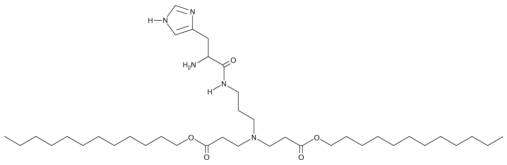
Product Data Sheet

Product Name: O12-D3-I3
Cat. No.: GC92048

Chemical Properties

Cas. No.			
Chemical Name	didodecyl 3,3'-((3-(2-amino-3-(1H-imidazol-4-yl)propanamido)propyl)azanediyl)dipropionate		
SMILES	O=C(NCCCN(CCC(OCCCCCCCCCCCC)=O)CCC(OCCCCCCCCCCCC)=O)C(N)CC1=CNC=N1		
Formula	$C_{39}H_{73}N_5O_5$	M.Wt	692
Solubility	Ethanol: Soluble: ≥10 mg/ml	Storage	-20°C
General tips	For obtaining a higher solubility , please warm the tube at 37 °C and shake it in the ultrasonic bath for a while.Stock solution can be stored below -20°C for several months.		
Shipping Condition	Evaluation sample solution : ship with blue ice All other available size: ship with RT , or blue ice upon request.		
Structure			

Background

O12-D3-I3 is an ionizable cationic lipid (p K_a = 6.39) that has been used in the generation of lipid nanoparticles (LNPs) for siRNA delivery *in vitro* and *in vivo*.[1] LNPs containing O12-D3-I3 and encapsulating ferrocene and siRNA targeting nuclear factor erythroid 2-related factor 2 (Nrf2) or the system x_c^- cystine/glutamate transporter decrease viability of HepG2 hepatocellular carcinoma cells. LNPs containing O12-D3-I3 and an mRNA reporter selectively accumulate in the tumor and liver over the lungs, kidneys, spleen, and heart in an MCF-7 breast cancer mouse xenograft model. LNPs containing O12-D3-I3 and encapsulating ferrocene and either Nrf2-targeting siRNA or system x_c^- cystine/glutamate transporter-targeting siRNA reduce tumor growth and volume in an MCF-7 mouse xenograft model. LNPs containing O12-D3-I3 and encapsulating siRNA targeting Factor VII decrease

hepatocyte Factor VII mRNA levels in mice.

References:

[1]. Liu, Y., He, F., Chen, L., et al.Imidazolyl lipids enhanced LNP endosomal escape for ferroptosis RNAi treatment of cancerSmall20(40)e2402362(2024).