SUPPORTING INFORMATION

Azide-modified Membrane Lipids: Miscibility with Saturated Phosphatidylcholines

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1. Physicochemical investigations

1.1 DSC

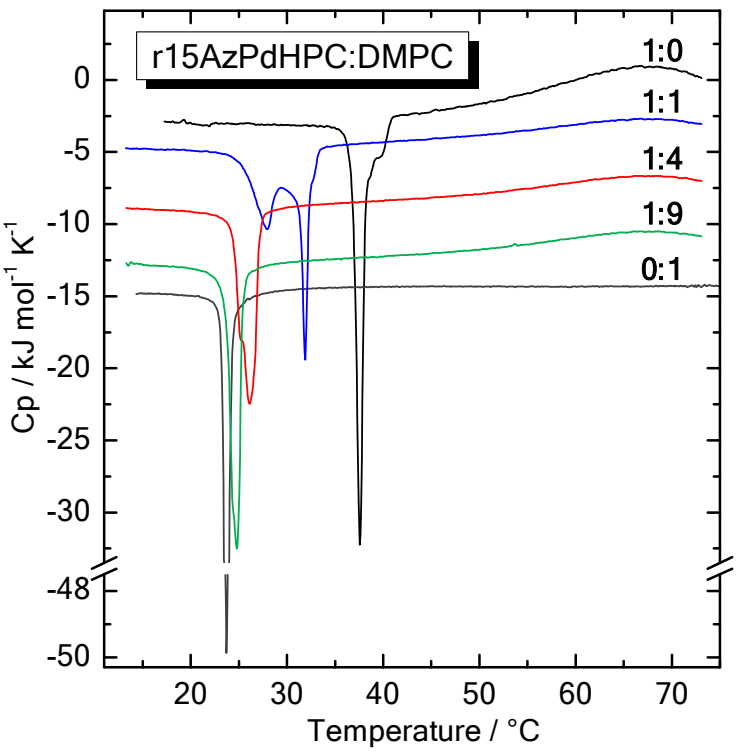

Figure S1. DSC cooling curves of 3 mM suspensions of binary lipid mixtures consisting of ***r*15AzPdHPC** and DMPC in phosphate buffer (10 mM, pH = 7.5) with different molar ratios given in the graph. The DSC curves of pure lipids (top: ***r*15AzPdHPC**, bottom: DMPC; c = 1 mg mL^{-1}) are shown for comparison. The cooling rate was 60 K h^{-1}. The curves are shifted vertically for clarity.

1.2 DLS

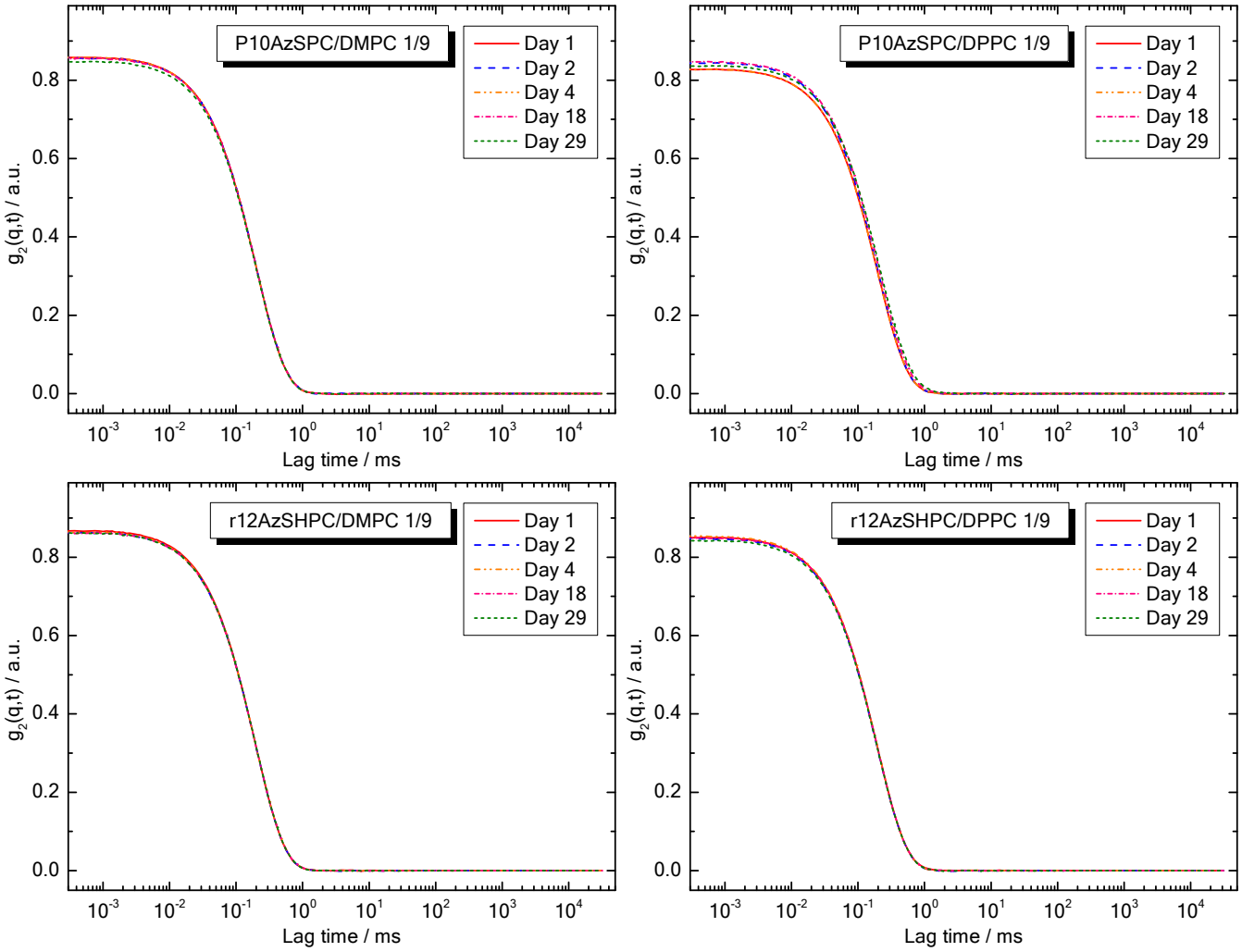

Figure S2. Autocorrelation functions of DLS measurements of aqueous suspensions (c = 3 mM) of various azidolipid/phospholipid mixtures (1:9, n:n; extruded through a polycarbonate membrane of 100 nm pore size) as indicated in the graph after different days of storage at 4 °C.

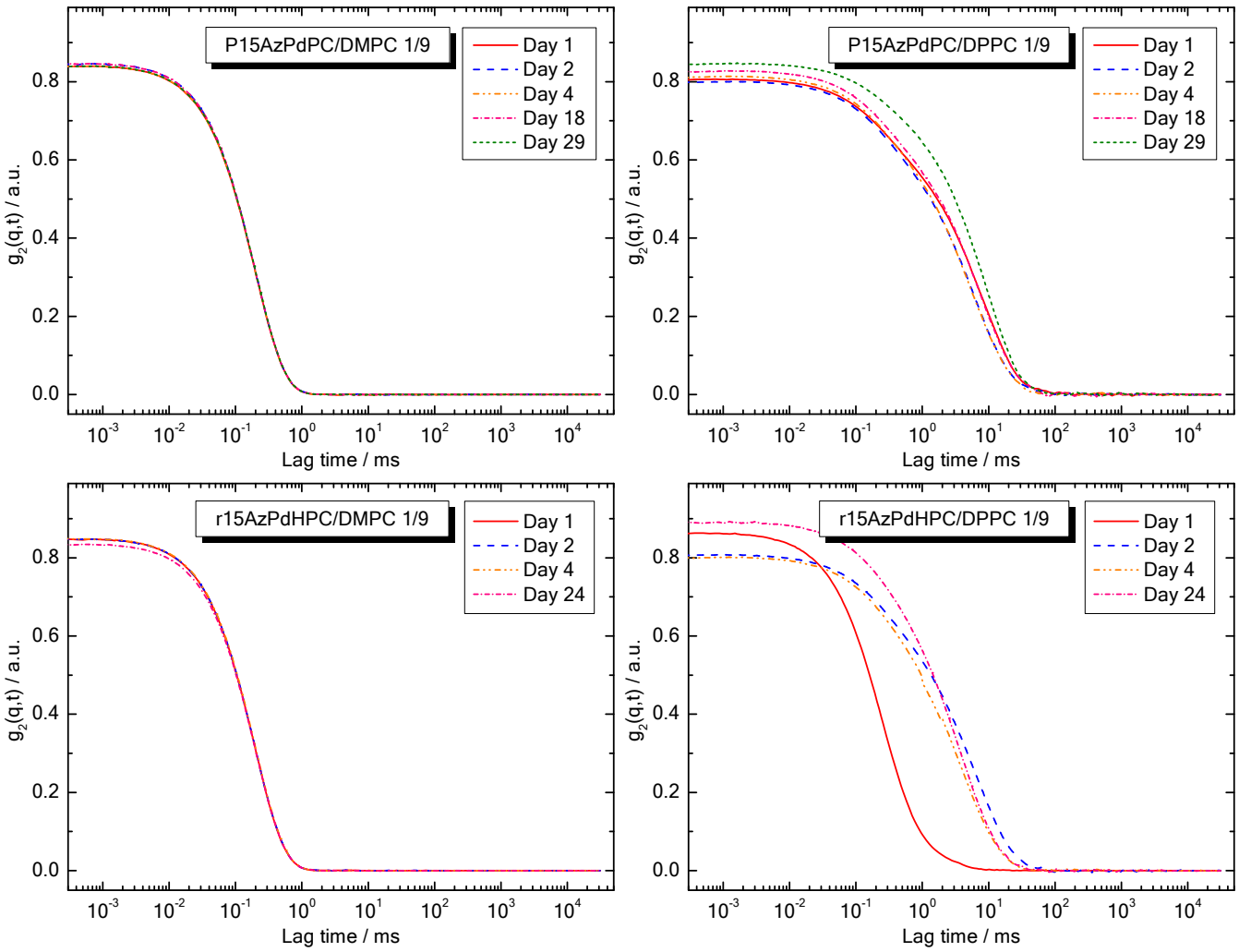

Figure S3. Autocorrelation functions of DLS measurements of aqueous suspensions (c = 3 mM) of various azidolipid/phospholipid mixtures (1:9, n:n; extruded through a polycarbonate membrane of 100 nm pore size) as indicated in the graph after different days of storage at 4 °C.

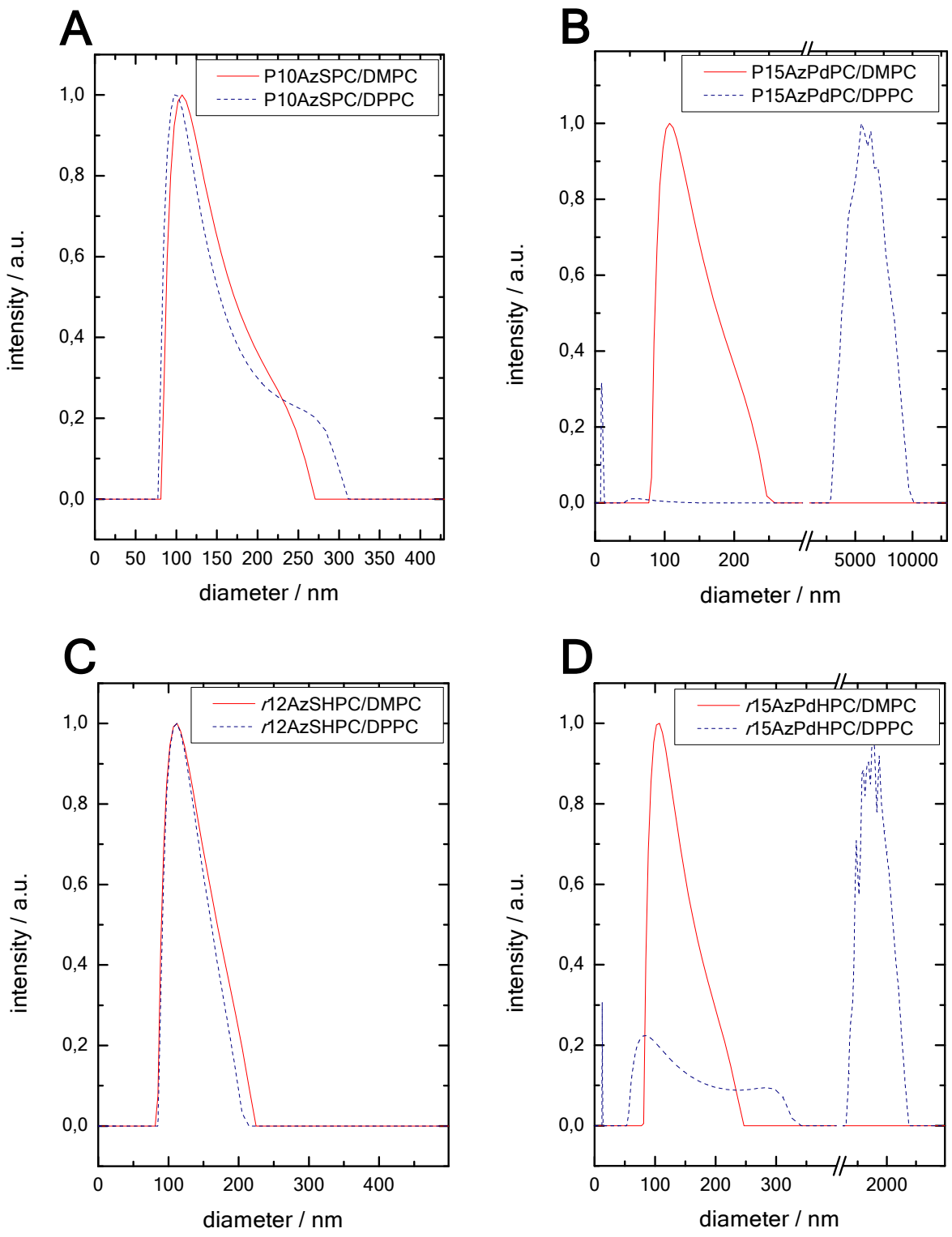

Figure S4. Volume-weighted particle size distribution of aqueous suspensions (c = 3 mM) of various azidolipid/phospholipid mixtures (1:9, n:n; extruded through a polycarbonate membrane of 100 nm pore size) as indicated in the graph after one day of storage at 4 °C.

1.3 FTIR

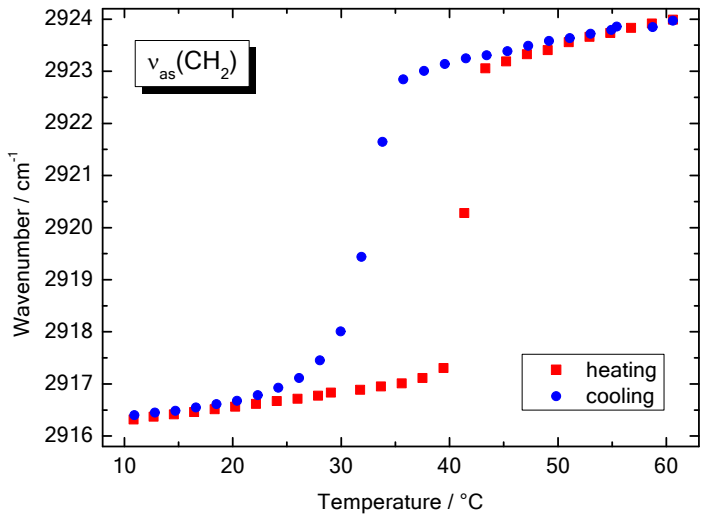

Figure S5. Wavenumber (heating, red; cooling, blue) of the antisymmetric methylene stretching vibrational band as a function of temperature for a suspension of ***r*15AzPdHPC** (c = 100 mg ml^{-1} in water).[1]

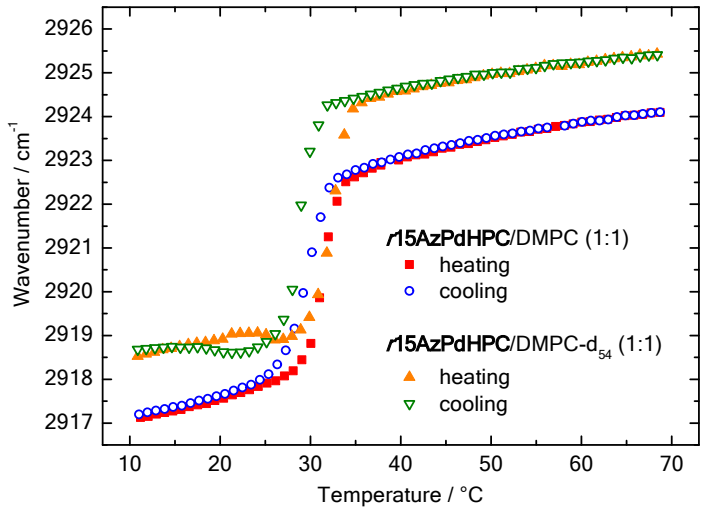

Figure S6. Wavenumber (heating, filled symbols; cooling, open symbols) of the antisymmetric methylene stretching vibrational band ($\nu_{as}(CH_2)$) as a function of temperature for a suspension of an equimolar mixture of ***r*15AzPdHPC** with DMPC (red/blue symbols) and DMPC-d_{54} (orange/green symbols), respectively. Please note, in case of ***r*15AzPdHPC**/DMPC-d_{54} mixture only the CH_2 groups of the azidolipid are monitored at this wavelength.

The overall lower $\nu_{as}(CH_2)$ wavenumbers in the ***r*15AzPdHPC**/DMPC mixture are due to the presence of a pronounced inter-chain vibrational coupling in the fully hydrogenated sample. The isotopic dilution with CD_2 acyl chains in the ***r*15AzPdHPC**/DMPC-d_{54} mixture reduces the ability of vibrational coupling between adjacent CH_2 chains.

2. References

1. Lindner, S.; Gruhle, K.; Schmidt, R.; Garamus, V. M.; Ramsbeck, D.; Hause, G.; Meister, A.; Sinz, A.; Drescher, S. Azide-modified Membrane Lipids: Synthesis, Properties, and Reactivity. *Langmuir* **2017**, *33*, 4960-4973.