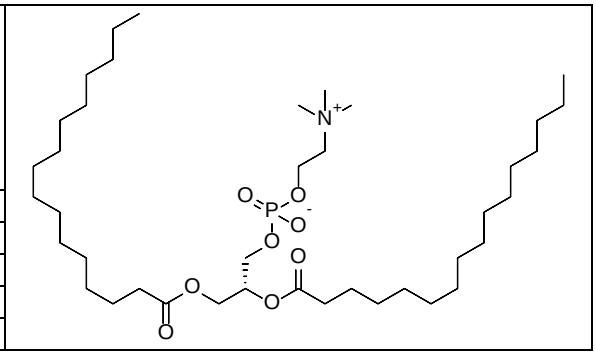
Product data sheet

MedKoo Cat#: 530992 Name: L-DPPC CAS: 63-89-8 Chemical Formula: $C_{40}H_{80}NO_8P$ Exact Mass: 733.5622 Molecular Weight: 734.0528	
Product supplied as:	Powder
Purity (by HPLC):	≥ 98%
Shipping conditions	Ambient temperature
Storage conditions:	Powder: -20°C 3 years; 4°C 2 years.
	In solvent: -80°C 3 months; -20°C 2 weeks.

1. Product description:

L-DPPC, also known as 1,2-Dipalmitoyl-sn-glycero-3-PC and L-Dipalmitoyl Lecithin, is a zwitterionic phosphoglyceride that can be used for the preparation of liposomal monolayers. L-DPPC incorporated liposomes have potential in establishing active immunotherapy with antigens exhibiting poor immunogenicity, such as glycosphingolipid antigens.

2. CoA, QC data, SDS, and handling instruction

SDS and handling instruction, CoA with copies of QC data (NMR, HPLC and MS analytical spectra) can be downloaded from the product web page under "QC And Documents" section. Note: copies of analytical spectra may not be available if the product is being supplied by MedKoo partners. Whether the product was made by MedKoo or provided by its partners, the quality is 100% guaranteed.

3. Solubility data

Solvent	Max Conc. mg/mL	Max Conc. mM
Ethanol	27.5	37.46

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	1.36 mL	6.81 mL	13.62 mL
5 mM	0.27 mL	1.36 mL	2.72 mL
10 mM	0.14 mL	0.68 mL	1.36 mL
50 mM	0.03 mL	0.14 mL	0.27 mL

5. Molarity Calculator, Reconstitution Calculator, Dilution Calculator

Please refer the product web page under section of "Calculator"

6. Recommended literature which reported protocols for in vitro and in vivo study

In vitro study

1. Lin L, Li Y, Qin X, Yu C, Liu M, Zhang Z, Guo Y. In situ nonlinear optical spectroscopic study of the structural chirality in DPPC Langmuir monolayers at the air/water interface. J Chem Phys. 2022 Mar 7;156(9):094704. doi: 10.1063/5.0069860. PMID: 35259885.

2. Pentak D, Ploch-Jankowska A, Zięba A, Kozik V. The Advances and Challenges of Liposome-Assisted Drug Release in the Presence of Serum Albumin Molecules: The Influence of Surrounding pH. Materials (Basel). 2022 Feb 20;15(4):1586. doi: 10.3390/ma15041586. PMID: 35208126; PMCID: PMC8874444.

In vivo study

1. Daeichin V, van Rooij T, Skachkov I, Ergin B, Specht PA, Lima A, Ince C, Bosch JG, van der Steen AF, de Jong N, Kooiman K. Microbubble Composition and Preparation for High-Frequency Contrast-Enhanced Ultrasound Imaging: In Vitro and In Vivo Evaluation. IEEE Trans Ultrason Ferroelectr Freq Control. 2017 Mar;64(3):555-567. doi: 10.1109/TUFFC.2016.2640342. Epub 2016 Dec 15. PMID: 28113312.

2. Uemura A, Watarai S, Iwasaki T, Kodama H. Induction of immune responses against glycosphingolipid antigens: comparison of antibody responses in mice immunized with antigen associated with liposomes prepared from various phospholipids. J Vet Med Sci. 2005 Dec;67(12):1197-201. doi: 10.1292/jvms.67.1197. PMID: 16397376.

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7. Bioactivity

Biological target:

DPPC (129Y83) is a zwitterionic phosphoglyceride that can be used for the preparation of liposomal monolayers.

In vitro activity

Furthermore, in a racemic DPPC monolayer with a moderate surface pressure, both chiral SHG and chiral SFG of CH3 groups are absent, whereas chiral SFG of CH2 groups is clearly present, indicating that L- and D-DPPC are diastereomers at the air/water interface and interfacial CH2 prefers a certain orientation regardless of the molecular handedness.

Reference: J Chem Phys. 2022 Mar 7;156(9):094704. https://pubmed.ncbi.nlm.nih.gov/35259885/

In vivo activity

On the other hand, the immune responses against GSL antigens in mice were detected after immunization with liposomes composed of dipalmitoylphosphatidylcholine (DPPC) (0.5 micromol), cholesterol (Chol) (0.5 micromol), Salmonella minnesota R595 lipopolysaccharides (LPS) (10 microg) and GSL (0.05 micromol) (DPPC-liposome). These results suggest that DPPC-liposome would serve effectively as a delivery vehicle for inducing immune responses against GSL antigen.

Reference: J Vet Med Sci. 2005 Dec;67(12):1197-201. https://pubmed.ncbi.nlm.nih.gov/16397376/

Note: The information listed here was extracted from literature. MedKoo has not independently retested and confirmed the accuracy of these methods. Customer should use it just for a reference only.