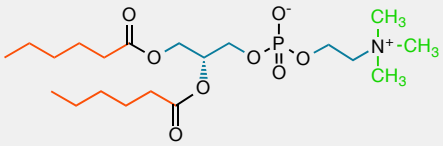
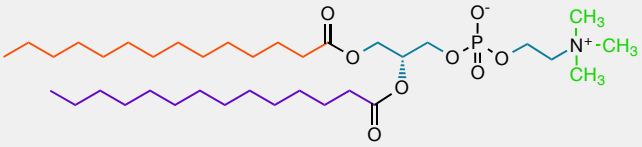
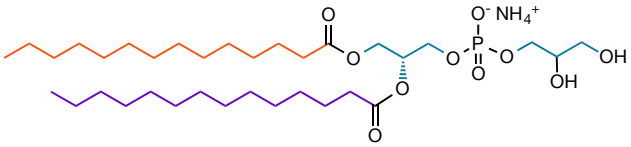
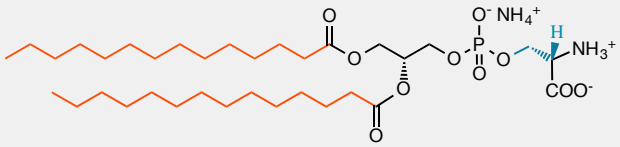
2020 CATALOG

DEUTERATED DETERGENTS AND LIPIDS

Compound	Available isotopomers	Feedback
DH6PC 1,2-Dihexanoyl-sn-glycero-3-phosphocholine 	d_{22} *(hexanoic acids)* d_{22}+d_9 *(fatty acids & methyls)* d_{22}+d_9+d_9 *(perdeuterated)* ***Custom*** *^2H & ^{13}C configurations*	
DH7PC 1,2-Diheptanoyl-sn-glycero-3-phosphocholine	d_{26} *(heptanoic acids)* d_{26}+d_9 *(fatty acids & methyls)* d_{26}+d_9+d_9 *(perdeuterated)* ***Custom*** *^2H & ^{13}C configurations*	*[1,2]* *[3]*
DMPC 1,2-Dimyristoyl-sn-glycero-3-phosphocholine 	d_{27} *(O1-myristate)* d_{27} *(O2-myristate)* d_{27}+d_{27} *(both fatty acids)* d_{27}+d_{27}+d_9 *(fatty & methyl)* d_{27}+d_{27}+d_9+d_9 *(perdeuterated)* ***Custom*** *^2H & ^{13}C configurations*	*[2,4,5,6,7]*
DMPG 1,2-Dimyristoyl-sn-glycero-3-phosphoglycerol 	d_{27}+d_{27} *(both fatty acids)* d_{27} *(O1-myristate)* d_{27} *(O2-myristate)* d_{27}+d_{27}+d_{10} *(perdeuterated)* ***Custom*** *^2H & ^{13}C configurations*	*[5,7]*
DMPS 1,2-Dimyristoyl-sn-glycero-3-phosphoserine 	d_{54} *(both myristates)* d_{54}+d_3 *(myristates & serine)* ***Custom*** *^2H & ^{13}C configurations*	

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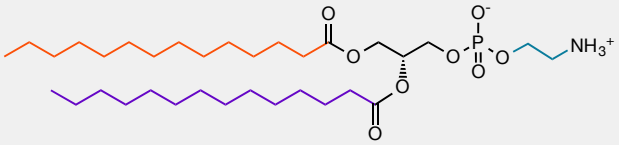
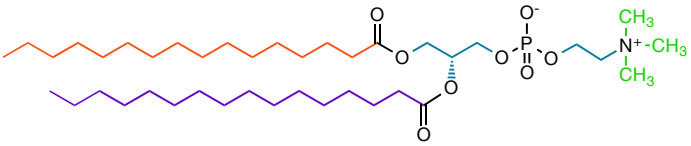
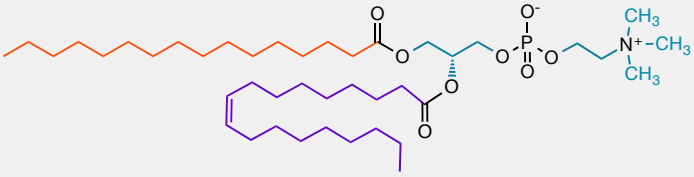
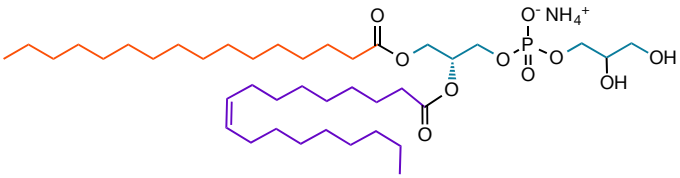
Compound	Available isotopomers	Feedback
DMPE 1,2-Dimyristoyl-sn-glycero-3-phosphoethanolamine 	d_{27} *(O1-myristate)* d_{27} *(O2-myristate)* $d_{27}+d_{27}$ *(both fatty acids)* $d_{27}+d_{27}+d_4$ *(& ethanolamine)* **Custom** *^2H & ^{13}C configurations*	
DPPC 1,2-Dipalmitoyl-sn-glycero-3-phosphocholine 	d_{31} *(O1-palmitate)* d_{31} *(O2-palmitate)* $d_{31}+d_{31}$ *(both palmitates)* $d_{31}+d_{31}+d_9$ *(palmitates & methyl)* $d_{31}+d_{31}+d_9+d_9$ *(perdeuterated)* **Custom** *^2H & ^{13}C configurations*	
POPC 1-Palmitoyl-2-oleoyl-sn-glycero-3-phosphocholine 	d_{31} *(O1-palmitate)* d_{33} *(O2-oleate)* $d_{31}+d_{33}$ *(both fatty acids)* $d_{31}+d_{33}+d_{18}$ *(perdeuterated)* **Custom** *^2H & ^{13}C configurations*	
POPG 1-Palmitoyl-2-oleoyl-sn-glycero-3-phosphoglycerol 	d_{31} *(O1-palmitate)* d_{33} *(O2-oleate)* $d_{31}+d_{33}$ *(both fatty acids)* $d_{31}+d_{33}+d_{10}$ *(perdeuterated)* **Custom** *^2H & ^{13}C configurations*	
DOPC 1,2-Dioleoyl-sn-glycero-3-phosphocholine	d_{66} *(both oleates)* d_{84} *(perdeuterated)* ***Custom*** *^2H & ^{13}C configurations*	
DOPG 1,2-Dioleoyl-sn-glycero-3-phosphoglycerol	d_{66} *(both oleates)* d_{76} *(perdeuterated)* ***Custom*** *^2H & ^{13}C configurations*	

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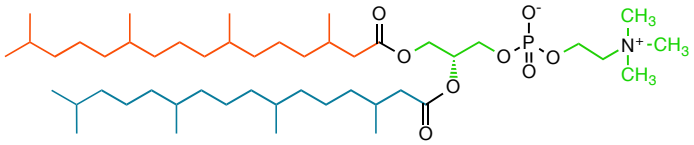
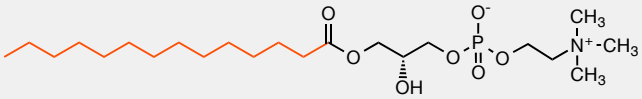
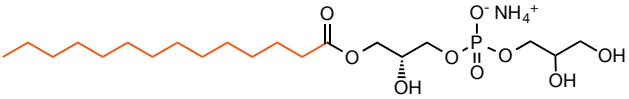
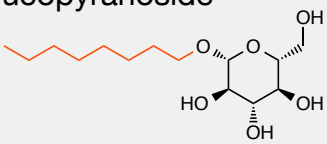
Compound	Available isotopomers	Feedback
DOPE 1,2-Dioleoyl-sn-glycero-3-phosphoethanolamine	d_{66} *(oleates)* d_{70} *(oleates & ethanolamine)* ***Custom*** *^{2}H & ^{13}C configurations*	
DPhPC 1,2-Diphytanoyl-sn-glycero-3-phosphocholine 	d_{39} *(O2-phytanoate)* d_{39} *(O1-phytanoate)* d_{39}+d_{39} *(both fatty acids)* d_{39}+d_{39}+d_{18} *(perdeuterated)* ***Custom*** *^{2}H & ^{13}C configurations*	*[8]*
LMPC 1-Myristoyl-2-lyso-sn-glycero-3-phosphocholine 	d_{27} *(O1-myristate)* ***Custom*** *^{2}H & ^{13}C configurations*	
LMPG 1-Myristoyl-2-lyso-sn-glycero-3-phosphoglycerol 	d_{27} *(O1-myristate)* ***Custom*** *^{2}H & ^{13}C configurations*	*[9,10]*
LPPG 1-Palmitoyl-2-lyso-sn-glycero-3-phosphoglycerol	d_{31} *(O1-palmitate)* ***Custom*** *^{2}H & ^{13}C configurations*	*[11,12]*
LDAO Lauryl-N,N-dimethyl N-oxide 	d_{31} *(perdeuterated)* ***Custom*** *^{2}H & ^{13}C configurations*	*[13,14]*
OG Octyl-β-D-glucopyranoside 	d_{17} *(octyl)*	

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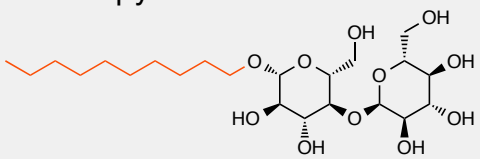
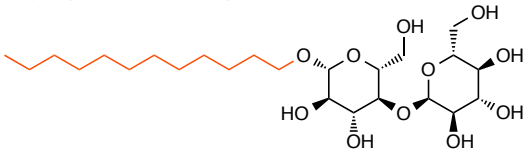
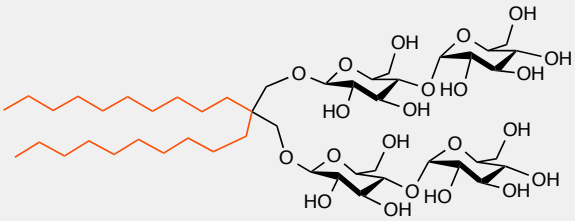
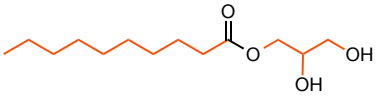
Compound	Available isotopomers	Feedback
DM Decyl-β-D-maltopyranoside 	d_{21} *(decyl tail)* ***Custom*** *^{2}H & ^{13}C configurations*	
DDM Dodecyl-β-D-maltopyranoside 	d_{25} *(dodecyl tail)* ***Custom*** *^{2}H & ^{13}C configurations*	
LMNG Lauryl maltose neopentyl glycol 	d_{42} *(decyl tails)* ***Custom*** *^{2}H & ^{13}C configurations*	
10-MAG decyl monoacylglycerol 	d_{24} *(perdeuterated)* ***Custom*** *^{2}H & ^{13}C configurations*	

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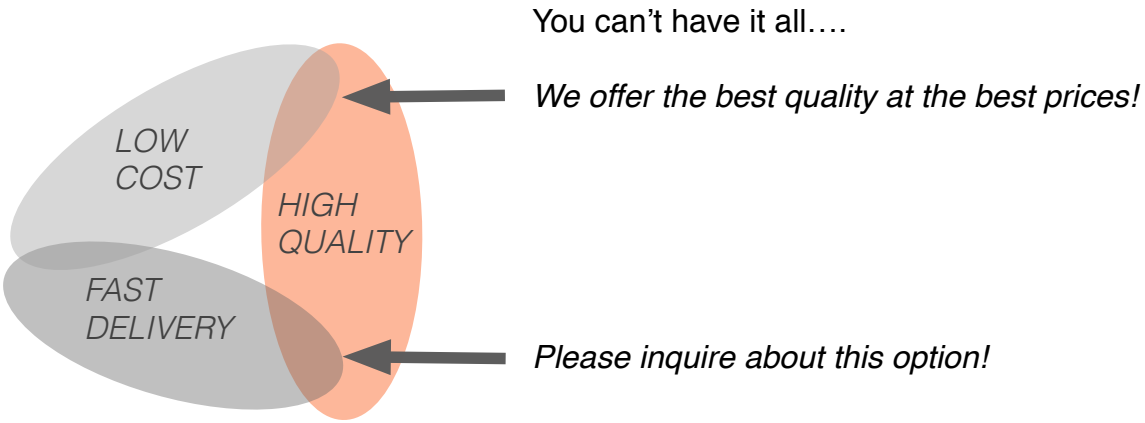

Selected publications citing our deuterated lipids and detergents

Movelan et al. Imidazole–Imidazole Hydrogen Bonding in the pH-Sensing Histidine Side Chains of Influenza A M2. J Am Chem Soc 2020, Article ASAP DOI: 10.1021/jacs.9b10984

Bibow, S. Opportunities and challenges of backbone, sidechain and RDC experiments to study membrane protein dynamics in a detergent-free lipid environment using solution state NMR. Frontiers in molecular biosciences 2019, 6, 103.

Eddy et al. Structural characterization of the human membrane protein VDAC2 in lipid bilayers by MAS NMR. Journal of biomolecular NMR 2019, https://doi.org/10.1007/s10858-019-00242-8.

Bayrhuber et al. NMR solution structure and functional behavior of the human proton channel. Biochemistry 2019, https://doi.org/10.1021/acs.biochem.9b00471

Toyama, Yuki and Ichio Shimada. Frequency selective coherence transfer NMR spectroscopy to study the structural dynamics of high molecular weight proteins. Journal of Magnetic Resonance 2019.

Brazin et al. The T cell antigen receptor α transmembrane domain coordinates triggering through regulation of bilayer immersion and CD3 subunit associations. Immunity 2018.

O'Brien et al. Improving yields of deuterated, methyl labeled protein by growing in H2O. J. Biomol. NMR 2018. https://doi.org/10.1007/s10858-018-0200-7.

Laguerre et al. From nanodiscs to isotropic bicelles: a procedure for solution NMR studies of detergent sensitive integral membrane proteins. Structure 2016, 24, 1830.

Bugge et al. A combined computational and structural model of the full-length human prolactin receptor. Nature Communications 2016, 7:11578.

Cuevas et al. Fast collisional lipid transfer among polymer-bounded nanodiscs. Scientific Reports. 2017;7:45875. doi:10.1038/srep45875.

Hagn, F., Nasr, M. and Wagner, G. Assembly of phospholipid nanodiscs of controlled size for structural studies of membrane proteins by NMR. Nature Protocols 2017, 13, 79-98.

Bibow et al. Solution structure of discoidal high-density lipoprotein particles with a shortened apolipoprotein A-I. Nat. Struct. Mol. Biol. 2017, 24, 187–193.

Hagn et al. Optimized Phospholipid Bilayer Nanodiscs Facilitate High-Resolution Structure Determination of Membrane Proteins. J Am Chem Soc 2013, 135, 1919.

Andreas et al. Structure and mechanism of the influenza A M218–60 dimer of dimers. J. Am. Chem. Soc. 2015, 137, 14877.

Brady et al. A conserved amphipathic helix is required for membrane tubule formation by Yop1p. PNAS 2015 IUE639–E648, doi: 10.1073/pnas.1415882112.
Klammt et al. Facile backbone structure determination of human membrane proteins by nmr spectroscopy Nature Methods 2012, 9, 834–839. https://doi.org/10.1038/nmeth.2033.

Chadwick et al. NMR Structure of the C-Terminal Transmembrane Domain of the HDL Receptor, SR-BI, and a Functionally Relevant Leucine Zipper Motif. Structure 2017, 25, 446.

Brazin et al. Constitutively oxidized CXXC motifs within the CD3 heterodimeric ectodomains of the T cell receptor complex enforce the conformation of juxtaposed segments. Journal of Biological Chemistry 2014, 289, 18880-18892.

Yu et al. Solution NMR Spectroscopic Characterization of Human VDAC-2 in Detergent Micelles and Lipid Bilayer Nanodiscs. Biochim Biophys Acta 2012, 1818, 1562.

Hiller et al. Solution Structure of the integral human membrane protein VDAC-1 in detergent micelles. Science 2008, 321, 1206.