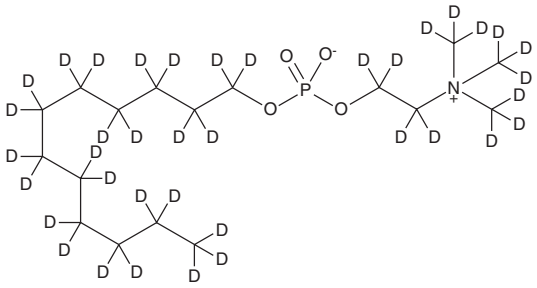
PRODUCT INFORMATION

Dodecylphosphocholine-d_{38}

Item No. 25996

CAS Registry No.: 130890-78-7
Formal Name: 2-[[(dodecyl-d_{25}-oxy)hydroxyphosphinyl]oxy]-N,N,N-tri(methyl-d_3)-ethan-1,1,2,2-d_4-aminium, inner salt
Synonym: n-Dodecylphosphocholine-d_{38}
MF: $C_{17}D_{38}NO_4P$
FW: 389.7
Chemical Purity: ≥95% (Dodecylphosphocholine)
Deuterium Incorporation: ≥99% deuterated forms (d_1-d_{38}); ≤1% d_0
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-d_{38} is intended for use as an internal standard for the quantification of dodecylphosphocholine (Item No. 25629) by GC- or LC-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).

Dodecylphosphocholine-d_{38} is supplied as a crystalline solid. A stock solution may be made by dissolving the dodecylphosphocholine-d_{38} in the solvent of choice, which should be purged with an inert gas. Dodecylphosphocholine-d_{38} is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of dodecylphosphocholine-d_{38} in ethanol is approximately 15 mg/ml and approximately 16 mg/ml in DMSO and DMF.

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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