Electronic Supplementary Information

Different stabilities of liposomes contaning saturated and unsaturated lipids toward the addition of cyclodextrins

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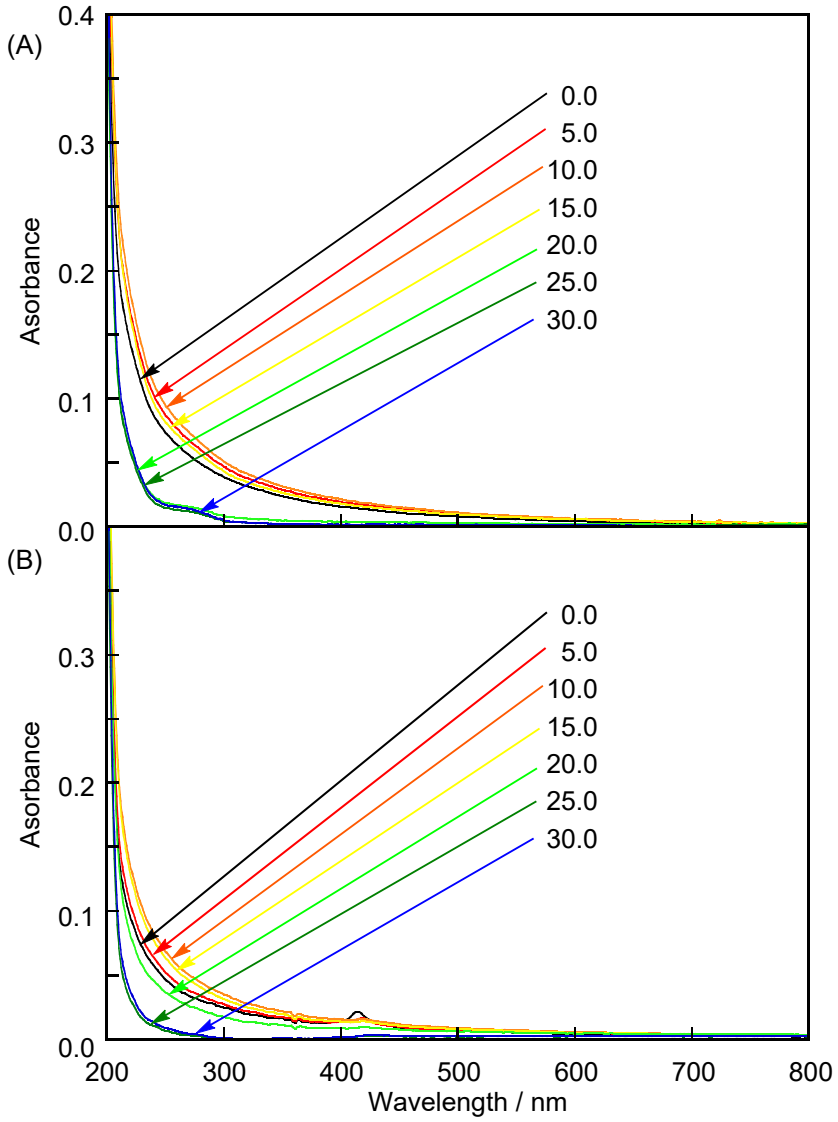

Fig. S1 Changes in the UV-vis absorption spectra of (A) POPC liposome and (B) DOPC liposome in the presence of several different concentrations of DMe-β-CDx (0.0, 5.0, 10.0, 15.0, 20.0, 25.0 and 30.0 equiv.), ([lipid] = 1.0 mM).

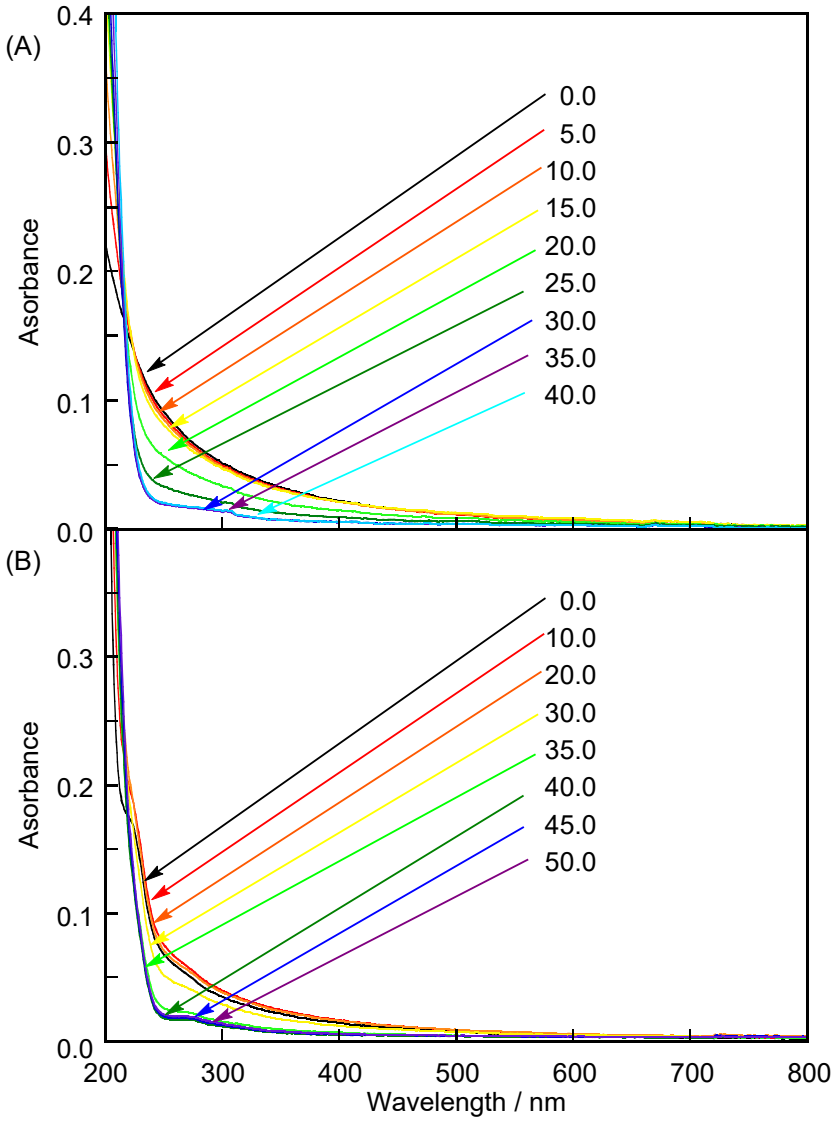

Fig. S2 Changes in the UV-vis absorption spectra of (A) DPPC liposome and (B) DOPC liposome in the presence of several different concentrations of DMe-α-CDx (0.0, 5.0, 10.0, 15.0, 20.0, 25.0 and 30.0 equiv.), ([lipid] = 1.0 mM).

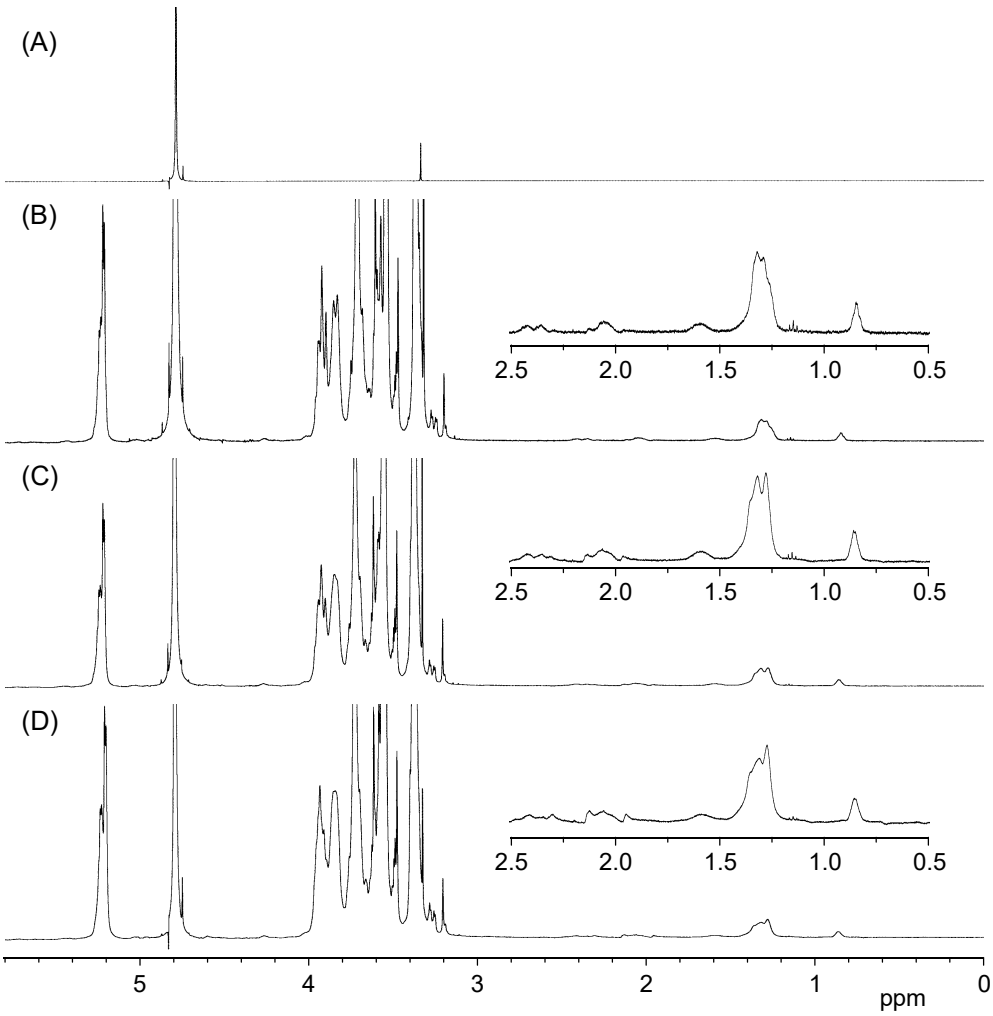

Fig. S3 ^{1}H NMR spectra of the POPC liposomes (A) in the absence and presence of (B) 10.0, (C) 20.0 and (D) 30.0 equiv. of DMe-β-CDx ([DPPC] = 1.0 mM, 400 MHz, D_2O, 25 °C). The inset shows the 0.50–2.50 ppm region of the spectra.

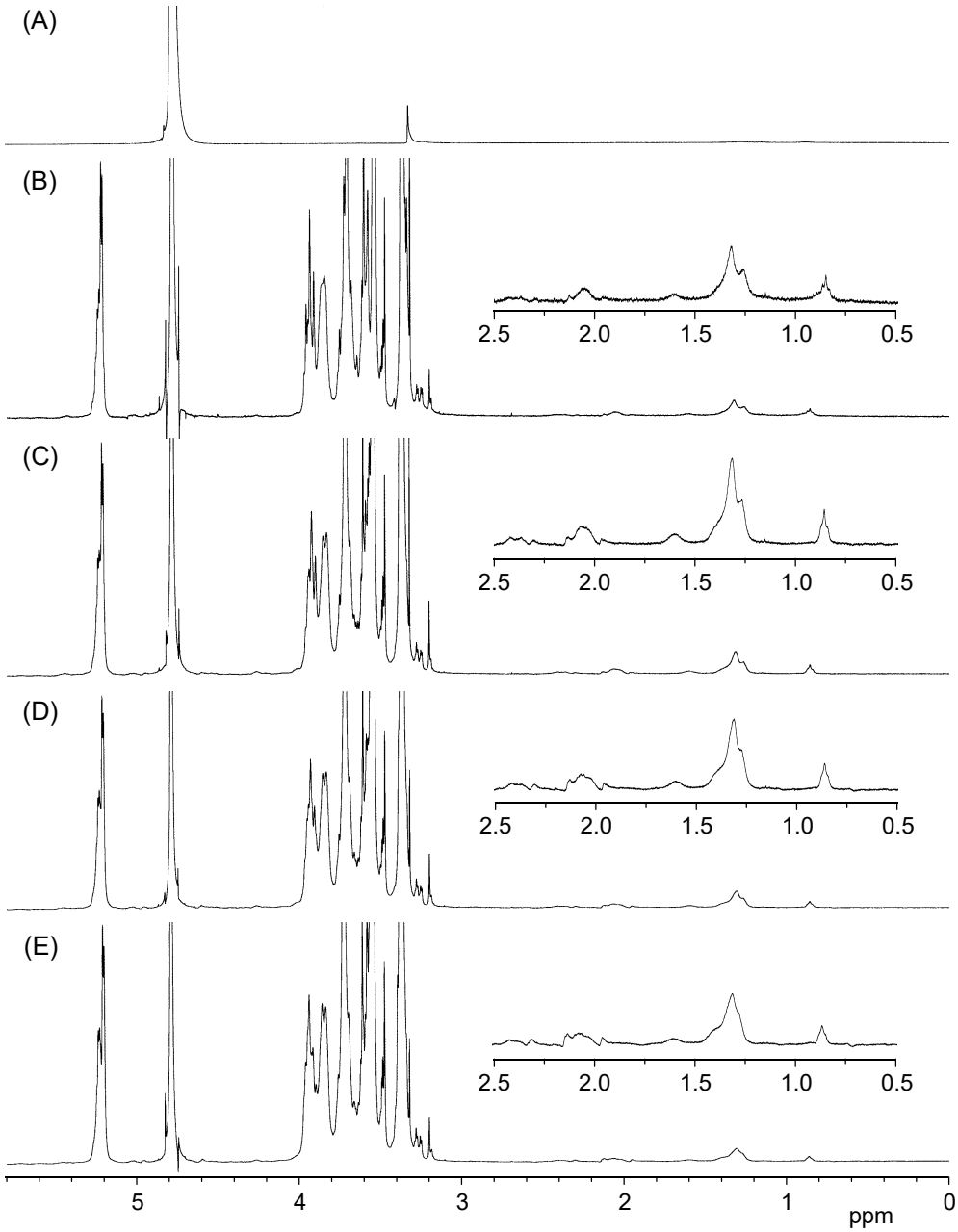

Fig. S4 ^{1}H NMR spectra of the DOPC liposomes (A) in the absence and presence of (B) 10.0, (C) 20.0, (D) 30.0 and (E) 40.0 equiv. of DMe-β-CDx ([DOPC] = 1.0 mM, 400 MHz, D_2O, 25 °C). The inset shows the 0.50–2.50 ppm region of the spectra.

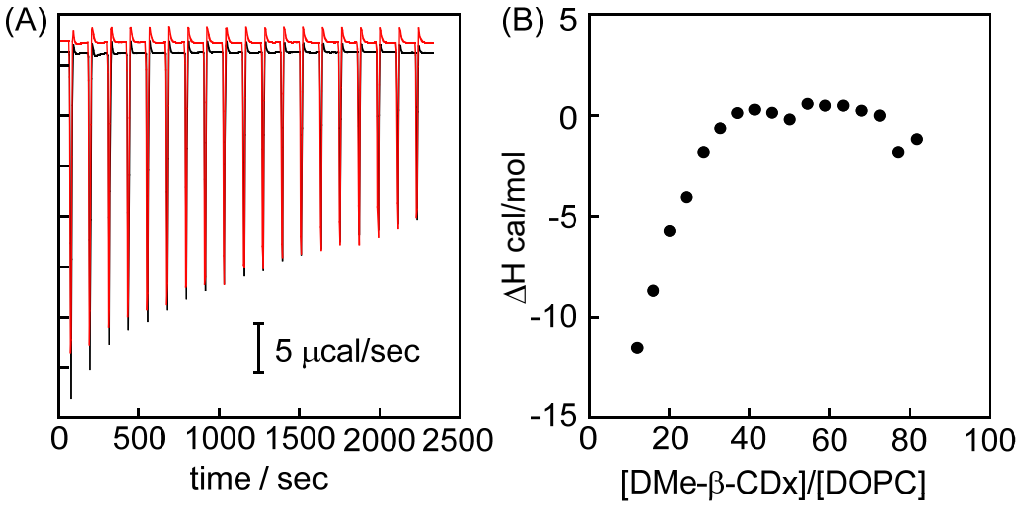

Fig. S5 (A) Microcalorimetric titration of DMe-β-CDx into water (red line) and a solution of DOPC (black line). The graph corresponds to the raw data for 19 sequential injection (2 μL per injection) of DMe-β-CDx solution (100 mM) injecting into water (200 μL) to determine the heat of dilution or a DOPC liposomes solution (200 μL, 0.5 mM). (B) Net heat effects of complexation of DOPC with DMe-β-CDx for each injection, obtained by subtracting the heat of dilution from the heat of reaction. ([DOPC] = 0.5 mM, water, 25 °C).

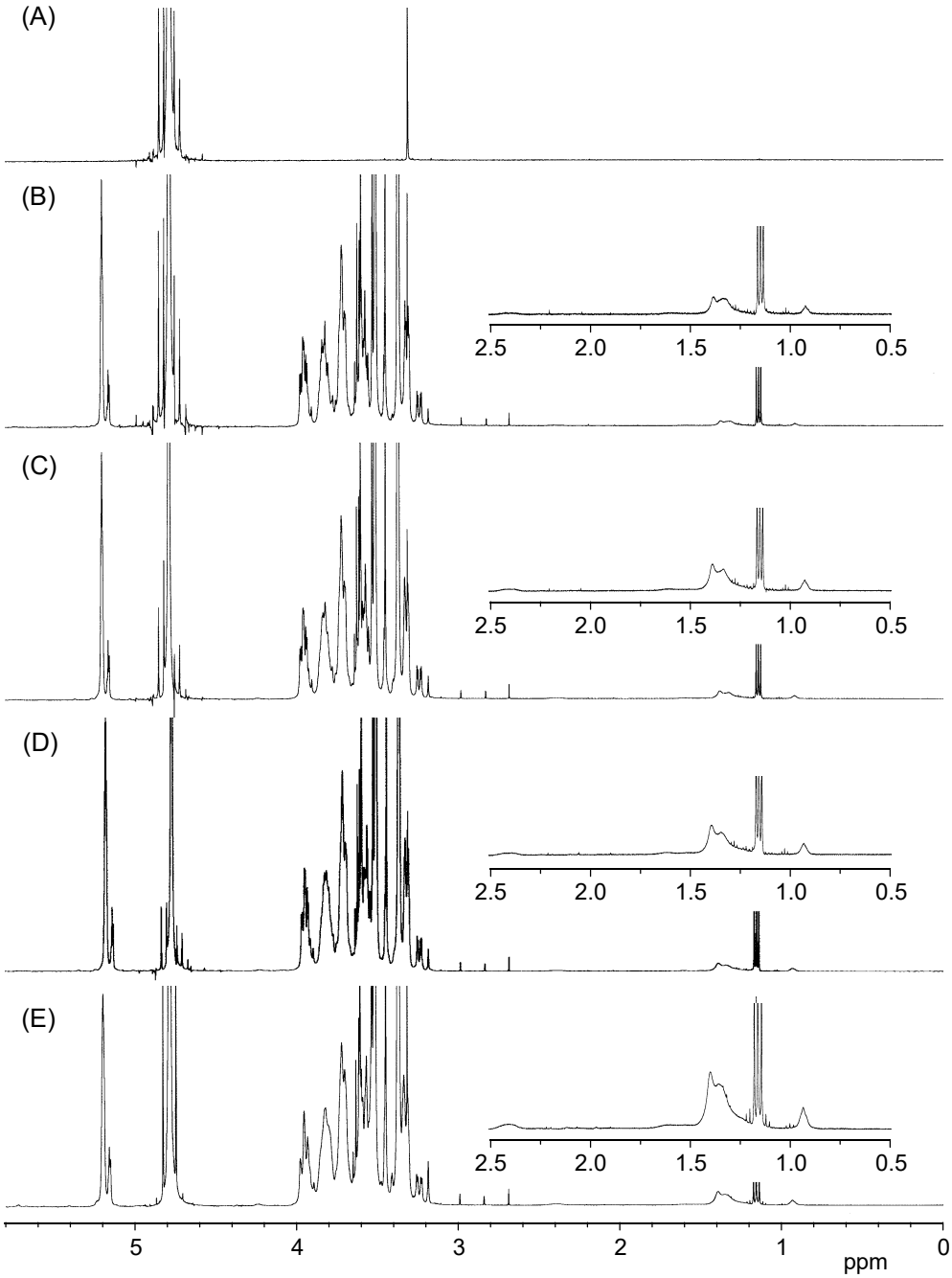

Fig. S6 ^{1}H NMR spectra of the DPPC liposomes (A) in the absence and presence of (B) 10.0, (C) 20.0, (D) 30.0 and (E) 40.0 equiv. of DMe-α-CDx ([DPPC] = 1.0 mM, 400 MHz, D_2O, 25 °C). The inset shows the 0.50–2.50 ppm region of the spectra.

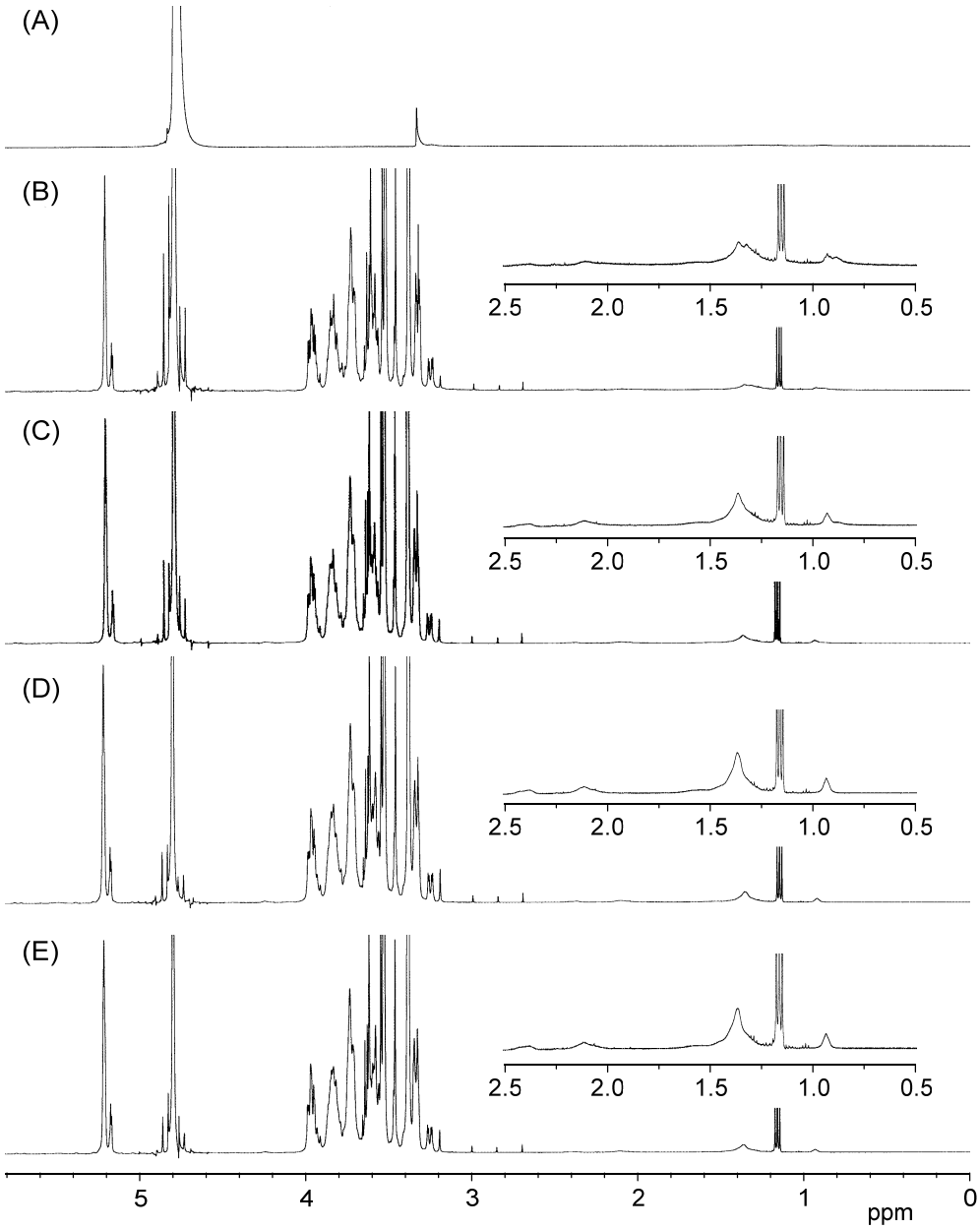

Fig. S7 ^{1}H NMR spectra of the DOPC liposomes (A) in the absence and presence of (B) 10.0, (C) 20.0, (D) 30.0 and (E) 40.0 equiv. of DMe-α-CDx ([DOPC] = 1.0 mM, 400 MHz, D_2O, 25 °C). The inset shows the 0.50–2.50 ppm region of the spectra.

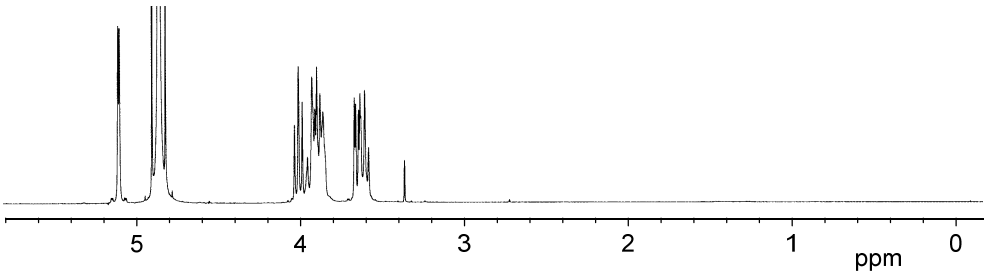

Fig. S8 ^{1}H NMR spectrum of the DPPC•α-CDx mixture immediately after mixing ([DPPC] = 1.0 mM, [α-CDx]/[DPPC] = 10 equiv.). D_2O, 23 °C, 400 MHz.