SUPPORTING INFORMATION:

Membrane activity of 3-hydroxyglutarate diesters

Kathleen Genge, Joanne M. Moszynski, Matthew Thompson and Thomas M. Fyles*

Department of Chemistry, University of Victoria
Box 3065, Victoria BC, V8W 3V6, Canada; tmf@uvic.ca

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Experimental

Synthesis: General Procedures: Most chemicals and solvents were used as received from known suppliers, except THF and DMF which were dried and distilled before use. NMR spectra were collected on a 300 MHz Bruker or 500 MHz Varian instrument. UV spectra were run on a Cary 5 UV-VIS spectrometer in a 10 x 10 mm quartz cell. ESI Mass spectra were recorded on a Waters MicroMass Q-TOF instrument running in negative ion mode. HPLC was performed using an HP Series 1100 instrument, with either a Macherey-Nagel "Nucleosil" RP C18 analytical (4 mm x 250 mm) or a Grace Davison "Alltima" RP C18 semi-prep (10 mm x 150 mm) column. Solvents used (ACN, CH_3OH; HPLC-grade, H_2O; Milipore) were filtered through a Milipore sub-micrometre filter before use. HPLC elution was monitored at various UV wavelengths (typically 254, 280 and 220 nm) and fluorometrically (λex = 305, λem = 320 nm). Fluorescence spectra were run on a PTI QM-2 instrument at $T = 20^0$C in 10 x 10 mm quartz cells equipped with a micro stir rod or 1 x 10 mm quartz cells (no stir rod) for the pyrene and CF assays.

3**:** To a stirred solution of HO_2C-***G(12)***-OtBDMS (***2***) [1] (0.44 g, 1.02 mmol) in 8 mL of degassed THF**,** HOBt (0.0621 g, 0.46 mmol) in 2 mL was added. The reaction mixture was left to stir for 20 minutes under N_2 before the addition of DIPEA (0.4 mL, 2.30 mmol) and DIC (1.6 mL, 0.01 mol). After an additional 20 minutes of stirring, ***1*** [2] (0.14 g, 0.5 mmol) in 1 mL THF was added. The reaction was left to stir overnight at 40°C, after which the white precipitate was filtered by suction from the clear colourless filtrate. The filtrate was washed with H_2O, 1% $NaHCO_3$, brine, dried over Na_2SO_4, concentrated by rotary evaporation to a clear, slightly yellow oil that was dried under vacuum overnight. The crude product was chromatographed (EtOAc in hexanes, increase in 5% after every 100 mL collected) to yield ***3***, a clear colourless oil (0.268 g, 72%). NMR (300 MHz, $CDCl_3$) ^{1}H: 0.04 (s, 6H), 0.85-0.81 (br, 12H), 1.27-1.23 (br, 28H), 1.59 (t, 6H, *J* = 9Hz), 1.68 (s, 3H), 1.73 (s, 3H), 2.26 (t, 2H, *J* = 8Hz), 2.52 (d, 4H, *J* = 6Hz), 4.55-3.96 (m, 4H), 4.53 (m, 3H), 5.34-5.28 (m, 1H). ^{13}C: -4.9, -4.6, 14.1, 17.8, 17.9, 22.6, 24.9, 25.6, 25.7, 25.9, 28.5, 29.1, 29.1, 29.2, 29.3, 29.3, 29.5, 29.5, 29.6, 31.9, 34.3, 42.5, 61.1, 64.6, 64.6, 66.3, 118.7, 138.8, 171.0, 173.8.

HO_2C**-Dec-G(12)-**OH**:** ***3*** **(**0.20 g, 0.30 mmol) was dissolved in 15 mL DCM under nitrogen. 0.8 µL TMSOTf was added via syringe. The reaction mixture was stirred for 30 minutes, washed with H_2O (x 2) then brine, dried over Na_2SO_4, filtered and condensed under reduced pressure. The crude product was crystallized out of the resulting yellow oil with hexanes to yield HO_2C-***Dec-G(12)***-OH as a white powder (0.0976 g, 67%). Purification of the crude product was performed with reverse phase HPLC (semi-prep

column, 1:1 MeOH:ACN mobile phase, UV/Vis detection at 220 - 280 nm, RT ~ 5 min). With evaporation, the product fraction yielded translucent crystals. NMR (300 MHz, $CDCl_3$) ^1H: 0.87 (t, 3H, *J* = 8Hz), 1.30-1.26 (br, 28H), 1.65-1.58 (m, 6H), 2.34 (t, 2H, *J* = 8Hz), 2.56-2.54 (br, 4H), 4.10 (t, 4H, *J* = 6Hz), 4.45 (pentet, 1H, *J* = 6Hz). ^{13}C: 11.9, 20.5, 22.5, 23.6, 23.7, 26.3, 26.8, 26.4, 26.9, 27.0, 27.2, 27.3, 27.4, 27.4, 29.7, 31.7, 38.5, 62.6, 62.8, 62.9, 169.7, 169.8, 177.0. MS (-ve ESI TOF MS): Calc'd for $C_{27}H_{49}O_7^-$: 485.3478, Found: 485.342.

***4* :** CuI (400 mg, 2.1mmol), 1-bromobutylbenzene (8.563 g, 40.1mmol), 4-ethynylbenzyl alcohol (3.540g, 26.7mmol) were dissolved in 25 mL DMF, the solution was deoxygenated with N_2 and $Pd(PPh_3)_4$ (243 mg, 0.210 mmol) was added and the mixture was heated and stirred at 80°C under nitrogen overnight. This solution was worked up by diluting with ~500 mL EtOAc, washing with 100 mL of 1% EDTA solution, then with 100 mL of H_2O and then 100 mL of NaCl (aq) (sat'd), dried with sodium sulfate and the solvents were removed on a rotary evaporator and vacuum line to afford a brown solid. This was chromatographed on silica (3:1 Hexanes: Ethyl acetate) to afford an orange fluffy solid. Amount: 2.4g, Yield: 36%. NMR (300 MHz, $CDCl_3$) ^1H: 0.85 (q, 3H, *J* = 7Hz), 1.28 (sextet, 2H, *J* = 7Hz), 1.53 (q, 2H, *J* = 8Hz), 2.55 (t, 2H, *J* = 8Hz), 4.63 (s, 2H), 7.08 (d, 2H, *J* = 8Hz), 7.27 (d, 2H, *J* = 8Hz), 7.36 (d, 2H, *J* = 8Hz), 7.44 (d, 2H, *J* = 8Hz). ^{13}C: 13.9, 22.3, 33.4, 35.6, 65.0, 88.5, 89.7, 120.3, 122.8, 126.8, 128.5, 131.5, 131.7, 140.8, 143.4.

5*:** Compound ***4 (2.264 g, 8.2 mmol) and 3-(*tert*-butyldimethylsilyloxy)glutaric anhydride (2.00g, 8.2 mmol) were dissolved in toluene (80mL). The solution was refluxed overnight to afford an orange solution. Upon inspection by TLC the reaction was not complete and additional 3-(*tert*-butyldimethylsilyloxy)glutaric anhydride (400 mg) was added to the solution and the mixture left at reflux for 16 hours. Upon removal of the solvent the black oily product appeared to be reasonable pure by NMR and was used directly in the next step. Amount: 4.541g, Yield: 98%. NMR (300 MHz, $CDCl_3$) ^1H: 0.01 (m, 6H), 0.77 (m, 9H), 0.85 (q, 6H, *J* = 7Hz), 1.24 (sextet, 2H, *J* = 7Hz), 1.52 (q, 2H, *J* = 7Hz), 2.55, (m, 6H), 4.50, (q, 1H, *J* = 6Hz), 5.04 (m, 2H), 7.08 (d, 2H, *J* = 8Hz), 7.24 (d, 2H, *J* = 8Hz), 7.36 (d, 2H, *J* = 8Hz), 7.43 (d, 2H, *J* = 8Hz). ^{13}C NMR: -4.8, -4.9, 14.1, 17.9, 22.3, 22.7, 25.5, 25.6, 31.6, 33.4, 35.6, 39.2, 42.3, 52.1, 66.0, 88.3, 90.1, 120.2, 123.5, 128.1, 128.5, 131.5, 131.7, 135.5, 143.5, 170.6, 176.7.

6: The crude product **5** (1.482 g, ~2.91 mmol), HOBt (0.7145 g, 4.37 mmol), and DiPEA (1.36 mL, 7.28 mmol) were dissolved in dry THF (75 mL) and allowed to stir for 10 minutes under nitrogen at which

time DIC (0.747mL, 4.37 mmol) was added. The solution was stirred for 10 minutes under nitrogen and then 1-tetradecanol (1.00 g, 4.66 mmol) was added and the mixture was stirred under nitrogen overnight. The solution was worked up by diluting with EtOAc (200 mL), washing with dilute $NaHCO_3$ (20 mL), H_2O (20 mL) and NaCl (aq) (sat'd) (20 ml). The organic solution was dried with sodium sulfate to afford an orange product. The product was chromatographed on silica using 2:1 DCM: Hexanes as eluent to afford ***6*** as a colourless oil. Amount: 1.39g, Yield: 41%. NMR (300 MHz, $CDCl_3$) ^{1}H: 0.06 (m, 6H), 1.32 (m, 26H), 1.57 (m, 5H), 2.56 (d, 2H, *J* = 6Hz), 2.61 (m, 4H), 4.04 (o, 2H, *J* = 3Hz), 4.57 (q, 1H, *J* = 6Hz), 5.11 (m, 2H), 7.16 (d, 2H, J = 8Hz), 7.32 (d, 2H, *J* = 8Hz), 7.44 (d, 2H, *J* = 8Hz), 7.50 (d, 2H, *J* = 8Hz). ^{13}C: -4.8, -4.9, 13.9, 14.1, 17.9, 22.3, 22.7, 25.6, 25.9, 28.6, 29.2, 29.3, 29.6, 29.6, 31.9, 33.4, 35.6, 42.5, 53.4, 64.7, 65.9, 66.3, 88.3, 90.0, 120.2, 123.5, 128.1, 128.5, 131.5, 131.7, 135.6, 143.5, 170.8, 171.0.

Prop-Dip-G(14)-OH: Compound ***6*** (0.300 g, 0.638 mmol) was dissolved in DCM (10 mL) and TMS-triflate (10 µL, 0.0319 mmol) was added. The mixture was stirred for 1 hour and quenched and washed with water (3x20 mL) to form a colourless solution and then with NaCl (aq) (sat'd) (20 mL). The organic extract was dried with sodium sulfate and the solvent was removed by rotary evaporation to produce a solid. This was further purified by trituration via sonicating in hexanes and vacuum filtering to produce a white solid which was further purified by HPLC. Amount: 0.130 g, Yield: 53%. NMR (300 MHz, $CDCl_3$) ^{1}H: 0.81 (t, 3H, *J* = 7Hz), 0.86 (t, 3H, *J* = 7Hz), 1.18 (m, 23H), 1.53 (m, 4H), 2.48 (d, 2H, *J* = 6Hz), 2.55 (m, 4H), 4.03 (t, 2H, *J* = 6Hz), 4.41 (q, 1H, *J* = 6Hz), 5.09 (s, 2H), 7.09 (d, 2H, *J* = 8Hz), 7.25 (d, 2H, *J* = 8Hz), 7.37 (d, 2H, *J* = 8Hz), 7.44 (d, 2H, *J* = 8Hz). ^{13}C: 13.9, 14.1, 22.3, 22.7, 25.9, 28.5, 29.3, 29.5, 29.6, 29.6, 31.9, 33.4, 35.6, 40.6, 40.7, 64.7, 65.1, 66.1, 88.3, 90.2, 120.2, 123.6, 128.1, 128.5, 131.5, 131.7, 135.4, 143.5, 171.4, 171.9. MS (MALDI): (590.4(10%), 613.4(87%), 629.4(65%)) Other notable peaks (637.3(60%), 659.3(84%, 675.3(100%))

7**:** 1.0 equivalent (70mg, 0.53mmol) of 4-ethynylbenzyl alcohol was added to 1.4 equivalents of ***2***, 1.4 equivalents of DIC and 0.5 equivalents of DIPEA in DMF. The reaction was stirred at room temperature for 16 hrs, after which was diluted with EtOAc, washed with H_2O, $NaHCO_3$ (sat), and NaCl (sat), dried over sodium sulfate and concentrated under vacuum. Purification by silica gel chromatography (elution at ~3% EtOAc/hexanes) yielded 196mg (68%) of the target compound as a pale yellow oil. NMR (300MHz, $CDCl_3$): ^{1}H: 0.02 (s, 3H), 0.04 (s, 3H), 0.82 (s, 9H), 0.87 (t, 3H, *J*= 6Hz), 1.25 (s, 18H), 1.65 – 1.55 (m, 2H), 2.53 (d, 2H, *J*= 6Hz), 2.60 (d, 2H, *J*= 6Hz), 3.07 (s, 1H), 4.03 (m, 2H), 4.55 (p, 1H, *J*= 6Hz), 5.09 (m,

2H), 7.29 (d, 2H, *J*= 8Hz), 7.46 (d, 2H, *J*= 8Hz). ^{13}C: -5.0, 14.1, 17.9, 22.7, 25.6, 25.9, 28.5, 29.2, 29.3, 29.5, 29.5, 29.6, 31.9, 42.4, 42.5, 64.7, 65.7, 66.3, 77.6, 83.2, 122.0, 127.9, 132.3, 136.5, 170.7, 170.9.

8: to a solution of 1.0 equivalent (1.29g, 4.92mmol) of 4-iodophenylacetic acid in ACN 2.0 equivalents HOBt, 2.0 equivalents DIC and 3 equivalents of DIPEA were added, and the reaction was allowed to stir at room temperature for 30 mins. After this time, 2.0 equivalents (1.05mL) of prenyl alcohol were added, and the reaction continued to stir at rt for 16 hours. After this time, the reaction mixture was diluted with EtOAc, washed with H_2O, $NaHCO_3$ (sat), and NaCl (sat), dried over sodium sulfate and concentrated under vacuum. Further purification by silica gel chromatography (elution at 10% EtOAc/hexanes) yields 1.44g (84%) of **8** as white crystals. MP = 42-44^{0}C. NMR (300 MHz, $CDCl_3$): ^{1}H: 1.68 (s, 3H), 1.74 (s, 3H), 3.54 (s, 2H), 4.58 (d, 2H, *J*= 7Hz), 5.36 (m, 1H), 7.02 (d, 2H, *J*= 8Hz), 7.63 (d, 2H, *J*= 8Hz). ^{13}C: 18.0, 25.8, 40.8, 61.9, 92.6, 118.3, 131.3, 133.7, 137.6, 139.4, 171.0.

9: 1.0 equivalent (171mg, 0.31mmol) of **7**, 1.3 equivalents (150mg) of **8**, 5mol% (18mg) $Pd(PPh_3)_4$, 10mol% (58.9mg) CuI and 2.0 equivalents NEt_3 were added to dry, deoxygenated THF. The reaction was stirred at room temperature for 16 hours, after which it was diluted with EtOAc, extracted twice against saturated EDTA, washed once with H_2O and once with NaCl (sat), dried over sodium sulfate and concentrated under vacuum. Silica gel chromatography (elution at ~15% EtOAc/hexanes) yielded 142mg (61%) of the target compound as a brown oil. NMR (300 MHz, $CDCl_3$): ^{1}H: 0.04 (s, 3H), 0.05 (s, 3H), 0.82 (s, 9H), 0.86 (t, 3H, *J*= 6Hz), 1.24 (s, 18H), 1.62 – 1.57 (m, 2H), 1.68 (s, 3H), 1.74 (s, 3H), 2.54 (d, 2H, *J*= 6Hz), 2.61 (d, 2H, *J*= 6Hz), 3.61 (s, 2H), 4.03 (m, 2H), 4.59 – 4.52 (m, 3H), 5.10 (m, 2H), 5.32 (m, 1H), 7.27 (d, 2H, *J*= 8Hz), 7.31 (d, 2H, *J*= 8Hz), 7.48 (m, 4H). ^{13}C: -4.9, 14.1, 17.9, 18.0, 22.7, 25.6, 25.8, 25.9, 28.5, 29.2, 29.3, 29.4, 29.5, 29.6, 31.9, 41.3, 42.4, 42.5, 61.9, 64.7, 65.8, 66.3, 89.0, 89.6, 118.3, 121.9, 123.2, 128.1, 129.3, 131.7, 131.7, 134.4, 135.8, 139.4, 170.8, 171.0, 171.2.

HO_2C-**Dip-G(12)-**OH**:** 1.0 equivalent (125mg, 0.17mmol) of **9** and 15% (~10uL) TMSOTf were dissolved in 5mL DCM. The reaction mixture was stirred for 10mins at room temperature, then diluted with DCM, washed with H_2O, NaCl (sat), dried over sodium sulphate and rotary evaporated. The obtained beige solid was then sonicated with hexanes and filtered, yielding 70mg (73%) of **HO_2C-Dip-G(12)-OH** as a white solid. This was then purified by HPLC (semi-prep column, 75% ACN:CH_3OH, retention time ~4mins) to yield white crystals. UV (CH_3OH); λ_{max}Abs=287nm. Fluorescence (CH_3OH); λ_{max}Ex= 302nm, λ_{max}Em= 320nm. NMR: ^{1}H (300 MHz, $CDCl_3$): 0.87 (t, 3H, *J*= 7Hz) 1.25 (s, 18H), 1.64 (m, 2H), 2.54 (d, 2H, *J*= 7Hz), 2.61 (d, 2H, *J*= 7Hz), 3.67 (s, 2H), 4.09 (t, 2H, *J*= 7Hz), 4.48 (p, 1H, *J*= 6Hz), 5.15 (s, 2H), 7.27 (d,

2H, *J*= 8Hz), 7.32 (d, 2H, *J*= 8Hz), 7.50 (m, 4H). ^{13}C (125 MHz, 1:1 $CDCl_3$:MeOD): 15.7, 24.6, 27.8, 30.5, 31.2, 31.3, 31.4, 31.5, 31.5, 31.6, 33.8, 43.4, 66.8, 66.9, 67.9, 90.8, 91.5, 123.8, 125.3, 130.0, 131.4, 133.6, 133.6, 137.1, 137.9, 173.5, 173.9. MS (-ve ESI TOF MS): Calc'd for $C_{34}H_{43}O_7$ = 563.3009 amu, obtained = 563.3237amu.

Vesicle Preparation and Fluorimetry-based Assays

General: All assays were based on procedures previously published [1, 3, 4, 5]. The compound HO_2C-**Oct-Dod-Oct-G(10)**-OH [3], was used as a reference sample for all assays as a stock MeOH solution.

Carboxyfluorescein assay: Vesicle preparation: Modified from published procedures [6]: 0.45g 5(6)-Carboxyfluorescein, (CF) was added to ~5 mL deionized water, solvated by titration of 1M potassium hydroxide to pH 7.5 (to form K^+CF^-), evaporated *in vacuo* and further dried under vacuum for 48 hours. The CF salt was diluted with CF buffer (10 mM Tris·HCl, 0.04 M KCl in deionized H_2O), to KCF solution of 0.1 M (10 mL) (pH 7.5 with 1M HCl). To a 50 mL round bottom flask, 4 mL of lipid stock (8:1:1 PC:PA:Cholesterol in $CHCl_3$) was dried as noted previously. The lipid was re-suspended in diethyl ether (6 mL) and 2mL of the KCF solution was then added. Sonication was used to disperse the two phases to a cloudy orange dispersion (power = 2.5, probe tip at the interface of the two phases). This dispersion was evaporated slowly under vacuum until bubbling from ether removal stopped. Then, 1 mL external buffer (10 mM Tris·HCl, 0.14 M KCl in deionized H_2O, pH 7.5 with HCl) was added. Slow rotary evaporation of the suspension continued to remove any excess ether for 30 min. The liposomes were sized with the membrane extrusion apparatus 19 times (500µL vesicle solution x 3) and then size-exclusion filtered as noted. The cloudy fraction, after the first four cloudy drops, was collected, for a total volume of vesicle suspension of ~1.5mL. The diameter of the resulting vesicles was ~200nm (measured by dynamic light scattering). The vesicle solution was stored at 5^0C and used within 12 hours.

Typical experiment: 160µL external buffer (10 mM Tris·HCl, 0.14 M KCl, pH 7.5) and 30 µL test solution (compound in THF or MeOH or 5% Triton X-100) was added to a 1.5mL Eppendorf tube and vortexed briefly. To each tube, 20µL CF vesicle suspension was added, vortexed for 10 seconds, and allowed to incubate at room temperature for 30 min. Each sample was then diluted to 5% in external buffer (1.5mL total volume, 0.6mL solution used for each trial). Samples were excited at 475nm (slits= 2 nm, integration = 1s) and the fluorescence emission scan was measured from 500-550nm in a 1 x 10mm quartz cell at T=20^0C. The average emission intensity at λ_{max} (~515 nm) was determined for each sample

concentration. The percentage of CF released was calculated as $I(\%)=[(I_{sample}-I_{MeOH\ blank})/(I_{triton}-I_{blank})$ and plotted against test compound concentration.

Supporting Information: Fluorescence data

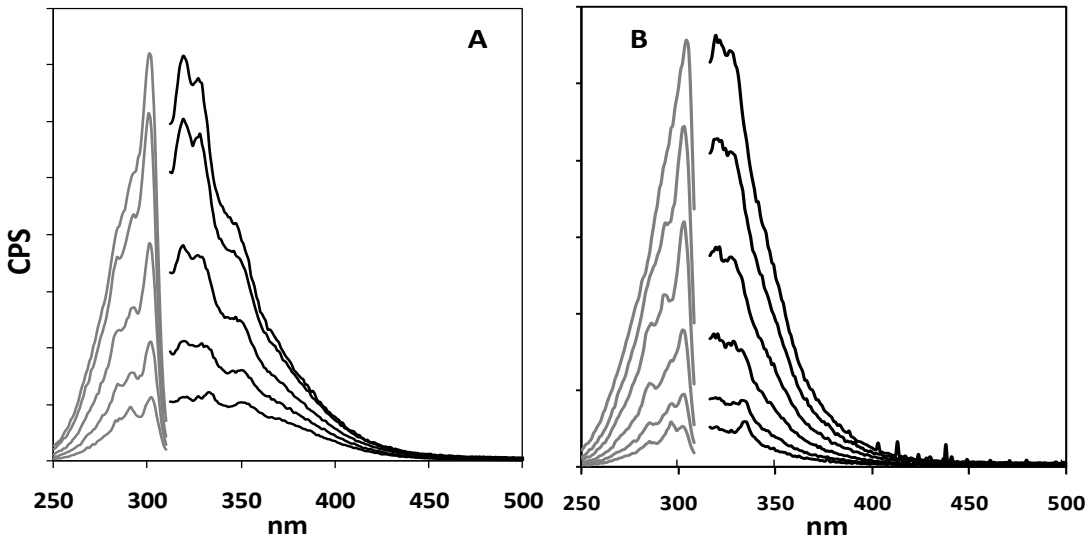

Figure S1: Fluorescence excitation (grey lines) and emission (black lines) of **A**: HO_2C-**Dip-G(12)**-OH in MeOH. From top to bottom, [HO_2C-**Dip-G(12)**-OH] = 18, 13, 6.6, 3.3, 1.7µM. **B**: **Prop-Dip-G(14)-**OH, from top to bottom, [**Prop-Dip-G(14)**-OH] = 40, 20, 10, 5, 2.5, 1.25µM.

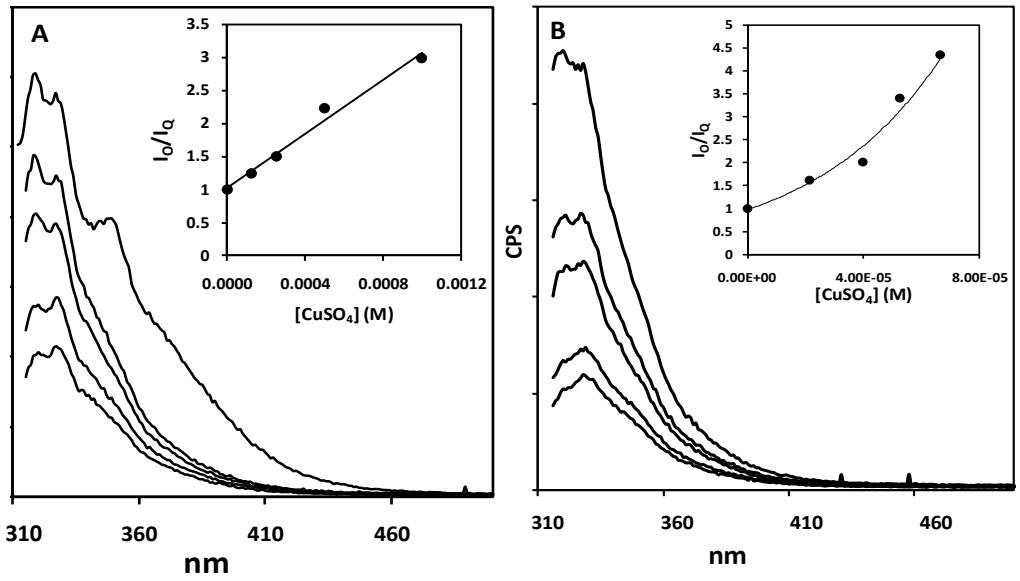

Figure S2: Fluorescence quenching of **A**: 14µM HO_2C-**Dip-G(12)**-OH in MeOH. From top to bottom, [$CuSO_4$]= 0, 0.125, 0.25, 0.5 1 mM. K_{SV}= 2.03±0.15 x 10^3 (Ex= 302nm). **B**: 32µM **Prop-Dip-G(14)**-OH in MeOH; from top to bottom [$CuSO_4$]= 0, 0.02,0.04, 0.05, 0.07mM. Ex= 304nm. INSET: Stern-Volmer analysis of the data, the line in **B** is to guide the eye.

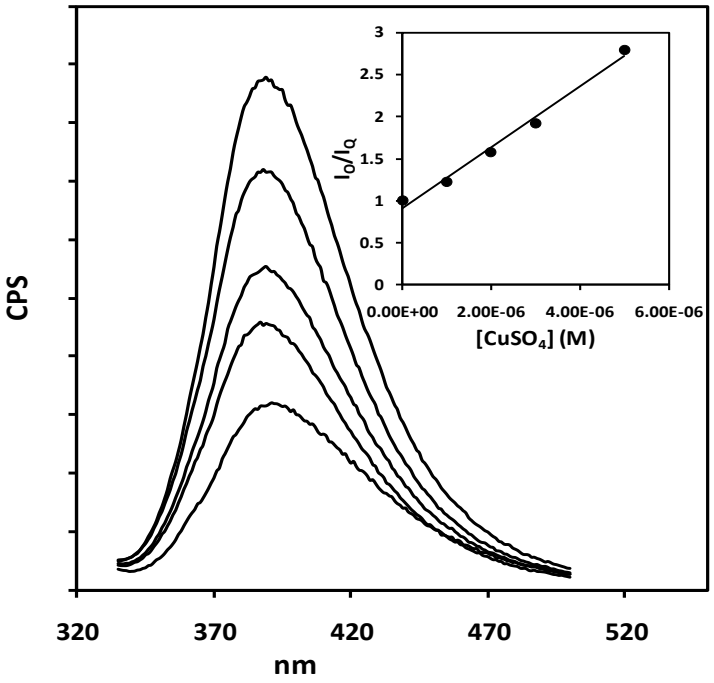

Figure S3: Fluorescence quenching of 14μM HO_2C-**Dip-G(12)**-OH by $CuSO_4$ in aqueous buffer (100mM NaCl). From top to bottom, [$CuSO_4$]= 0, 1, 2, 3, 5μM. K_{SV} = 3.63±0.23 x $10^{5.}$ INSET: Stern-Volmer analysis of the data. Ex= 302nm. **Prop-Dip-G(14)**-OH does not quench in aqueous solution.

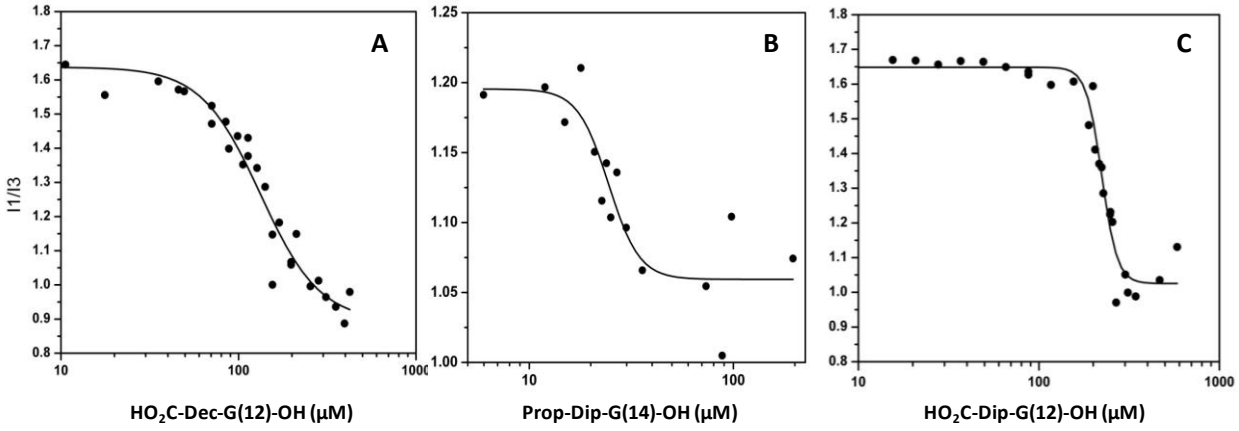

Figure S4: Pyrene aggregation assay for **A**: HO_2C-**Dec-G(12)**-OH; cmc= 133.06 ±9.24μM, **B**: **Prop-Dip-G(14)**-OH; cmc= 24.46 ±2.28μM, **C**: HO_2C-**Dip-G(12)**-OH; cmc= 223.06 ±4.30μM. Solution is in 10mM Na_3PO_4, 100mM NaCl, pH= 6.4, [pyrene] = 2μM.

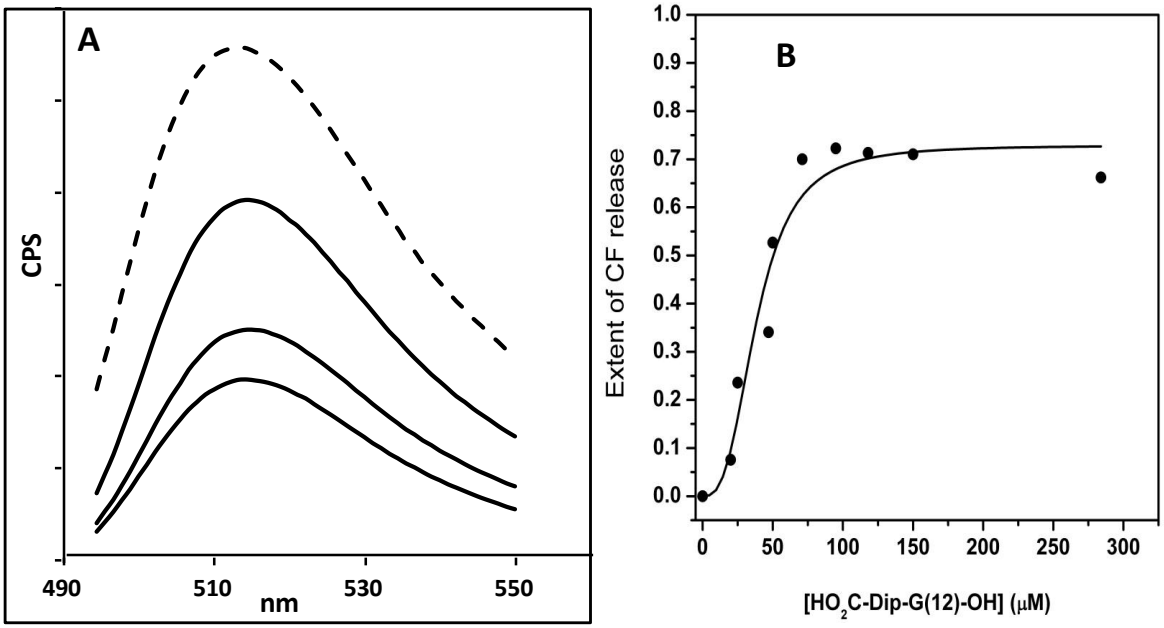

Figure S5: Results of CF assay for HO_2C-**Dip-G(12)**-OH. **A**: raw data; from top to bottom, solid lines = 71, 47, 25 and 0μM HO_2C-**Dip-G(12)**-OH, dashed line= Triton X100,. **B**: extent of CF release calculated by: $(\mathbf{I}_{sample}\text{-}\mathbf{I}_{blank}/(\mathbf{I}_{triton}\text{-}\mathbf{I}_{blank})$

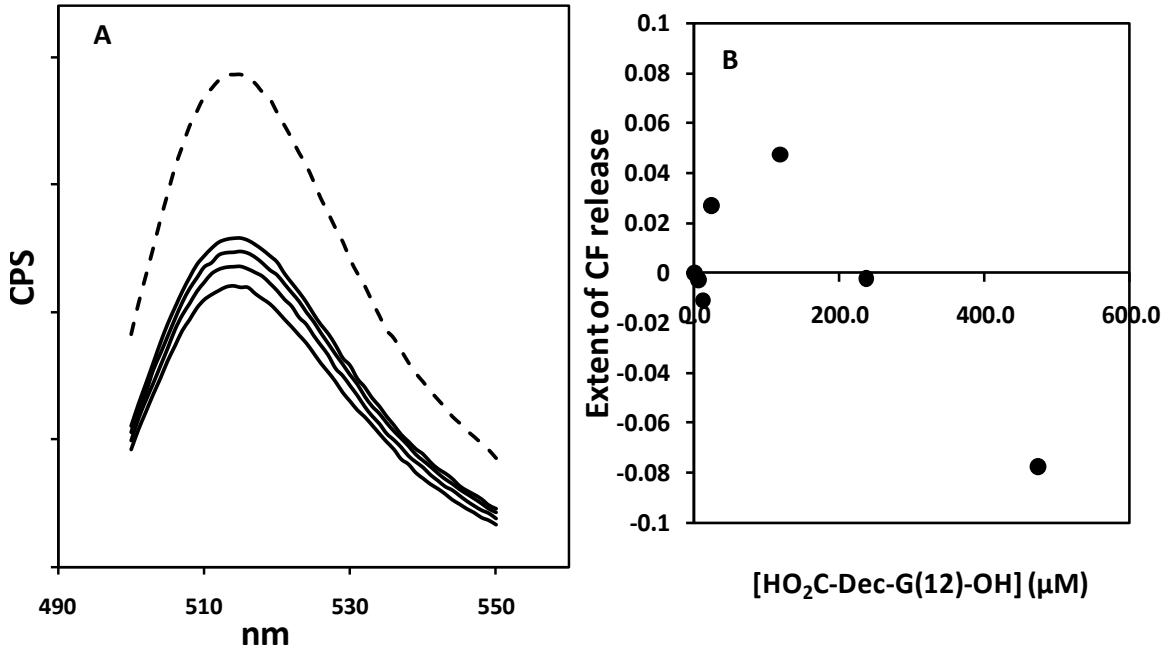

Figure S6: Results of CF assay for HO_2C-**Dec-G(12)**-OH. **A**: raw data; from top to bottom, solid lines = 24, 0, 47 and 237μM HO_2C-**Dec-G(12)**-OH, dashed line= Triton X100,. **B**: extent of CF release calculated by: $(\mathbf{I}_{sample}\text{-}\mathbf{I}_{blank}/(\mathbf{I}_{triton}\text{-}\mathbf{I}_{blank})$

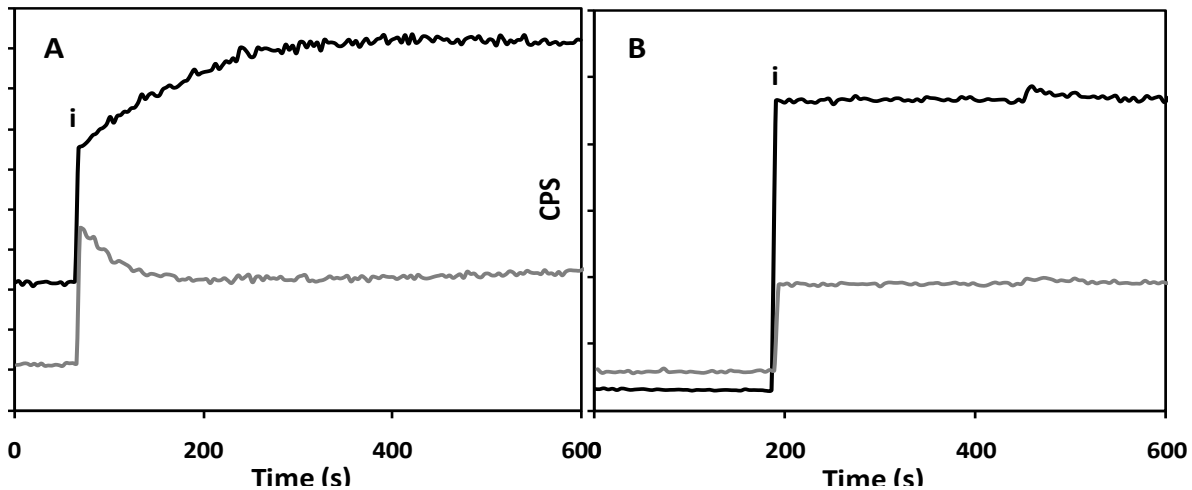

Figure S7: Emission spectra over time for **A**: 22µM HO_2C-**Dip-G(12)**-OH, **B**: 32µM **Prop-Dip-G(14)**-OH in aqueous solution (100mM NaCl) to which 100µL vesicles were injected at point **i**. Black lines= 320nm, grey lines = 380nm (**A**) or 361nm (**B**).

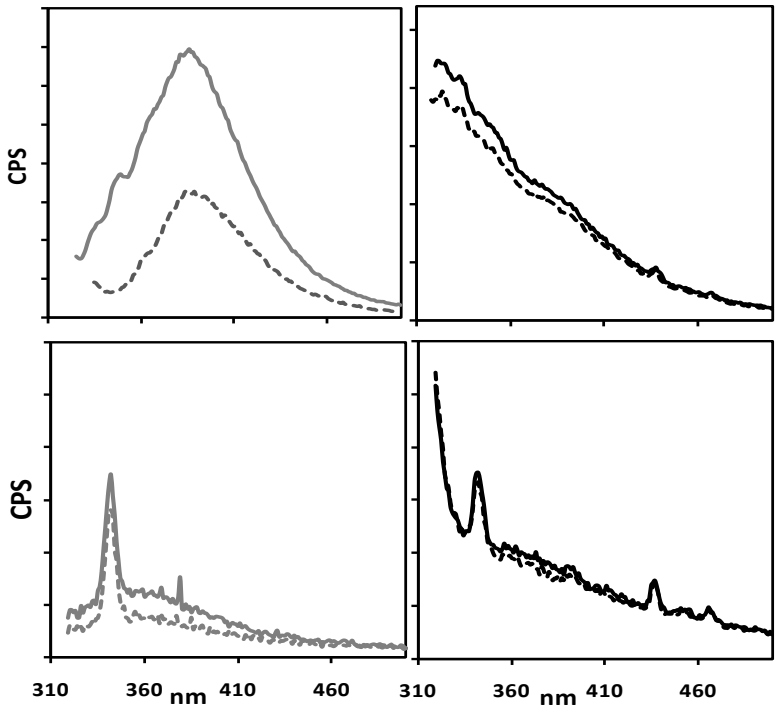

Figure S8: Fluorescence characteristics in differing media. TOP PANEL: fluorescence emission spectra of 28µM HO_2C-**Dip-G(12)**-OH in aqueous buffer (grey lines) or after incubation with lipid vesicles (black lines) in the absence (solid lines) or presence (dashed lines) of 50µM $CuSO_4$. Ex= 302nm. BOTTOM PANEL: analogous data for 32.5µM **Prop-Dip-G(14)**-OH, ex = 304nm, [$CuSO_4$] = 307µM, all other parameters the same.

1. Fyles, T. M.; Luong, H. *Organic and Biomolecular Chemistry* **2009,** *7,* 725-732.
2. Moszynski, J. M.; Fyles, T. M. *Organic and Biomolecular Chemistry* **2010,** *8,* 5139-5149.
3. Fyles, T. M.; Luong, H. *Organic and Biomolecular Chemistry* **2009,** *7,* 733-738.
4. Buchmann, M. B.; Fyles, T. M.; Sutherland, T. *Bioorganic and Medicinal Chemistry* **2004,** *12,* 1315-1324.
5. Eggers, P. K.; Fyles, T. M.; Mitchell, K. D.; Sutherland, T. *Journal of Organic Chemistry* **2003,** *68,* 1050-1058.
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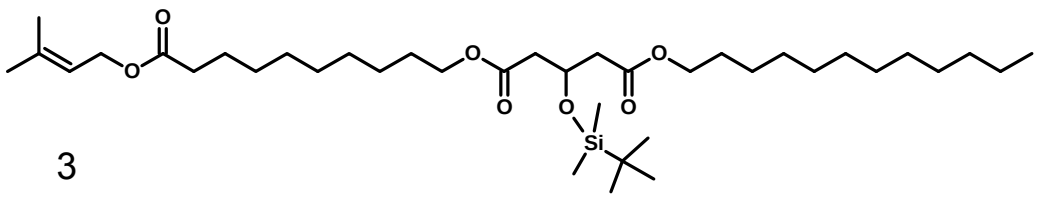
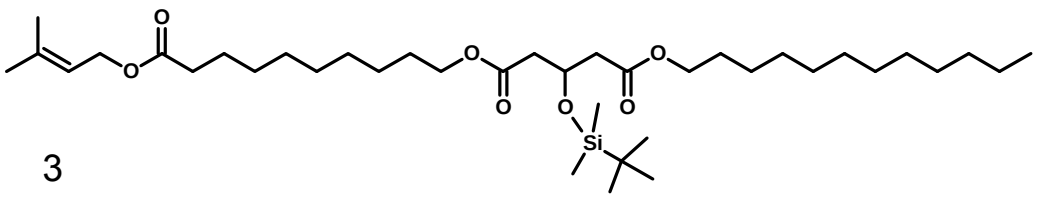


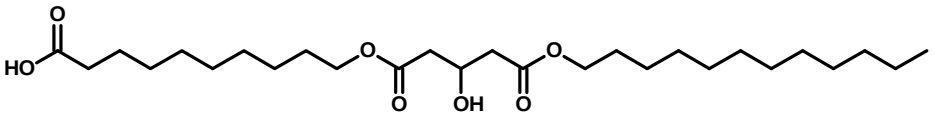
3

^{1}H NMR ($CDCl_3$) 300MHz



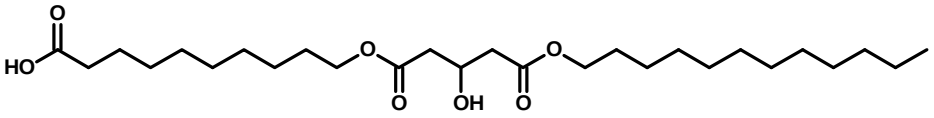
3

^{13}C NMR ($CDCl_3$) 75MHz



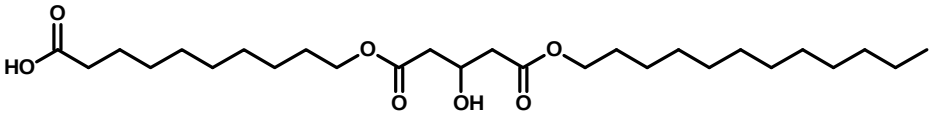
HO_2C-Dec-G(12)-OH

^{1}H NMR ($CDCl_3$) 300MHz

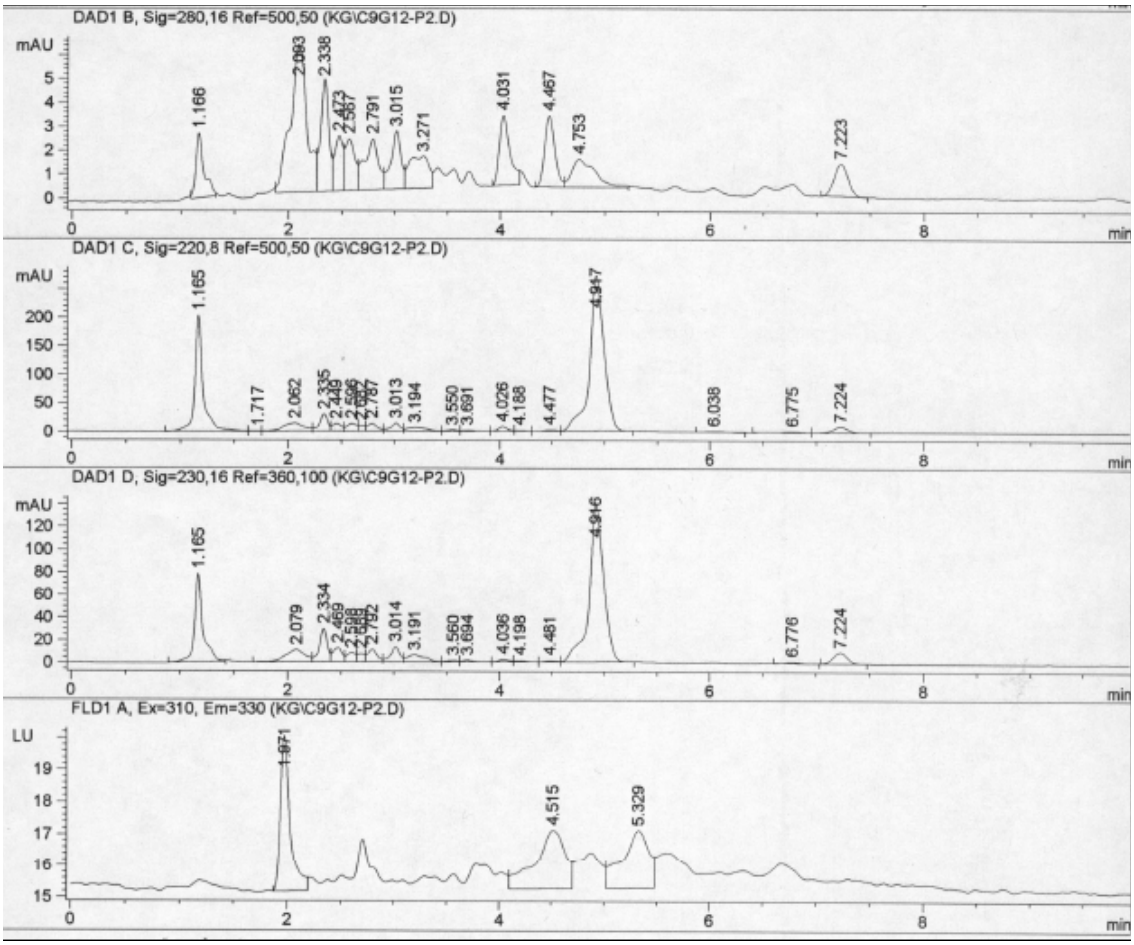


HO_2C-Dec-G(12)-OH

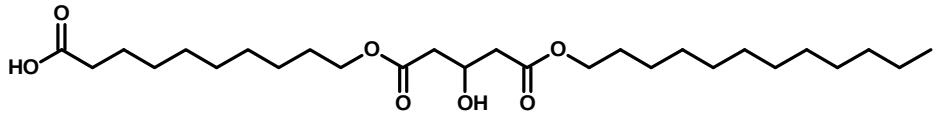
^{13}C NMR ($CDCl_3$) 75MHz



HO_2C-Dec-G(12)-OH

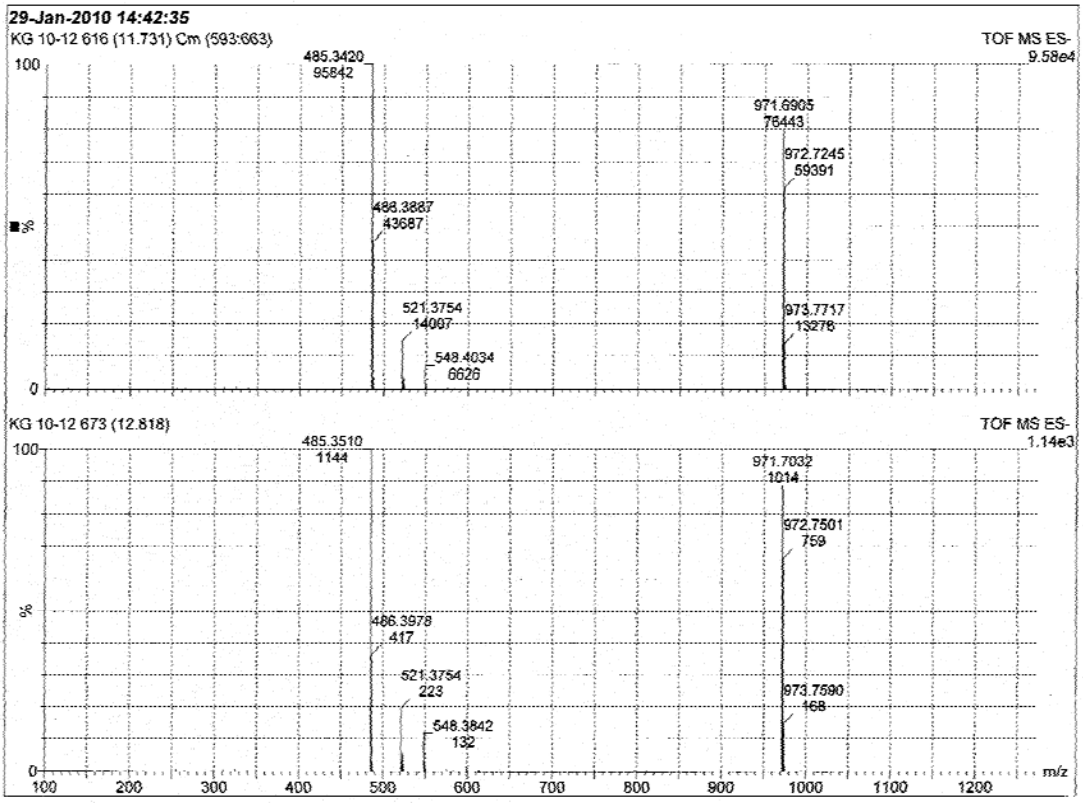


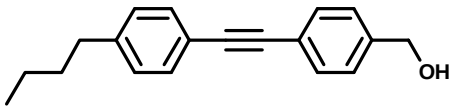
-HPLC trace
-conditions: HP series 1100 HPLC
-Grace ‘Alltima’ semi-prep 10 x 150mm C18 RP column
-1:1 CH_3OH: ACN as eluting solvents, flow 3.5mL/min



HO_2C-Dec-G(12)-OH

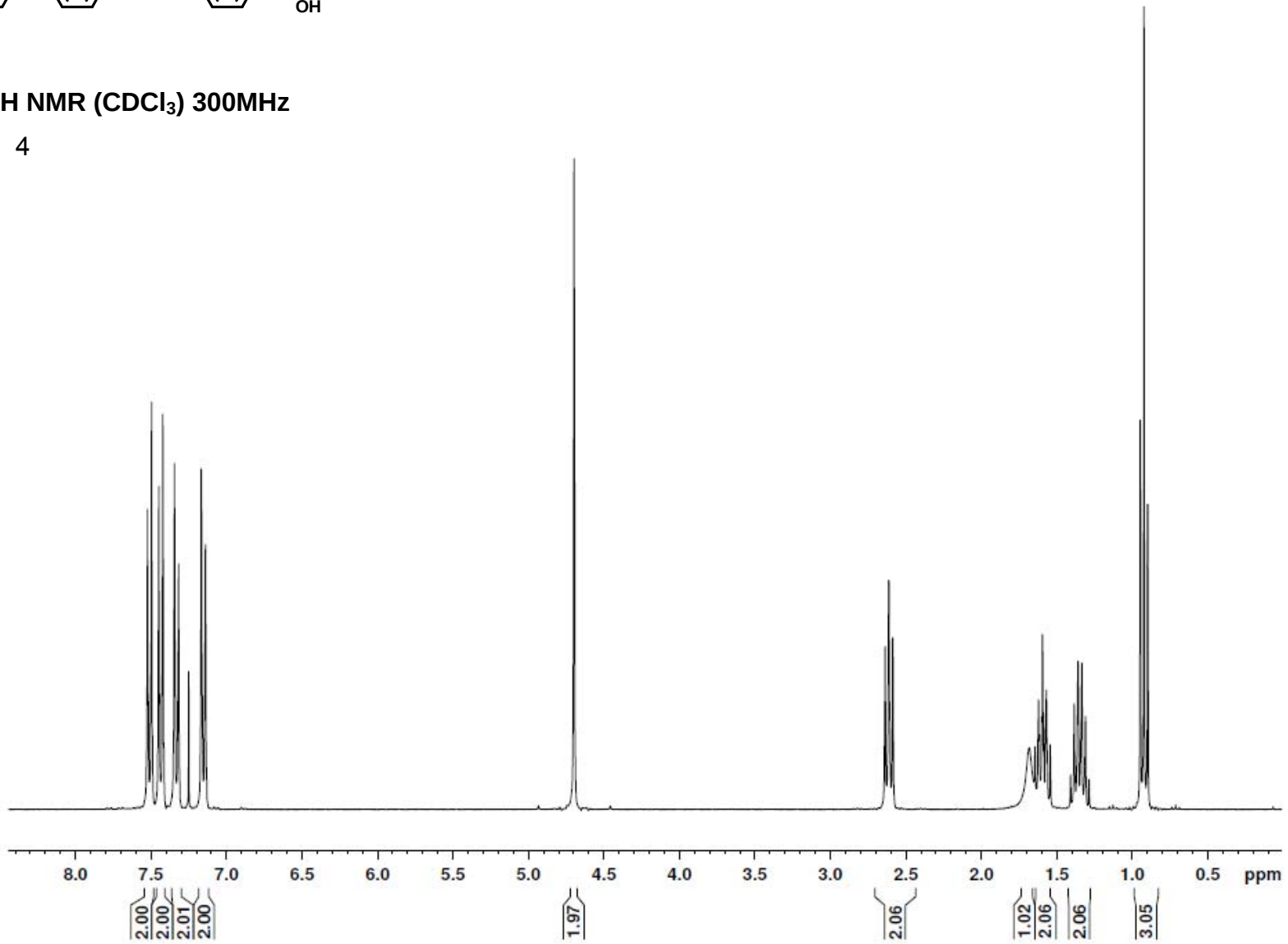
MS: -ve ESI, Q-TOF 2 instrument
Calc'd for $C_{27}H_{49}O_7$: 485.3478 amu, Found: 485.342 amu

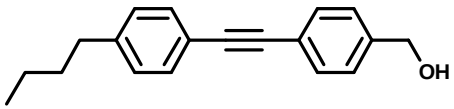




^{1}H NMR ($CDCl_3$) 300MHz

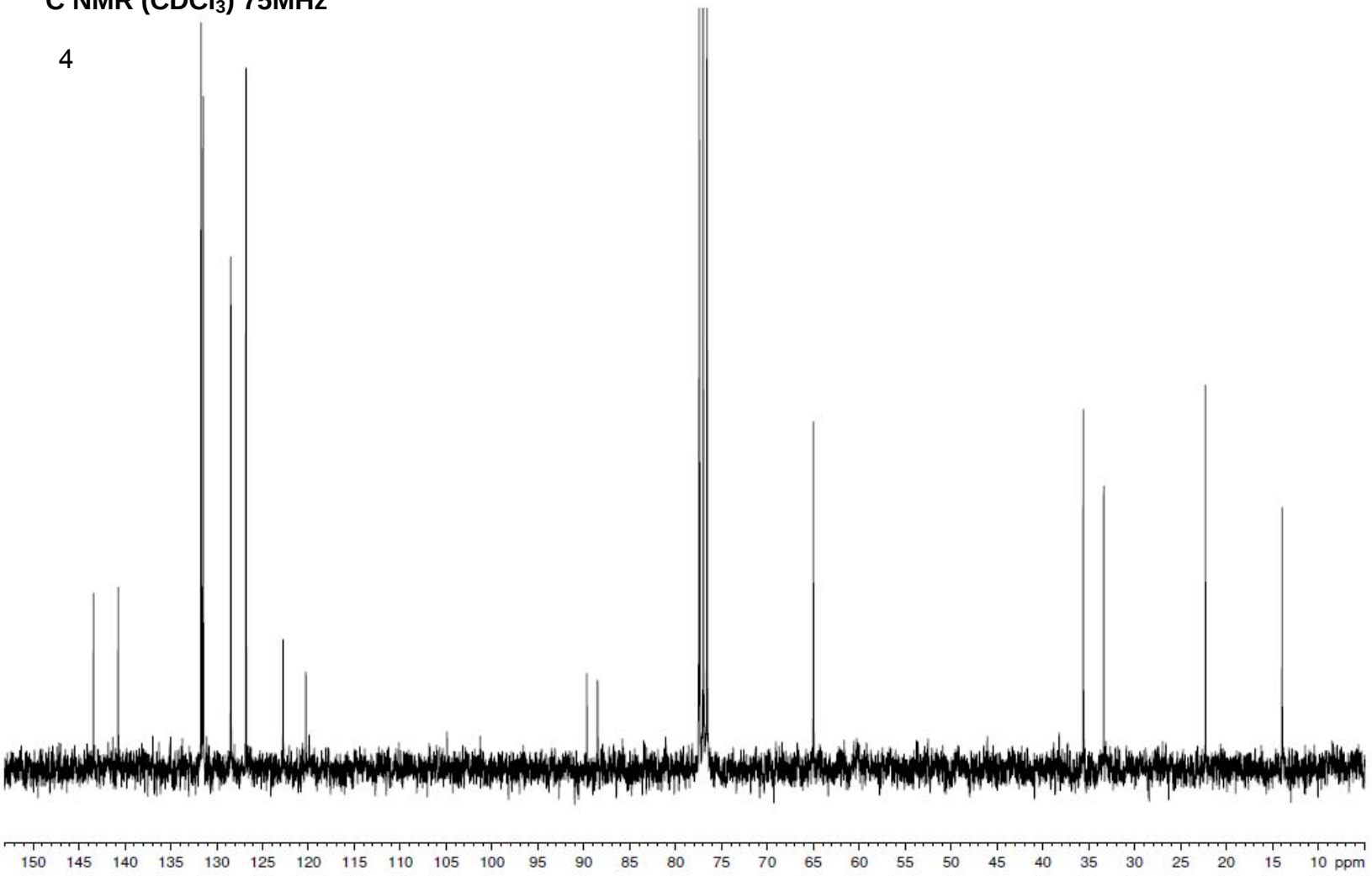
4

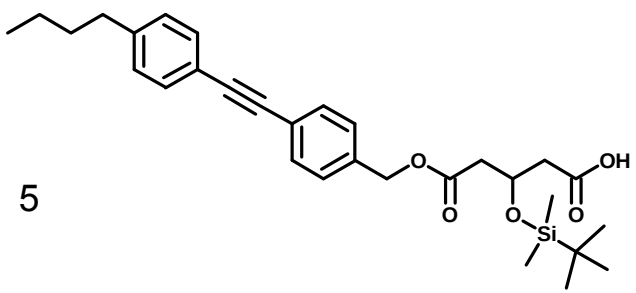




^{13}C NMR ($CDCl_3$) 75MHz

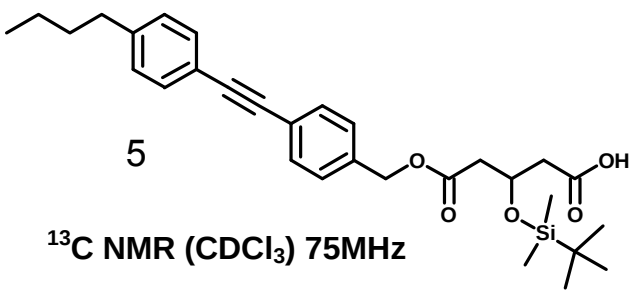
4



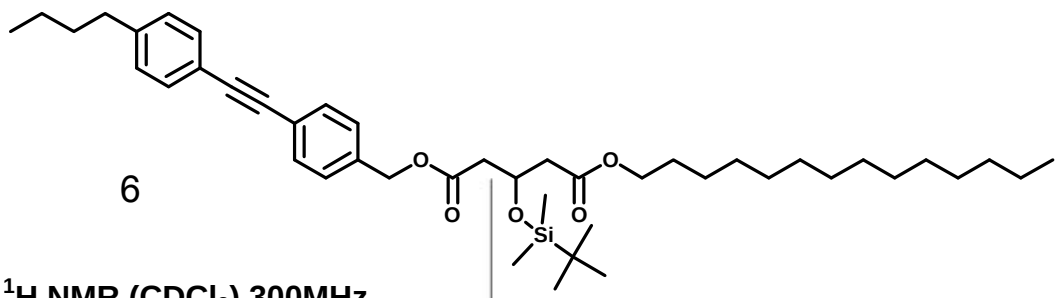


5

^{1}H NMR ($CDCl_3$) 300MHz

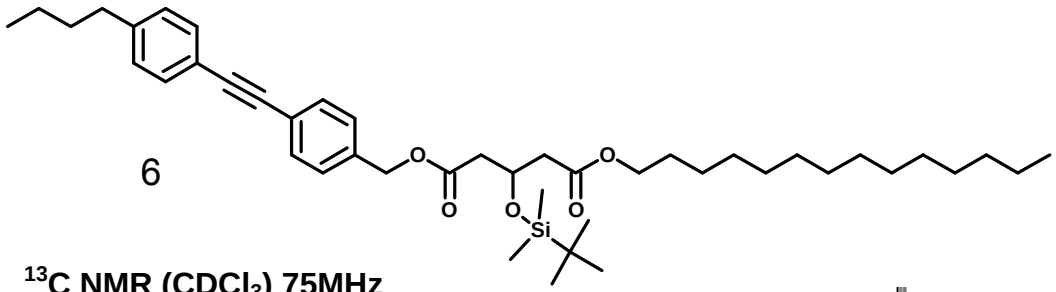


^{13}C NMR ($CDCl_3$) 75MHz



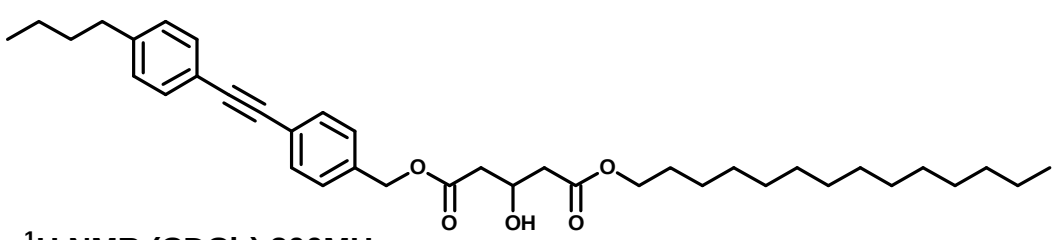
6

^{1}H NMR ($CDCl_3$) 300MHz



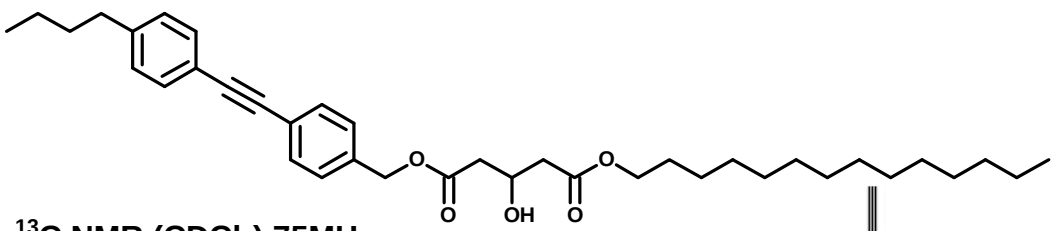
6

^{13}C NMR ($CDCl_3$) 75MHz



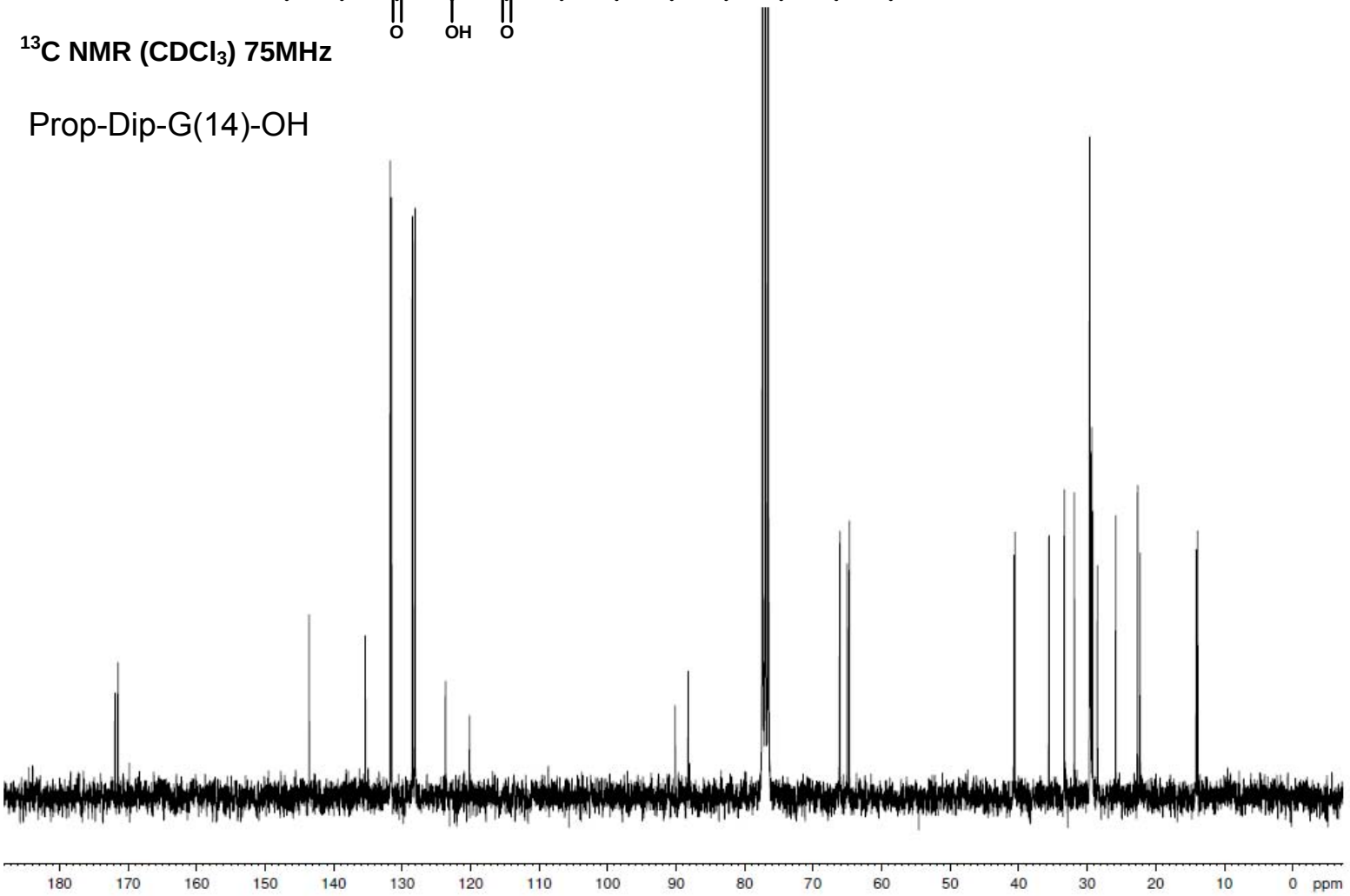
^{1}H NMR ($CDCl_3$) 300MHz

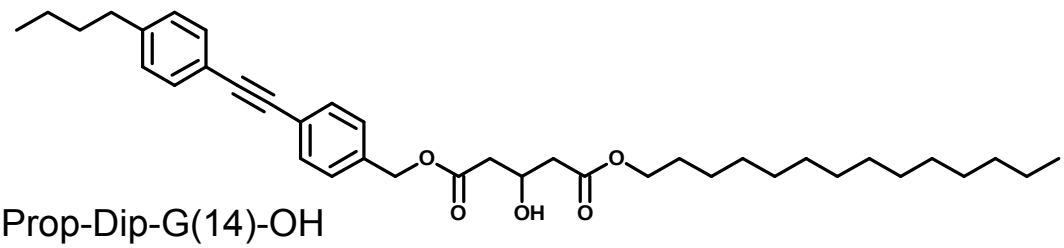
Prop-Dip-G(14)-OH



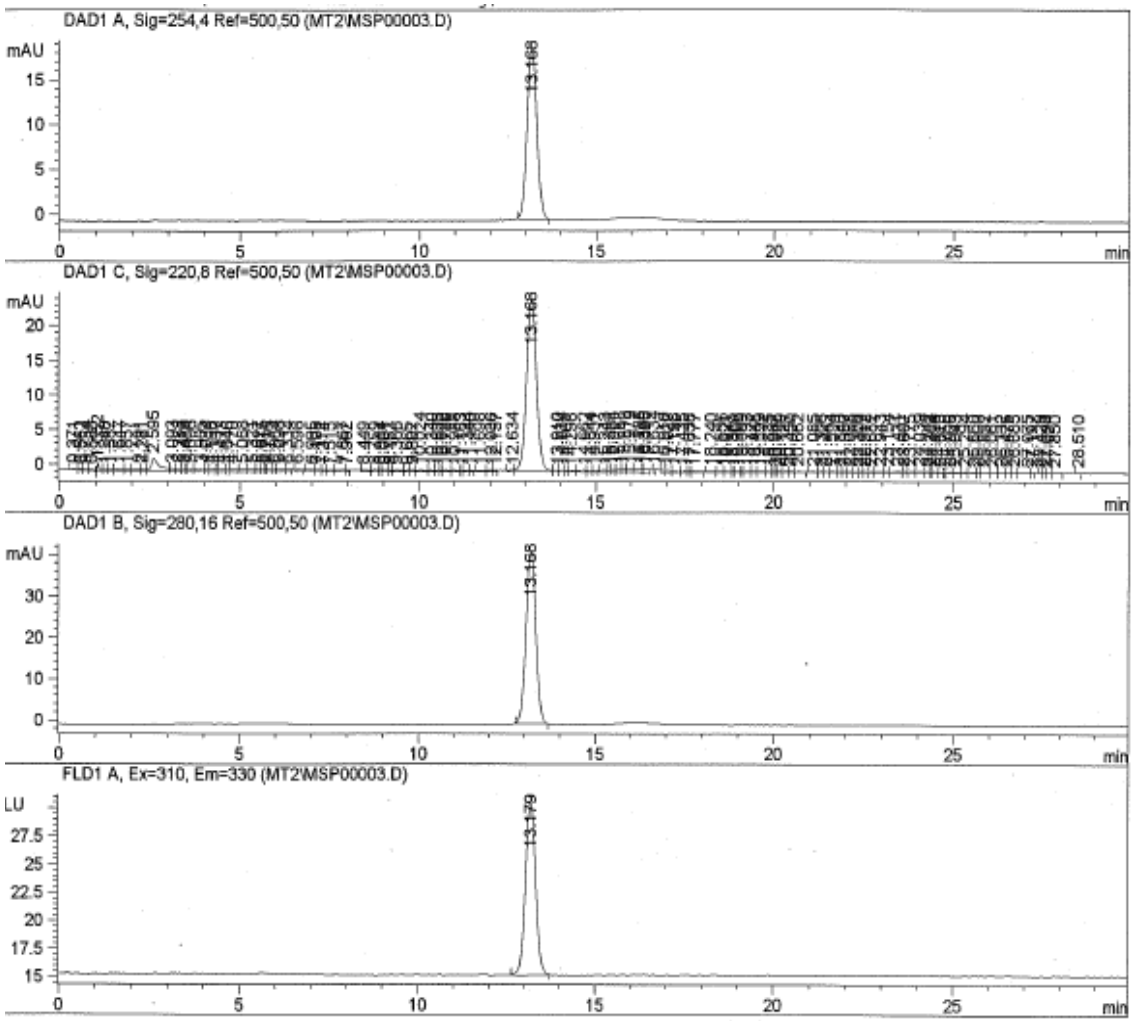
^{13}C NMR ($CDCl_3$) 75MHz

Prop-Dip-G(14)-OH

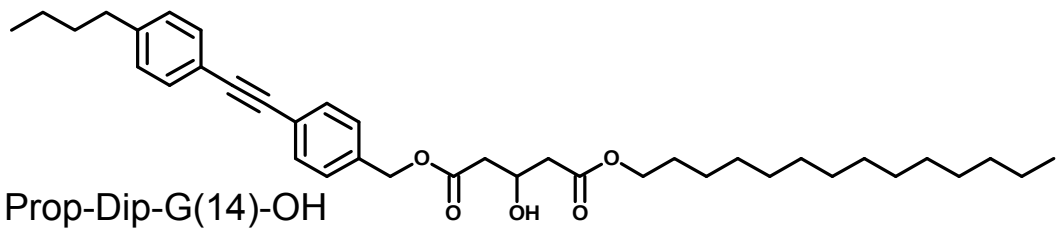




Prop-Dip-G(14)-OH

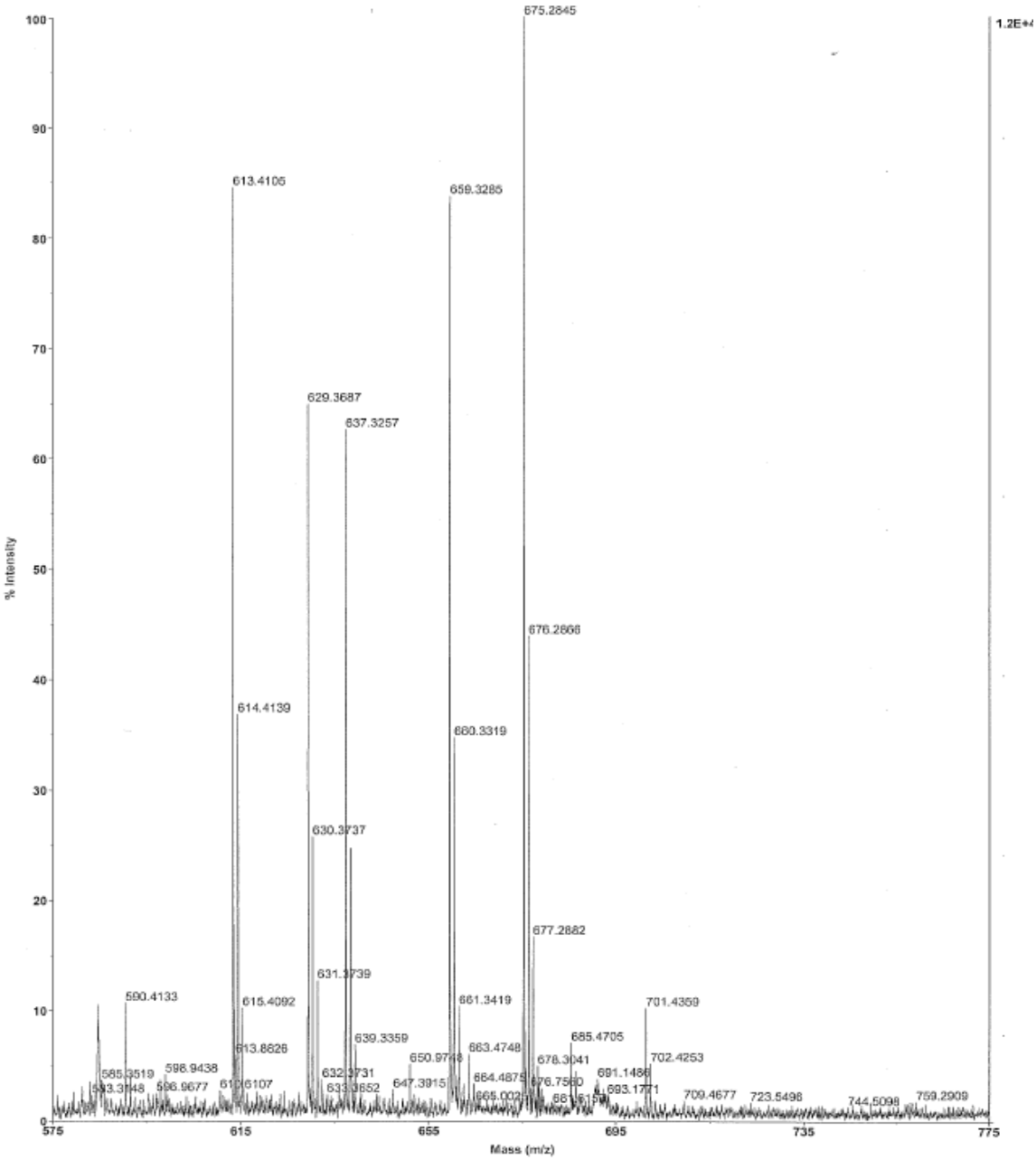


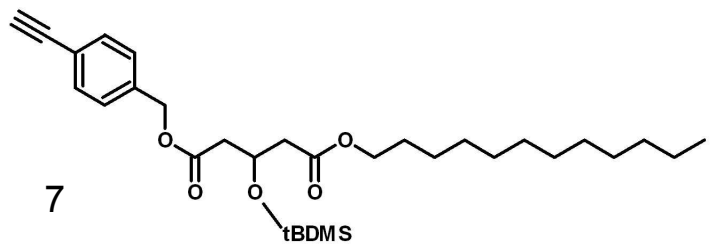
-HPLC trace of sample used for fluorescence and transport assays
-conditions: HP series 1100 HPLC
- Macherey-Nagel “Nucleosil” RP C18 analytical column (4 mm x 250 mm)
-1:1 CH_3OH: ACN as eluting solvents, flow = 1mL/min



Prop-Dip-G(14)-OH

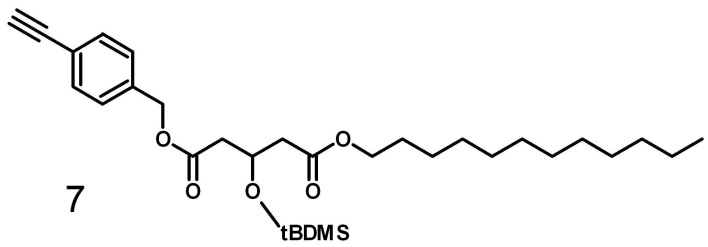
MALDI MS





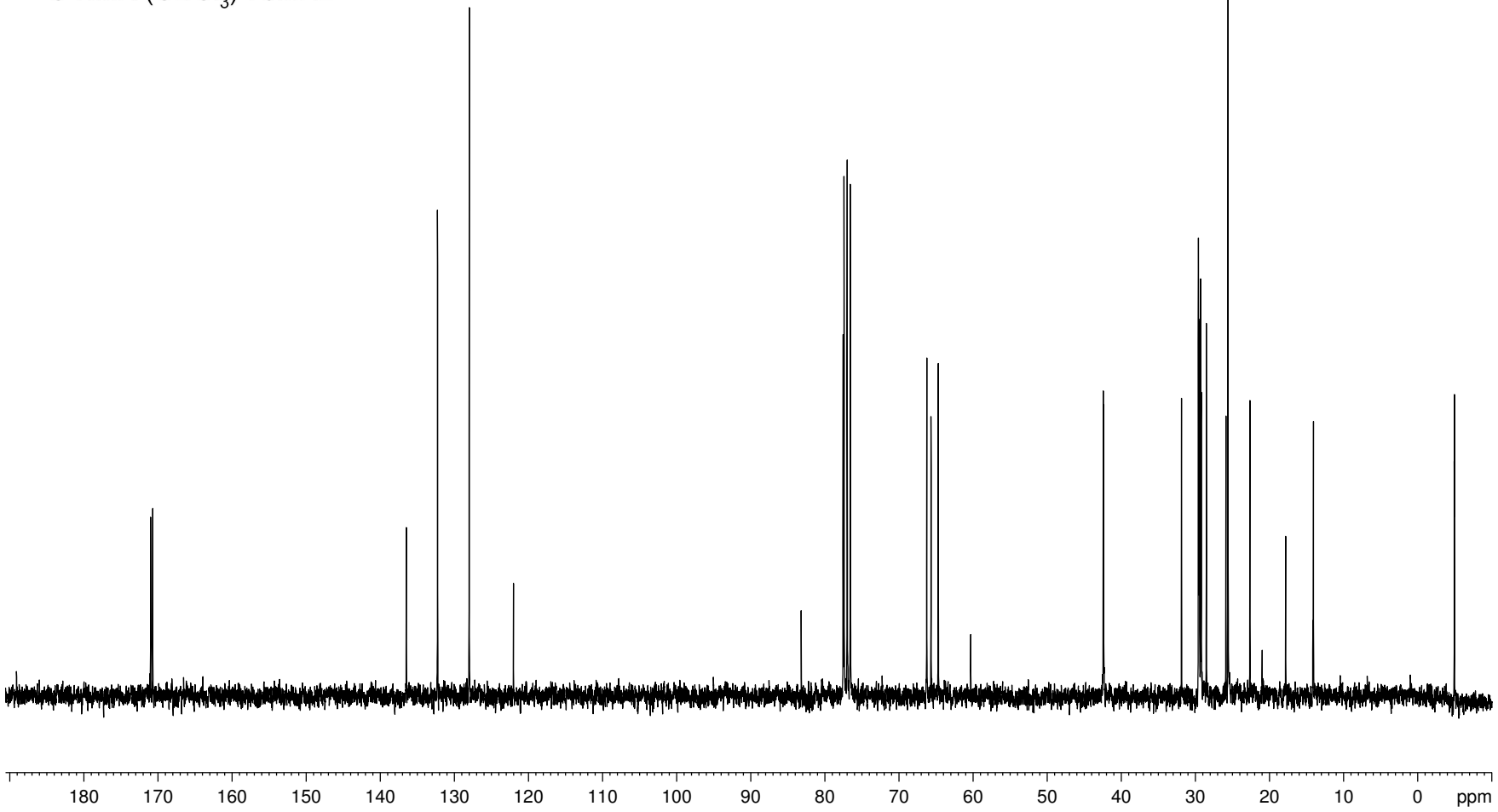
7

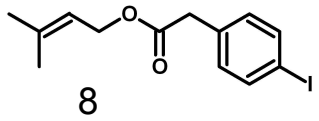
^{1}H NMR ($CDCl_3$) 300MHz



7

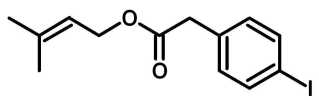
^{13}C NMR ($CDCl_3$) 75MHz





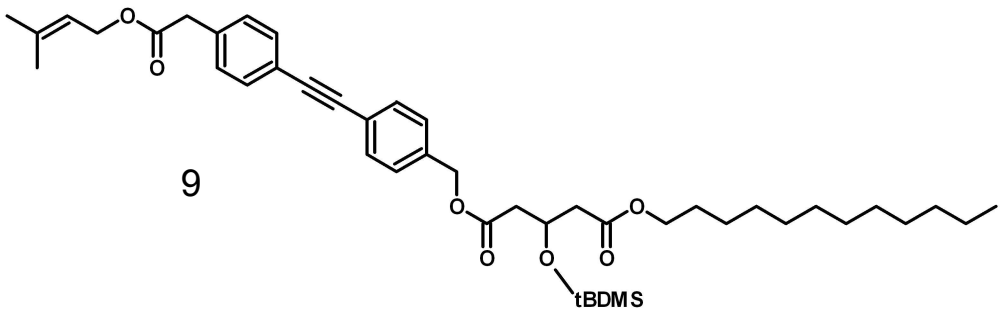
8

^{1}H NMR ($CDCl_3$) 300MHz



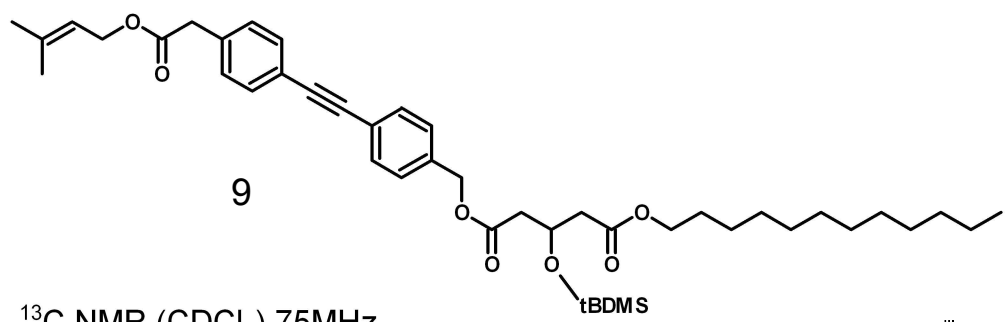
8

^{13}C NMR ($CDCl_3$) 75MHz



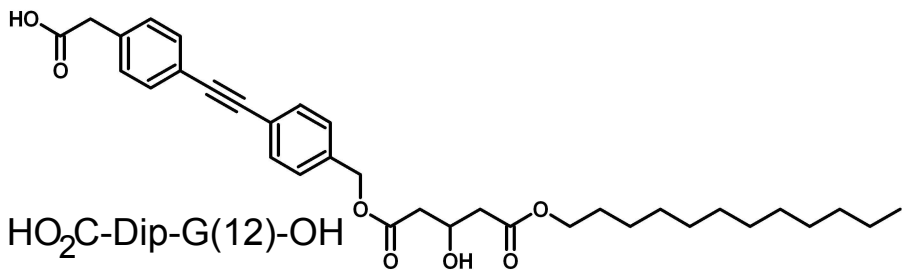
9

^{1}H NMR ($CDCl_3$) 300MHz



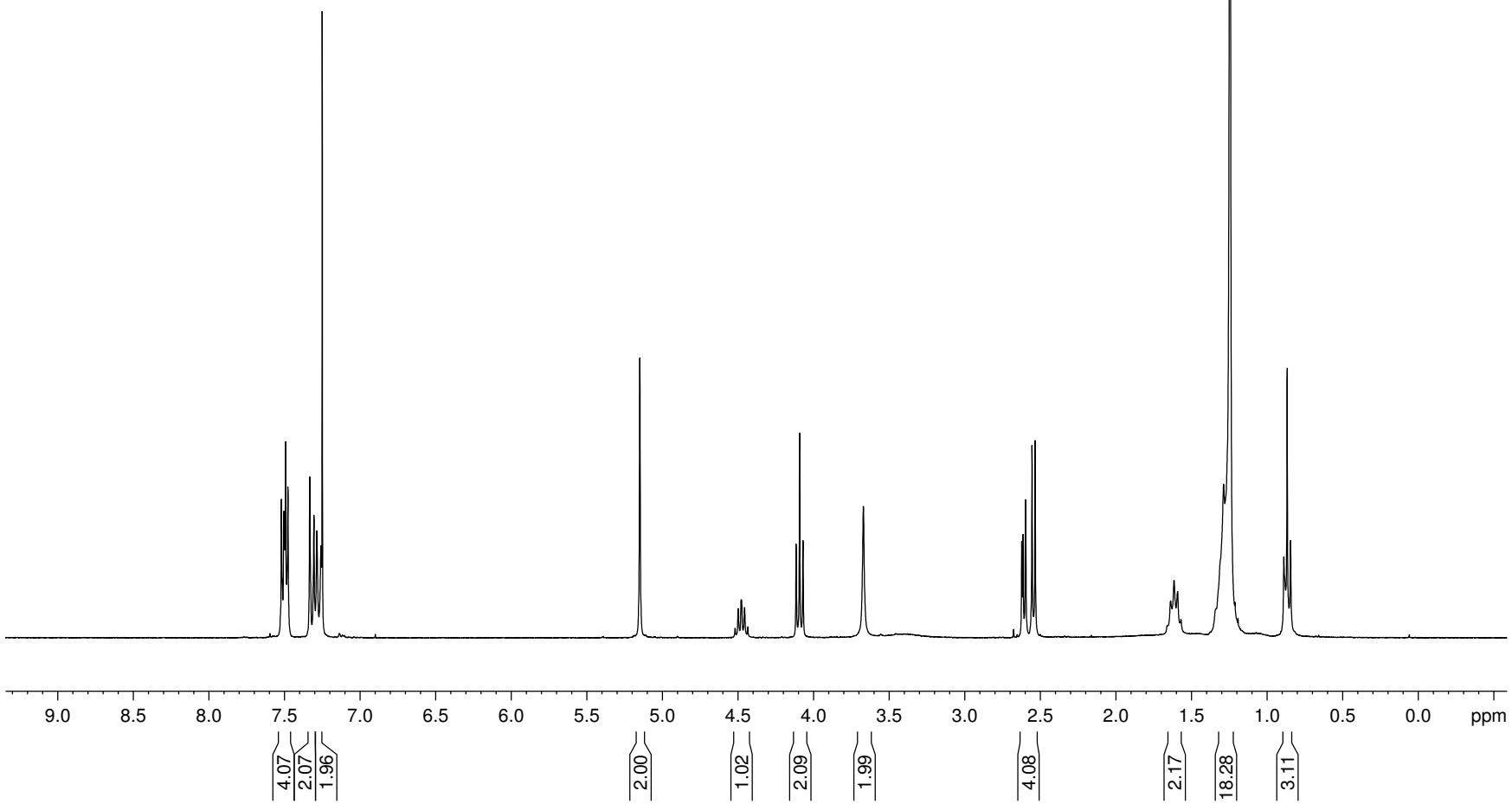
9

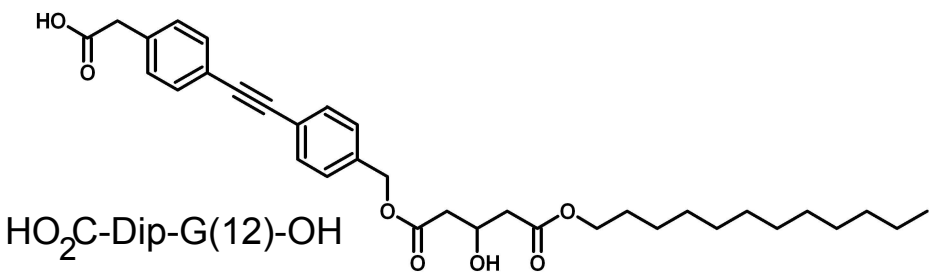
^{13}C NMR ($CDCl_3$) 75MHz



HO_2C-Dip-G(12)-OH

^1H NMR ($CDCl_3$) 300MHz

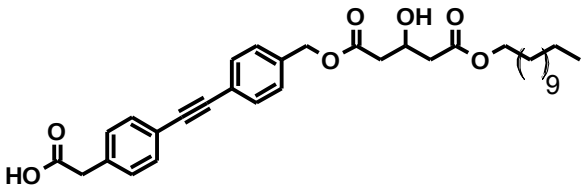


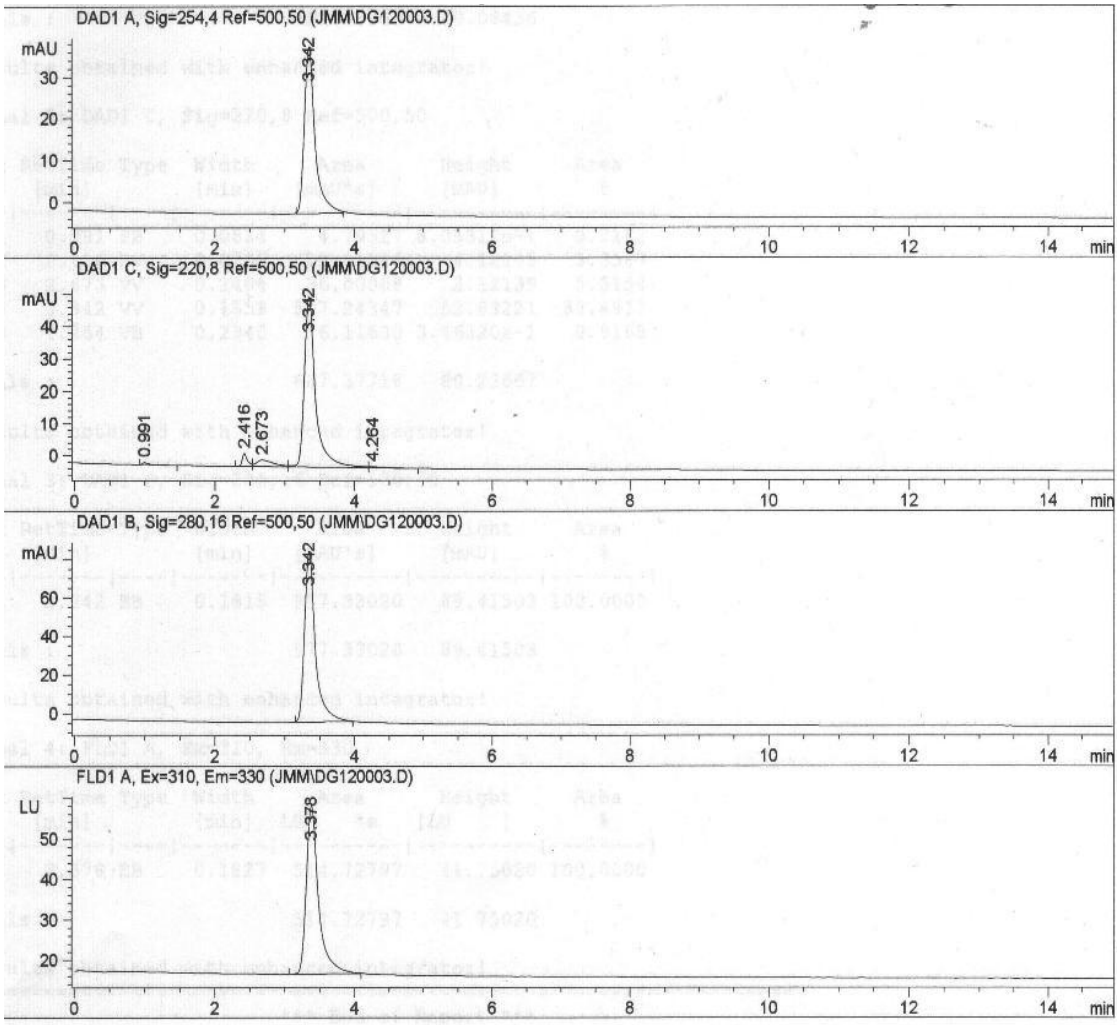


HO_2C-Dip-G(12)-OH

^{13}C NMR (1:1 $CDCl_3$:CD_3OD) 125MHz

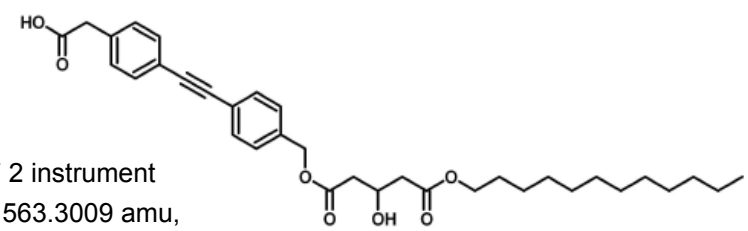
HO_2C-Dip-G(12)-OH





-HPLC trace of sample used for fluorescence and transport studies
-CONDITIONS: HP series 1100 HPLC
-Machery-Nagel RP C18 “Nucleosil” analytical column (4 mm x 250mm)
-3:1 ACN: CH_3OH as eluting solvents, flow 1mL/min

HO_2C-Dip-G(12)-OH



MS: -ve ion ESI, Q-TOF 2 instrument
Calc'd for C34H43O7 = 563.3009 amu,
obtained = 563.3237amu