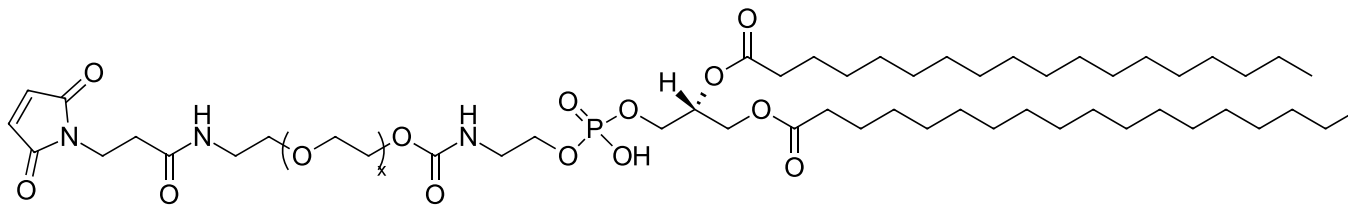


DSPE-PEG2000-Maleimide

Catalog number: L-2810



Molecular Formula: $(C_2H_4O)_x-C_{53}H_{97}NO_{14}P$

MW: ~2,900 (PEG MW = 2000 Da)

CAS#: 474922-22-0

Alternate Name: 1,2-distearoyl-sn-glycero-3-phosphoethanolamine-N-[carbonyl-amino(polyethylene glycol)-2000-N'-(3-maleimidopropionyl)]

Solubility: Chloroform (5 mg/mL), EtOH (5 mg/mL), DMSO (2 mg/mL),

Storage and Handling: Store dry at -20 °C. Stock solutions should be stored frozen (-20 °C or below).

Background: PEG derivatized lipids are used to increase the circulation time of liposomes and lipid nanoparticles (LNPs) *in vivo*. The hydrophilic PEG chains decrease interactions with the reticular-endothelial system and increases the size of the particles both of which result in lowered clearance rate from the body. The maleimide group can be reacted with thiol groups on proteins, peptides, and antibodies resulting in ligand-mediated targeting of LNP formulations.

References: 1) G. Pasut, F.M. Veronese “State of the art in PEGylation: the great versatility achieved after forty years of research” *J. Control. Release*, 161 (2012), 461-472.

2) J.M. Harris, R.B. Chess “Effect of pegylation on pharmaceuticals” *Nat. Rev. Drug Discov.*, 2 (2003), 214-221

3) Suk, J. S., Xu, Q., Kim, N., Hanes, J., & Ensign, L. M. (2016). “PEGylation as a strategy for improving nanoparticle-based drug and gene delivery”. *Adv. Drug Deliv. Rev.*, 99(Pt A), (2016) 28–51. <https://doi.org/10.1016/j.addr.2015.09.012>

Hazardous Properties and Cautions: The toxicological and pharmacological properties of this compound are not fully known. For further information see the MSDS on request. This product is manufactured and shipped only in small quantities, intended for research and development in a laboratory utilizing prudent procedures for handling chemicals of unknown toxicity, under the supervision of persons technically qualified to evaluate potential risks and authorized to enforce appropriate health and safety measures. As with all research chemicals, precautions should be taken to avoid unnecessary exposures or risks.

Warranty and Disclaimer: Echelon warrants the product conforms to the specifications stated herein. In the event of nonconformity, Echelon will replace products or refund purchase price, at its sole option, and Echelon shall not be responsible for any other loss or damage, whether known or foreseeable to Echelon. No other warranties apply, express or implied, including but not limited to warranty of fitness for any purpose or implied warranty of merchantability. Purchaser is solely responsible for all consequences of its use of the product and Echelon assumes no responsibility therefore, including success of purchaser's research and development, or health or safety of any uses of the product.

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