Direct Demonstration of Lipid Phosphorylation in the Lipid Bilayer of the Biomimetic Bicontinuous Cubic Phase Using the Confined Enzyme Lipid A Phosphoethanolamine Transferase

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Supplementary Information 1. ESI-TOF MS data of RP-HPLC fractions from Figure 3(A,D)

Figure S1.1. RP-HPLC and ESI-TOF MS data of a sample and fractions with pure MO + DOPE + DOG, similar to Figure 3(A) in 70% ethanol (60 μg loaded on the column). (A) RP-HPLC result: DAD signal 203 nm. (B) MS data sample, (C) MS data 22 – 23 minutes: MO, (D) MS data 38 – 39 min: DOPE, (E) MS data 40 – 41 min: DOG.
Figure S1.2. RP-HPLC and ESI-TOF MS data of the sample and fractions with MO + DOPE + NmEptA, 24 hours (Figure 3(D)).

(A) RP-HPLC result: DAD signal 203 nm. (B) MS data sample, (C) MS data 17 – 18 minutes: MOPE, (D) MS data 19 – 20 min: MO, (E) MS data 36 – 37 min: DOPE, (F) MS data 37 – 38 min: DOG.
Supplementary Information 2. Reproducibility SAXS data Figures 5, 6 and 7.

Figure S2.1. Reproducibility SAXS data Figure 5(B,C), results in Figure 5(A) is data with 0% DOPE in Figure 6(A) and the reproducibility of this data is shown in Figure S2.2(A). (A) MO with different concentrations of DOPE and DOG. D stands for the Q_{II}D phase, H stands for the H_{II} phase. (B) MO with different concentrations of DMPE and DMG. At concentrations of 6% DMPE and higher a coexisting L_{α} phase with a lattice parameter of 51 Å, typical for pure DMPE, was observed. At concentrations of 3% DMG and higher a coexisting L_{α} phase with a lattice parameter of 42 Å, typical for pure DMG, was observed.
Figure S2. Reproducibility SAXS data Figure 6. (A) MO with different concentrations of DOPE and NmEptA after 12 hours, all from the Q_{II}D phase. (B) MO with different concentrations of DOPE and NmEptA after 20 hours, all from the Q_{II}D phase.
Figure S2.3. Reproducibility SAXS data Figure 7. (A) MO with different concentrations of DMPE and NmEptA after 12 hours, all from the Q\text{II}\text{D} phase. (B) MO with different concentrations of DMPE and NmEptA after 20 hours, all from the Q\text{II}\text{D} phase. At concentrations of 6% DMPE and higher a coexisting L\text{α} phase with a lattice parameter of 51 Å, typical for pure DMPE, was observed.
Supplementary Information 3. High-throughput data with DMPE, presented in individual graphs for every % w/w DMPE.

Figure S3.1. High-throughput SAXS results for 0 to 10 % w/w DMPE and the respective linear fits for (A) 0% w/w DMPE, (B) 2% w/w DMPE, (C) 4% w/w DMPE, (D) 6% w/w DMPE, (E) 8% w/w DMPE, (F) 10% w/w DMPE.