Supporting Information

The Effect of Structure on Thermal and Thermoresponsive Properties of N-Substituted Polyesters

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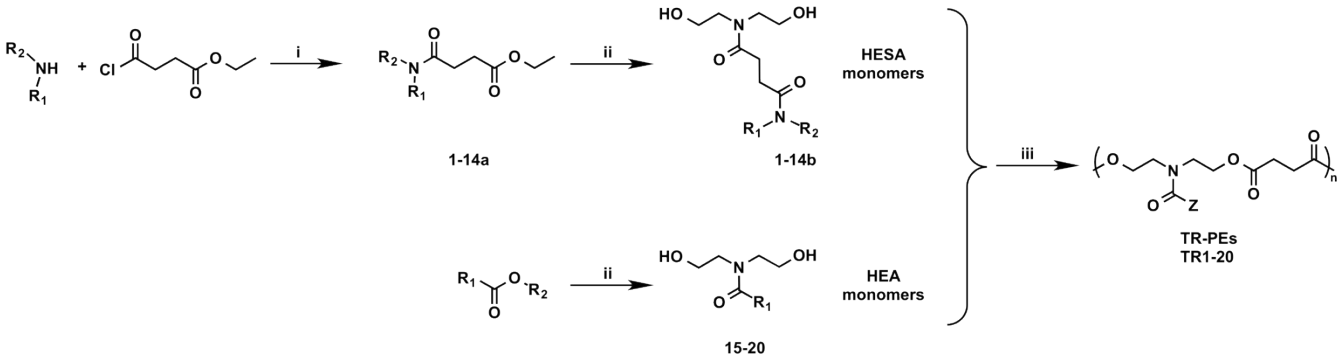
Table S1. T_{cp} Data corresponding to polymers in Figure 4.

Polymer	MW (kDa)	T_{cp} (ºC)	Polymer	MW (kDa)	T_{cp} (ºC)
TR7	7.3	24.3	TR11	15.9	45.3
	10.2	20		20.4	42.1
	11.3	14.7		23.5	39.4
	19.5	13.2		29.3	37.6
	23.1	11.6		30.3	37.8
	56.6	7.8		40.8	34.9
TR8	9.3	25.9	TR12	19.6	52.4
	10.8	21.5		20.3	51.7
	12.5	19.7		23.6	47.1
	14.1	21.3		29.4	40.2
	15.1	18.1		31.2	43.4
	17.7	17.3		33	42.4
	17.8	17.1		42.4	40.2
	47.1	13.1	TR13	23.9	60.2
	56.5	11.9		45.6	53.5
	63.2	11.9		46.7	51.8
	72.7	10.4		54.1	51.5
TR9	7.6	36.8		54.7	51.6
	15.3	25.6		57.3	50.6
	17.8	22.2		105.5	48.4

	23.2	21.9		105.7	48.4
	28.4	18.8		107.8	49.4
	39.2	15.5		116.7	50.7
	54.2	15.8		133.5	48.1
TR10	19.3	26.7	TR14	43.7	77.2
	20.9	25.1	TR19	16.9	31.2
	20.9	25.6		20.4	27.9
	37.7	21		46.2	20.4
	48.5	20.1		75.4	15.6
	55.3	19	TR20	22.9	60.6
	61.1	18.9		23.1	62
				32.8	60.8
				36	61.2

I. Synthesis of Monomers and Polymers

Scheme S1. Synthetic route for preparation of monomers and polyesters[a]



[a]Reagents and conditions: (i) Et_3N, CH_2Cl_2, 0 °C to room-temperature, 1 h. (ii) DEA, neat, 80 °C, vacuum, 16 h. (iii) Et_3N, MeOH, 60 °C microwave, 2 h. (iii) SA, DIC, DPTS, CH_2Cl_2, 0 °C to room-temperature, 48 h.

General Procedure for Synthesis of *N*-Substituted Diol Monomers

The synthetic procedures used to synthesize the *N*-substituted diol monomers are described in this section using a modified version of the previous literature procedure. [28, 38] Synthesis of N^1-cyclopropyl-N^4,N^4-bis(2-hydroxyethyl)succinamide (**cPrA, 1b**), N^1,N^1-bis(2-hydroxyethyl)-N^4-propylsuccinamide (**nPrA, 2b**), N^1,N^1-bis(2-hydroxyethyl)-N^4-(prop-2-yn-1-yl)succinamide (**propargylA**, **3b**), *N*,*N*-bis(2-hydroxyethyl)-4-oxo-4-(pyrrolidin-1-yl)butanamide (**PyrA, 4b**), N^1,N^1-bis(2-hydroxyethyl)-N^4-isopropylsuccinamide (**iPrA, 7b**), N^1,N^1-diethyl-N^4,N^4-bis(2-hydroxyethyl)succinamide (**dEtA, 8b**),

N^1,N^1-bis(2-hydroxyethyl)-N^4,N^4-bis(2-methoxyethyl)succinamide (**bMoEtA, 13b**), *N*,*N*-bis(2-hydroxyethyl)butyramide (**nPr, 15**), *N*,*N*-bis(2-hydroxyethyl)isobutyramide (**iPr, 16**), *N*,*N*-bis(2-hydroxyethyl)propionamide (**Et, 17**), and was undertaken according to previous literature procedures.[28]

Ethyl 4-oxo-4-(pyrrolidin-1-yl)butanoate (**1a**): Yield = 96%. ^{1}H NMR (300 MHz, $CDCl_3$): δ 1.15 (t, *J* = 7.1 Hz, 3H), 1.91-1.70 (m, 4H), 2.58-2.43 (m, 4H), 3.35 (t, *J* = 6.8 Hz, 4H), 4.03 (q, *J* = 7.1 Hz, 2H); ^{13}C NMR (126 MHz, $CDCl_3$): δ 14.13, 24.33, 26.00, 29.09, 45.62, 46.37, 60.41, 169.65, 173.17.

N^1-cyclopropyl-N^4,N^4-bis(2-hydroxyethyl)succinamide (**cPrA, 1b**): Yield = 82.6%. ^{1}H NMR (300 MHz, $CDCl_3$): δ 0.50-0.44 (m, 2H), 0.75-0.68 (m, 2H), 2.48 (t, *J* = 6.4 Hz, 2H), 2.61-2.68 (m, 1H), 2.73 (t, *J* = 6.5 Hz, 2H), 3.53 (q, *J* = 5.0 Hz, 5H), 3.79 (br s, 5H), 4.03 (br s, 1H), 4.47 (br s, 1H), 6.45 (br s, 1H).^{13}C NMR (126 MHz, $CDCl_3$): δ 6.29, 22.63, 28.67, 31.20, 50.48, 52.13, 60.43, 173.92, 174.50.

Ethyl 4-oxo-4-(propylamino)butanoate (**2a**): Yield = 98.4%. ^{1}H NMR (300 MHz, $CDCl_3$): δ 0.89 (t, J = 7.4 Hz, 3H), x1.23 (t, J = 7.1 Hz, 3H), 1.49 (sextet, J = 7.3 Hz, 2H), 2.44 (t, J = 6.8 Hz, 2H), 2.64 (t, J = 6.8 Hz, 2H), 3.19 (q, J = 7.1 Hz, 2H), 4.12 (q, J = 7.1 Hz, 2H), 5.79 (s, 1H); ^{13}C NMR (126 MHz, CDCl3): δ 11.35, 14.20, 22.86, 29.79, 31.14, 41.34, 60.66, 171.45, 173.11.

N^1,N^1-bis(2-hydroxyethyl)-N^4-propylsuccinamide (**nPrA, 2b**): Yield = 38%. ^{1}H NMR (300 MHz, $CDCl_3$): δ 1.07 (t, *J* = 7.1 Hz, 3H), 1.20 (t, *J* = 7.2 Hz, 3H), 2.74-2.71 (m, 4H), 3.29-3.37 (m, 4H), 3.56 (dt, *J* = 14.9, 4.4 Hz, 4H), 3.78-3.83 (m, 4H), 4.65 (br s, 1H); ^{13}C NMR (126 MHz, $CDCl_3$): δ 11.47, 22.85, 28.66, 31.63, 41.53, 50.96, 52.53, 60.85, 61.23, 172.84, 174.31.

Ethyl 4-oxo-4-(piperidin-1-yl)butanoate (**4a**): Yield = 91.8%. ^{1}H NMR (300 MHz, $CDCl_3$): δ 1.25 (d, *J* = 14.3 Hz, 3H), 1.58 (dq, *J* = 18.7, 5.7 Hz, 6H), 2.63 (dd, *J* = 4.5, 3.4 Hz, 4H), 3.41 (t, *J* = 5.3 Hz, 2H), 3.54 (t, *J* = 5.5 Hz, 2H), 4.14 (q, *J* = 7.1 Hz, 2H); ^{13}C NMR (75 MHz, $CDCl_3$): δ 13.93, 24.29, 25.29, 26.11, 27.66, 29.20, 42.56, 46.10, 60.10, 169.07, 172.87.

N,N-bis(2-hydroxyethyl)-4-oxo-4-(piperidin-1-yl)butanamide (**PPDA**, **4b**): Yield = 52.4%. ^{1}H NMR (500 MHz, $CDCl_3$): δ 1.63-1.51 (m, 6H), 2.72 (dd, *J* = 16.8, 5.5 Hz, 4H), 3.43 (d, *J* = 5.1 Hz, 2H), 3.61-3.49 (m, 6H), 3.83 (dd, *J* = 14.7, 3.6 Hz, 4H), 4.64 (s, 1H); ^{13}C NMR (126 MHz, $CDCl_3$): δ 24.57, 25.61, 26.37, 27.94, 29.06, 43.17, 46.62, 50.93, 52.69, 61.18, 61.30, 170.65, 174.65.

Ethyl 4-(dibutylamino)-4-oxobutanoate (**5a**): Yield = 96.5%. ^{1}H NMR (300 MHz, $CDCl_3$): δ 0.93 (dt, *J* = 13.2, 7.3 Hz, 6H), 1.37-1.23 (m, 8H), 1.62-1.44 (m, 4H), 2.69-2.57 (m, 4H), 3.27 (dt, *J* = 18.4, 7.7 Hz, 4H), 4.14 (q, *J* = 7.1 Hz, 2H); ^{13}C NMR (75 MHz, $CDCl_3$): δ 13.62, 13.67, 13.99, 19.95, 20.06, 27.77, 29.37, 29.73, 30.88, 45.70, 47.42, 60.21, 170.45, 172.99.

N^1,N^1-dibutyl-N^4,N^4-bis(2-hydroxyethyl)succinamide (**dnBuA, 5b**): Yield = 48.8%. ^{1}H NMR (500 MHz, $CDCl_3$): δ 0.93 (dt, *J* = 25.9, 7.3 Hz, 6H), 1.31 (dq, *J* = 32.2, 7.5 Hz, 4H), 1.47 (dt, *J* = 14.9, 7.5 Hz, 2H), 1.58 (dt, *J* = 15.1, 7.6 Hz, 2H), 2.74 (dd, *J* = 19.5, 6.0 Hz, 4H), 3.26 (dt, *J* = 13.8, 7.2 Hz, 4H), 3.58 (dt, *J* = 25.2, 4.6 Hz, 4H), 3.68 (s, 1H), 3.83 (d, *J* = 19.6 Hz, 4H), 4.61-4.57 (m, 1H); ^{13}C NMR (126 MHz, $CDCl_3$): δ 13.93, 14.00, 20.31, 27.99, 29.22, 29.96, 30.95, 46.14, 47.93, 51.04, 52.82, 61.24, 61.30, 172.04, 174.70.

Ethyl 4-(heptylamino)-4-oxobutanoate (**6a**): Yield = 96.5%. ^{1}H NMR (300 MHz, $CDCl_3$): δ 0.87 (t, *J* = 6.8 Hz, 3H), 1.28-1.23 (m, 11H), 1.48 (t, *J* = 6.3 Hz, 2H), 2.44 (t, *J* = 6.8 Hz, 2H), 2.64 (q, *J* = 6.6 Hz, 2H), 3.23 (td, *J* = 7.1, 5.9 Hz, 2H), 4.14 (q, *J* = 7.1 Hz, 2H), 5.63 (s, 1H); ^{13}C NMR (75 MHz, $CDCl_3$): δ 13.98, 14.12, 22.53, 26.84, 28.93, 29.56, 29.72, 31.02, 31.71, 39.61, 60.55, 171.36, 173.02.

N^1-heptyl-N^4,N^4-bis(2-hydroxyethyl)succinamide (**HepA, 6b**): Yield = 21.0%. ^{1}H NMR (500 MHz, $CDCl_3$): δ 0.87 (t, *J* = 6.7 Hz, 3H), 1.28 (s, 8H), 1.46 (t, *J* = 6.5 Hz, 2H), 2.54 (t, *J* = 6.4 Hz, 2H), 2.73 (t, *J* = 6.4 Hz, 2H), 3.19 (q, *J* = 6.6 Hz, 2H), 3.55 (t, *J* = 5.0 Hz, 4H), 3.80 (s, 5H), 4.31 (s, 1H), 6.04 (s, 1H); ^{13}C NMR (126 MHz, $CDCl_3$): δ 14.19, 22.72, 27.00, 28.60, 29.08, 29.64, 31.69, 31.88, 39.89, 50.99, 52.55, 60.93, 61.34, 172.69, 174.35.

Ethyl 4-(isopropylamino)-4-oxobutanoate (**7a**): Yield = 93.9%. ^{1}H NMR (300 MHz, $CDCl_3$): δ 1.06 (d, *J* = 6.6 Hz, 6H), 1.18 (t, 3H), 2.36 (t, *J* = 7.0 Hz, 2H), 2.57 (t, *J* = 6.8 Hz, 2H), 4.10-3.95 (m, 3H), 5.82 (br s, 1H); ^{13}C NMR (126 MHz, $CDCl_3$): δ 14.24, 22.76, 29.81, 31.32, 41.45, 60.68, 170.56, 173.11.

N^1,N^1-bis(2-hydroxyethyl)-N^4-isopropylsuccinamide (**iPrA, 7b**): Yield = 55^{1}H NMR (300 MHz, $CDCl_3$): δ 1.04 (d, *J* = 6.5 Hz, 6H), 2.40 (t, *J* = 6.7 Hz, 2H), 2.64 (t, *J* = 6.7 Hz, 2H), 3.46 (dt, *J* = 9.3, 4.8 Hz, 4H), 3.69 (s, 5H), 3.90 (dq, *J* = 13.8, 6.8 Hz, 1H), 4.54 (br s, 1H), 4.89 (br s, 1H), 6.49 (d, *J* = 7.8 Hz, 1H); ^{13}C NMR (126 MHz, $CDCl_3$): δ 22.65, 28.73, 31.57, 41.58, 50.62, 52.24, 60.73, 171.93, 173.97.

Ethyl 4-(diethylamino)-4-oxobutanoate (**8a**): Yield = 96%. ^{1}H NMR (300 MHz, $CDCl_3$): δ 1.08 (t, *J* = 7.1 Hz, 3H), 1.21 (dt, *J* = 17.7, 7.1 Hz, 6H), 2.68-2.56 (m, 4H), 3.39-3.28 (m, *J* = 11.3, 7.1 Hz, 4H), 4.12 (q, *J* = 7.1 Hz, 2H); ^{13}C NMR (126 MHz, $CDCl_3$): δ 13.13, 14.24, 27.93, 29.56, 40.34, 41.86, 60.49, 76.91, 77.16, 77.41, 170.30, 173.29.

N^1,N^1-diethyl-N^4,N^4-bis(2-hydroxyethyl)succinamide (**dEtA, 8b**): Yield = 44%. ^{1}H NMR (300 MHz, $CDCl_3$): δ0.93 (t, 3H), δ1.62 (m, 2H), δ2.34 (t, 2H), δ3.47 (m, 4H), δ3.74 (m, 4H), δ4.23 (br, 2H); ^{13}C NMR (126 MHz, $CDCl_3$): δ 12.97, 13.98, 28.05, 28.55, 40.47, 42.04, 50.67, 52.38, 60.82, 171.51, 174.05.

Ethyl 4-oxo-4-(pyrrolidin-1-yl)butanoate (**9a**): Yield = 96%. ^{1}H NMR (300 MHz, $CDCl_3$): δ 1.15 (t, *J* = 7.1 Hz, 3H), 1.91-1.70 (m, 4H), 2.58-2.43 (m, 4H), 3.35 (t, *J* = 6.8 Hz, 4H), 4.03 (q, *J* = 7.1 Hz, 2H); ^{13}C NMR (126 MHz, $CDCl_3$): δ 14.13, 24.33, 26.00, 29.09, 45.62, 46.37, 60.41, 169.65, 173.17.

N,N-bis(2-hydroxyethyl)-4-oxo-4-(pyrrolidin-1-yl)butanamide (**PyrA, 9b**): Yield = 63%). ^{1}H NMR (300 MHz, $CDCl_3$): δ 1.98-1.77 (m, 4H), 2.67 (q, *J* = 6.0 Hz, 4H), 3.41 (dt, *J* = 10.5, 6.8 Hz, 4H), 3.54 (dt, *J* = 15.4, 4.9 Hz, 4H), 3.78 (dd, *J* = 9.7, 4.7 Hz, 4H), 4.03 (br s, 1H), 4.78 (br s, 1H); ^{13}C NMR (126 MHz, $CDCl_3$): δ 24.27, 25.89, 27.71, 29.91, 45.74, 46.51, 50.59, 52.30, 60.75, 170.87, 173.86.

Ethyl 4-oxo-4-(((tetrahydrofuran-2-yl)methyl)amino)butanoate (**10a**): Yield = 91.7%. ^{1}H NMR (300 MHz, $CDCl_3$): δ 1.25 (t, *J* = 7.1 Hz, 3H), 1.58-1.50 (m, 1H), 2.01-1.84 (m, 3H), 2.48 (t, *J* = 6.7 Hz, 2H), 2.68-2.61 (m, 2H), 3.14 (ddd, *J* = 13.8, 7.4, 4.9 Hz, 1H), 3.57 (ddd, *J* = 13.8, 6.5, 3.4 Hz, 1H), 3.78-3.70 (m, 1H), 3.87-3.82 (m, 1H), 3.97-3.89 (m, 1H), 4.14 (q, *J* = 7.1 Hz, 2H), 5.94 (s, 1H); ^{13}C NMR (75 MHz, $CDCl_3$): δ 14.10, 25.74, 28.54, 29.55, 30.83, 43.17, 60.49, 67.95, 77.70, 171.49, 172.82.

N^1,N^1-bis(2-hydroxyethyl)-N^4-((tetrahydrofuran-2-yl)methyl)succinamide (**THFA, 10b**): Yield = 48.3%. ^{1}H NMR (300 MHz; $CDCl_3$): δ 2.71-2.67 (m, 2H), 2.87-2.83 (m, 2H), 3.32 (d, *J* = 10.1 Hz, 6H), 3.61-3.44 (m, 12H), 3.83 (dt, *J* = 9.0, 4.6 Hz, 4H); ^{13}C NMR (75 MHz, $CDCl_3$): δ 25.71, 28.64, 28.67, 31.27, 43.33, 50.42, 52.04, 60.46, 60.61, 67.99, 77.76, 172.95, 173.72.

Ethyl 4-((2-ethoxyethyl)amino)-4-oxobutanoate (**11a**): Yield = 73.3%). ^{1}H NMR (500 MHz, $CDCl_3$): δ 1.23 (dt, *J* = 25.0, 7.1 Hz, 6H), 2.48 (t, *J* = 6.9 Hz, 2H), 2.66 (t, *J* = 6.9 Hz, 2H), 3.52-3.42 (m, 6H), 4.14 (q, *J* = 7.1 Hz, 2H), 5.97 (s, 1H). ^{13}C NMR (126 MHz, $CDCl_3$): δ 14.33, 15.26, 29.75, 31.19, 39.54, 60.79, 66.57, 69.14, 171.49, 173.06.

N^1-(2-ethoxyethyl)-N^4,N^4-bis(2-hydroxyethyl)succinamide (**EoEtA, 11b**): Yield = 50.4%. ^{1}H NMR (500 MHz, $CDCl_3$): δ 1.20 (t, *J* = 7.0 Hz, 3H), 2.60 (t, *J* = 6.3 Hz, 2H), 2.73 (dd, *J* = 7.4, 5.3 Hz, 2H), 3.41 (quintet,

J = 5.1 Hz, 2H), 3.49 (dt, *J* = 13.0, 6.3 Hz, 4H), 3.55 (q, *J* = 4.2 Hz, 4H), 3.73 (s, 1H), 3.82 (s, 4H), 4.25 (s, 1H), 6.26 (s, 1H); ^{13}C NMR (126 MHz, $CDCl_3$): δ 15.23, 28.43, 31.57, 39.55, 50.96, 52.59, 61.29, 66.54, 172.79, 174.25.

Ethyl 4-morpholino-4-oxobutanoate (**12a**): Yield = 91.3%. ^{1}H NMR (300 MHz, $CDCl_3$): δ 1.29-1.24 (m, 3H), 2.70-2.58 (m, 4H), 3.49 (t, *J* = 4.7 Hz, 2H), 3.63 (s, 2H), 3.67 (t, *J* = 4.5 Hz, 4H), 4.15 (q, *J* = 7.1 Hz, 2H); ^{13}C NMR (75 MHz, $CDCl_3$): δ 14.17, 27.68, 29.22, 42.07, 45.72, 60.53, 66.51, 66.82, 169.91, 172.97.

N,N-bis(2-hydroxyethyl)-4-morpholino-4-oxobutanamide (**MorA, 12b**): Yield = 86.1%. ^{1}H NMR (500 MHz, $CDCl_3$): δ 2.73 (s, 4H), 3.50 (t, *J* = 4.8 Hz, 2H), 3.57 (dq, *J* = 15.3, 5.1 Hz, 6H), 3.66 (dt, *J* = 18.2, 4.7 Hz, 4H), 3.82 (dt, *J* = 13.6, 4.8 Hz, 4H), 4.27 (s, 1H); ^{13}C NMR (126 MHz, $CDCl_3$): δ 27.84, 28.85, 42.35, 45.94, 50.85, 52.60, 61.16, 61.44, 66.59, 66.91, 171.25, 174.43.

Ethyl 4-(bis(2-methoxyethyl)amino)-4-oxobutanoate (**13a**): Yield = 85.7%. ^{1}H NMR (300 MHz; $CDCl_3$): δ 1.25 (t, *J* = 7.1 Hz, 3H), 2.73-2.60 (m, 4H), 3.32 (d, *J* = 6.9 Hz, 6H), 3.57-3.50 (m, 9H), 4.13 (q, *J* = 7.1 Hz, 2H). ^{13}C NMR (126 MHz; $CDCl_3$): δ 14.13, 28.00, 29.45, 46.43, 48.65, 58.69, 58.98, 60.35, 70.66, 71.10, 171.70, 173.14

N^1,N^1-bis(2-hydroxyethyl)-N^4,N^4-bis(2-methoxyethyl)succinamide (**bMoEtA, 13b**): Yield = 41%. ^{1}H NMR (300 MHz; $CDCl_3$): δ 2.71-2.67 (m, 2H), 2.87-2.83 (m, 2H), 3.32 (d, *J* = 10.1 Hz, 6H), 3.61-3.44 (m, 12H), 3.83 (dt, *J* = 9.0, 4.6 Hz, 4H); ^{13}C NMR (126 MHz; $CDCl_3$): δ 14.13, 28.00, 29.45, 46.43, 48.65, 58.69, 58.98, 60.35, 70.66, 71.10, 171.70, 173.14.

Ethyl 4-((2-methoxyethyl)amino)-4-oxobutanoate (**14a**): Yield = 94.2%. ^{1}H NMR (300 MHz; $CDCl_3$): δ 1.25 (t, *J* = 7.1 Hz, 3H), 2.47 (t, *J* = 7.0 Hz, 2H), 2.64 (q, *J* = 6.8 Hz, 2H), 3.35 (s, 3H), 3.44-3.44 (m, 4H), 4.14 (q, *J* = 7.1 Hz, 2H), 5.96 (s, 1H); ^{13}C NMR (75 MHz, $CDCl_3$): δ 14.14, 29.58, 30.89, 39.22, 58.64, 60.57, 71.15, 171.51, 172.89.

N^1,N^1-bis(2-hydroxyethyl)-N^4-(2-methoxyethyl)succinamide (**MoEtA, 14b**): Yield = 69.8%. ^{1}H NMR (500 MHz; $CDCl_3$): δ 2.61 (t, *J* = 6.3 Hz, 2H), 2.74 (dd, *J* = 7.4, 5.4 Hz, 2H), 3.36 (s, 3H), 3.42 (dt, *J* = 10.4, 5.3 Hz, 4H), 3.56 (s, 4H), 3.70 (s, 1H), 3.83 (t, *J* = 4.6 Hz, 4H), 4.19 (s, 1H), 6.28 (s, 1H); ^{13}C NMR (126 MHz, $CDCl_3$): δ 28.51, 31.57, 39.37, 50.97, 52.57, 58.81, 61.02, 61.31, 71.23, 172.85, 174.24.

N,N-bis(2-hydroxyethyl)butyramide (**nPr, 15**): Yield = 65%. ^{1}H NMR (300 MHz, $CDCl_3$): δ 0.93 (t, *J* = 7.4 Hz, 3H), 1.63 (sextet, *J* = 7.5 Hz, 2H), 2.35 (t, *J* = 7.6 Hz, 2H), 3.49 (dt, *J* = 11.1, 5.4 Hz, 4H), 3.76 (dt, *J* = 11.4, 5.5 Hz, 4H), 4.26 (br s, 2H); ^{13}C NMR (126 MHz, $CDCl_3$): δ 13.95, 18.74, 35.48, 50.53, 52.23, 60.68, 61.16, 175.47.

N,N-bis(2-hydroxyethyl)isobutyramide (**iPr, 16**): Yield = 69%**.** ^{1}H NMR ($CDCl_3$, 300 MHz) δ 1.09 (d, *J* = 6.7 Hz, 6H), 2.87 (dt, *J* = 13.4, 6.7 Hz, 1H), 3.50 (td, *J* = 5.1, 2.5 Hz, 4H), 3.76 (dt, *J* = 9.9, 5.0 Hz, 4H), 4.26 (br s, 2H).^{13}C NMR (126 MHz, $CDCl_3$): δ 19.64, 30.54, 50.80, 52.06, 61.07, 61.49, 179.83.

N,N-bis(2-hydroxyethyl)acetamide (**Me, 18**): Yield = 61.5%. ^{1}H NMR (300 MHz; $CDCl_3$): δ 2.16 (s, 3H), 3.57-3.48 (m, 6H), 3.87-3.78 (m, 4H). ^{13}C NMR (75 MHz, $CDCl_3$): δ 21.84, 50.04, 52.87, 60.20, 60.56, 172.91.

N,N -bis(2-hydroxyethyl)-2-methoxyacetamide (**MoMe, 19**): Yield = 80.7%. ^{1}H NMR (300 MHz, $CDCl_3$): δ 3.44 (s, 3H), 3.47 (t, *J* = 5.1 Hz, 2H), 3.56 (t, *J* = 5.0 Hz, 2H), 3.78 (t, *J* = 5.1 Hz, 2H), 3.87 (t, *J* = 5.0 Hz, 2H), 4.19 (s, 2H); ^{13}C NMR (75 MHz, $CDCl_3$): δ 49.92, 50.86, 59.14, 60.01, 60.36, 71.01, 171.06.

N,N-bis(2-hydroxyethyl)-3-methoxypropanamide (**MoEt, 20**): Yield = 92.6%. ^{1}H NMR (300 MHz; $CDCl_3$): δ 2.67 (t, *J* = 6.2 Hz, 2H), 3.34 (s, 3H), 3.54 (q, *J* = 5.0 Hz, 4H), 3.70 (t, *J* = 6.2 Hz, 2H), 3.78 (dt, *J* = 16.8, 5.1 Hz, 6H). ^{13}C NMR (75 MHz, $CDCl_3$): δ 33.65, 50.43, 52.17, 58.81, 60.54, 60.84, 68.82, 172.96.

General Procedure for Polyesterification of *N*-Substituted Diol Monomers

Carbodiimide-mediated polyesterification was used to generate thermoresponsive poly(ester)s (TR-PEs) from *N*-substituted diols. This route allows for the generation of high molecular weight PEs bearing sensitive functional groups that might not be possible using other polyesterification methods. In a general reaction, a equimolar ratio of diol and diacid were taken into flask containing a small amount of 4-(dimethylamino) pyridinium 4-toluene sulfonate (DPTS) and dry CH_2Cl_2. The mixture was then cooled and *N,N'*-diisopropylcarbodiimide (DIC) was added dropwise and allowed to stir at room-temperature for 1 – 4 days. Detailed synthetic procedures are described below. Polyesters were prepared according to previously established methods using room-temperature carbodiimide mediated polymerization.[28] *Note:* After filtering off diisopropyl urea byproduct, the HESA-based polyesters (**TR1-14**) were purified via dialysis against MeOH. HEA-based polyesters (**TR15-20**) were purified by precipitation (2x) into cold MeOH.

TR-cPrAPE (**TR1**): Recovered = 1.74 g, M_n = 25.5 kDa, $Đ_M$ = 1.66, T_g = 14 ºC, T_{deg} = 274 ºC. ^{1}H NMR (500 MHz, $CDCl_3$): δ 0.47 (s, 2H), 0.70 (q, *J* = 6.1 Hz, 2H), 2.45 (s, 2H), 2.71-2.59 (m, 7H), 3.67-3.58 (m, 4H), 4.23 (dt, *J* = 16.0, 5.3 Hz, 4H), 6.67 (s, 1H).

TR-nPrAPE (**TR2**): Recovered = 2.11 g, M_n = 29.1 kDa, $Đ_M$ = 1.52, T_g = 5 ºC, T_{deg} = 271 ºC. ^{1}H NMR (500 MHz, $CDCl_3$): δ 0.90 (t, *J* = 7.4 Hz, 3H), 1.49 (q, *J* = 7.3 Hz, 2H), 2.50 (t, *J* = 6.0 Hz, 2H), 2.63-2.59 (m, 4H), 2.71 (t, *J* = 5.4 Hz, 2H), 3.16 (q, *J* = 6.6 Hz, 2H), 3.67-3.59 (m, 4H), 4.23 (dt, *J* = 12.6, 6.0 Hz, 4H), 6.41 (s, 1H).

TR-PropargylAPE (**TR3**): Recovered = 445 mg, M_n = 12.9 kDa, $Đ_M$ = 1.33, T_g = 13 ºC, T_{deg} = 242 ºC. ^{1}H NMR (300 MHz, $CDCl_3$): δ 2.76-2.56 (m, 9H), 3.64 (dt, *J* = 18.6, 4.8 Hz, 4H), 4.01 (t, *J* = 2.5 Hz, 2H), 4.26 (t, *J* = 5.6 Hz, 4H), 7.02 (s, 1H). ^{1}H NMR (300 MHz, DMSO-d_6): δ 2.32 (t, *J* = 6.8 Hz, 2H), 2.57-2.48 (m, 6H), 3.02 (t, *J* = 2.3 Hz, 1H), 3.60-3.45 (m, 4H), 3.81 (dd, *J* = 5.4, 2.4 Hz, 2H), 4.11 (dt, *J* = 30.3, 5.3 Hz, 4H), 8.19 (t, *J* = 5.5 Hz, 1H).

TR-PPDAPE (**TR4**): Recovered = 572 mg, M_n = 26.0 kDa, $Đ_M$ = 1.40, T_g = 22 ºC, T_{deg} = 309 ºC. ^{1}H NMR (300 MHz, $CDCl_3$): δ 1.63-1.51 (m, 6H), 2.62 (dd, *J* = 6.9, 6.3 Hz, 4H), 2.68 (s, 4H), 3.53-3.42 (m, 4H), 3.65 (dt, *J* = 28.0, 5.7 Hz, 4H), 4.29-4.20 (m, 4H).

TR-dnBuAPE (**TR5**): Recovered = 641 mg, M_n = 44.5 kDa, $Đ_M$ = 1.42, T_g = -4 ºC, T_{deg} = 315 ºC. ^{1}H NMR (300 MHz, $CDCl_3$): δ 0.92 (dt, *J* = 12.8, 7.2 Hz, 6H), 1.36-1.24 (m, 4H), 1.60-1.45 (m, 4H), 2.65 (ddd, *J* = 13.6, 10.2, 5.8 Hz, 8H), 3.27 (q, *J* = 7.5 Hz, 4H), 3.71-3.58 (m, 4H), 4.27-4.19 (m, 4H).

TR-HepAPE (**TR6**): Recovered = 712 mg, M_n = 56.8 kDa, $Đ_M$ = 1.34, T_g = 9 ºC, T_{deg} = 277 ºC. ^{1}H NMR (300 MHz, $CDCl_3$): δ 0.87 (q, *J* = 4.2 Hz, 3H), 1.27 (d, *J* = 3.3 Hz, 8H), 1.49-1.45 (m, 2H), 2.52-2.47 (m, 2H), 2.61 (d, *J* = 13.4 Hz, 4H), 2.74-2.70 (m, 2H), 3.22-3.16 (m, 2H), 3.68-3.58 (m, 4H), 4.26-4.20 (m, 4H), 6.35 (s, 1H).

TR-iPrAPE (**TR7**): Recovered = 1.82 g, M_n = 56.5 kDa, $Đ_M$ = 1.57, T_g = 10 ºC, T_{deg} = 287 ºC. ^{1}H NMR (500 MHz, $CDCl_3$): δ 1.12 (d, *J* = 6.6 Hz, 6H), 2.47 (t, *J* = 6.6 Hz, 2H), 2.64-2.59 (m, 4H), 2.71-2.69 (t, 2H), 3.59 (t, *J* = 4.9 Hz, 2H), 3.66 (t, *J* = 5.4 Hz, 2H), 4.01 (dq, *J* = 13.0, 6.5 Hz, 1H), 4.23 (dt, *J* = 11.3, 5.5 Hz, 4H), 6.24-6.14 (m, 1H).

TR-dEtAPE (**TR8**): Recovered = 519 mg, M_n = 47.1kDa, $Đ_M$ = 1.66, T_g = -4 ºC, T_{deg} = 304 ºC. ^{1}H NMR (500 MHz, $CDCl_3$): δ 1.14 (dt, *J* = 55.9, 7.1 Hz, 6H), 2.70-2.60 (m, 7H), 3.35 (qd, *J* = 7.1, 2.3 Hz, 4H), 3.65 (dt, *J* = 48.3, 5.6 Hz, 4H), 4.23 (dt, *J* = 26.0, 5.2 Hz, 4H).

TR-PyrAPE (**TR9**): Recovered = 1.18 g, M_n = 54.2 kDa, $Đ_M$ = 1.60, T_g = 0 ºC, T_{deg} = 307 ºC. ^{1}H NMR (500 MHz, $CDCl_3$): δ 1.89 (dquintet, *J* = 55.3, 6.8 Hz, 4H), 2.65-2.59 (m, 5H), 2.71 (t, *J* = 6.5 Hz, 2H), 3.48-3.41 (m, 4H), 3.65 (dt, *J* = 47.5, 5.6 Hz, 4H), 4.28-4.20 (m, 4H).

TR-THFAPE (**TR10**): Recovered = 187.4 mg, M_n = 48.5 kDa, $Đ_M$ = 1.49, T_g = 13 ºC, T_{deg} = 275 ºC. ^{1}H NMR (500 MHz, $CDCl_3$): δ 1.54 (dt, *J* = 18.6, 8.7 Hz, 1H), 1.97-1.87 (m, 3H), 2.54 (t, *J* = 6.4 Hz, 2H), 2.65-2.60 (m, 4H), 2.72 (q, *J* = 6.3 Hz, 2H), 3.16 (dd, *J* = 13.4, 6.0 Hz, 1H), 3.53-3.48 (m, 1H), 3.61 (t, *J* = 4.5 Hz, 2H), 3.67 (t, *J* = 5.7 Hz, 2H), 3.73 (q, *J* = 7.3 Hz, 1H), 3.85 (q, *J* = 7.4 Hz, 1H), 3.95 (dd, *J* = 7.0, 3.6 Hz, 1H), 4.24 (dt, *J* = 13.2, 6.2 Hz, 4H), 6.49 (s, 1H).

TR-EoEtAPE (**TR11**): Recovered = 360 mg, M_n = 30.3 kDa, $Đ_M$ = 1.38, T_g = 9 ºC, T_{deg} = 273 ºC. ^{1}H NMR (300 MHz, $CDCl_3$): δ 1.19 (t, *J* = 7.0 Hz, 3H), 2.53 (t, *J* = 6.5 Hz, 2H), 2.62 (d, *J* = 14.4 Hz, 5H), 2.71-2.69 (m, 2H), 3.40 (d, *J* = 5.4 Hz, 2H), 3.50-3.46 (m, 4H), 3.66 (t, *J* = 5.7 Hz, 4H), 4.23 (q, *J* = 6.5 Hz, 4H), 6.42 (s, 1H).

TR-MorAPE (**TR12**): Recovered = 486 mg, M_n = 31.4 kDa, $Đ_M$ = 1.35, T_g = 4 ºC, T_{deg} = 306 ºC. ^{1}H NMR (300 MHz, $CDCl_3$): δ 2.66 (ddd, *J* = 22.0, 9.6, 5.9 Hz, 8H), 3.71-3.51 (m, 12H), 4.29-4.20 (m, 4H).

TR-bMoEtAPE (**TR13**): Recovered = 1.12 g, M_n = 113.5 kDa, $Đ_M$ = 1.58, T_g = -20 ºC, T_{deg} = 315 ºC. ^{1}H NMR (300 MHz; $CDCl_3$): δ 2.66 (dq, *J* = 20.0, 6.2 Hz, 8H), 3.31 (d, *J* = 7.0 Hz, 6H), 3.70-3.47 (m, 12H), 4.22 (dt, *J* = 13.5, 6.3 Hz, 4H).

TR-MoEtAPE (**TR14**): Recovered = 153 mg, M_n = 43.7 kDa, $Đ_M$ = 1.39, T_g = -8 ºC, T_{deg} = 266 ºC. ^{1}H NMR (500 MHz, $CDCl_3$): δ 1.18 (t, *J* = 7.0 Hz, 3H), 2.52 (t, *J* = 6.5 Hz, 2H), 2.64-2.59 (m, 4H), 2.71 (t, *J* = 6.4 Hz, 2H), 3.40 (q, *J* = 5.3 Hz, 2H), 3.51-3.46 (m, 4H), 3.59 (t, *J* = 4.5 Hz, 2H), 3.66 (t, *J* = 5.7 Hz, 2H), 4.23 (dt, *J* = 12.7, 6.1 Hz, 4H), 6.43 (dd, *J* = 17.0, 5.4 Hz, 1H).

TR-nPrPE (**TR15**): Recovered = 756 mg, M_n = 25.3 kDa, $Đ_M$ = 1.57, T_g = -20 ºC. ^{1}H NMR (300 MHz, $CDCl_3$): δ 1.11 (d, *J* = 6.7 Hz, 6H), 1.11 (d, *J* = 6.7 Hz, 6H), 2.60 (t, *J* = 2.8 Hz, 4H), 2.60 (t, *J* = 2.8 Hz, 4H), 2.82 (septet, *J* = 13.4, 6.7 Hz, 1H), 3.65-3.57 (m, 4H), 3.65-3.57 (m, 4H), 4.22-4.21 (m, 4H), 4.22-4.21 (m, 4H). Urea impurity from polymerization observable at δ1.19 and δ4.01

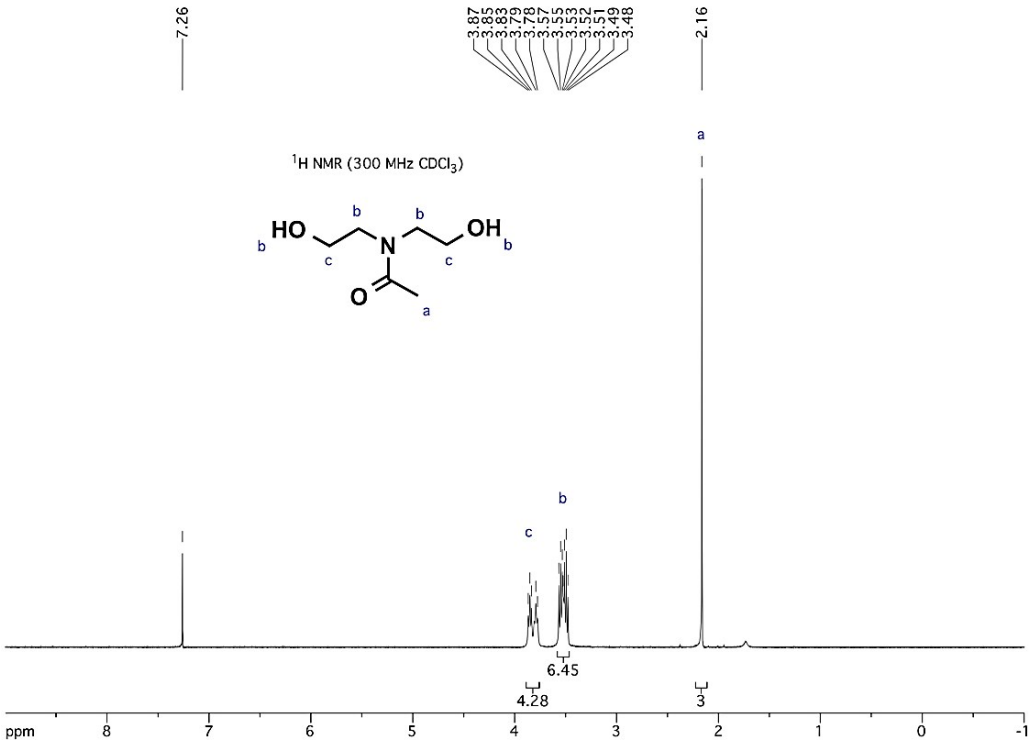
TR-iPrPE (**TR16**): Recovered = 396 mg, M_n = 17.1 kDa, $Đ_M$ = 1.37, T_g = -2 ºC. ^{1}H NMR (300 MHz, $CDCl_3$): δ 0.96 (t, *J* = 7.4 Hz, 3H), 1.66 (sextet, *J* = 7.4 Hz, 2H), 2.33 (t, *J* = 7.4 Hz, 2H), 2.62 (t, *J* = 3.2 Hz, 4H), 3.61 (q, *J* = 5.3 Hz, 4H), 4.24-4.22 (m, 4H). Urea impurity from polymerization observable at δ1.19 and δ4.01.

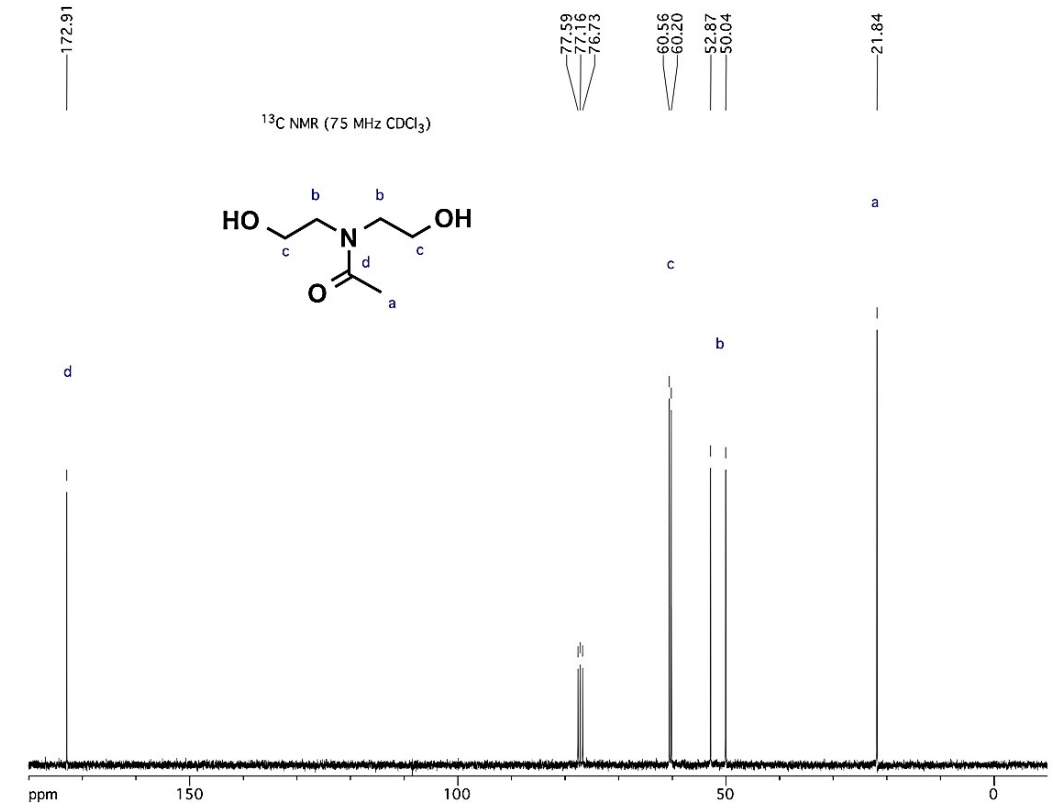
TR-MePE (**TR18**): Recovered = 484 mg, M_n = 45.3 kDa, $Đ_M$ = 1.3, T_g = -5 ºC. ^{1}H NMR (300 MHz, $CDCl_3$): δ 2.12 (s, 3H), 2.61 (t, *J* = 3.8 Hz, 4H), 3.60 (q, *J* = 6.5 Hz, 4H), 4.23 (t, *J* = 5.4 Hz, 4H).

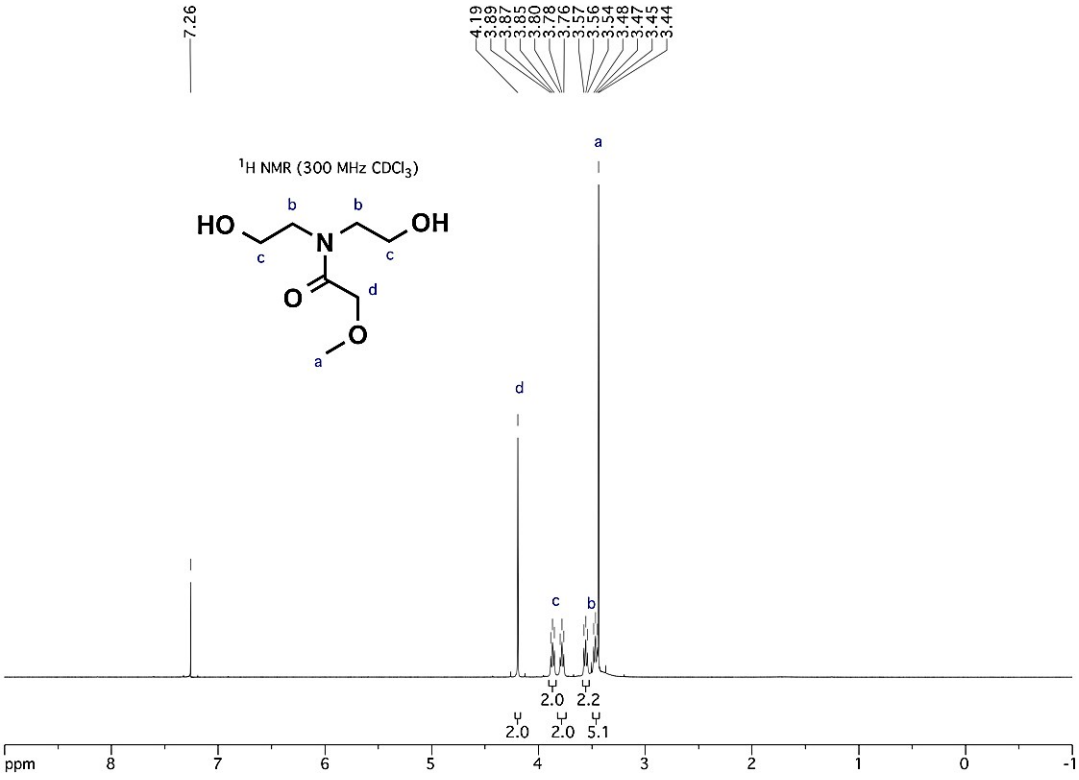
TR-MoMePE (**TR19**): Recovered = 703 mg, M_n = 23.1 kDa, $Đ_M$ = 1.43, T_g = -9 ºC, T_{deg} = 290 ºC. ^{1}H NMR (300 MHz, $CDCl_3$): δ 2.61 (s, 4H), 3.41 (s, 3H), 3.62 (t, *J* = 5.6 Hz, 4H), 4.14 (s, 2H), 4.25 (q, *J* = 5.7 Hz, 4H).

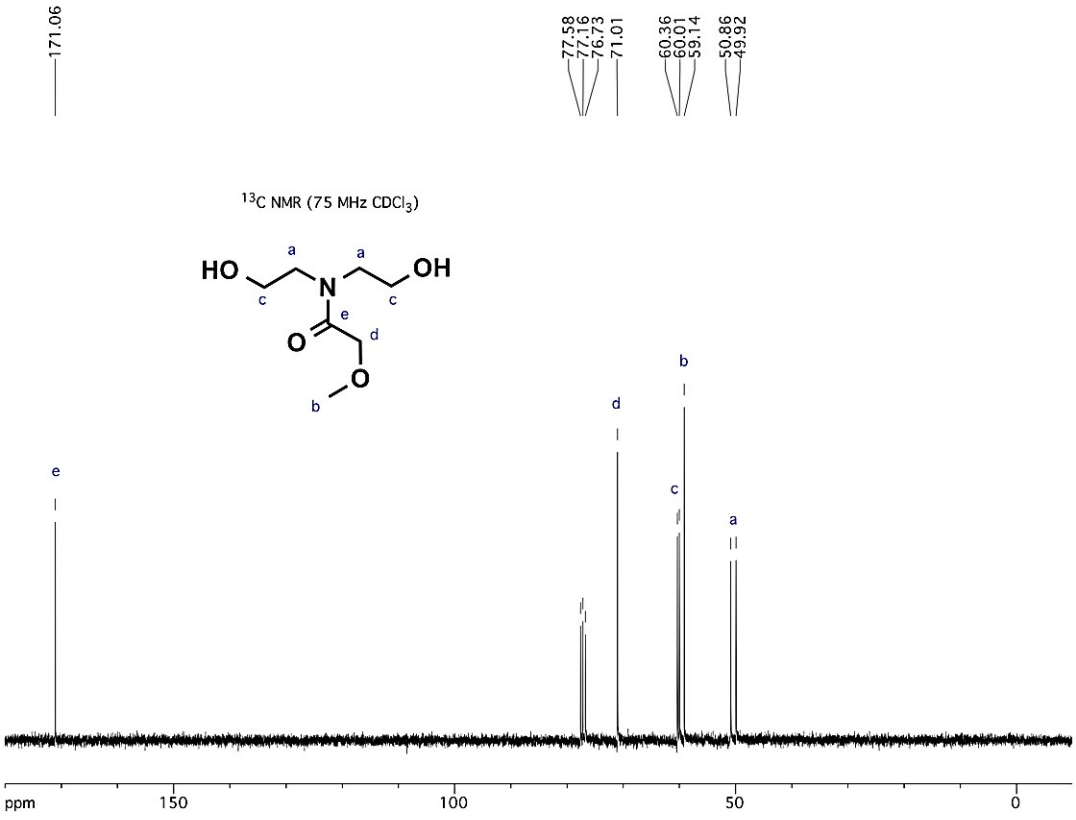
TR-MoEtPE (**TR20**): Recovered = 1.40 g, M_n = 75.4 kDa, $Đ_M$ = 1.47, T_g = -13 ºC, T_{deg} = 294 ºC. ^{1}H NMR (300 MHz, $CDCl_3$): δ 2.61 (d, *J* = 7.0 Hz, 7H), 3.33 (s, 3H), 3.70-3.61 (m, 6H), 4.23 (d, *J* = 3.4 Hz, 4H).

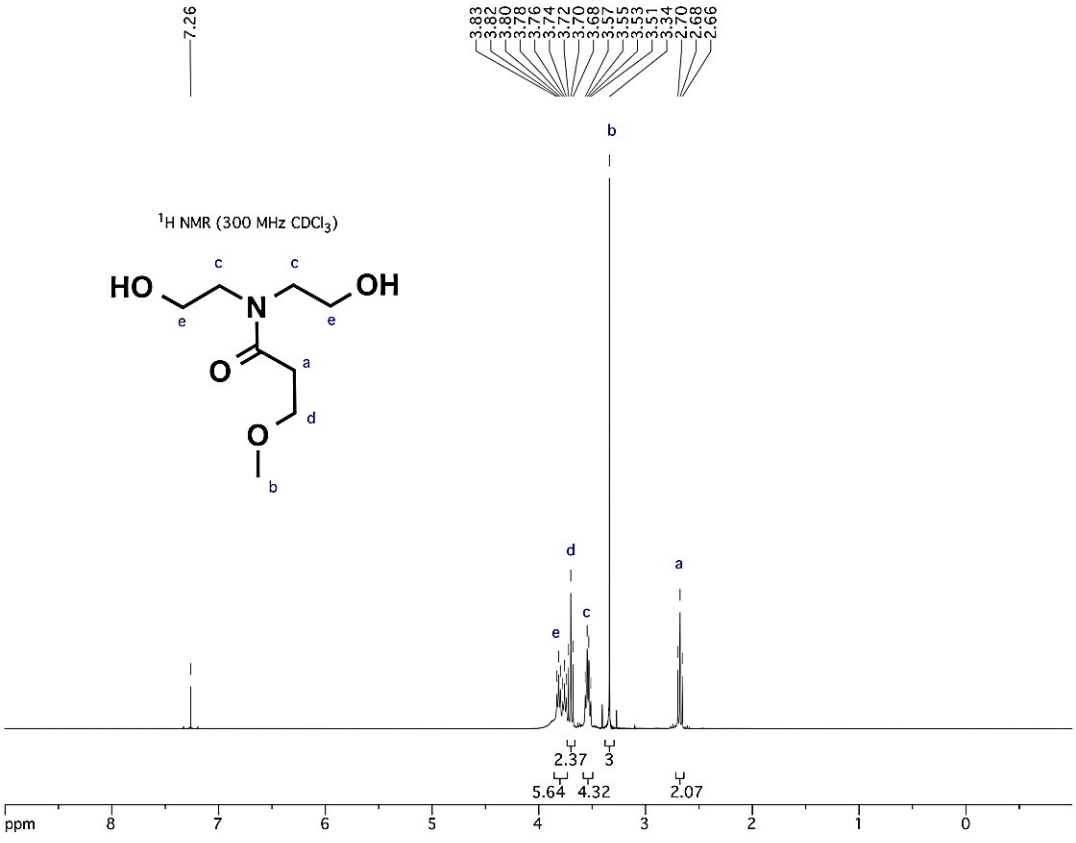
II. NMR Spectra of Monomers and Polymers




172.91
77.59
77.16
76.73
60.56
60.20
52.87
50.04
21.84
^{13}C NMR (75 MHz $CDCl_3$)
HO
OH
N
O
a
b
c
d
ppm
150
100
50
0


7.26
4.19
3.89
3.87
3.85
3.80
3.78
3.76
3.57
3.56
3.54
3.48
3.47
3.45
3.44
^{1}H NMR (300 MHz $CDCl_3$)
HO
OH
N
O
O
a
b
c
d
2.0
2.0
2.0
2.2
5.1
ppm
8
7
6
5
4
3
2
1
0
-1


171.06
77.58
77.16
76.73
71.01
60.36
60.01
59.14
50.86
49.92
13C NMR (75 MHz CDCl3)
HO
OH
N
O
O
a
b
c
d
e
ppm
150
100
50
0


7.26
3.83
3.82
3.80
3.78
3.76
3.74
3.72
3.70
3.68
3.57
3.55
3.53
3.51
3.34
2.70
2.68
2.66
1H NMR (300 MHz CDCl3)
HO
OH
N
O
O
a
b
c
d
e
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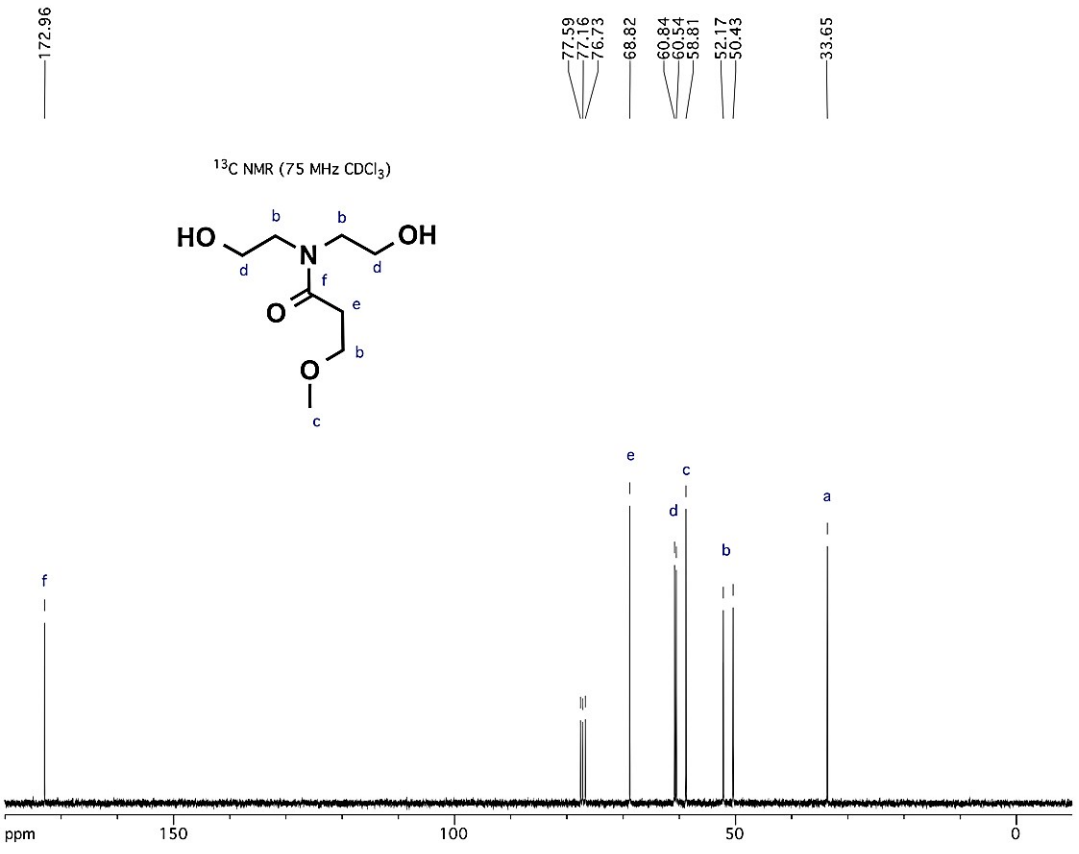
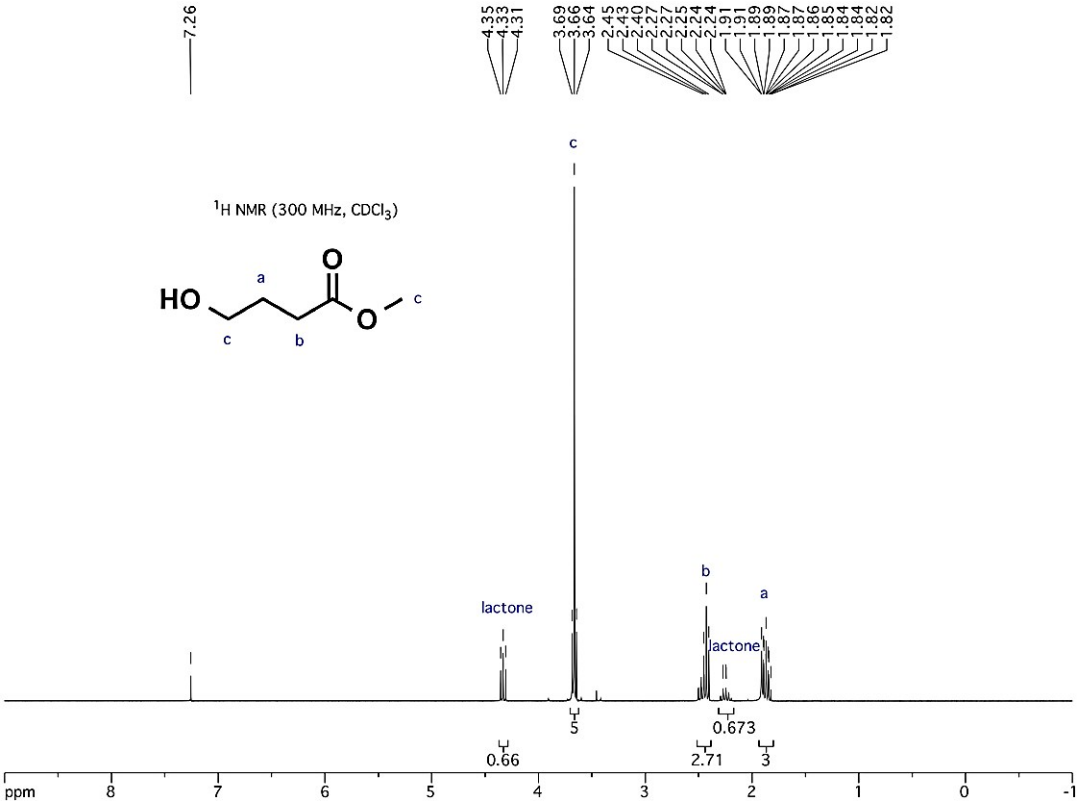
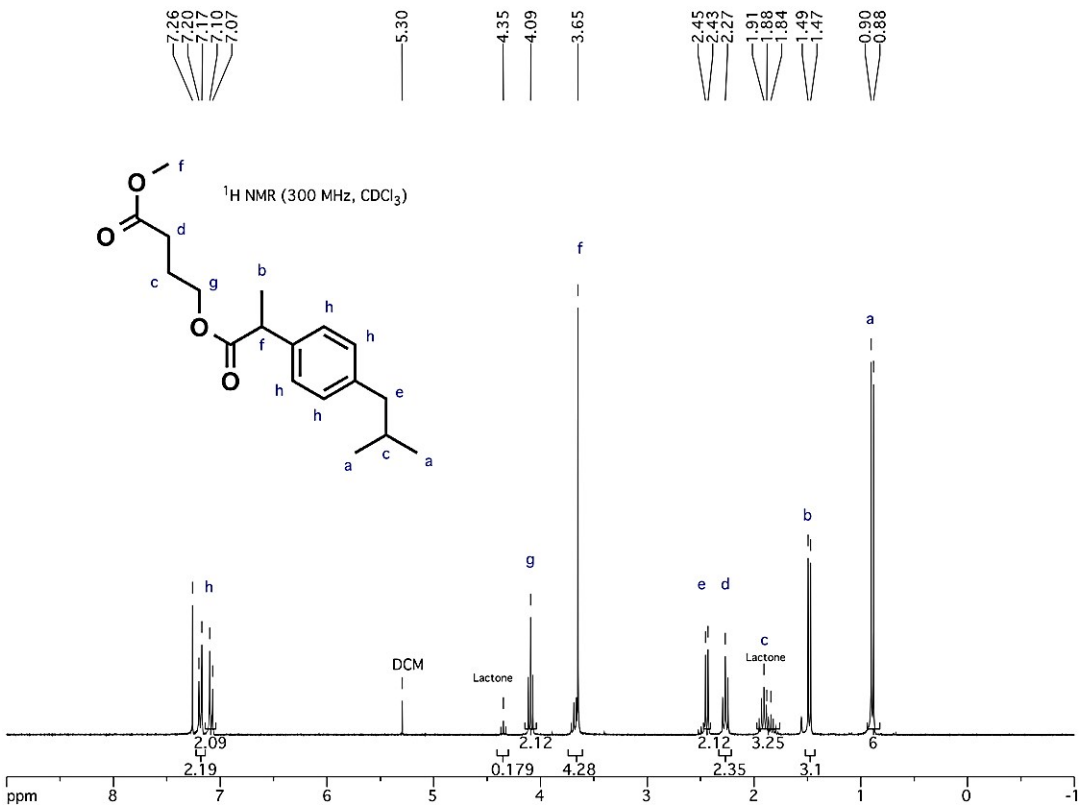
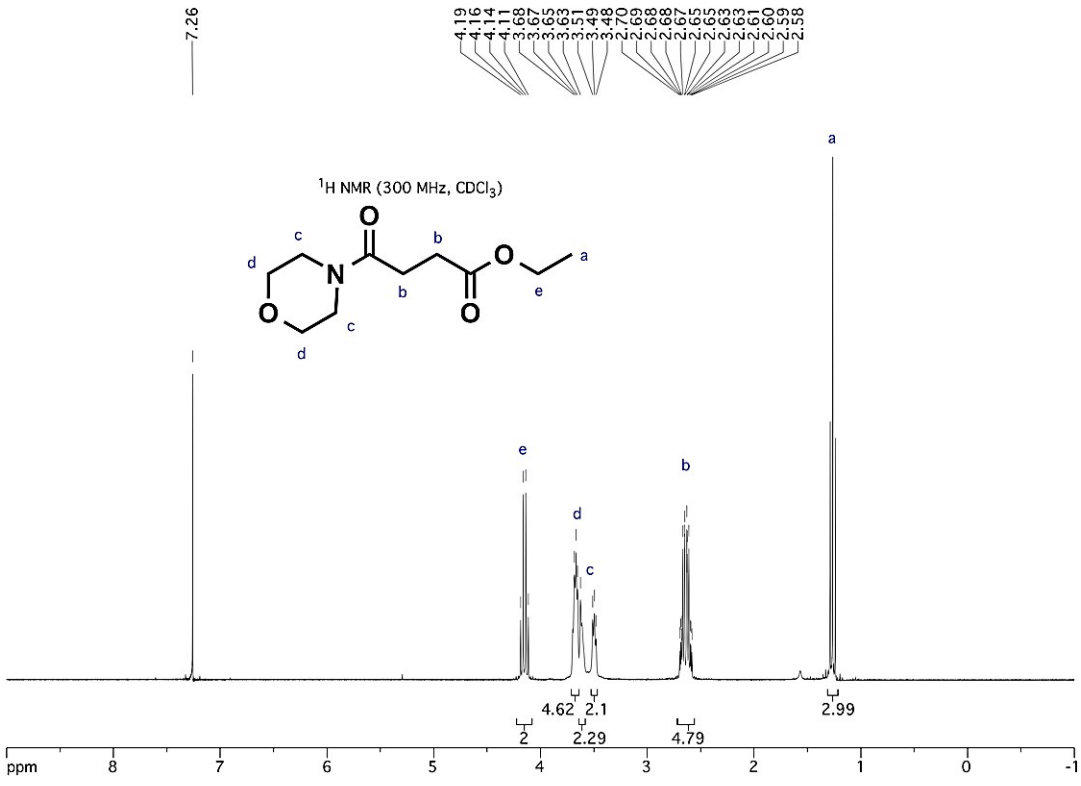
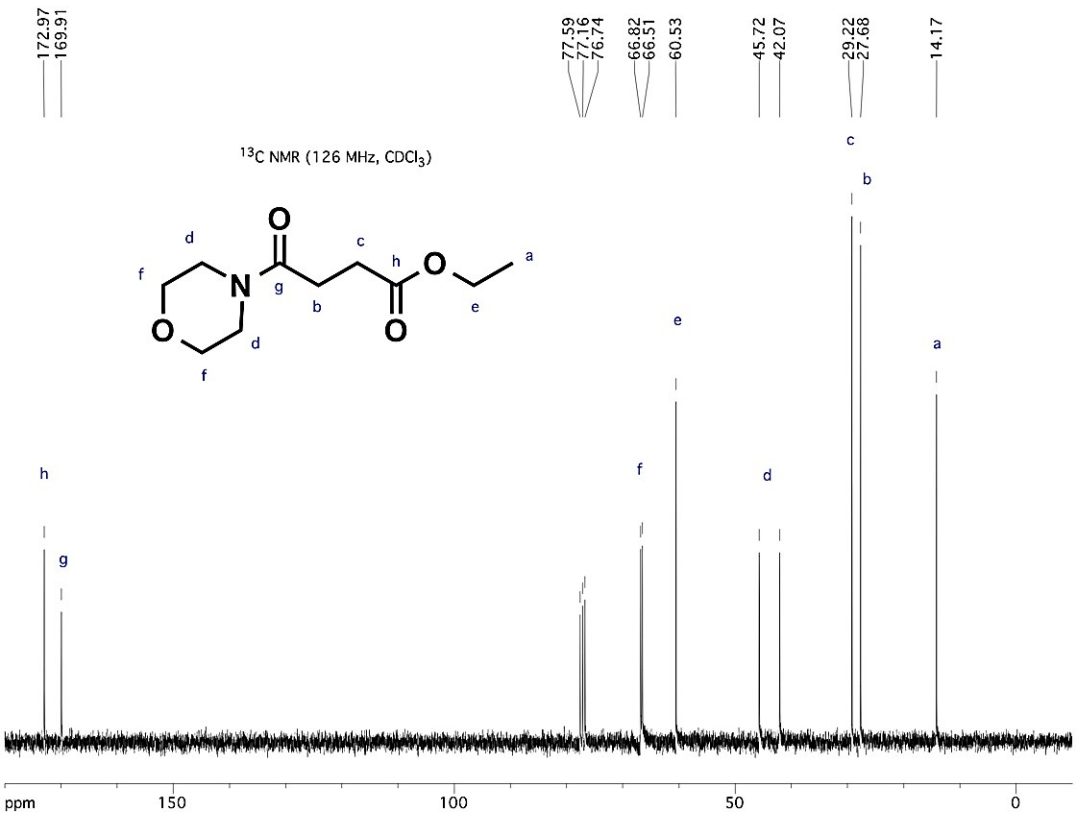
3
5.64
4.32
2.07
ppm
8
7
6
5
4
3
2
1
0


172.96
77.59
77.16
76.73
68.82
60.84
60.54
58.81
52.17
50.43
33.65
13C NMR (75 MHz CDCl3)
HO
OH
N
O
O
a
b
c
d
e
f
ppm
150
100
50
0


7.26
4.35
4.33
4.31
3.69
3.66
3.64
2.45
2.43
2.40
2.27
2.27
2.25
2.24
2.24
1.91
1.91
1.89
1.89
1.87
1.87
1.86
1.85
1.84
1.84
1.82
1.82
1H NMR (300 MHz, CDCl3)
HO
O
O
a
b
c
lactone
lactone
0.66
5
0.673
2.71
3
ppm
8
7
6
5
4
3
2
1
0
-1


7.26
7.20
7.17
7.10
7.07
5.30
4.35
4.09
3.65
2.45
2.43
2.27
1.91
1.88
1.84
1.49
1.47
0.90
0.88
^{1}H NMR (300 MHz, $CDCl_3$)
DCM
Lactone
Lactone
2.09
2.19
0.179
2.12
4.28
2.12
2.35
3.25
3.1
6
ppm


7.26
4.19
4.16
4.14
4.11
3.68
3.67
3.65
3.63
3.51
3.49
3.48
2.70
2.69
2.68
2.68
2.67
2.65
2.63
2.63
2.61
2.60
2.59
2.58
^{1}H NMR (300 MHz, $CDCl_3$)
4.62
2
2.1
2.29
4.79
2.99
ppm


172.97
169.91
77.59
77.16
76.74
66.82
66.51
60.53
45.72
42.07
29.22
27.68
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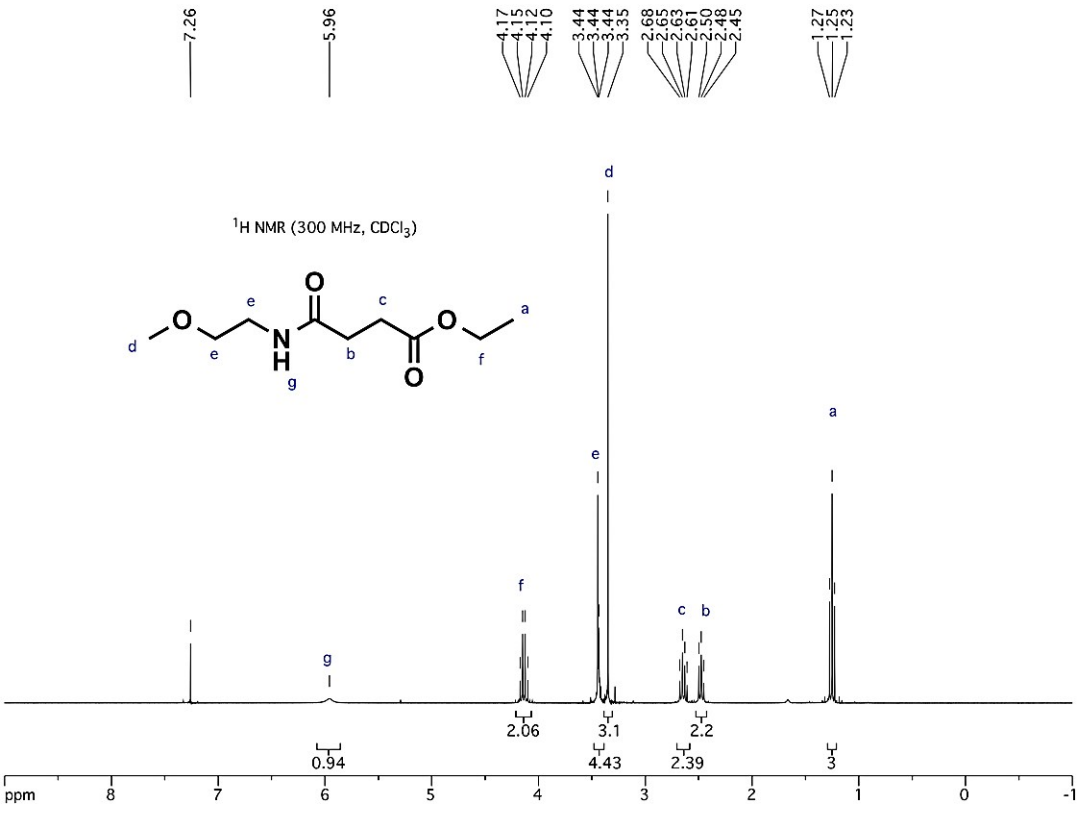
ppm
150
100
50
0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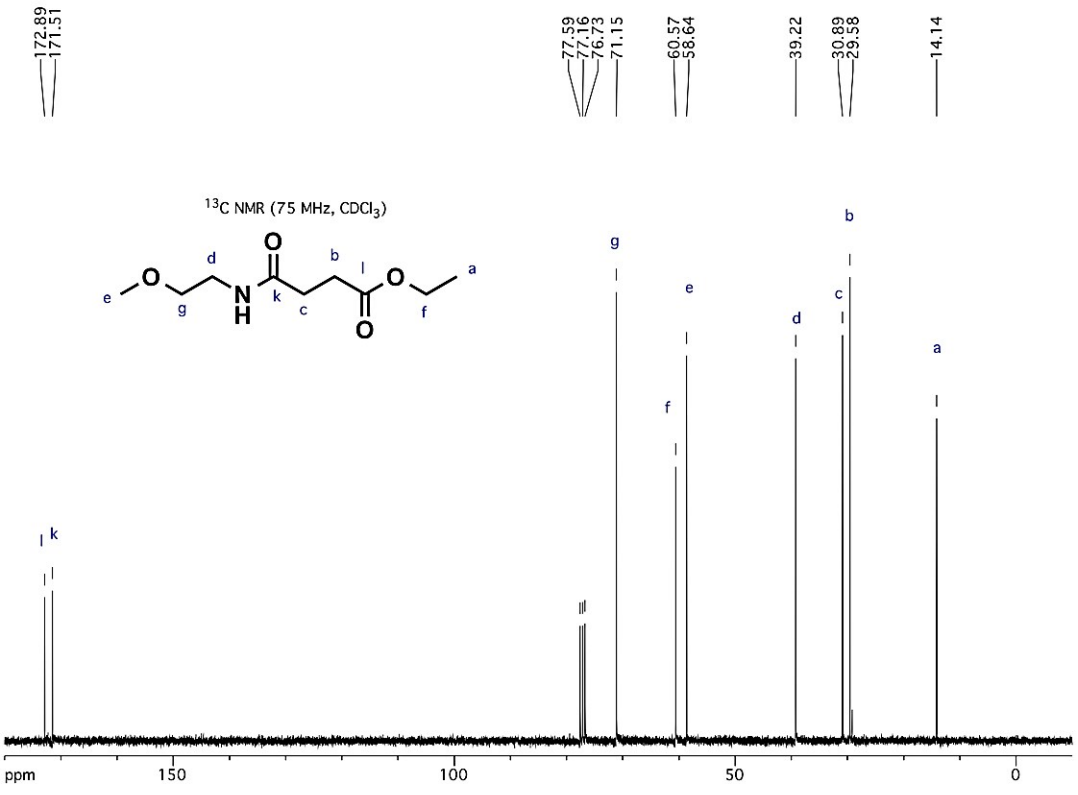
5.96
4.17
4.15
4.12
4.10
3.44
3.44
3.44
3.35
2.68
2.65
2.63
2.61
2.50
2.48
2.45
1.27
1.25
1.23
^{1}H NMR (300 MHz, $CDCl_3$)
2.06
3.1
2.2
0.94
4.43
2.39
3
ppm
8
7
6
5
4
3
2
1
0
-1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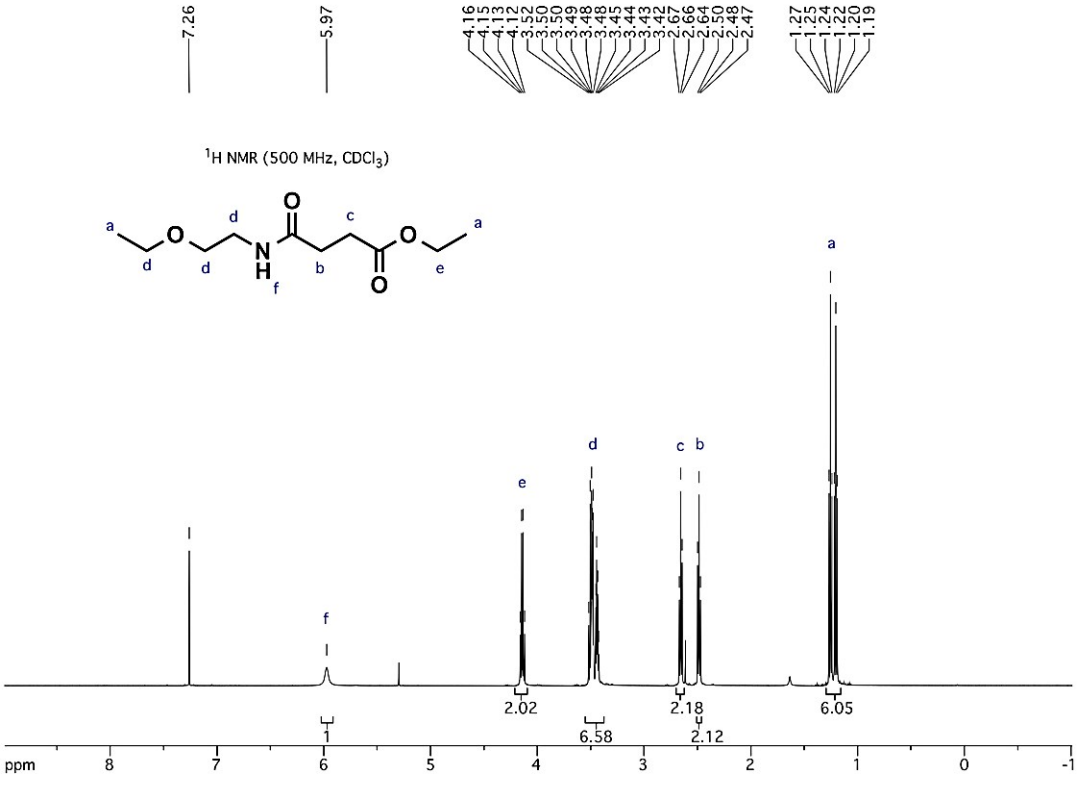
171.51
77.59
77.16
76.73
71.15
60.57
58.64
39.22
30.89
29.58
14.14
13C NMR (75 MHz, CDCl3)
ppm
150
100
50
0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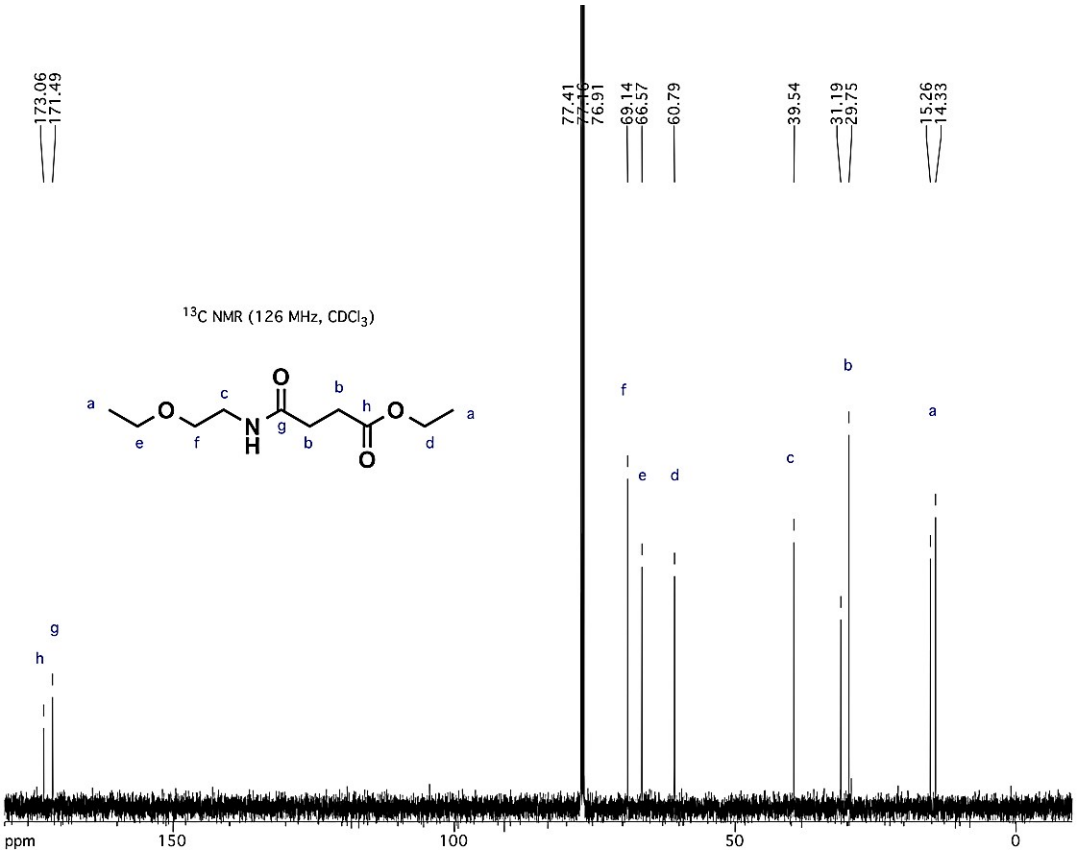
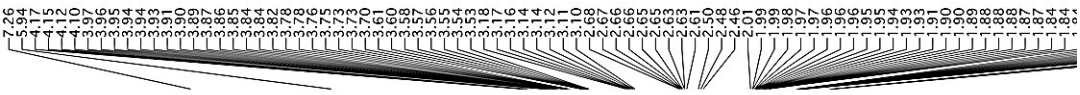
5.97
4.16
4.15
4.13
4.12
3.52
3.50
3.50
3.49
3.48
3.48
3.45
3.44
3.43
3.42
2.67
2.66
2.64
2.50
2.48
2.47
1.27
1.25
1.24
1.22
1.20
1.19
1H NMR (500 MHz, CDCl3)
2.02
6.58
2.18
2.12
6.05
ppm
8
7
6
5
4
3
2
1
0
-1


173.06
171.49
77.41
77.16
76.91
69.14
66.57
60.79
39.54
31.19
29.75
15.26
14.33
^{13}C NMR (126 MHz, $CDCl_3$)
ppm
150
100
50
0


7.26
5.94
4.17
4.15
4.12
4.10
3.97
3.96
3.95
3.94
3.93
3.91
3.90
3.89
3.87
3.86
3.85
3.84
3.84
3.82
3.78
3.78
3.76
3.75
3.73
3.73
3.70
3.61
3.60
3.58
3.57
3.56
3.55
3.54
3.53
3.18
3.17
3.16
3.14
3.12
3.11
3.10
3.09
2.67
2.66
2.66
2.65
2.65
2.63
2.63
2.61
2.50
2.48
2.46
2.01
1.99
1.99
1.98
1.97
1.97
1.96
1.96
1.95
1.95
1.94
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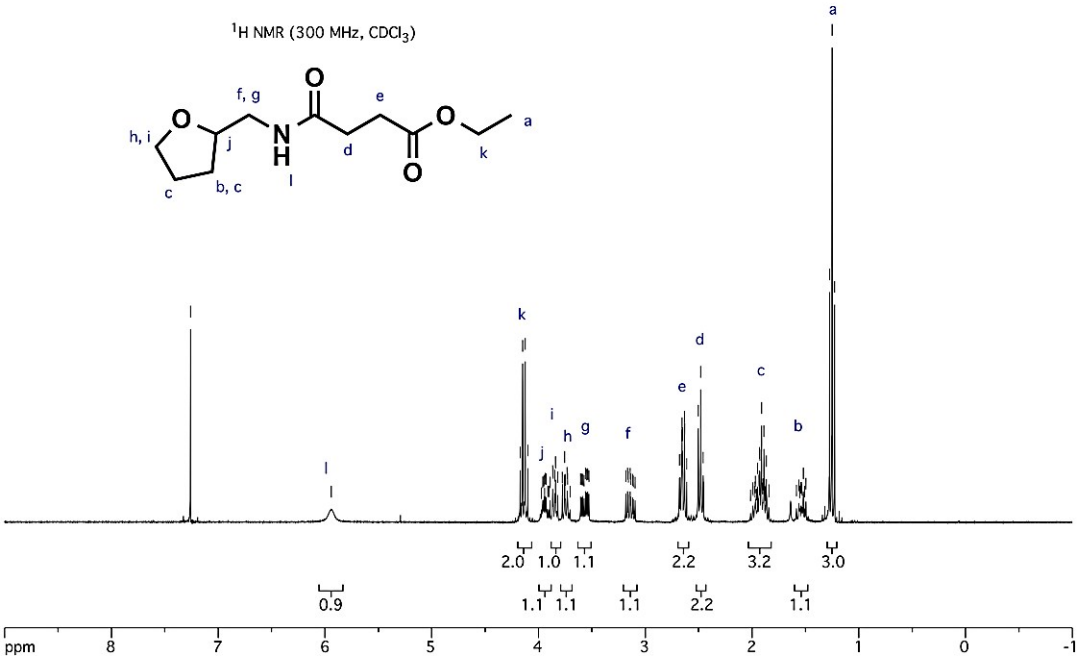
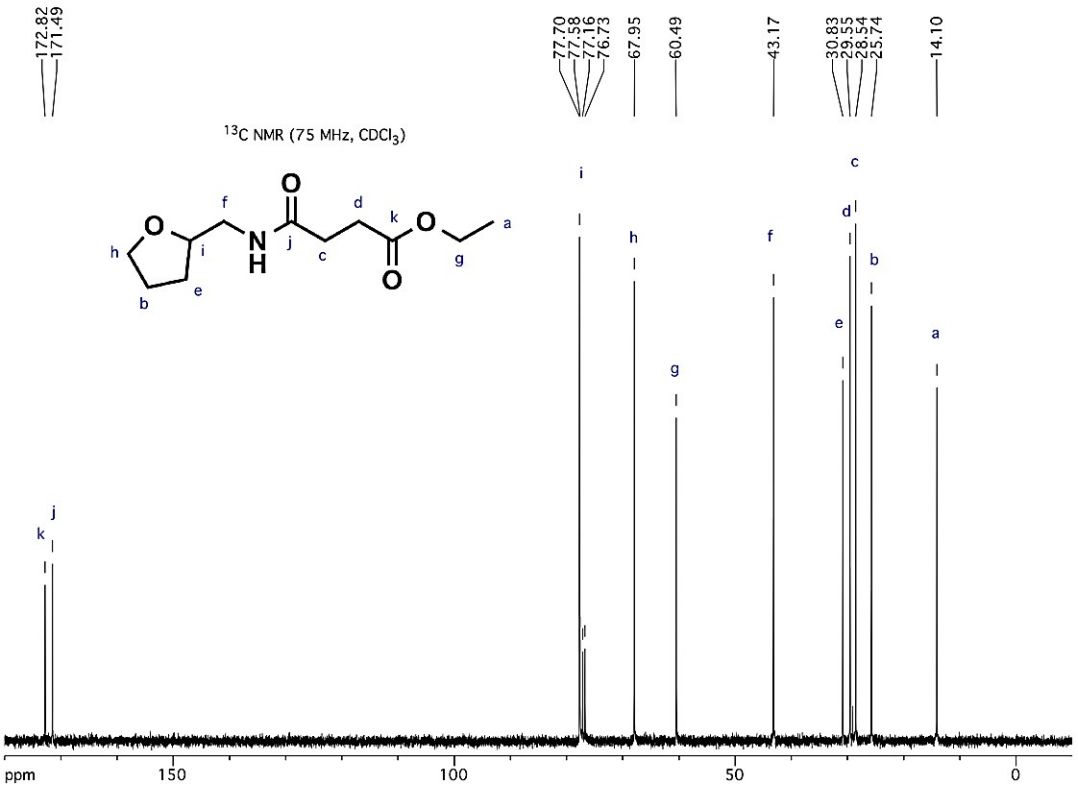
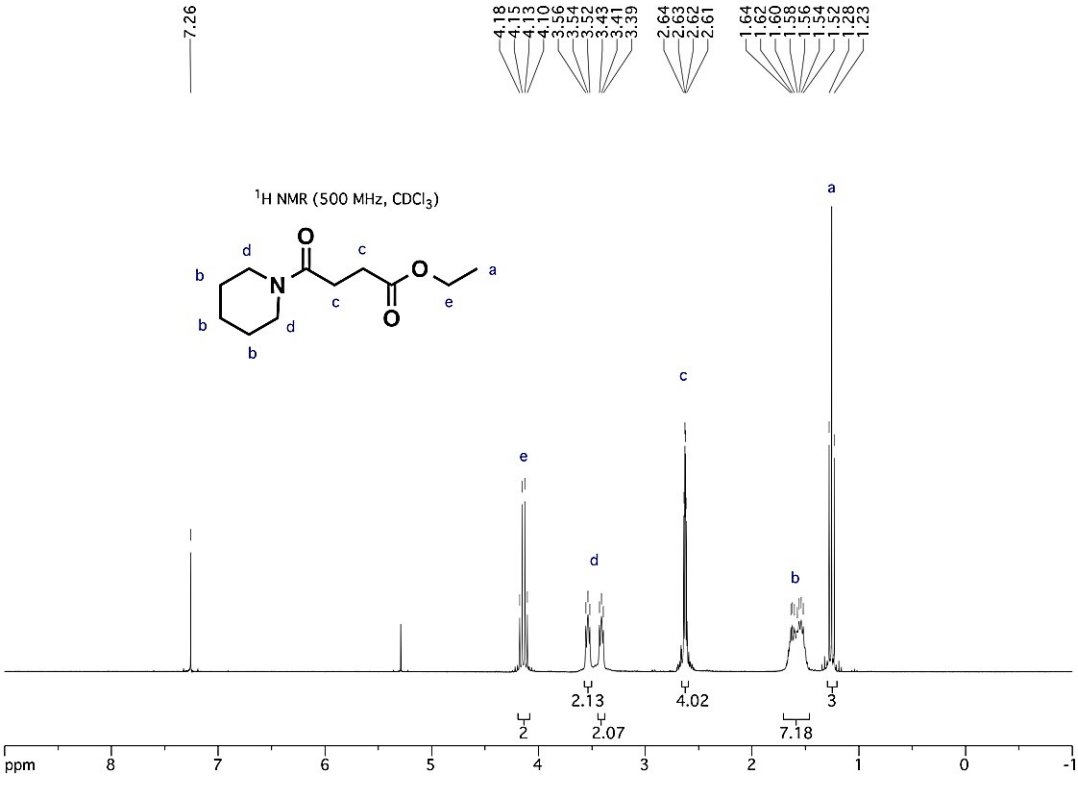
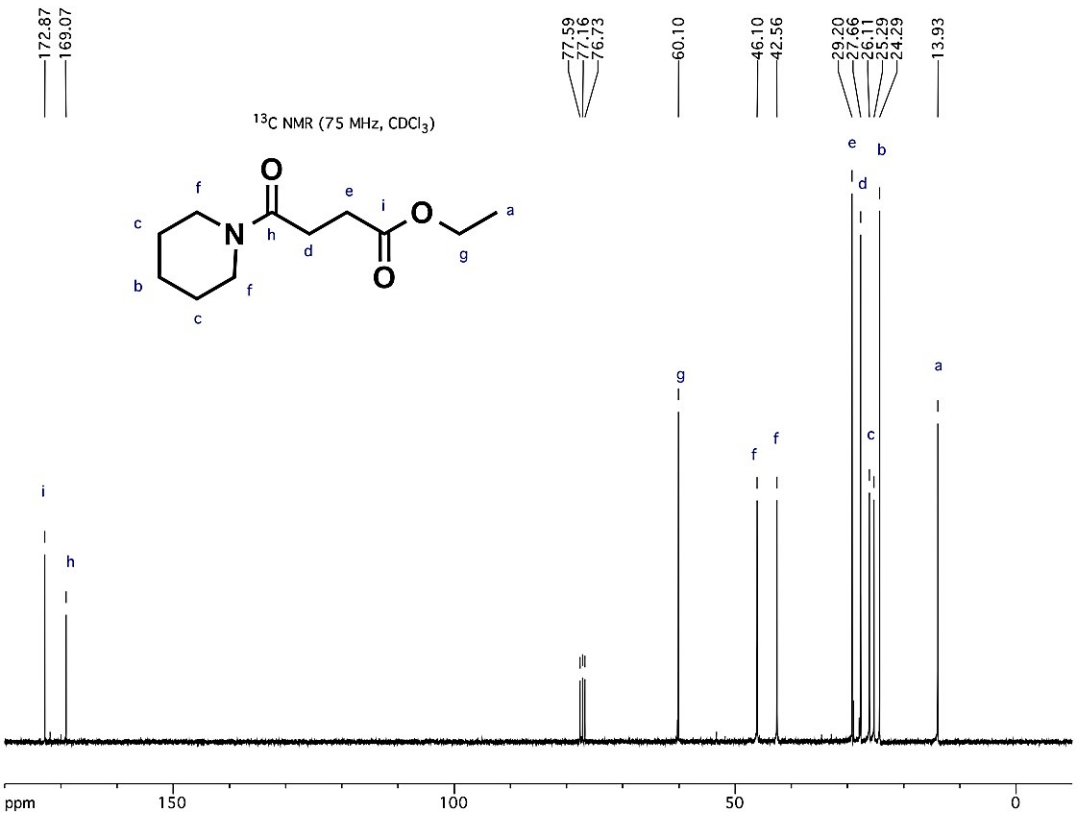
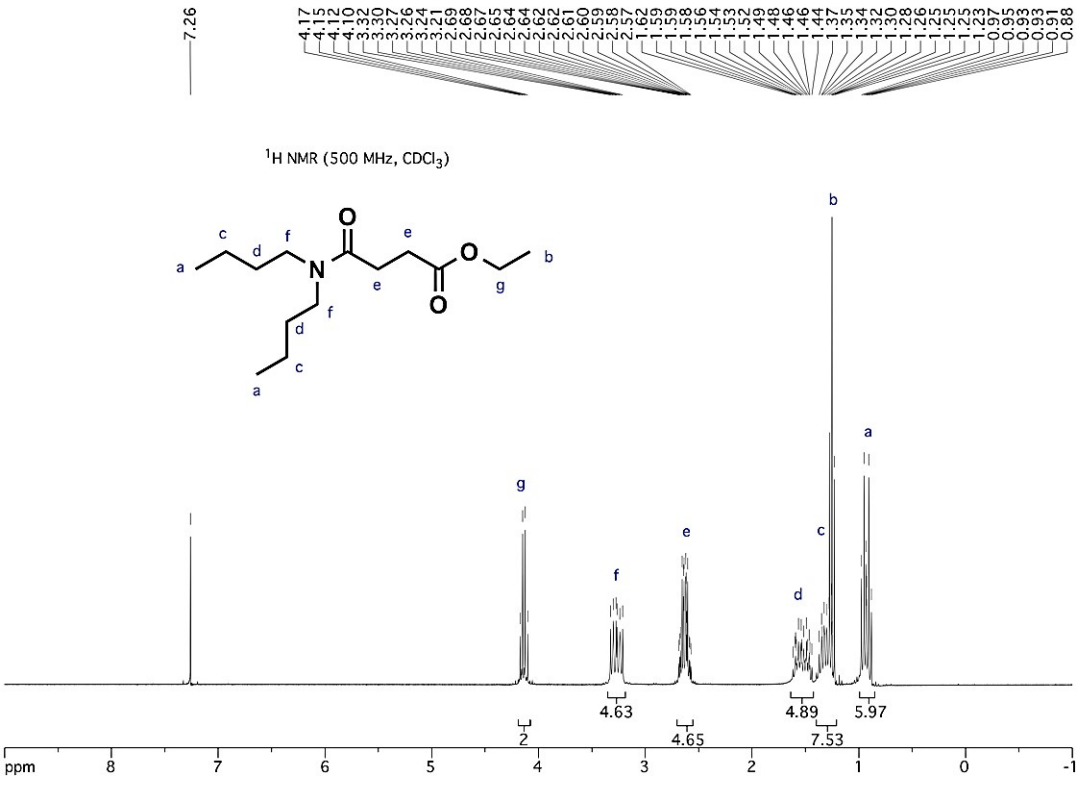
1.88
1.88
1.87
1.87
1.84
1.84

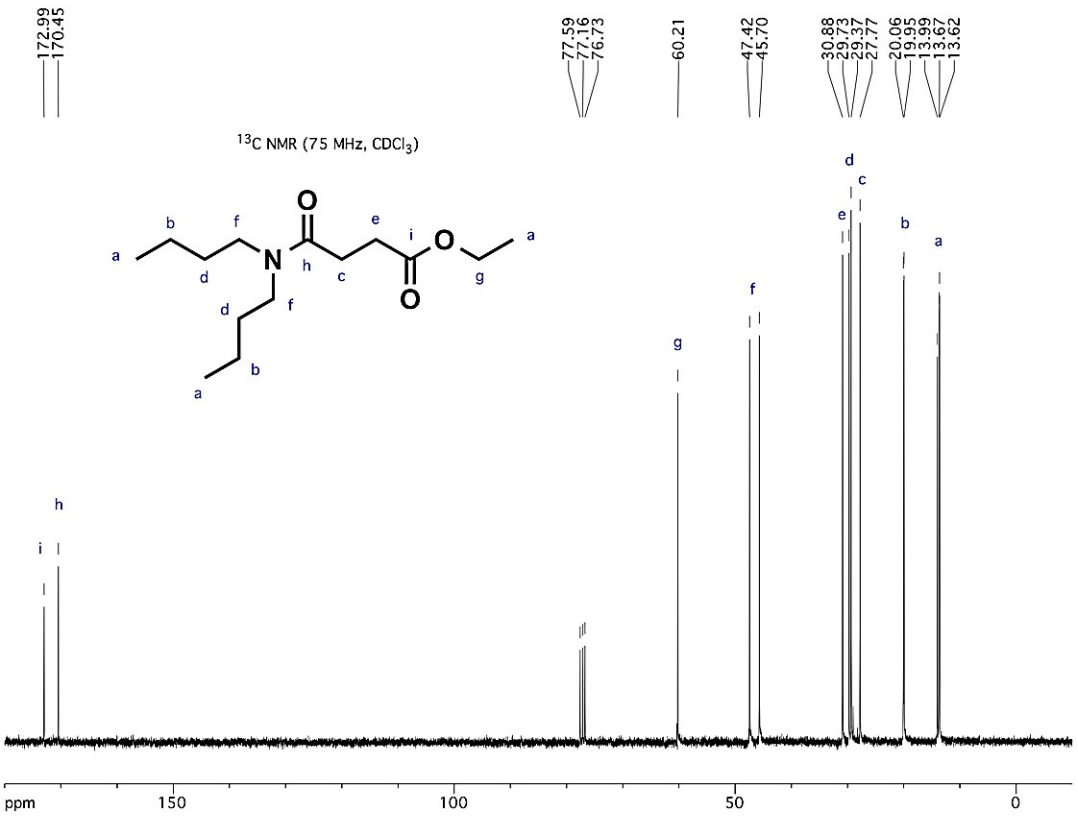

^{1}H NMR (300 MHz, $CDCl_3$)
2.0
1.0
1.1
2.2
3.2
3.0
0.9
1.1
1.1
1.1
2.2
1.1
ppm
8
7
6
5
4
3
2
1
0
-1

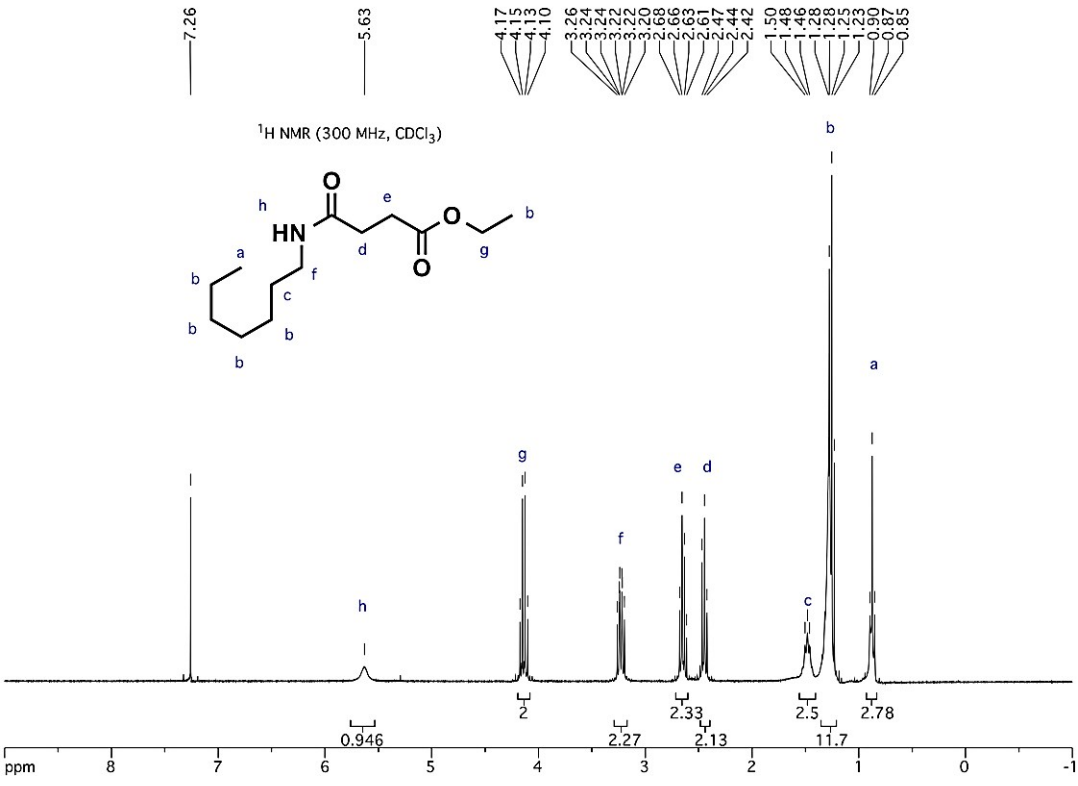

172.82
171.49
77.70
77.58
77.16
76.73
67.95
60.49
43.17
30.83
29.55
28.54
25.74
14.10
13C NMR (75 MHz, CDCl3)
ppm
150
100
50
0

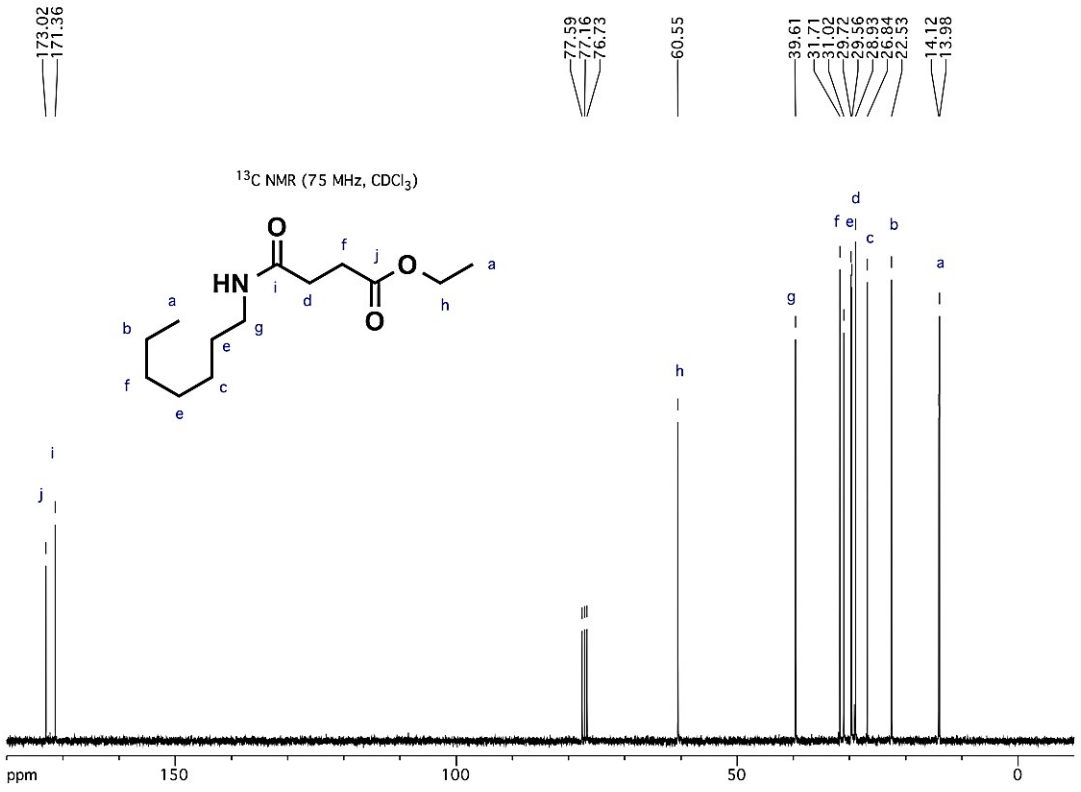

7.26
4.18
4.15
4.13
4.10
3.56
3.54
3.52
3.43
3.41
3.39
2.64
2.63
2.62
2.61
1.64
1.62
1.60
1.58
1.56
1.54
1.52
1.28
1.23
1H NMR (500 MHz, CDCl3)
2.13
4.02
3
2
2.07
7.18
ppm
8
7
6
5
4
3
2
1
0
-1

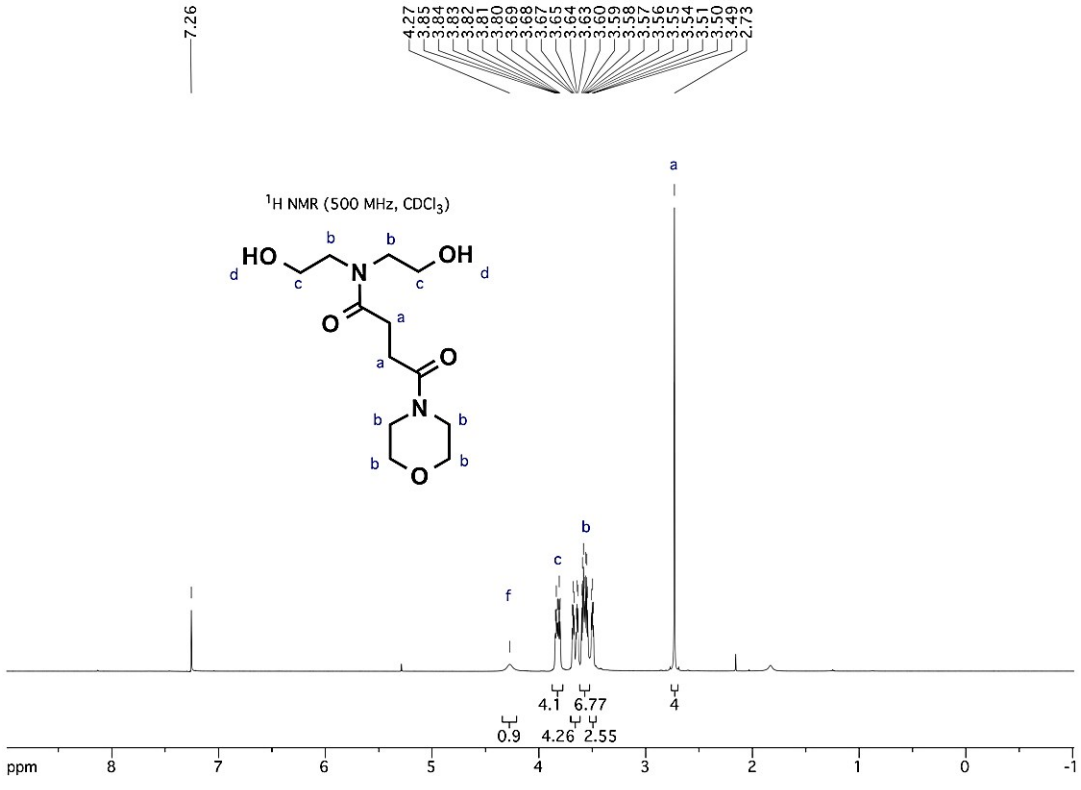

172.87
169.07
77.59
77.16
76.73
60.10
46.10
42.56
29.20
27.66
26.11
25.29
24.29
13.93
^{13}C NMR (75 MHz, $CDCl_3$)
ppm
150
100
50
0

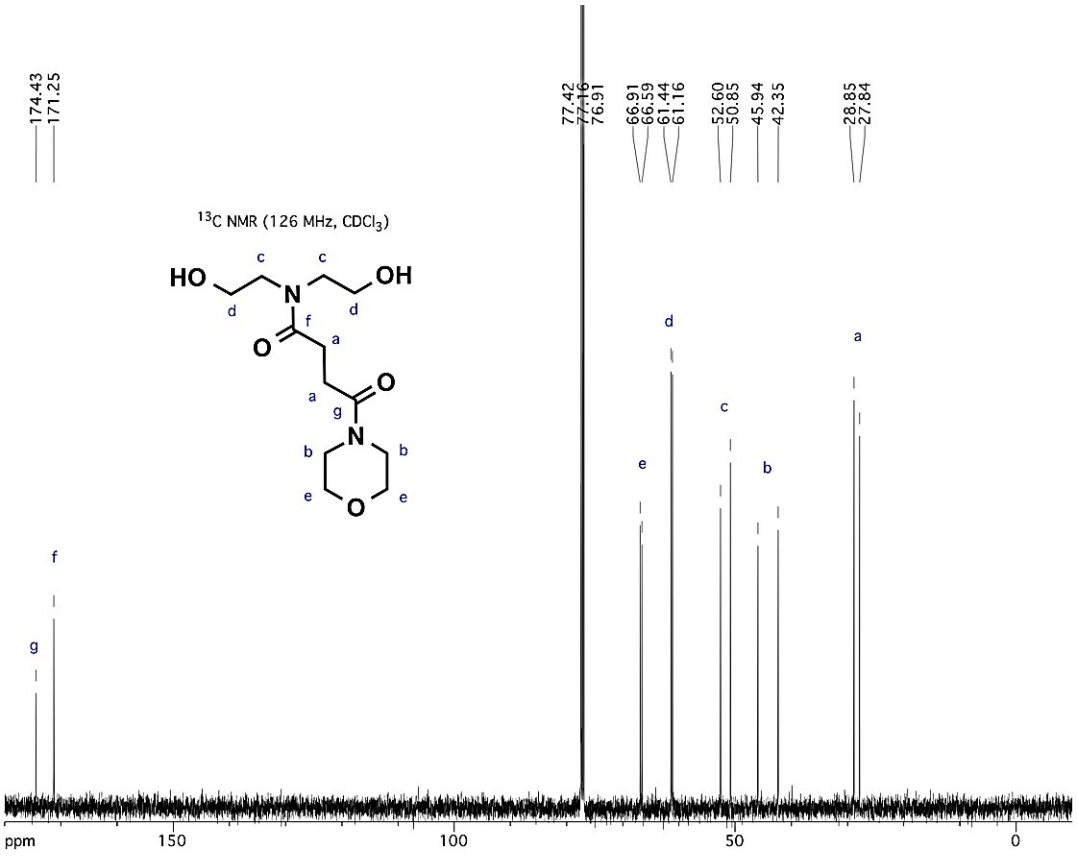

7.26
^{1}H NMR (500 MHz, $CDCl_3$)
4.63
4.65
4.89
7.53
5.97
2
ppm
8
7
6
5
4
3
2
1
0
-1

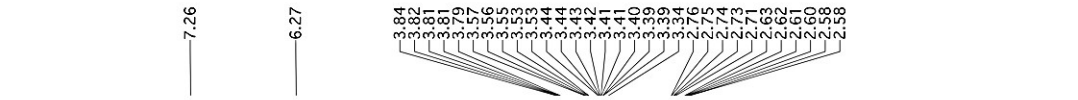

172.99
170.45
77.59
77.16
76.73
60.21
47.42
45.70
30.88
29.73
29.37
27.77
20.06
19.95
13.99
13.67
13.62
13C NMR (75 MHz, CDCl3)
ppm
150
100
50
0

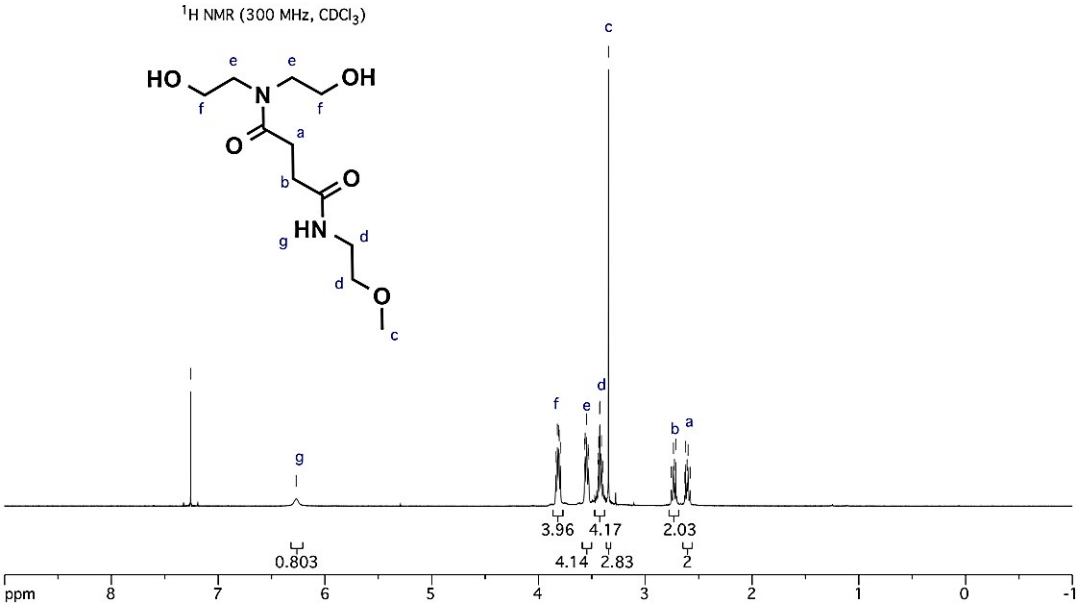

7.26
5.63
4.17
4.15
4.13
4.10
3.26
3.24
3.24
3.22
3.22
3.20
2.68
2.66
2.63
2.61
2.47
2.44
2.42
1.50
1.48
1.46
1.28
1.28
1.25
1.23
0.90
0.87
0.85
1H NMR (300 MHz, CDCl3)
0.946
2
2.27
2.33
2.13
2.5
11.7
2.78
ppm
8
7
6
5
4
3
2
1
0
-1

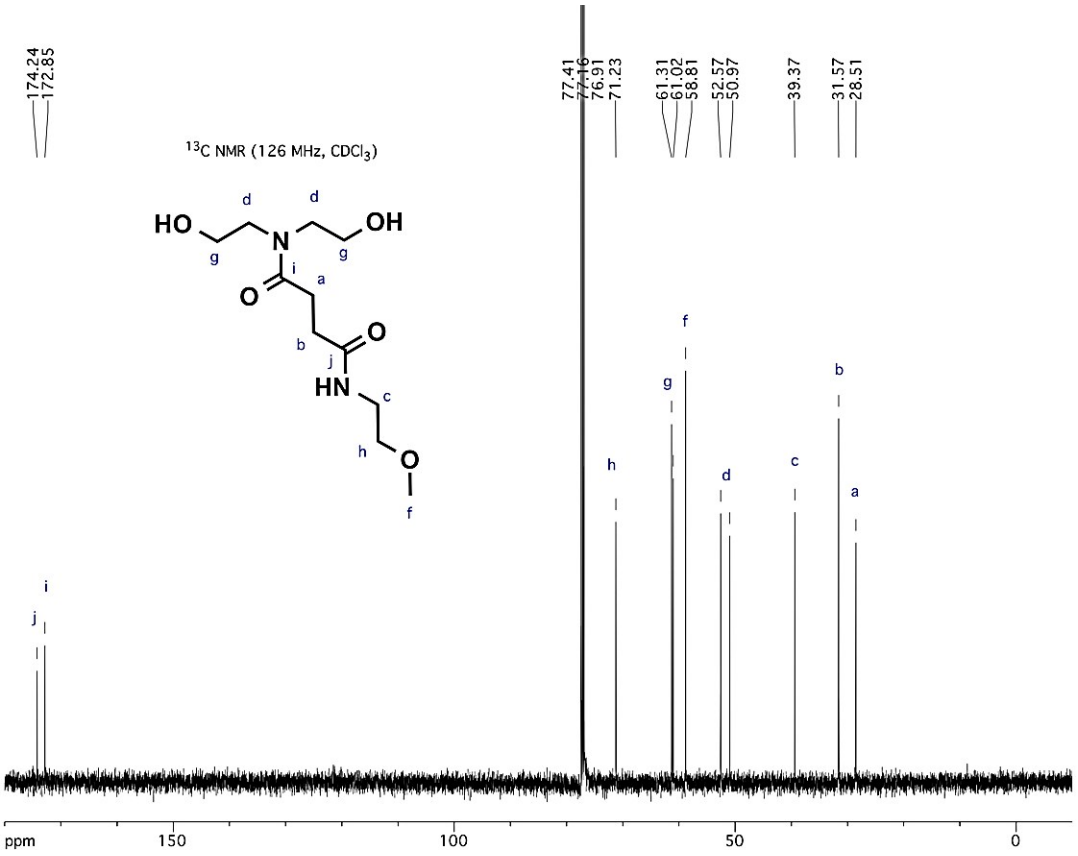

173.02
171.36
77.59
77.16
76.73
60.55
39.61
31.71
31.02
29.72
29.56
28.93
26.84
22.53
14.12
13.98
13C NMR (75 MHz, CDCl3)
HN
O
O
O
ppm
150
100
50
0

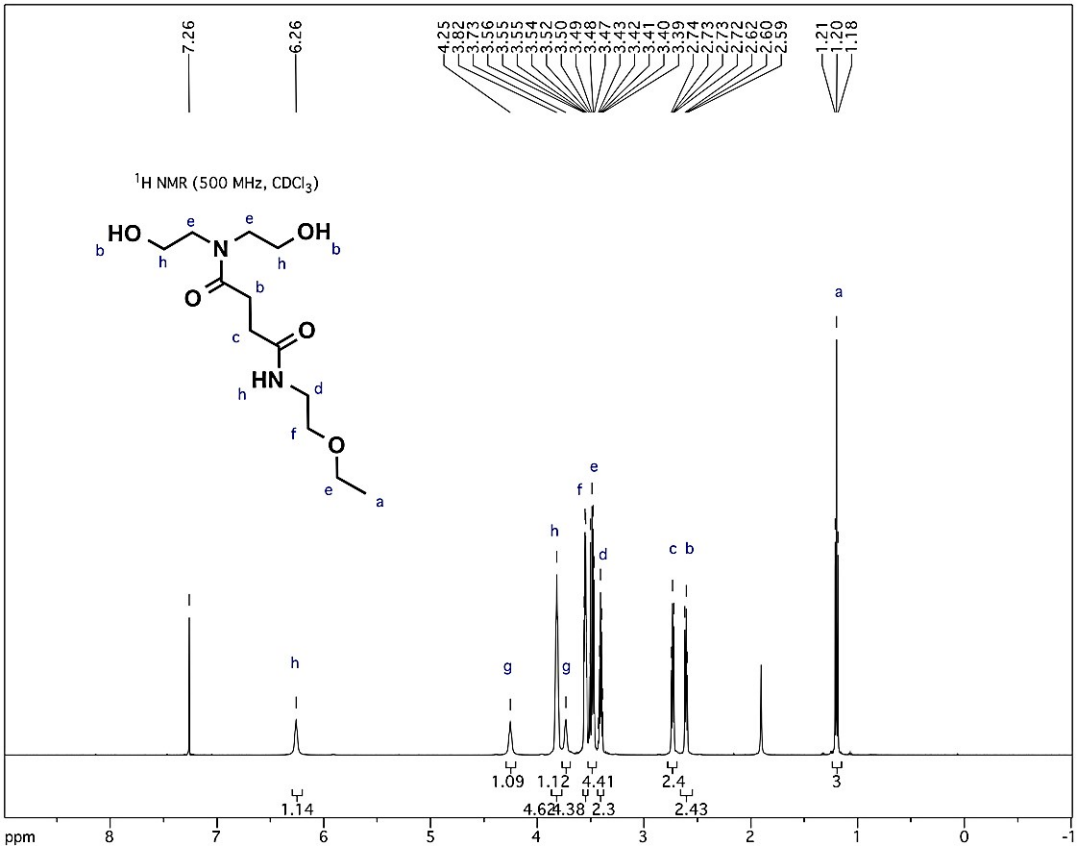

7.26
4.27
4.85
4.84
4.83
4.82
4.81
4.80
4.69
4.68
4.67
4.65
4.64
4.63
4.60
4.59
4.58
4.57
4.56
4.55
4.54
4.51
4.50
4.49
2.73
1H NMR (500 MHz, CDCl3)
HO
OH
N
O
O
N
O
0.9
4.1
6.77
4
4.26
2.55
ppm
8
7
6
5
4
3
2
1
0
-1

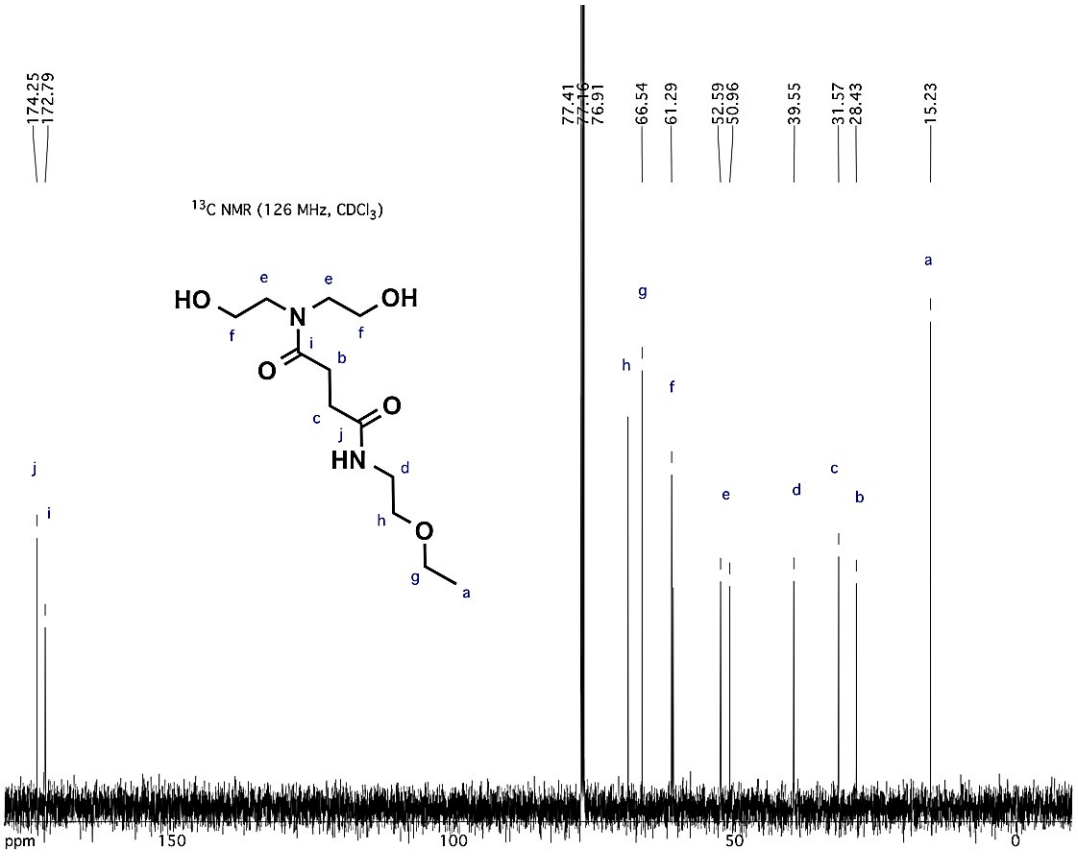

174.43
171.25
77.42
77.16
76.91
66.91
66.59
61.44
61.16
52.60
50.85
45.94
42.35
28.85
27.84
13C NMR (126 MHz, CDCl3)
HO
OH
N
O
ppm
150
100
50
0

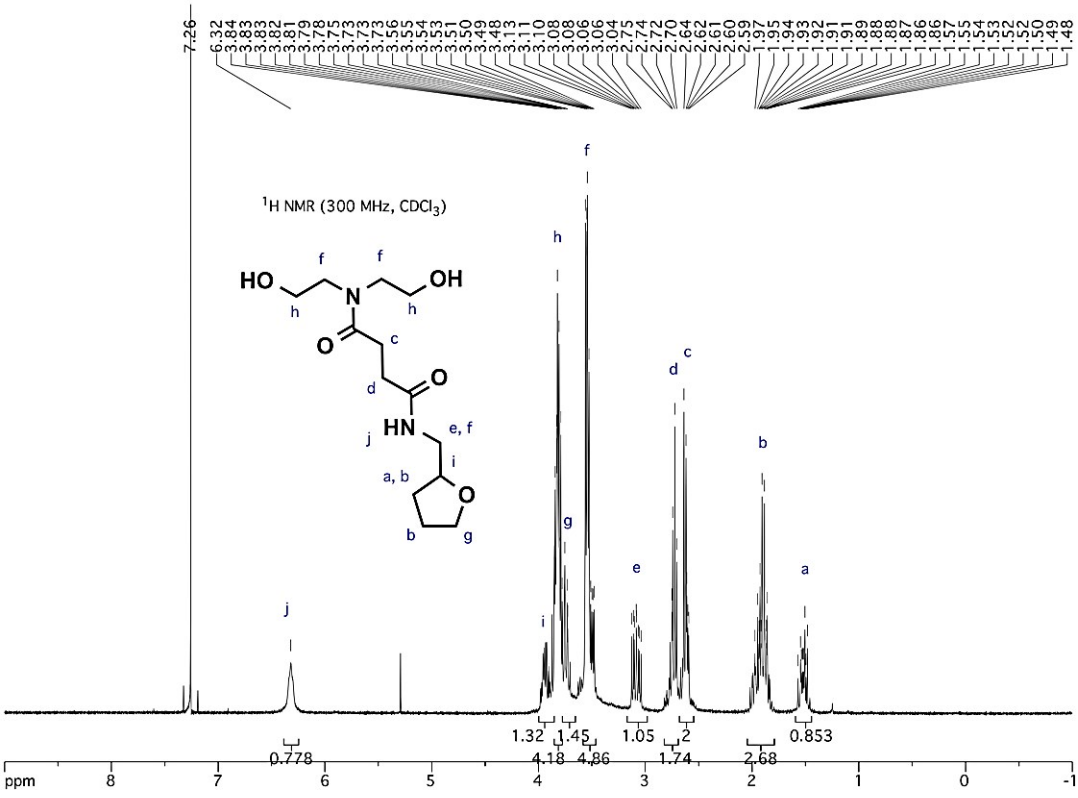

7.26
6.27
3.84
3.82
3.81
3.81
3.79
3.57
3.56
3.55
3.53
3.53
3.44
3.44
3.43
3.42
3.41
3.41
3.40
3.39
3.39
3.34
2.76
2.75
2.74
2.73
2.71
2.63
2.62
2.61
2.60
2.58
2.58

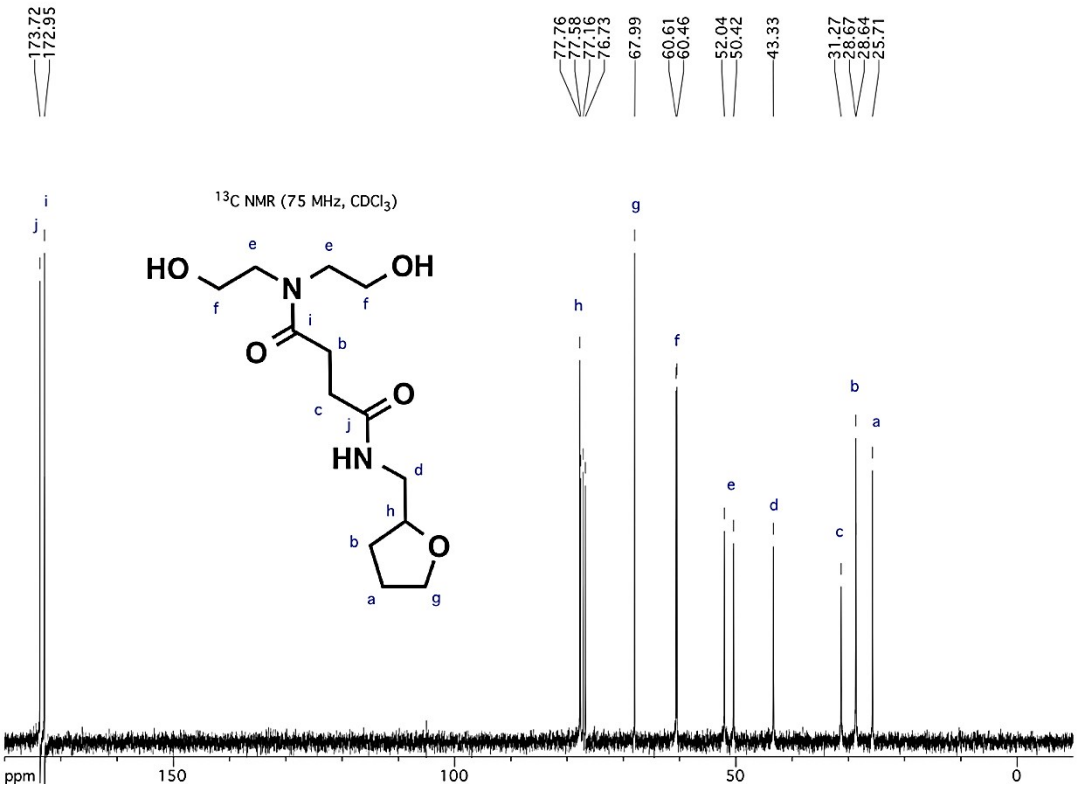

1H NMR (300 MHz, CDCl3)
HO
OH
N
O
HN
O
3.96
4.17
2.03
0.803
4.14
2.83
2
ppm
8
7
6
5
4
3
2
1
0
-1

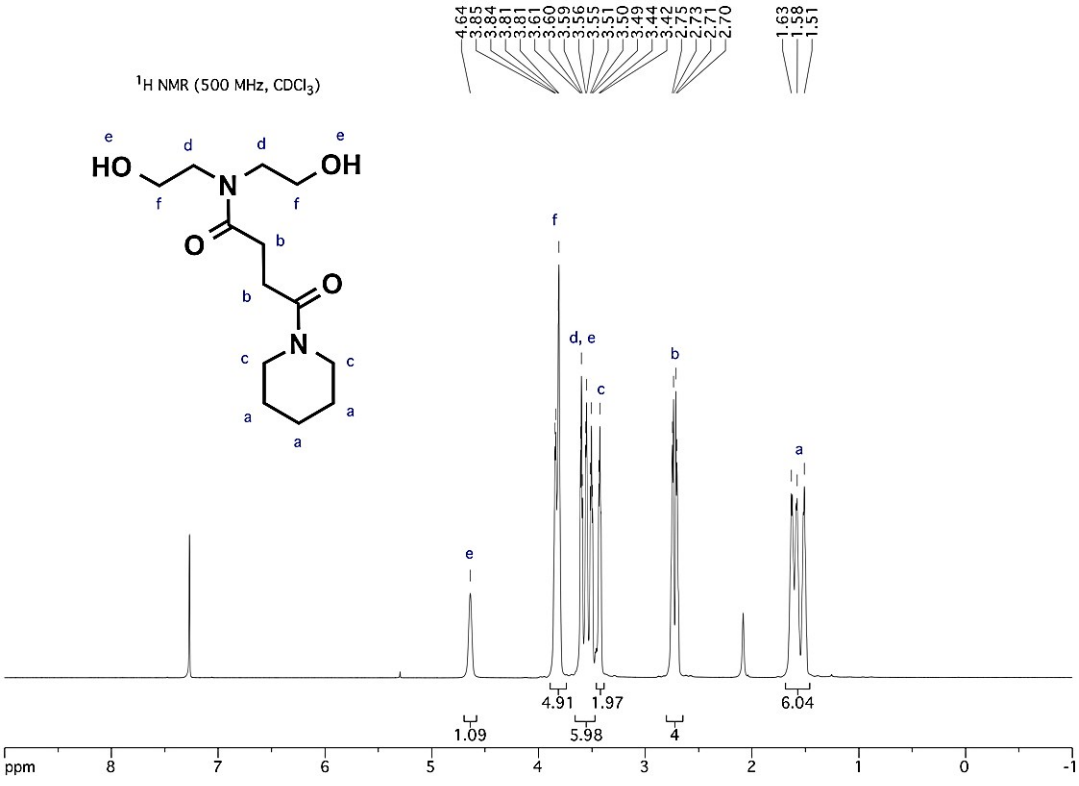

174.24
172.85
77.41
77.16
76.91
71.23
61.31
61.02
58.81
52.57
50.97
39.37
31.57
28.51
13C NMR (126 MHz, CDCl3)
HO
OH
N
O
HN
ppm
150
100
50
0

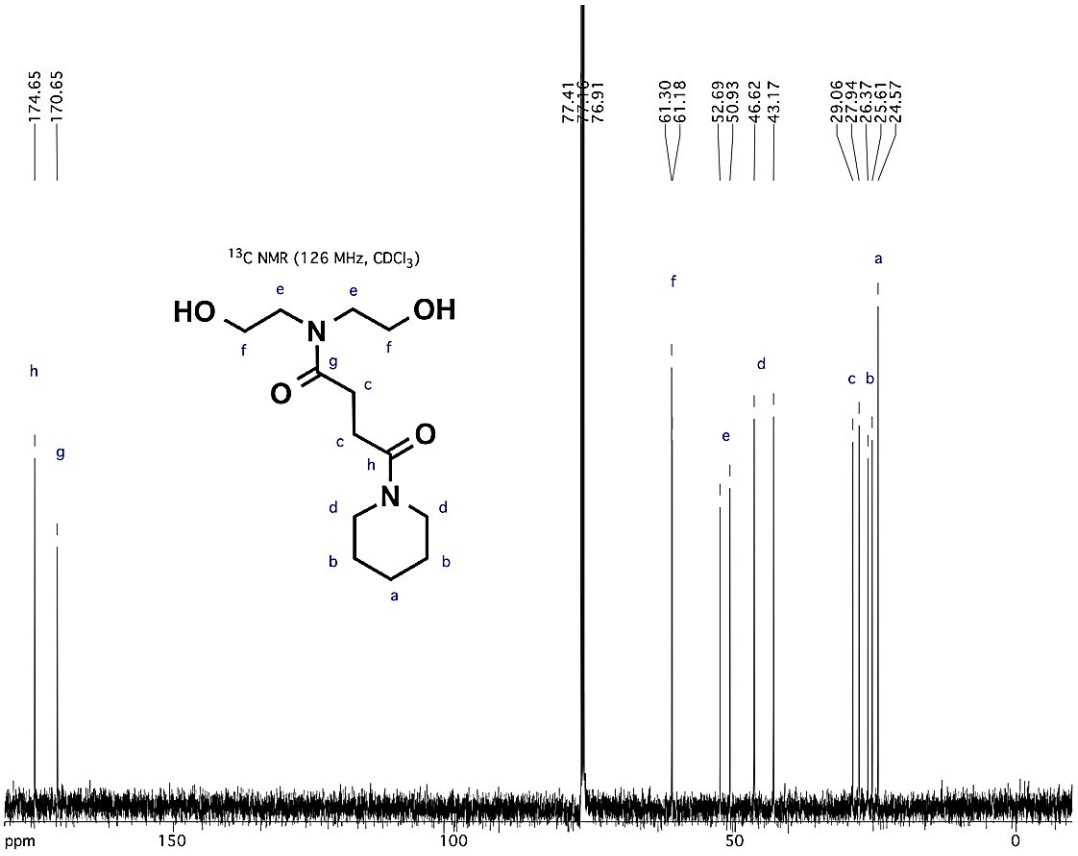

7.26
6.26
4.25
3.82
3.73
3.56
3.55
3.54
3.52
3.50
3.49
3.48
3.47
3.43
3.42
3.41
3.40
3.39
2.74
2.73
2.72
2.62
2.60
2.59
1.21
1.20
1.18
1H NMR (500 MHz, CDCl3)
HO
OH
N
O
HN
1.14
1.09
1.12
4.62
4.38
4.41
2.3
2.4
2.43
3
ppm
8
7
6
5
4
3
2
1
0
-1

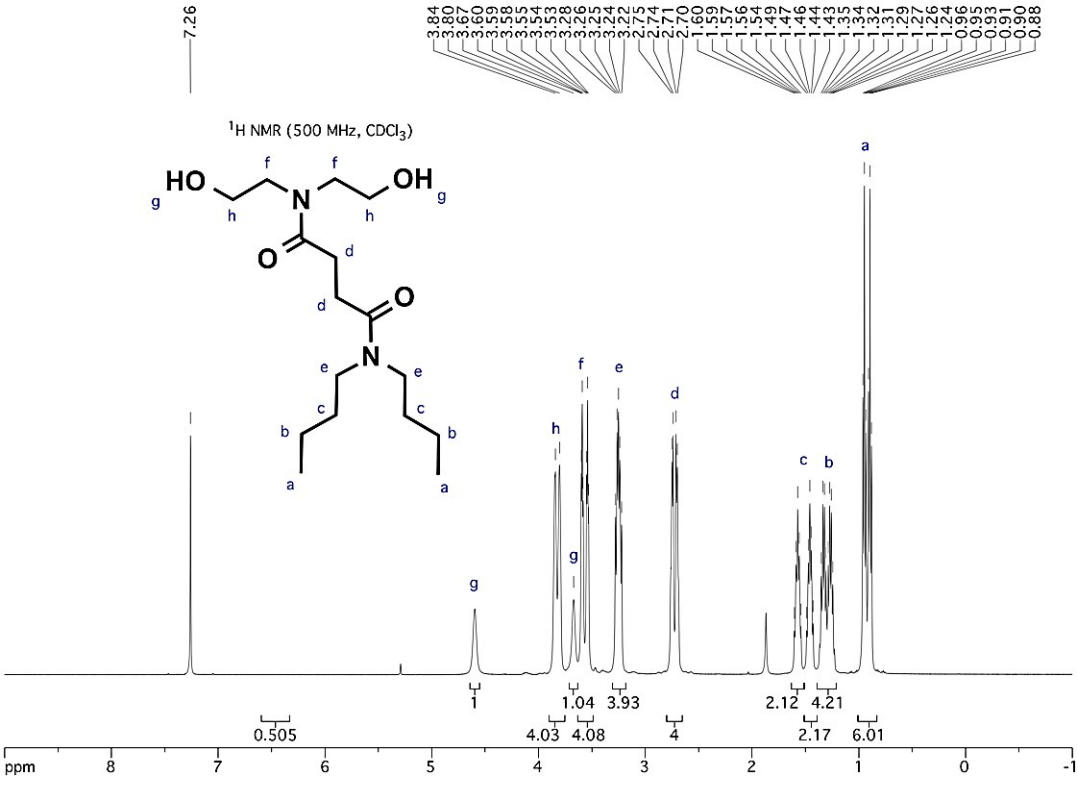

174.25
172.79
77.41
77.16
76.91
66.54
61.29
52.59
50.96
39.55
31.57
28.43
15.23
^{13}C NMR (126 MHz, $CDCl_3$)
HO
OH
N
O
HN
ppm
150
100
50
0

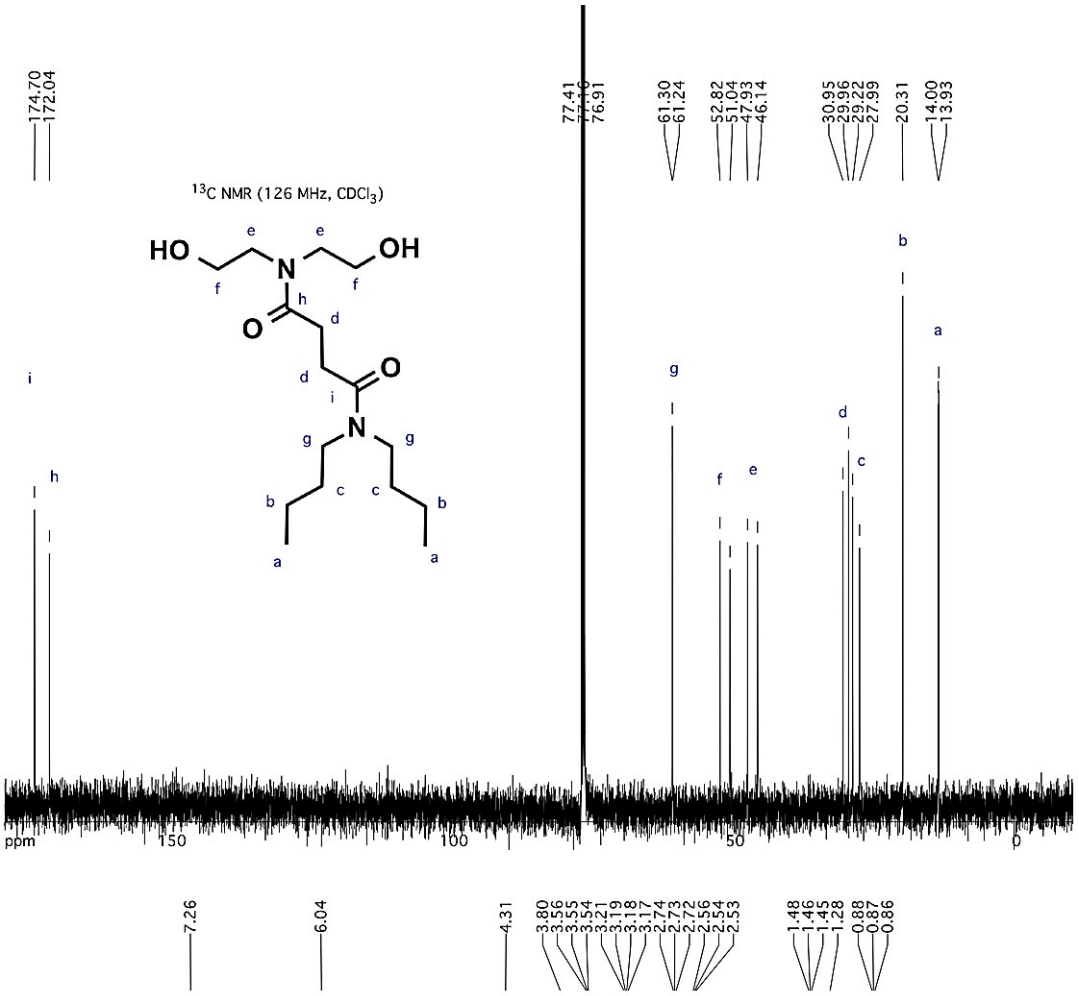

7.26
^{1}H NMR (300 MHz, $CDCl_3$)
HO
OH
N
O
HN
0.778
1.32
1.45
1.05
2
0.853
4.18
4.86
1.74
2.68
ppm
8
7
6
5
4
3
2
1
0
-1

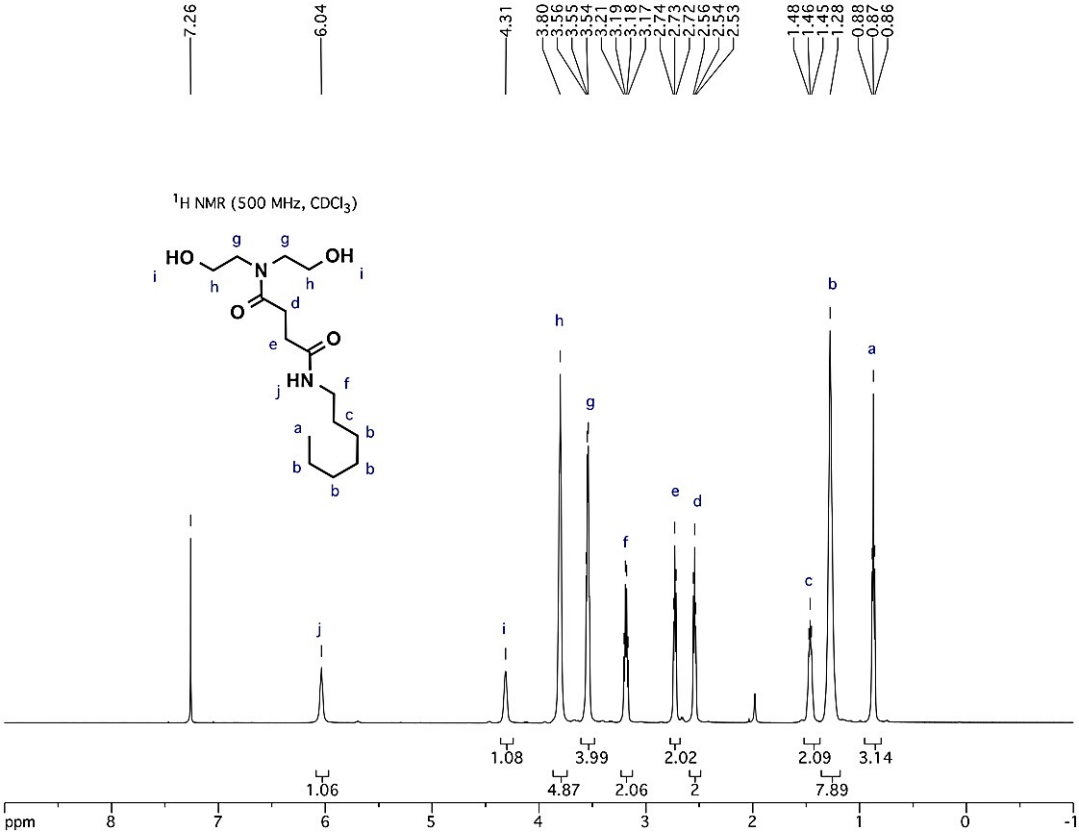

173.72
172.95
77.76
77.58
77.16
76.73
67.99
60.61
60.46
52.04
50.42
43.33
31.27
28.67
28.64
25.71
^{13}C NMR (75 MHz, $CDCl_3$)
HO
OH
N
O
HN
O
ppm
150
100
50
0

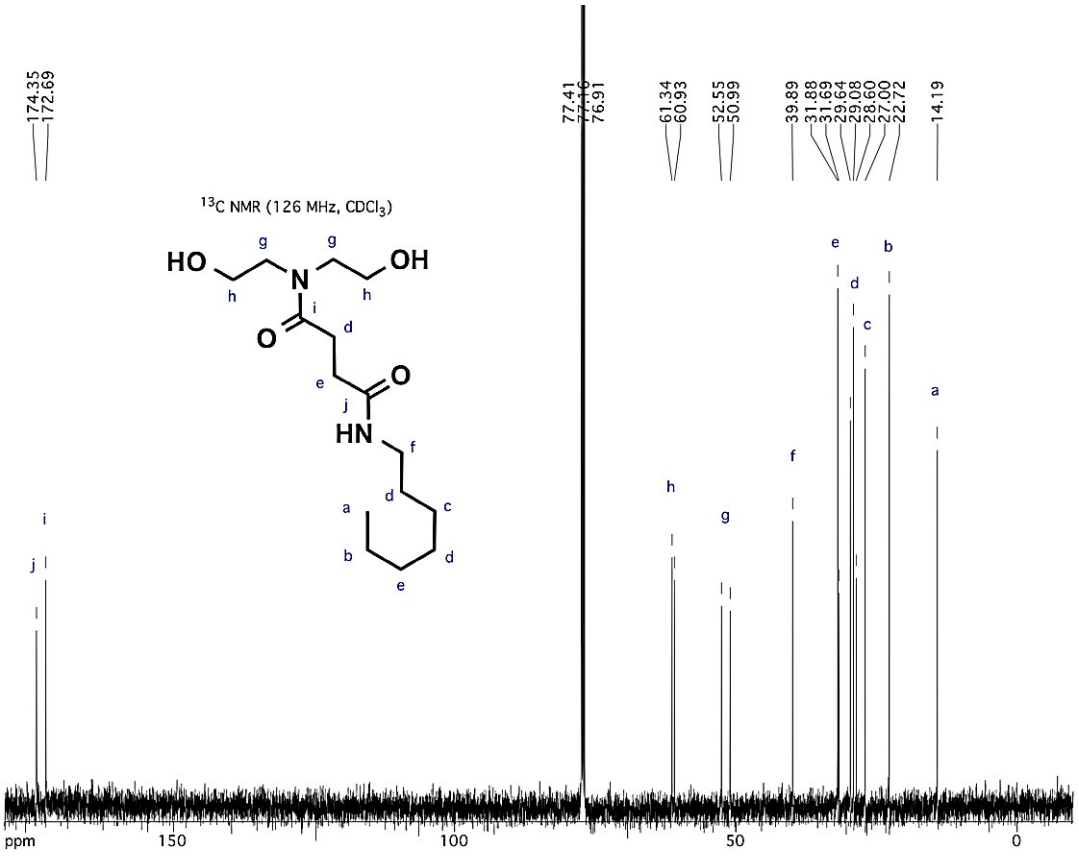

4.64
3.85
3.84
3.81
3.61
3.60
3.59
3.56
3.55
3.51
3.50
3.49
3.44
3.42
2.75
2.73
2.71
2.70
1.63
1.58
1.51
^{1}H NMR (500 MHz, $CDCl_3$)
HO
OH
N
O
N
1.09
4.91
1.97
5.98
4
6.04
ppm
8
7
6
5
4
3
2
1
0
-1

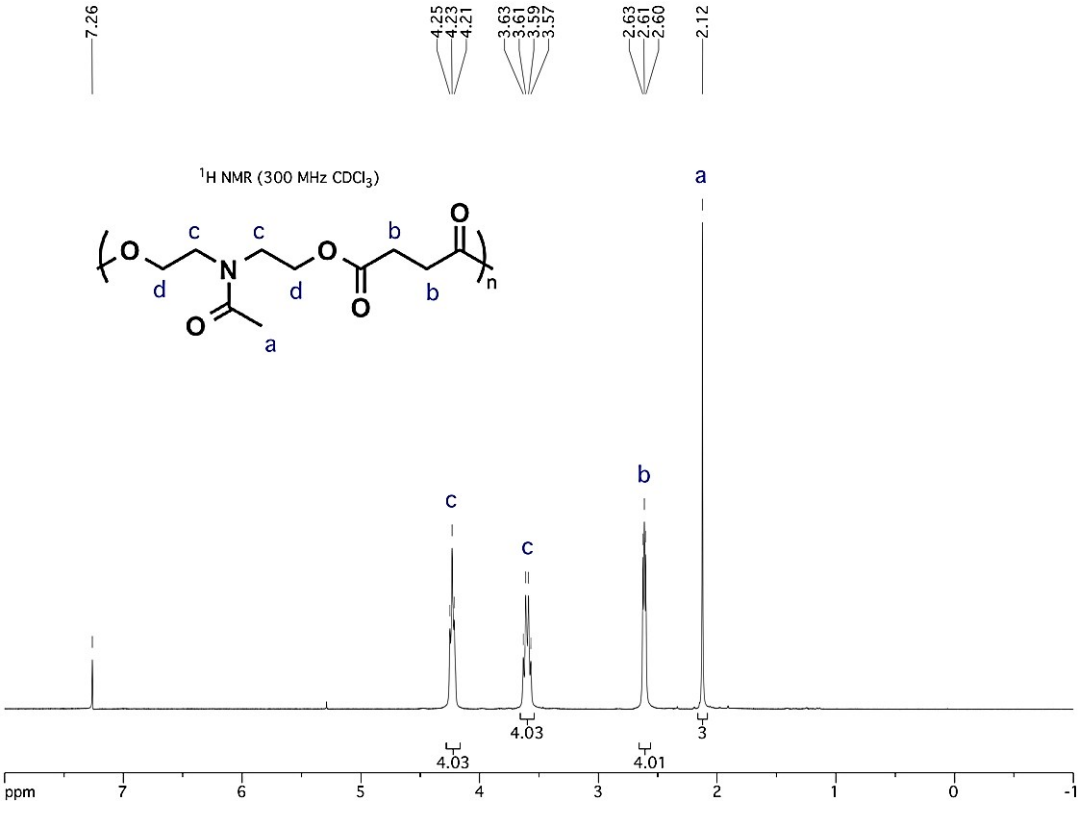

174.65
170.65
77.41
77.16
76.91
61.30
61.18
52.69
50.93
46.62
43.17
29.06
27.94
26.37
25.61
24.57
^{13}C NMR (126 MHz, $CDCl_3$)
HO
OH
N
O
ppm
150
100
50
0

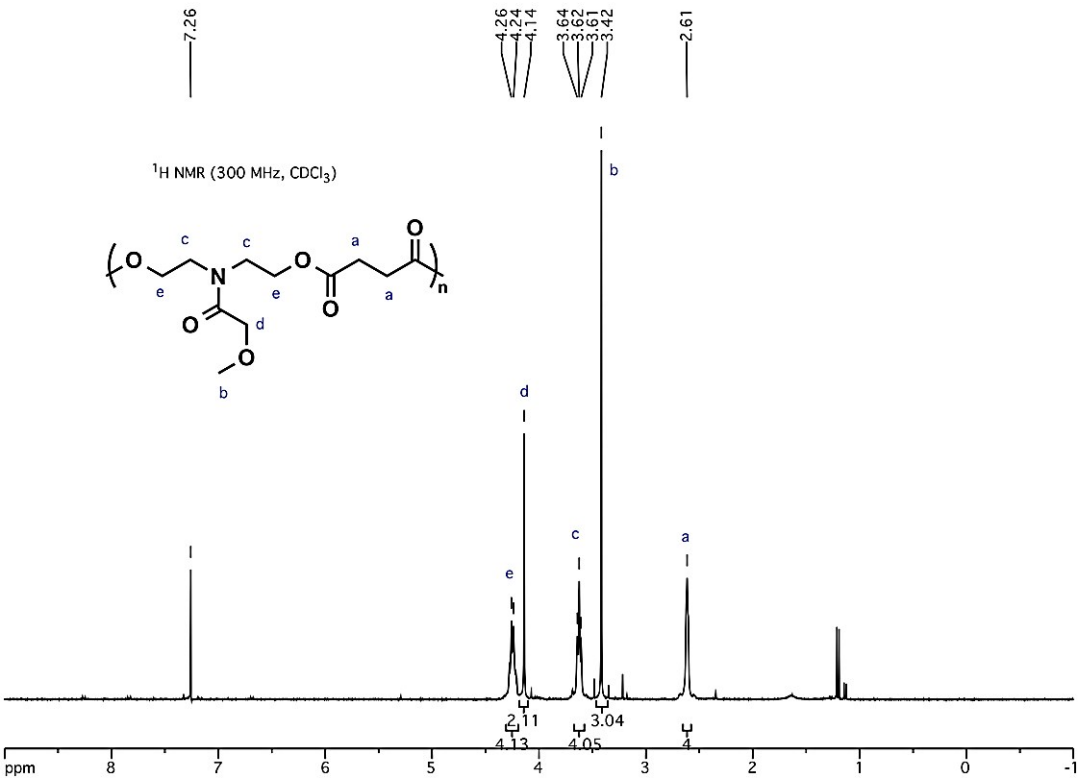

7.26
3.84
3.80
3.67
3.60
3.59
3.58
3.55
3.54
3.53
3.28
3.26
3.25
3.24
3.22
2.75
2.74
2.71
2.70
1.60
1.59
1.57
1.56
1.54
1.49
1.47
1.46
1.44
1.43
1.35
1.34
1.32
1.31
1.29
1.27
1.26
1.24
0.96
0.95
0.93
0.91
0.90
0.88
^{1}H NMR (500 MHz, $CDCl_3$)
HO
OH
N
O
1
1.04
3.93
2.12
4.21
0.505
4.03
4.08
4
2.17
6.01
ppm
8
7
6
5
4
3
2
1
0
-1

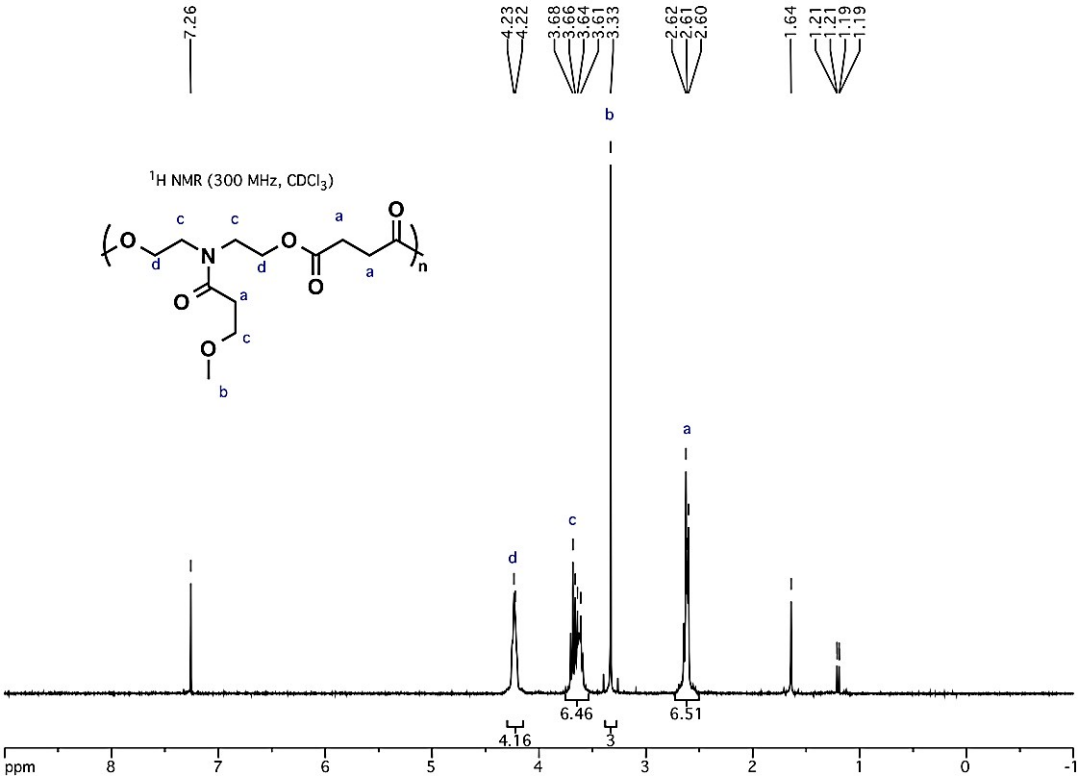

174.70
172.04
77.41
77.16
76.91
61.30
61.24
52.82
51.04
47.93
46.14
30.95
29.96
29.22
27.99
20.31
14.00
13.93
^{13}C NMR (126 MHz, $CDCl_3$)
HO
OH
N
O
ppm
150
100
50
0

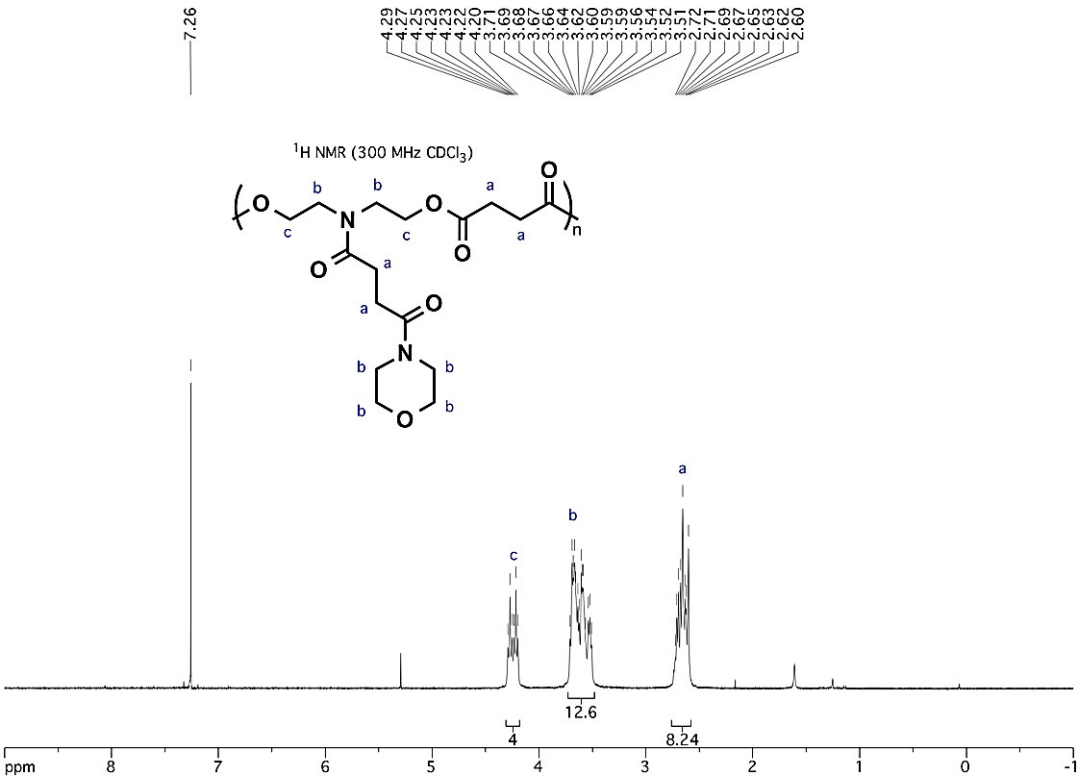

7.26
6.04
4.31
3.80
3.56
3.55
3.54
3.21
3.19
3.18
3.17
2.74
2.73
2.72
2.56
2.54
2.53
1.48
1.46
1.45
1.28
0.88
0.87
0.86
^{1}H NMR (500 MHz, $CDCl_3$)
HO
OH
N
HN
O
1.06
1.08
4.87
3.99
2.06
2.02
2
2.09
7.89
3.14
ppm
8
7
6
5
4
3
2
1
0
-1

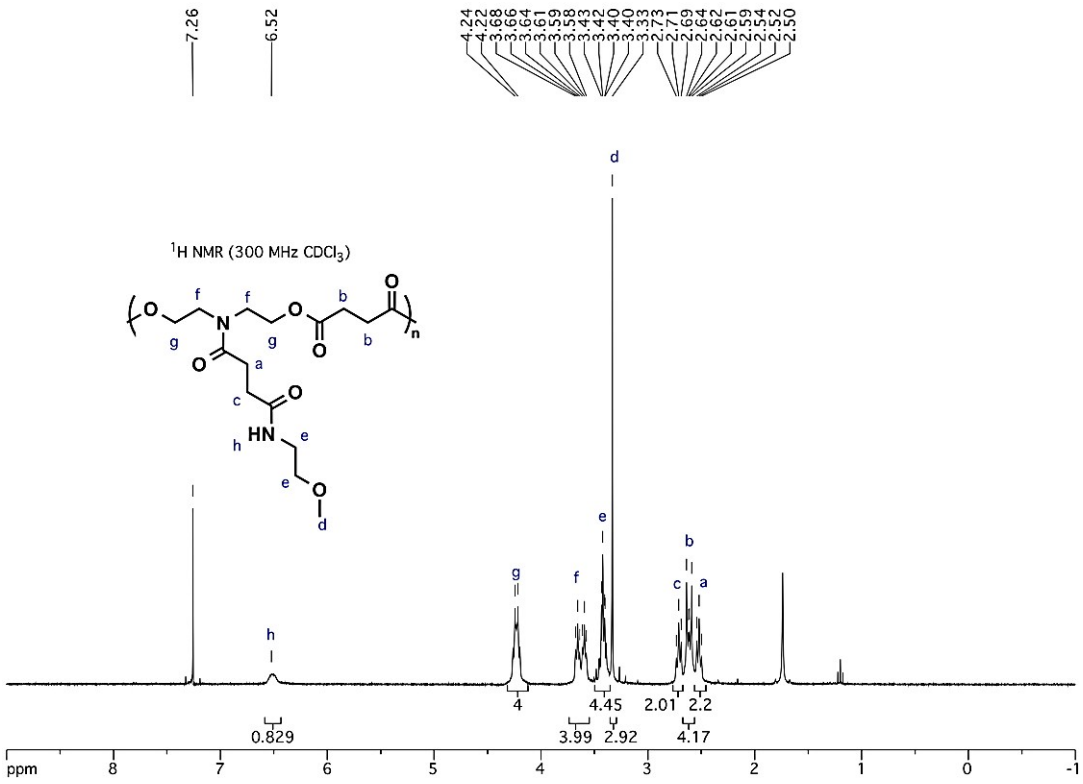

174.35
172.69
77.41
77.16
76.91
61.34
60.93
52.55
50.99
39.89
31.88
31.69
29.64
29.08
28.60
27.00
22.72
14.19
^{13}C NMR (126 MHz, $CDCl_3$)
HO
OH
N
HN
O
ppm
150
100
50
0


7.26
4.25
4.23
4.21
3.63
3.61
3.59
3.57
2.63
2.61
2.60
2.12
^{1}H NMR (300 MHz $CDCl_3$)
O
N
n
4.03
4.03
4.01
3
ppm
7
6
5
4
3
2
1
0
-1


7.26
4.26
4.24
4.14
3.64
3.62
3.61
3.42
2.61
^{1}H NMR (300 MHz, $CDCl_3$)
b
d
c
a
e
2.11
3.04
4.13
4.05
4
ppm


7.26
4.23
4.22
3.68
3.66
3.64
3.61
3.33
2.62
2.61
2.60
1.64
1.21
1.21
1.19
1.19
^{1}H NMR (300 MHz, $CDCl_3$)
b
a
c
d
6.46
6.51
4.16
3
ppm


7.26
4.29
4.27
4.25
4.23
4.23
4.22
4.20
3.71
3.69
3.68
3.67
3.66
3.64
3.62
3.60
3.59
3.59
3.56
3.54
3.52
3.51
2.72
2.71
2.69
2.67
2.65
2.63
2.62
2.60
1H NMR (300 MHz CDCl3)
b
b
a
c
c
a
a
a
b
b
b
b
b
c
b
a
12.6
4
8.24
ppm
8
7
6
5
4
3
2
1
0
-1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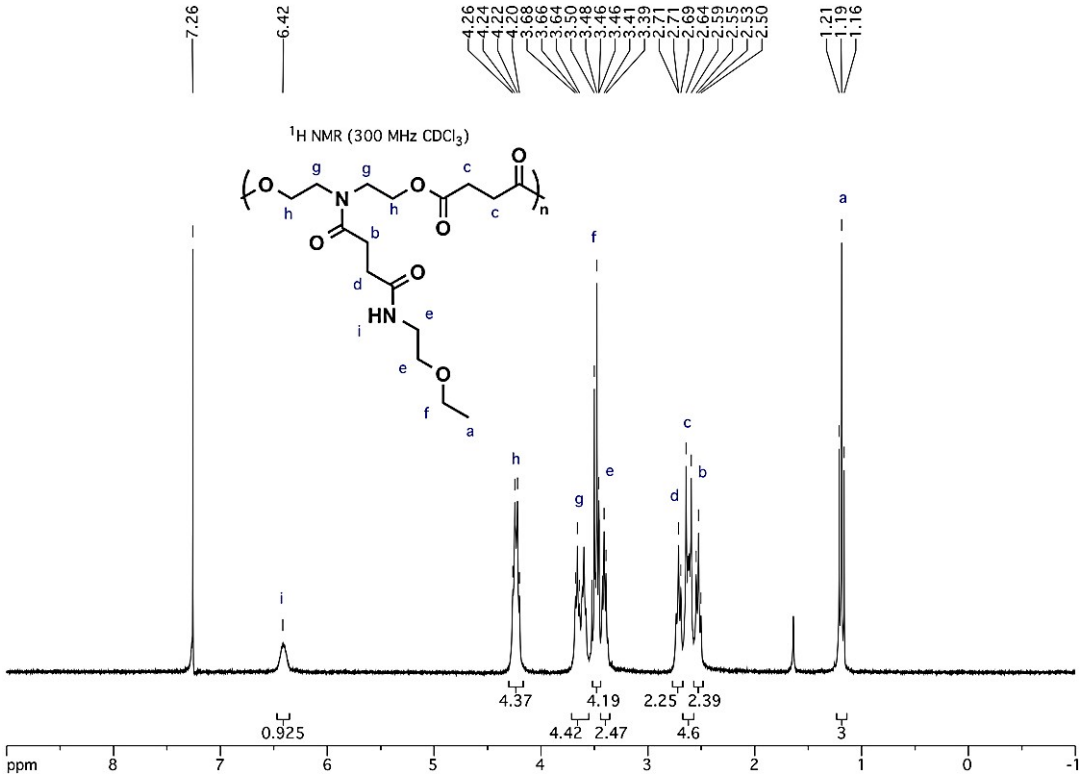
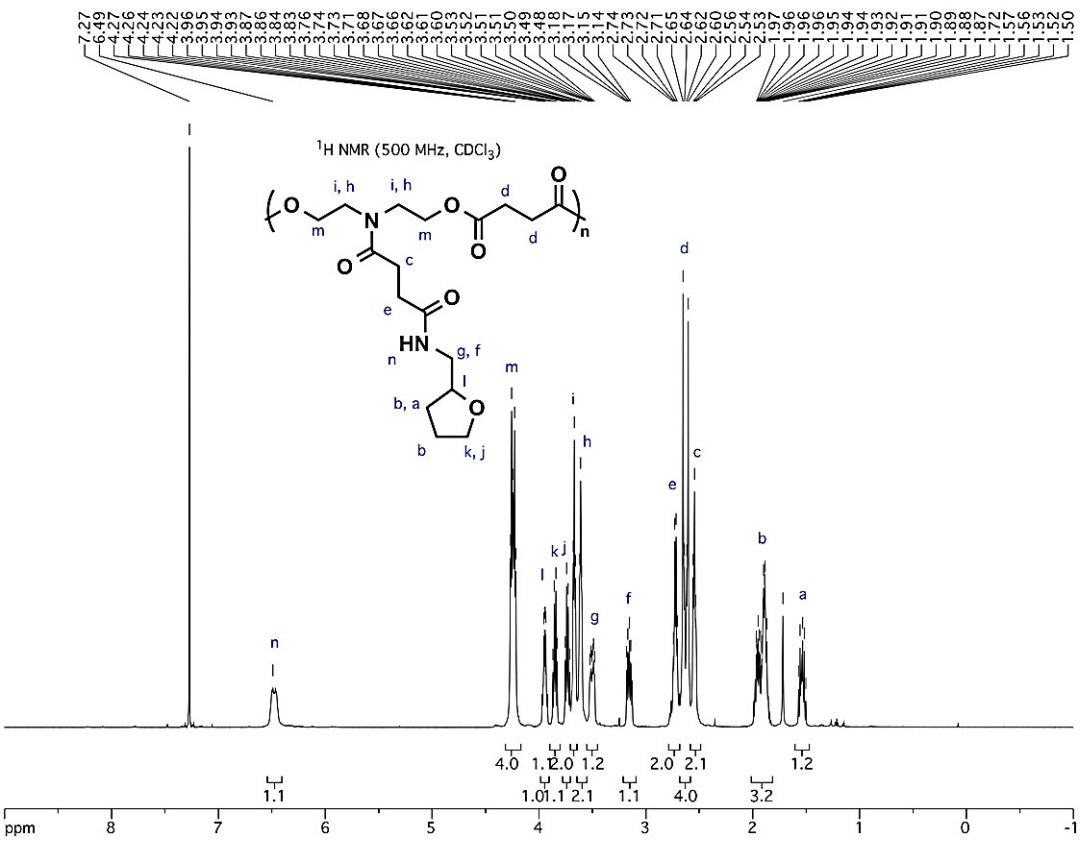
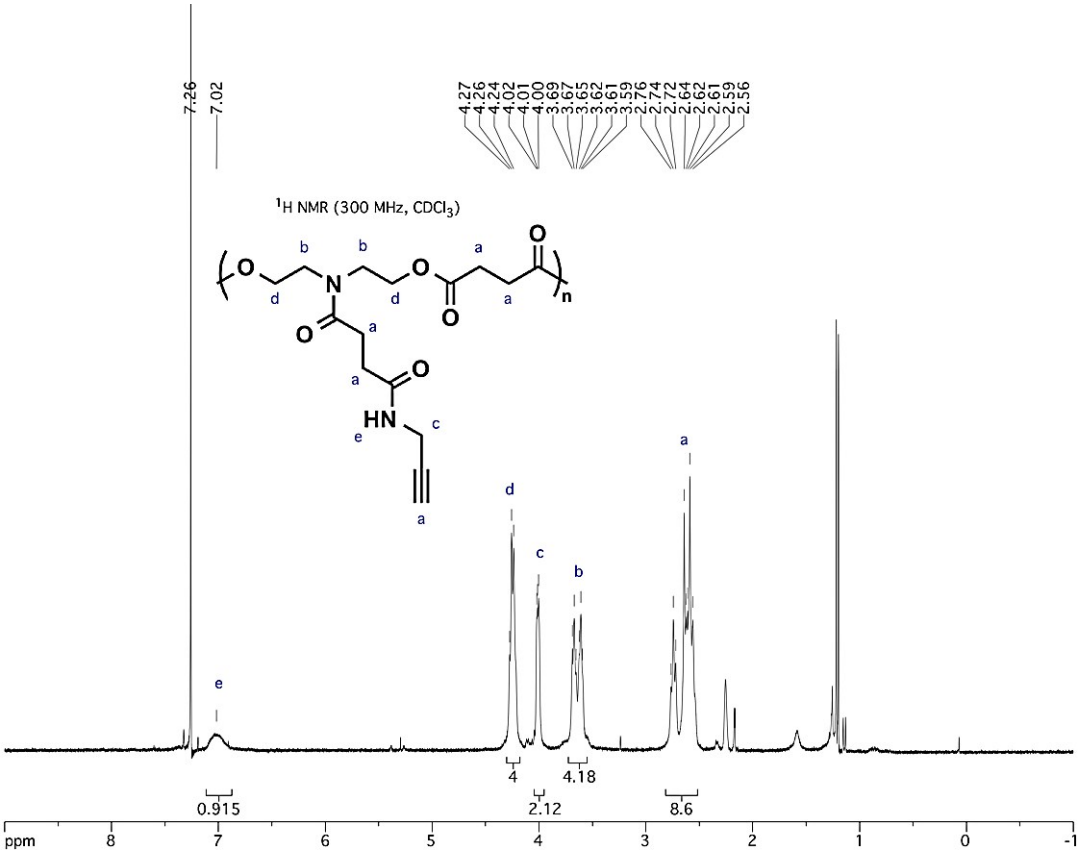
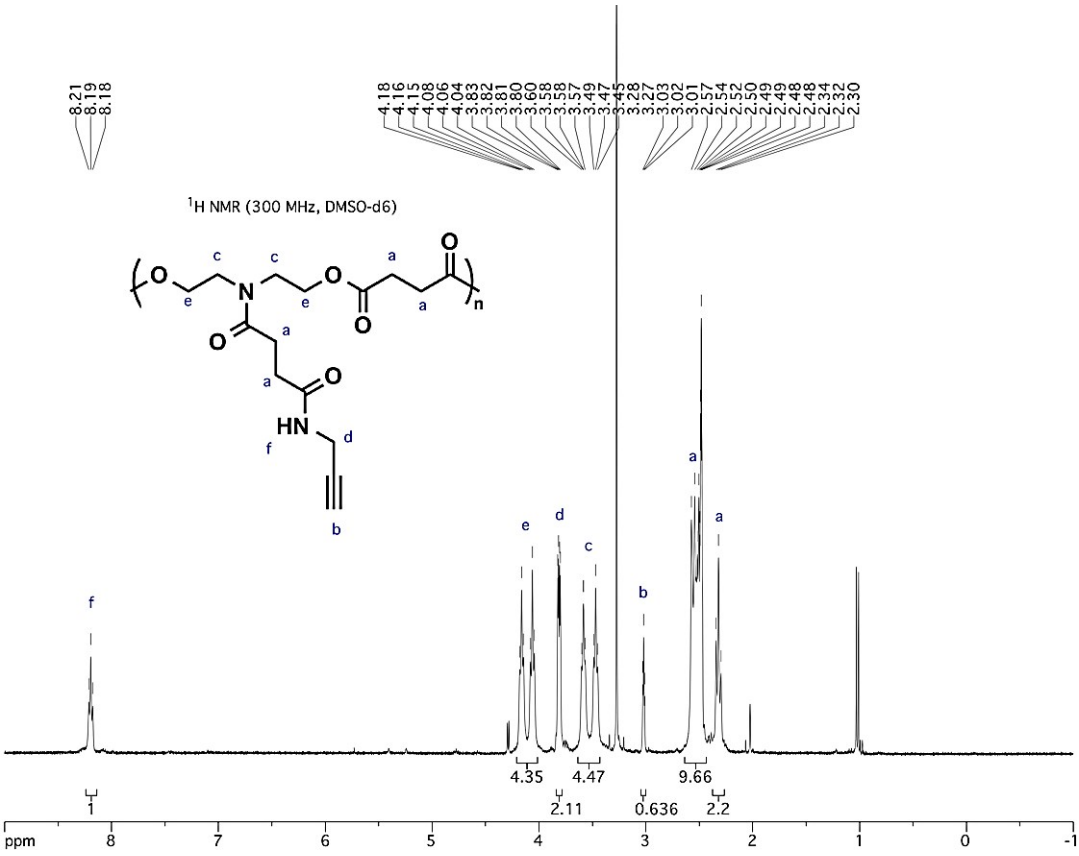
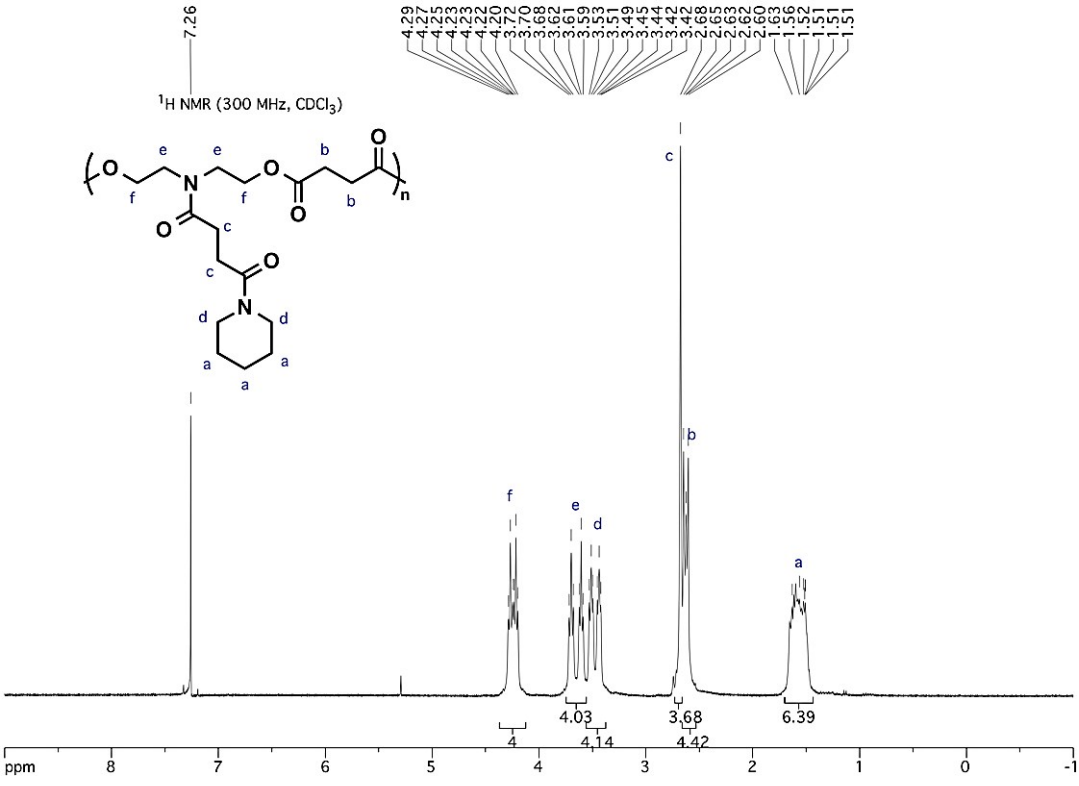
6.52
4.24
4.22
3.68
3.66
3.64
3.61
3.59
3.58
3.43
3.42
3.40
3.33
2.73
2.71
2.69
2.64
2.62
2.61
2.59
2.54
2.52
2.50
1H NMR (300 MHz CDCl3)
4
4.45
2.01
2.2
0.829
3.99
2.92
4.17
ppm

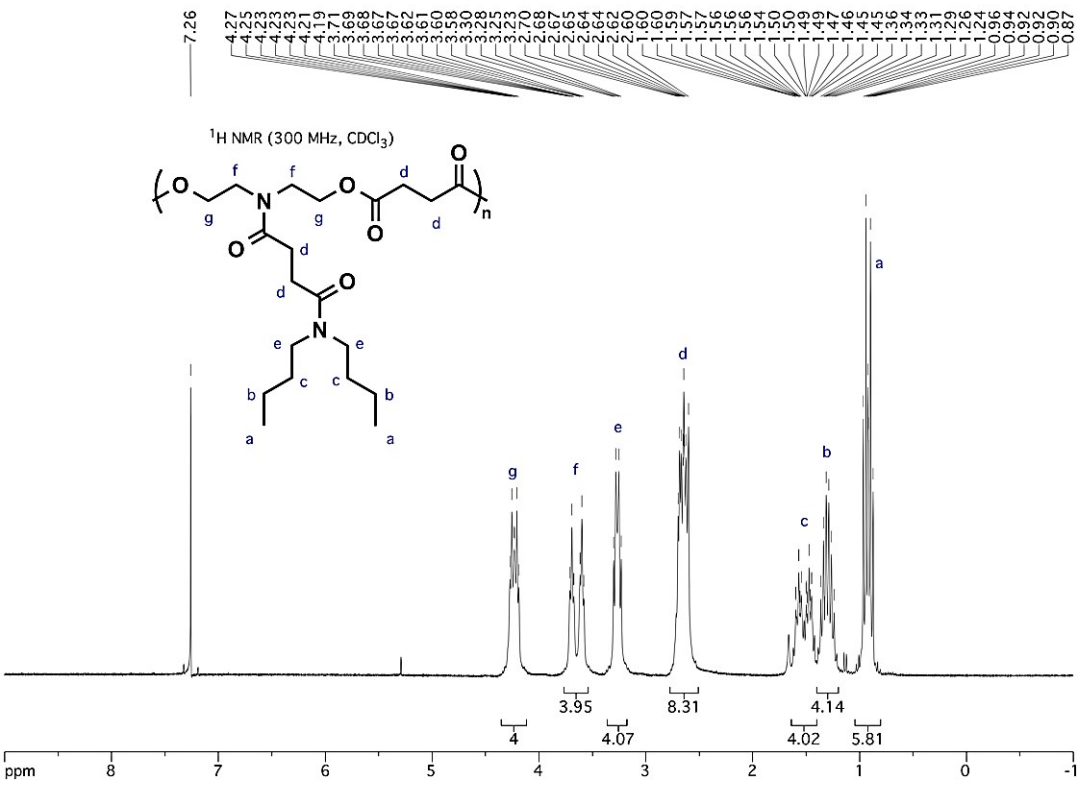

7.26
6.42
4.26
4.24
4.22
4.20
3.68
3.66
3.64
3.50
3.48
3.46
3.41
3.39
2.71
2.69
2.64
2.59
2.55
2.53
2.50
1.21
1.19
1.16
1H NMR (300 MHz CDCl3)
4.37
4.19
2.25
2.39
0.925
4.42
2.47
4.6
3
ppm

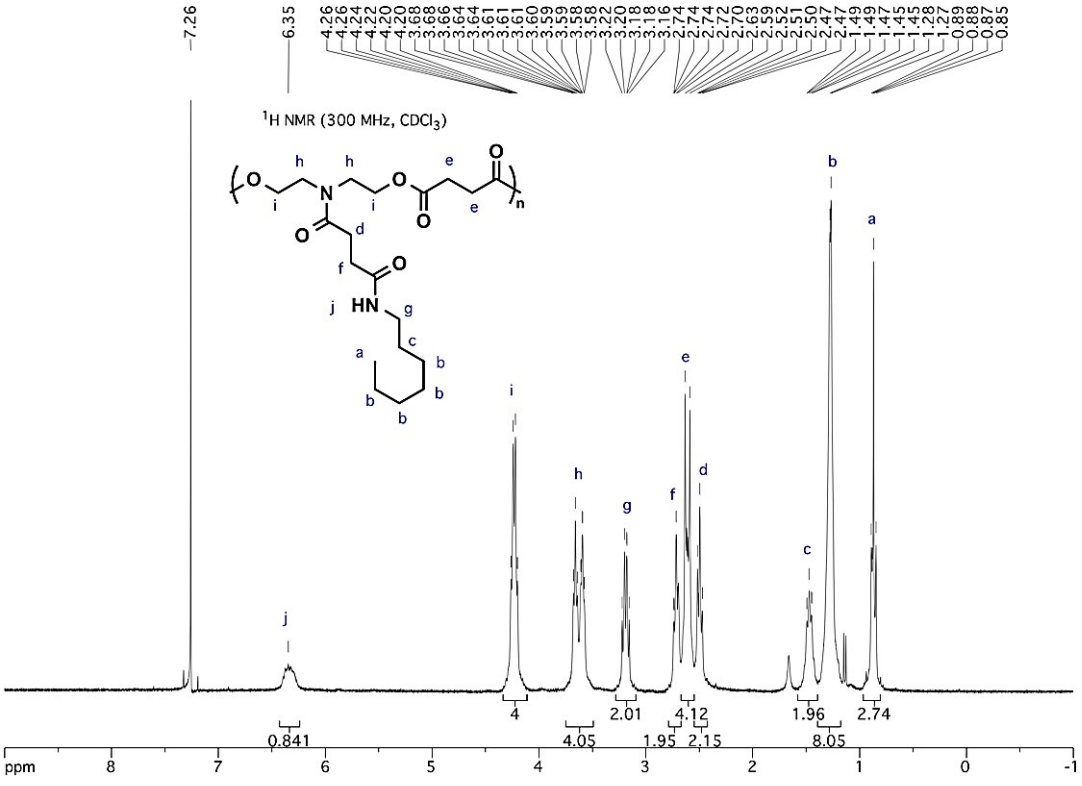

7.27 6.49 4.27 4.26 4.24 4.23 4.22 3.96 3.95 3.94 3.93 3.87 3.86 3.84 3.83 3.76 3.74 3.73 3.71 3.68 3.67 3.66 3.62 3.61 3.60 3.53 3.52 3.51 3.51 3.50 3.49 3.48 3.18 3.17 3.15 3.14 2.74 2.73 2.72 2.71 2.65 2.64 2.62 2.60 2.56 2.54 2.53 1.97 1.96 1.96 1.95 1.94 1.94 1.93 1.92 1.91 1.91 1.90 1.89 1.88 1.87 1.72 1.57 1.56 1.53 1.52 1.50
1H NMR (500 MHz, CDCl3)
i, h
i, h
d
m
m
d
c
e
HN
n
g, f
l
b, a
b
k, j
4.0 1.1 2.0 1.2 2.0 2.1 1.2
1.1 1.0 1.1 2.1 1.1 4.0 3.2
ppm


7.26 7.02 4.27 4.26 4.24 4.02 4.01 4.00 3.69 3.67 3.65 3.62 3.61 3.59 2.76 2.74 2.72 2.64 2.62 2.61 2.59 2.56
1H NMR (300 MHz, CDCl3)
b
b
a
d
d
a
a
a
HN
e
c
a
4 4.18 0.915 2.12 8.6
ppm


8.21
8.19
8.18
4.18
4.16
4.15
4.08
4.06
4.04
3.83
3.82
3.81
3.80
3.60
3.58
3.58
3.57
3.49
3.47
3.45
3.28
3.27
3.03
3.02
3.01
2.57
2.54
2.52
2.50
2.49
2.49
2.48
2.48
2.34
2.32
2.30
1H NMR (300 MHz, DMSO-d6)
4.35
4.47
9.66
1
2.11
0.636
2.2
ppm


7.26
4.29
4.27
4.25
4.23
4.23
4.22
4.20
3.72
3.70
3.68
3.62
3.61
3.59
3.53
3.51
3.49
3.45
3.44
3.42
3.42
2.68
2.65
2.63
2.62
2.60
1.63
1.56
1.52
1.51
1.51
1.51
1H NMR (300 MHz, CDCl3)
4.03
3.68
6.39
4
4.14
4.42
ppm


7.26
4.27 4.25 4.23 4.23 4.21 4.19 3.71 3.69 3.68 3.67 3.67 3.62 3.61 3.60 3.58 3.30 3.28 3.25 3.23 2.70 2.68 2.67 2.65 2.64 2.64 2.62 2.60 1.60 1.60 1.59 1.57 1.57 1.56 1.56 1.54 1.50 1.50 1.49 1.49 1.47 1.46 1.45 1.45 1.36 1.34 1.33 1.31 1.29 1.26 1.24 0.96 0.94 0.92 0.90 0.87
1H NMR (300 MHz, CDCl3)
3.95
8.31
4.14
4
4.07
4.02
5.81
ppm


7.26
6.35
4.26 4.26 4.24 4.22 4.20 4.20 3.68 3.68 3.66 3.64 3.64 3.61 3.61 3.60 3.59 3.59 3.58 3.58 3.22 3.20 3.18 3.16 2.74 2.74 2.72 2.70 2.63 2.59 2.52 2.51 2.50 2.47 2.47 1.49 1.49 1.47 1.45 1.45 1.28 1.27 0.89 0.88 0.87 0.85
1H NMR (300 MHz, CDCl3)
4
2.01
4.12
1.96
2.74
0.841
4.05
1.95
2.15
8.05
ppm