4P$
FW: 351.5
Purity: ≥95%
Supplied as: A crystalline solid
Storage: -20°C
Stability: ≥4 years



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

Laboratory Procedures

Dodecylphosphocholine is supplied as a crystalline solid. A stock solution may be made by dissolving the dodecylphosphocholine in the solvent of choice, which should be purged with an inert gas. Dodecylphosphocholine is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of dodecylphosphocholine in ethanol is approximately 15 mg/ml and approximately 16 mg/ml in DMSO and DMF.

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 dodecylphosphocholine can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of dodecylphosphocholine in PBS (pH 7.2) is approximately 25 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

Dodecylphosphocholine is a detergent that is commonly used for membrane protein structure determination using NMR.[1] It has also been used to generate membrane mimetic micelles and to characterize pore formation by the influenza M2 transmembrane domain within a synthetic membrane.[2] Dodecylphosphocholine micelles induce amyloid fibril formation by the prion protein (PrP) β-strand (PrP (110-136)).[3] Dodecylphosphocholine has a critical micelle concentration (CMC) of approximately 1.5 mM.

References

1. Kurauskas, V., Hessel, A., Ma, P., *et al*. How detergent impacts membrane proteins: Atomic-level views of mitochondrial carriers in dodecylphosphocholine. *J. Phys. Chem. Lett*. **9(5)**, 933-938 (2018).
2. Cady, S.D., Wang, J., Wu, Y., *et al*. Specific binding of adamantane drugs and direction of their polar amines in the pore of the influenza M2 transmembrane domain in lipid bilayers and dodecylphosphocholine micelles determined by NMR spectroscopy. *J. Am Chem. Soc*. **133(12)**, 4274-4284 (2011).
3. Sauvé, S. and Aubin, Y. Dodecylphosphocholine micelles induce amyloid formation of the PrP(110-136) peptide via an α-helical metastable conformation. *PLoS One* **11(12)**, e0168021 (2016).

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