

Supporting Information

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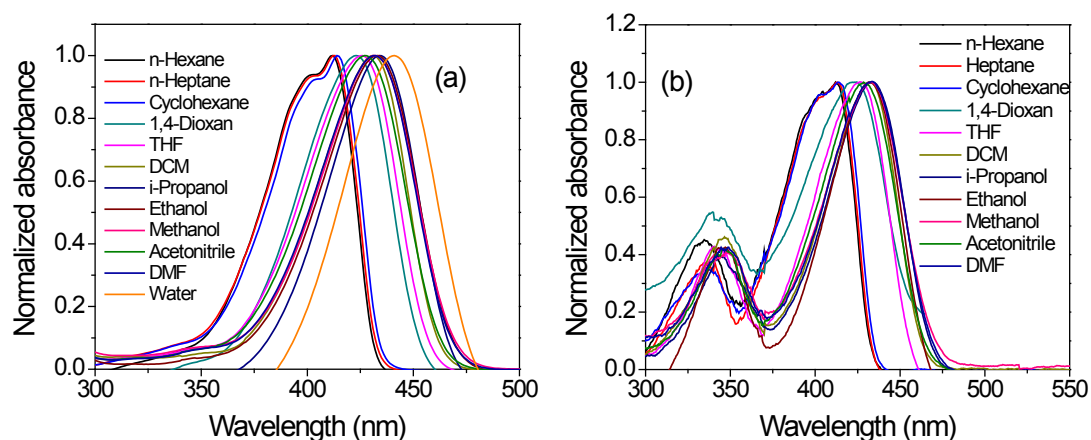


Figure S1: Normalized absorption spectra of (a) **Cum** and (b) **Cum-Chl** (except water) at 2.5 μM in solvents of different polarity.

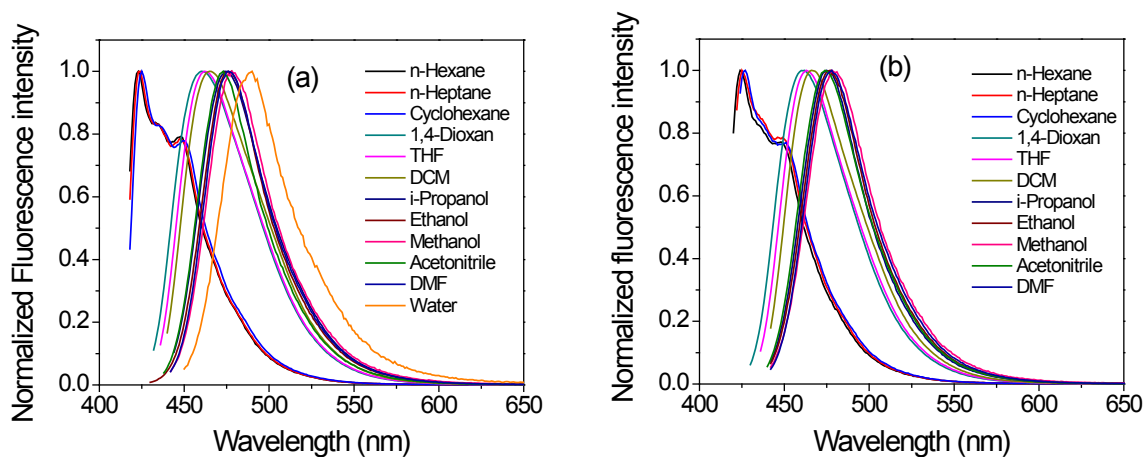


Figure S2: Normalized fluorescence spectra of (a) **Cum** and (b) **Cum-Chl** (longer wavelength excitation) (except water) at 2.5 μM in solvents of different polarity.

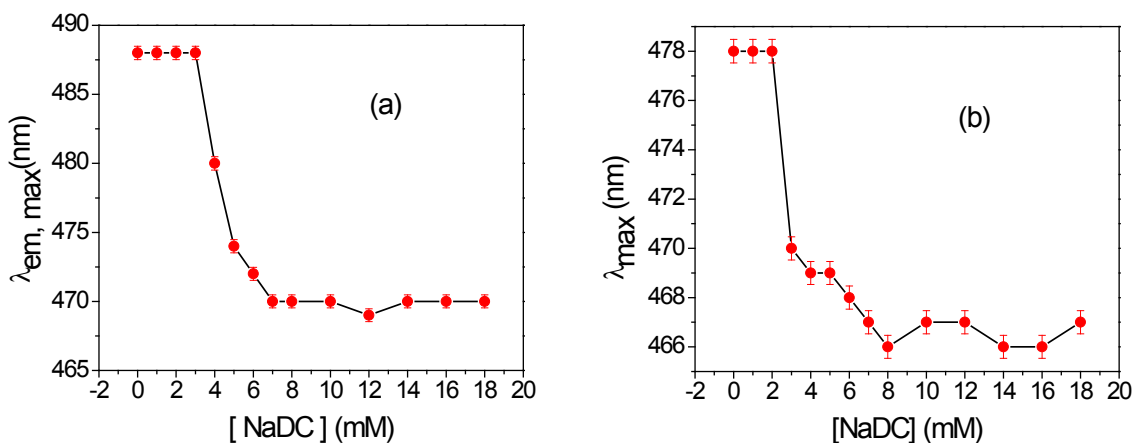


Figure S3: Blue shift of $\lambda_{em, max}$ of (a) Cum and (b) Cum-Chl monomer in NaDC medium at λ_{ex} 440 nm.

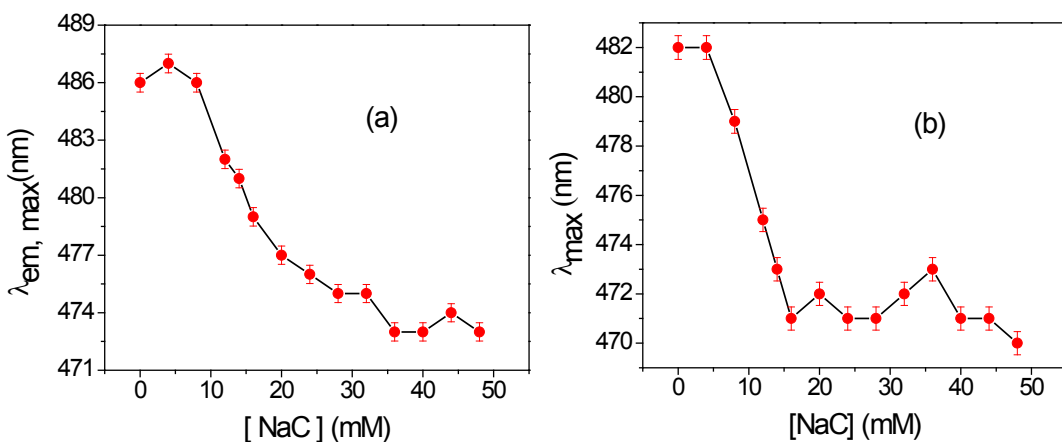


Figure S4: Blue shift of $\lambda_{em, max}$ of (a) Cum and (b) Cum-Chl monomer in NaC medium at λ_{ex} 440 nm.

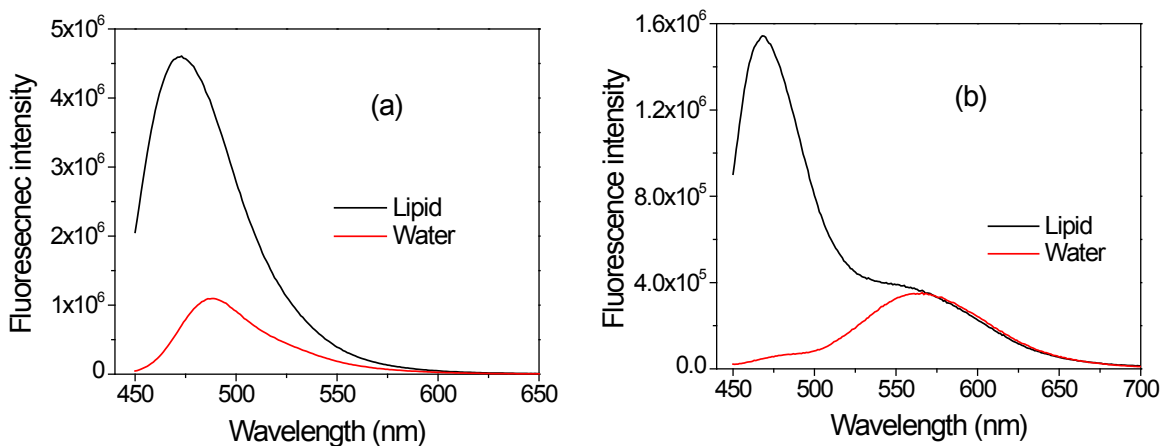


Figure S5: Fluorescence spectra of (a) **Cum** and (b) **Cum-Chl** at λ_{ex} 440 nm in DMPC liposome and water at 21°C.

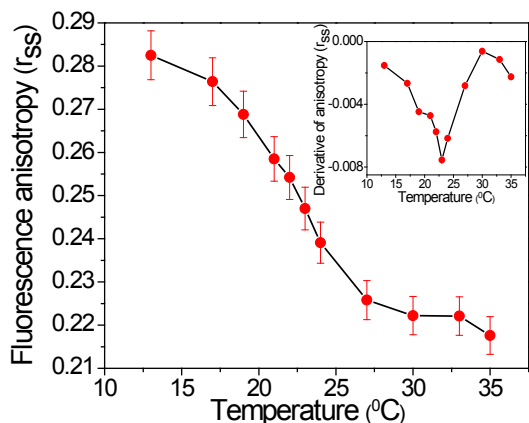


Figure S6: Drop in fluorescence anisotropy (r_{ss}) of **Cum** with temperature (λ_{ex} 440 nm, λ_{em} 480 nm), inset shows its derivative plot.

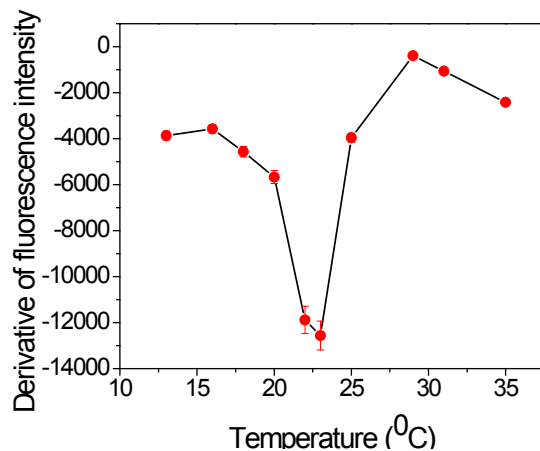


Figure S7: Derivative plot of fluorescence intensity of H-aggregates of **Cum-Chl** (2.5 μM) in DMPC liposome with temperature at λ_{ex} 440 nm.

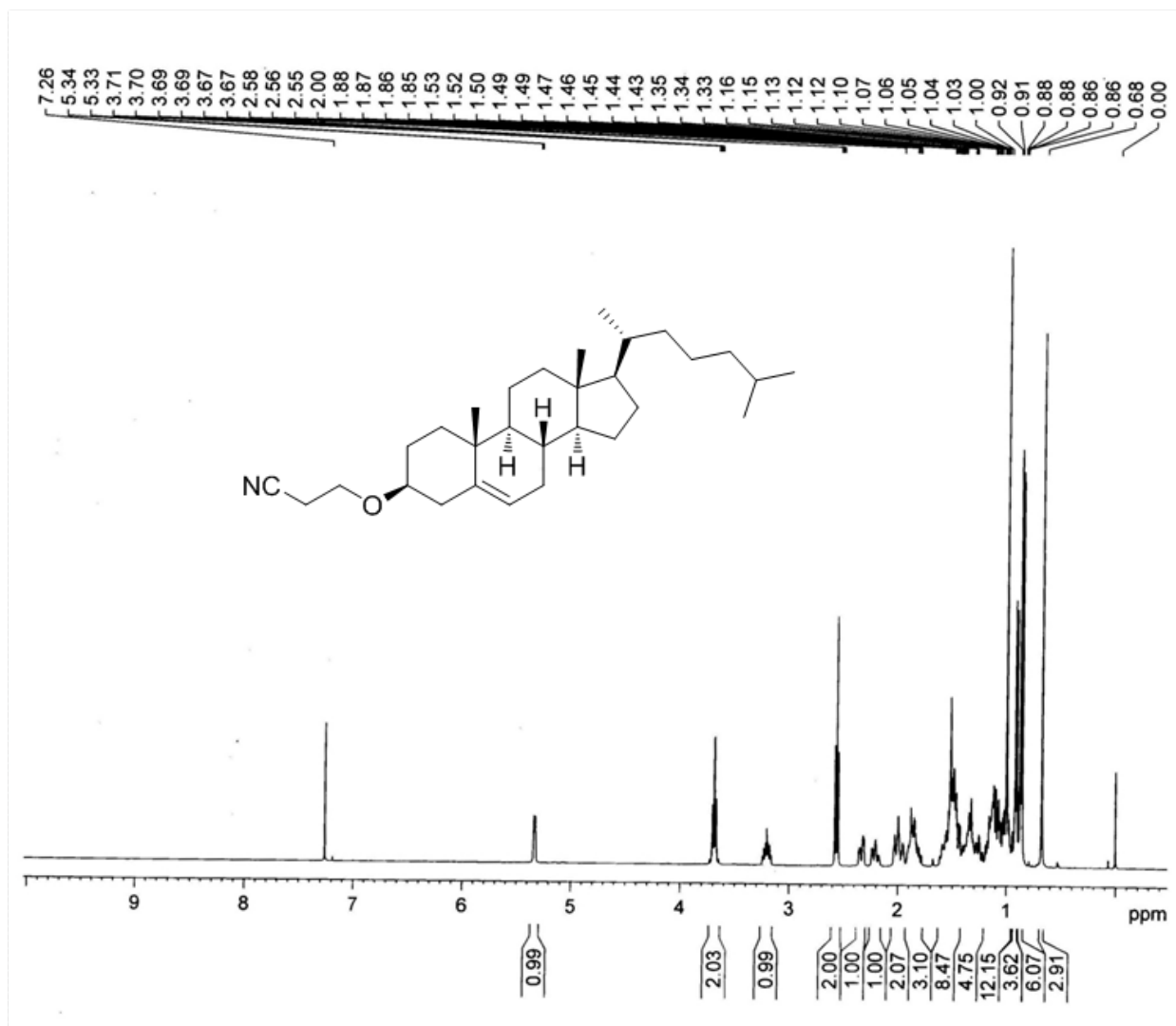


Figure S8; ¹H NMR (400 MHz, CDCl₃) spectrum of 3-Cholesterylpropanenitrile 4

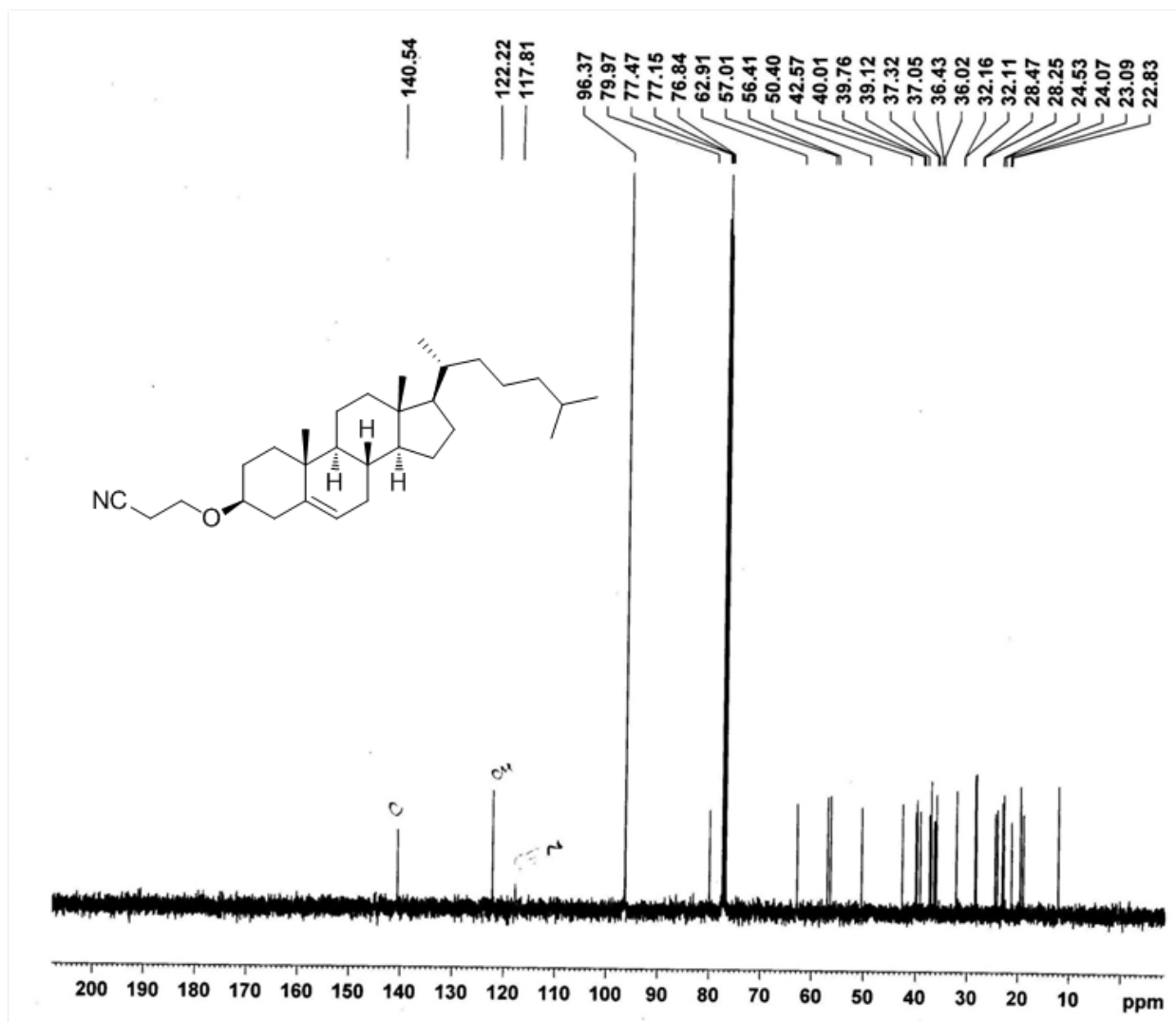


Figure S9; ¹³C NMR (100 MHz, CDCl₃) spectrum of 3-Cholesterylpropanenitrile 4

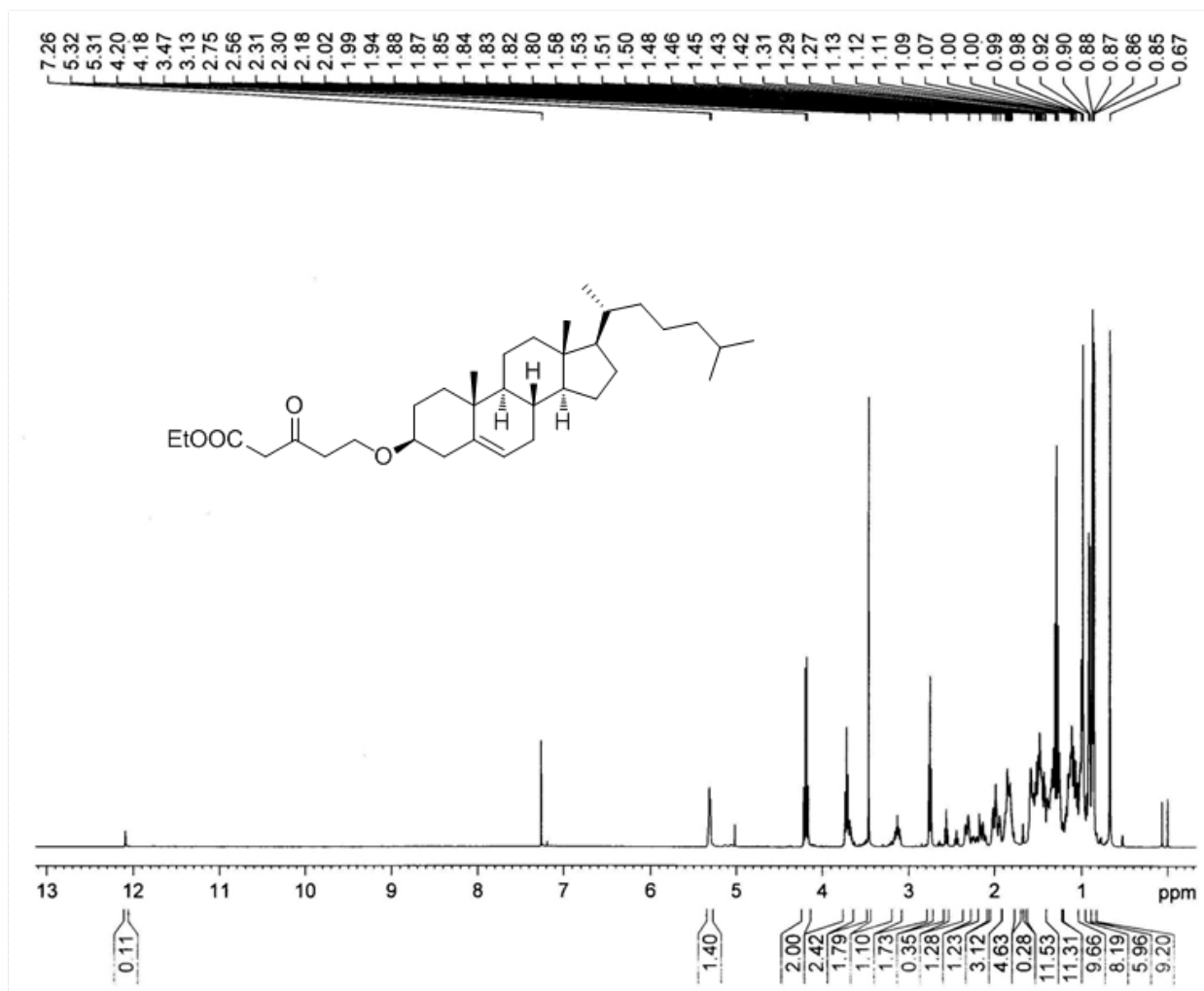


Figure S10; ¹H NMR (400 MHz, CDCl₃) spectrum of Ethyl 5-(3-cholesteryl)-3-oxopentanoate 5

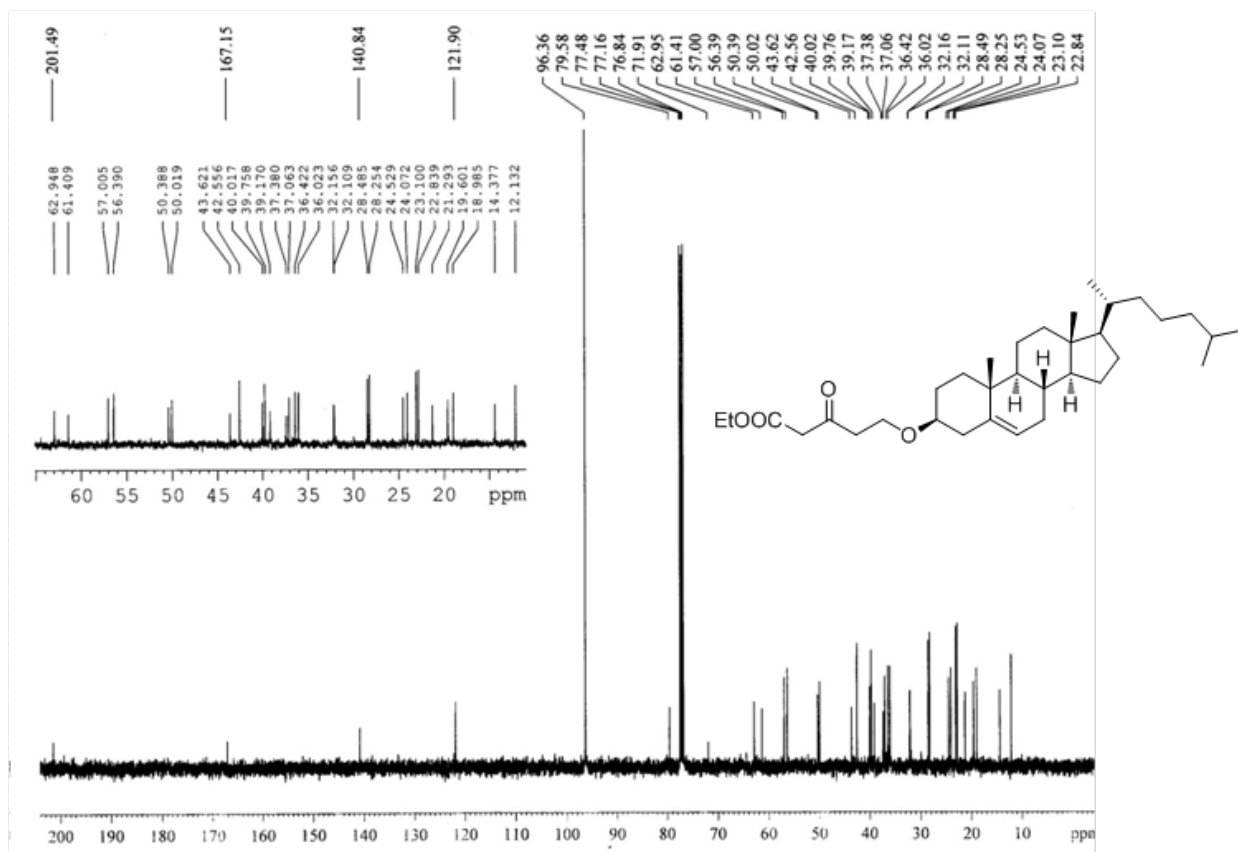


Figure S11; ^{13}C NMR (100 MHz, CDCl_3) spectrum of Ethyl 5-(3-cholesteryl)-3-oxopentanoate 5

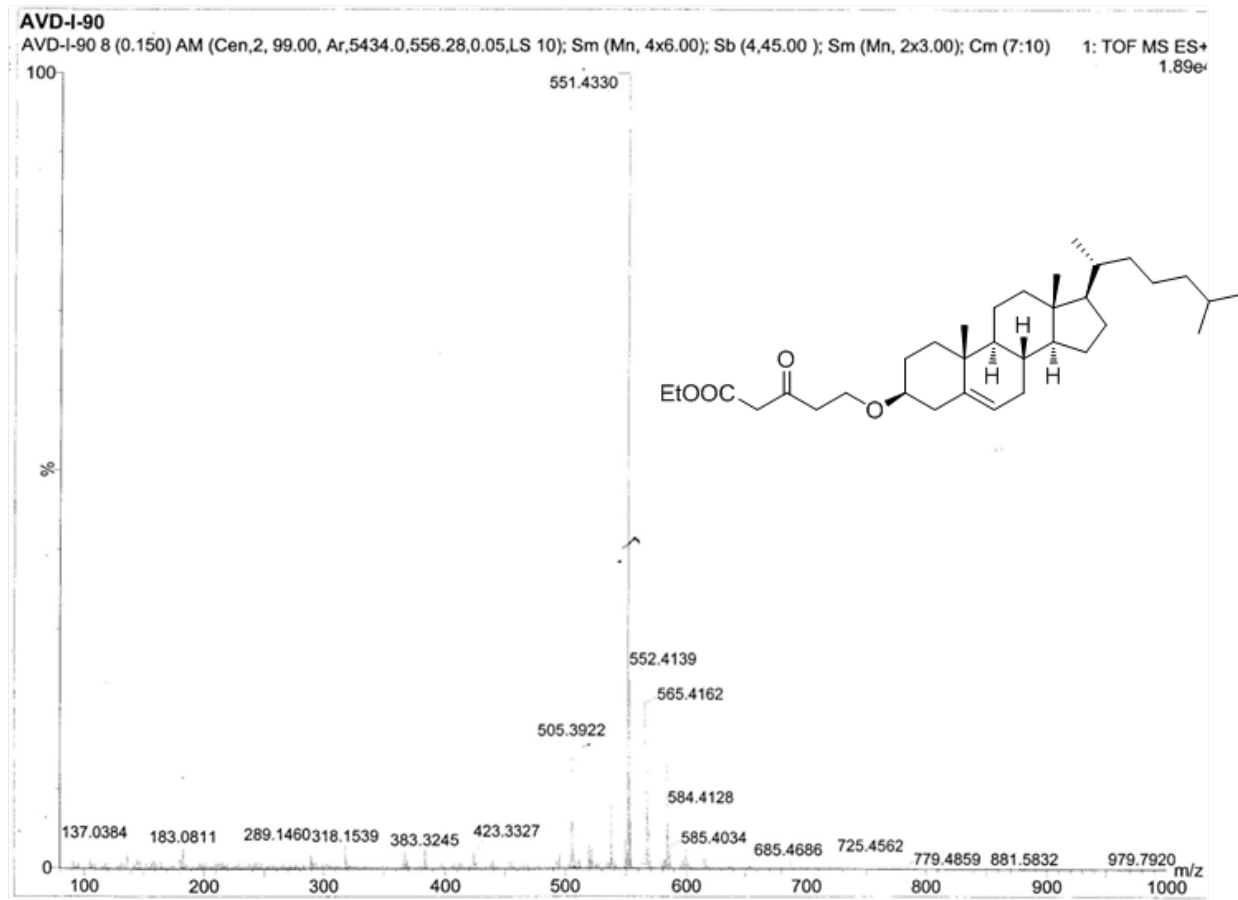


Figure S12; HRMS Spectrum of Ethyl 5-(3-cholesteryl)-3-oxopentanoate 5

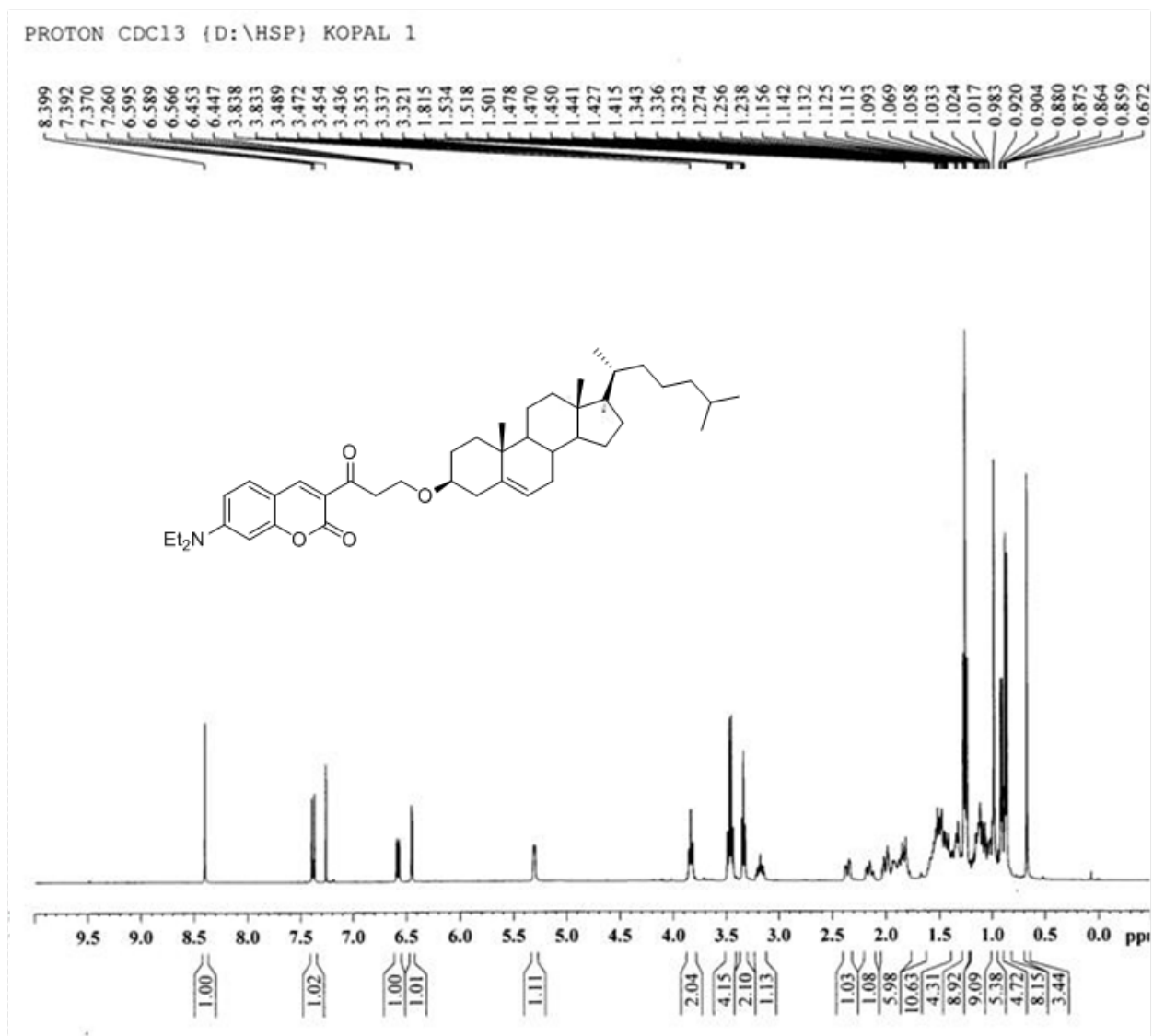


Figure S13; ^1H NMR (400 MHz, CDCl_3) spectrum of 7-(Diethylamino)-3-(3-cholesteryl)propanoyl)-2H-chromen-2-one 2

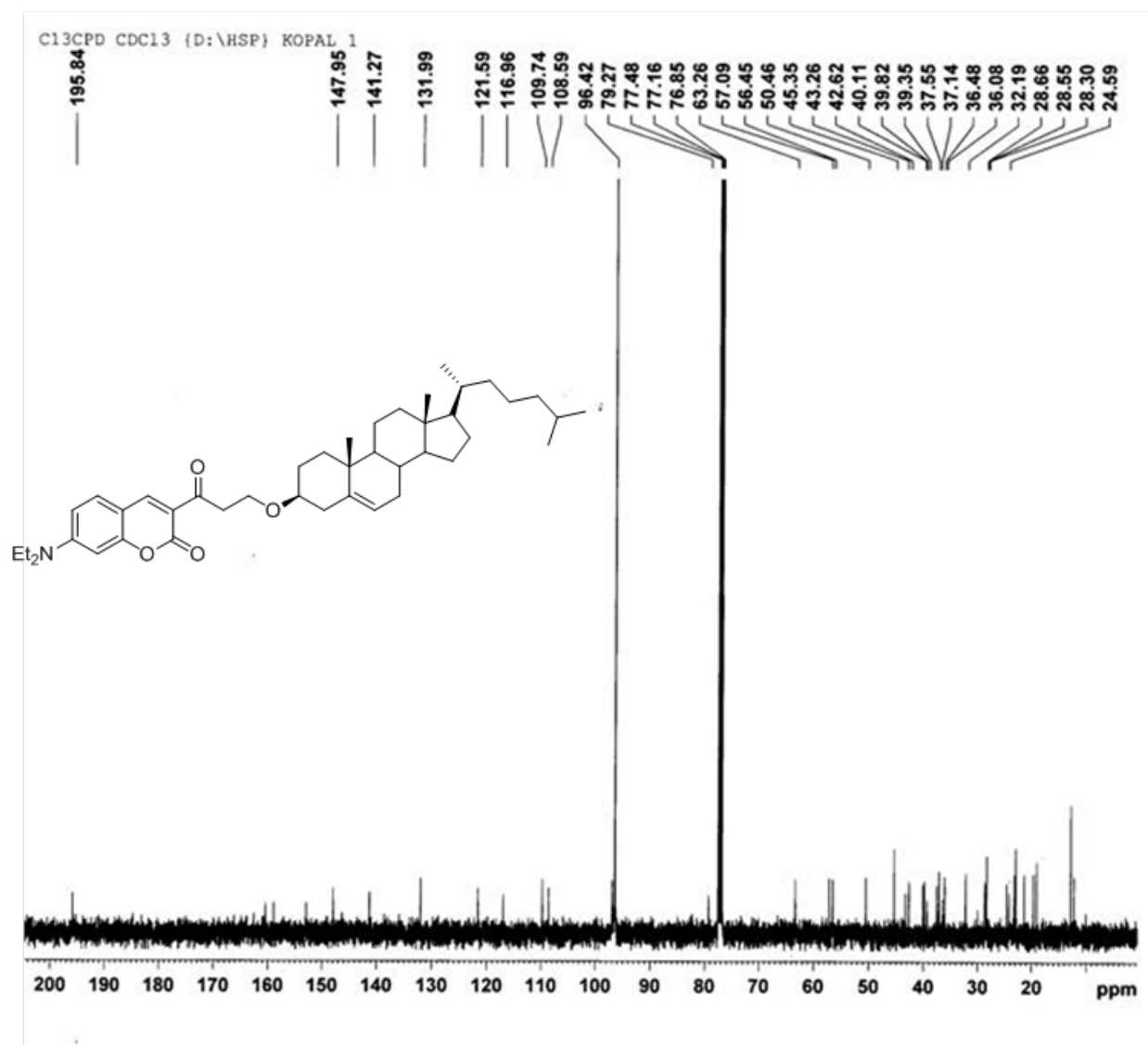


Figure S14; ^{13}C NMR (100 MHz, CDCl_3) spectrum of 7-(Diethylamino)-3-(3-cholesteryl)propanoyl-2H-chromen-2-one 2

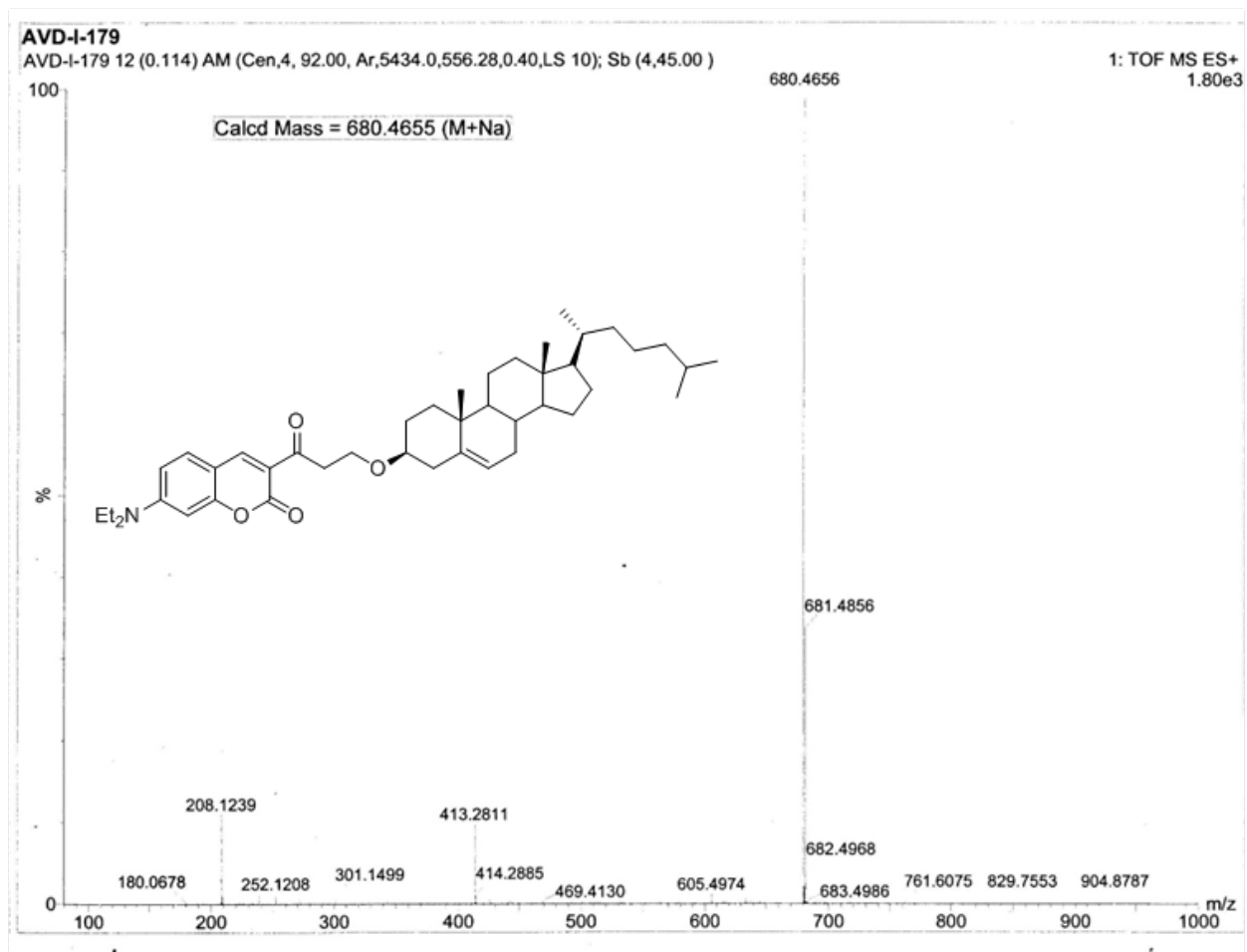


Figure S15; HRMS Spectrum of 7-(Diethylamino)-3-(3-cholesteryl)propanoyl)-2H-chromen-2-one 2