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APPENDICES

APPENDIX A

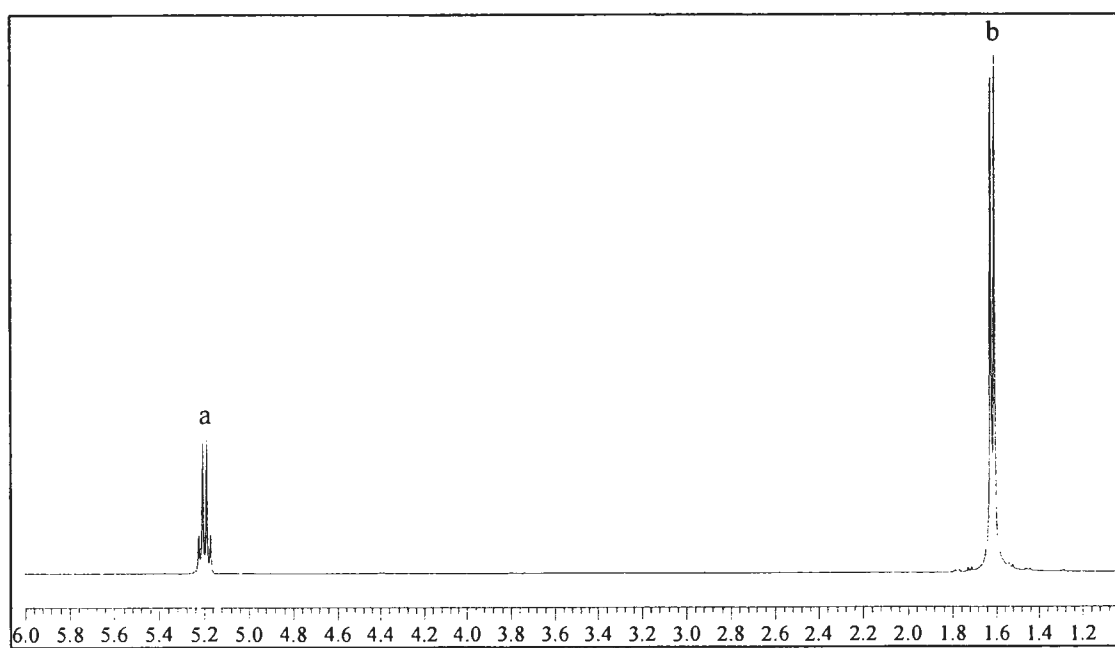
NMR spectra of PLLA and PLLA-*b*-PG

Figure A-1 ¹H NMR spectra of PLLA (entry 1, table 4.1), 0.3 mol% Sn(Oct)₂, 130 °C, 1 day

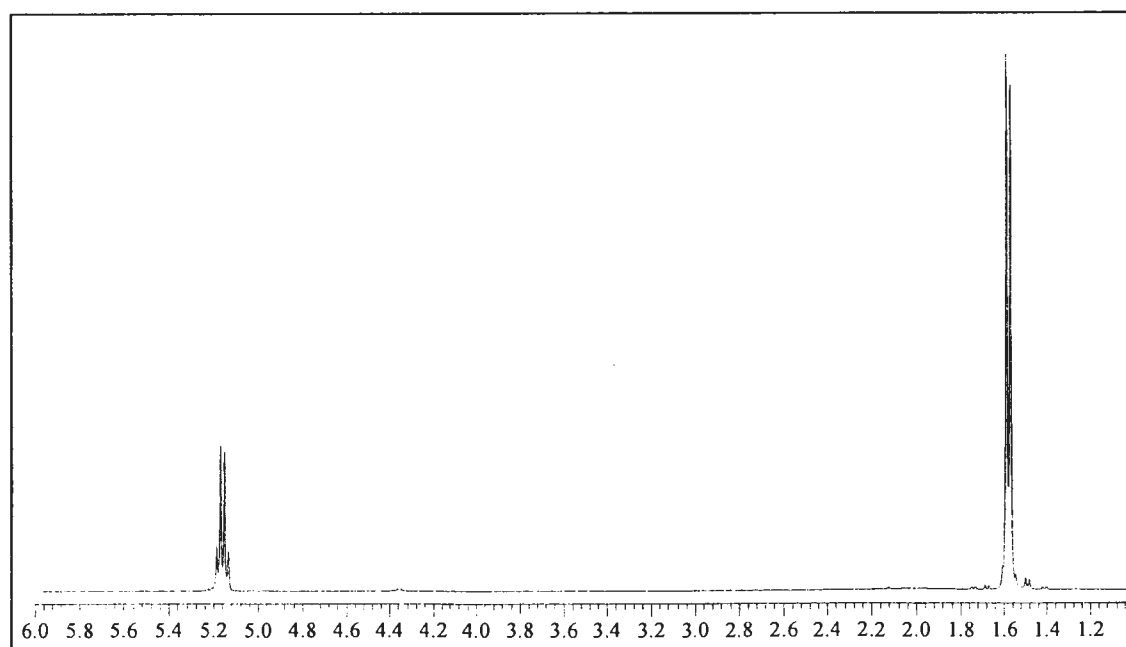


Figure A-2 ¹H NMR spectra of PLLA (entry 2, table 4.1), 0.5 mol% Sn(Oct)₂, 130 °C, 1 day

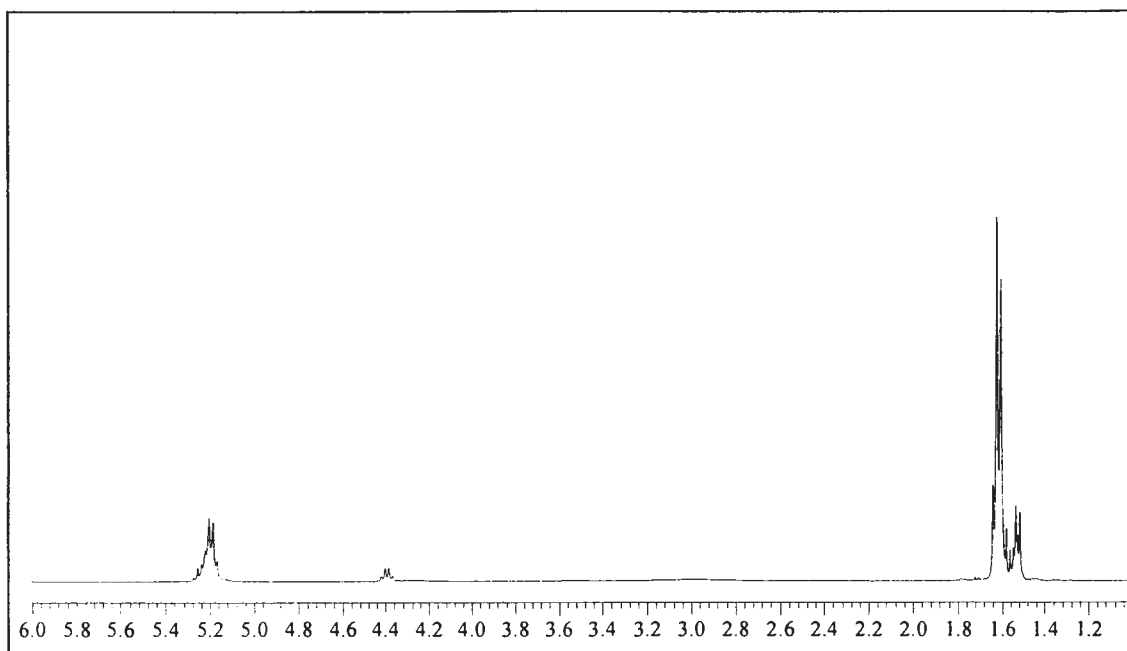


Figure A-3 ¹H NMR spectra of PLLA-*b*-PG (entry 1, table 4.3), 10:1 LLA:G feed molar ratio, 5 mol% Sn(Oct)₂ of OH content in PG, 130 °C, 1 day.

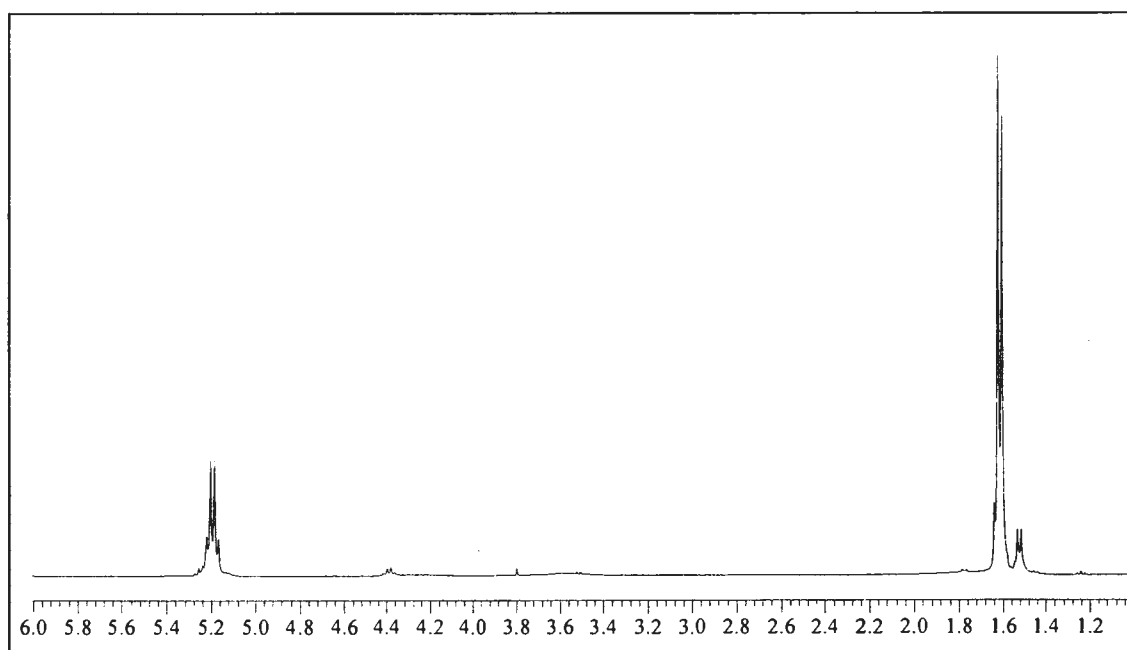


Figure A-4 ¹H NMR spectra of PLLA-*b*-PG (entry 2, table 4.3), 10:1 LLA:G feed molar ratio, 5 mol% Sn(Oct)₂ of OH content in PG, 130 °C, 1 day.

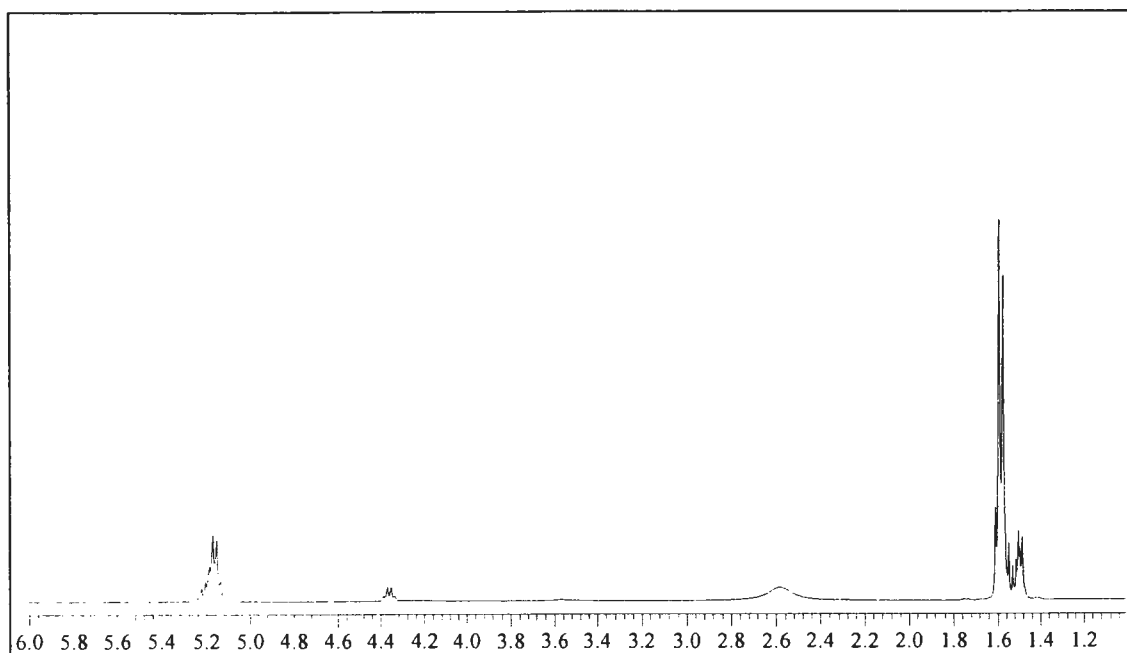


Figure A-5 ¹H NMR spectra of PLLA-*b*-PG (entry 2, MeOH-soluble table 4.4), 10:1 LLA:G feed molar ratio, 5 mol% Sn(Oct)₂ of OH content in PG, 130 °C, 1 day.

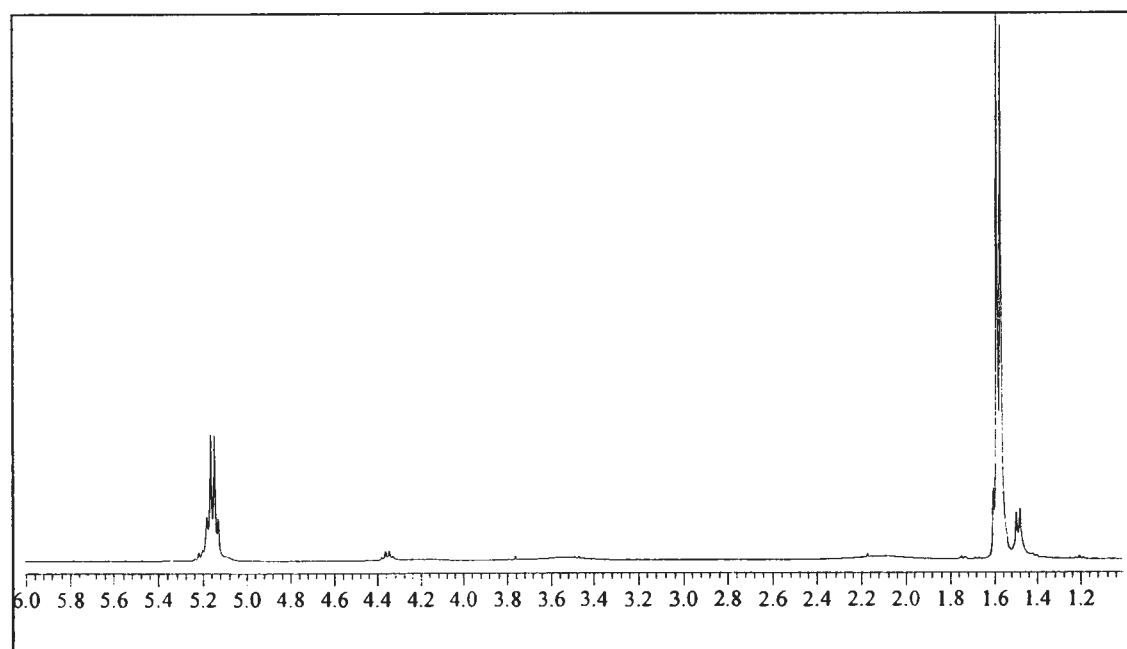


Figure A-6 ¹H NMR spectra of PLLA-*b*-PG (entry 2, MeOH-insoluble table 4.4), 10:1 LLA:G feed molar ratio, 5 mol% Sn(Oct)₂ of OH content in PG, 130 °C, 1 day.

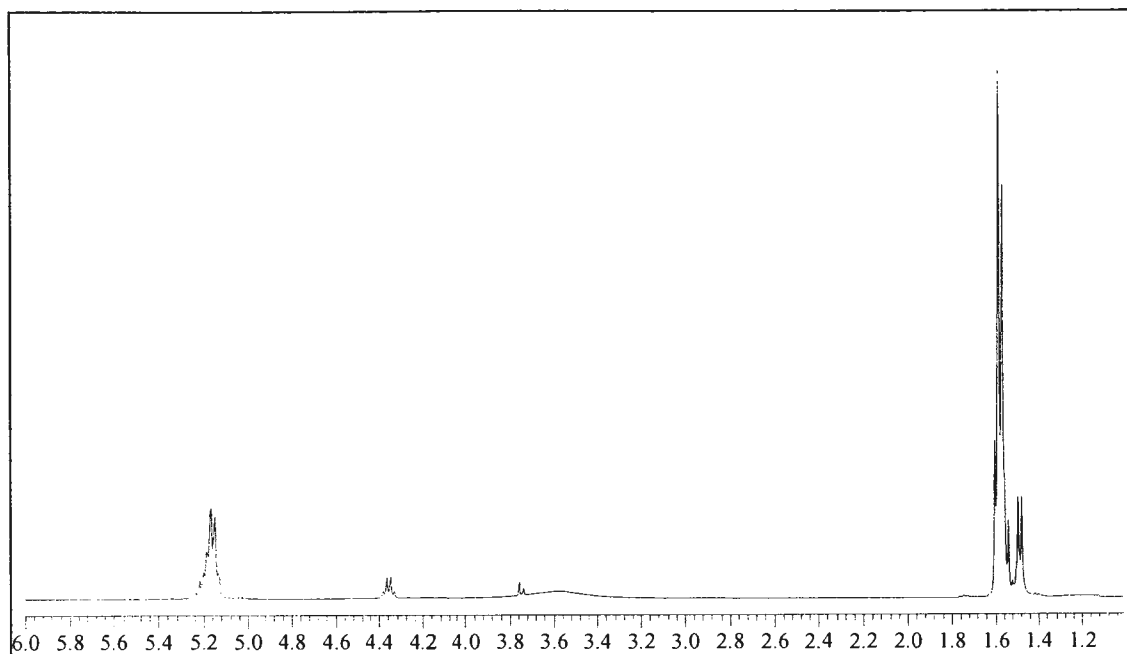


Figure A-7 ¹H NMR spectra of PLLA-*b*-PG (entry 3, MeOH-soluble table 4.4), 10:1 LLA:G feed molar ratio, 5 mol% Sn(Oct)₂ of OH content in PG, 130 °C, 1 day.

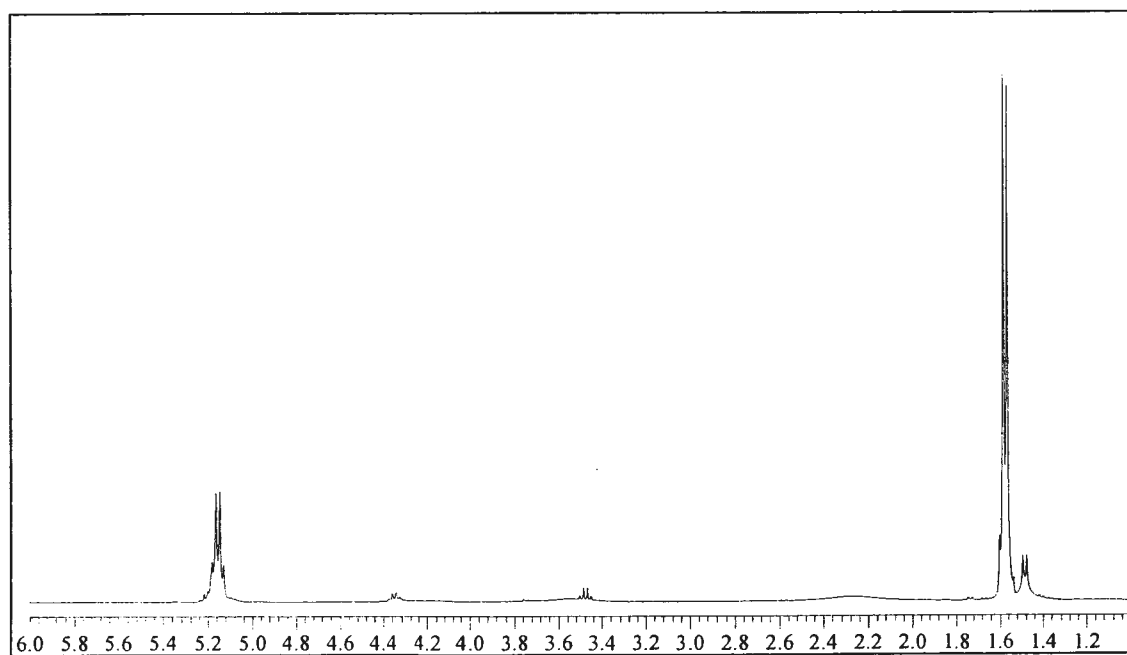


Figure A-8 ¹H NMR spectra of PLLA-*b*-PG (entry 3, MeOH-insoluble table 4.4), 10:1 LLA:G feed molar ratio, 5 mol% Sn(Oct)₂ of OH content in PG, 130 °C, 1 day.

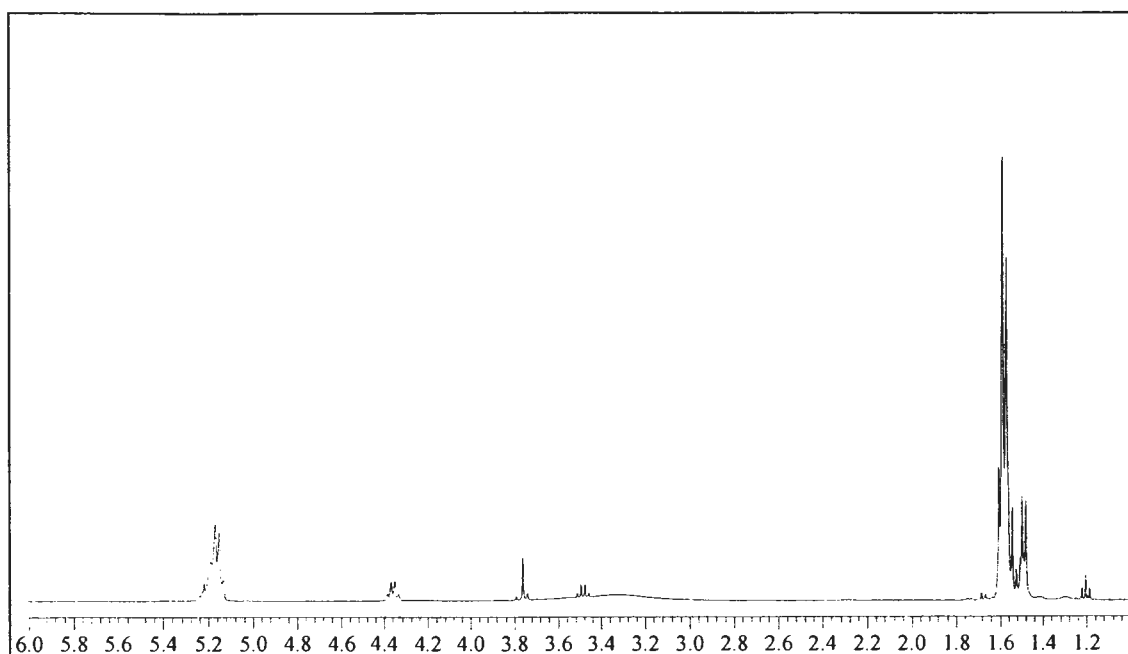


Figure A-9 ¹H NMR spectra of PLLA-*b*-PG (entry 4, MeOH-soluble table 4.4), 10:1 LLA:G feed molar ratio, 5 mol% Sn(Oct)₂ of OH content in PG, 130 °C, 1 day.

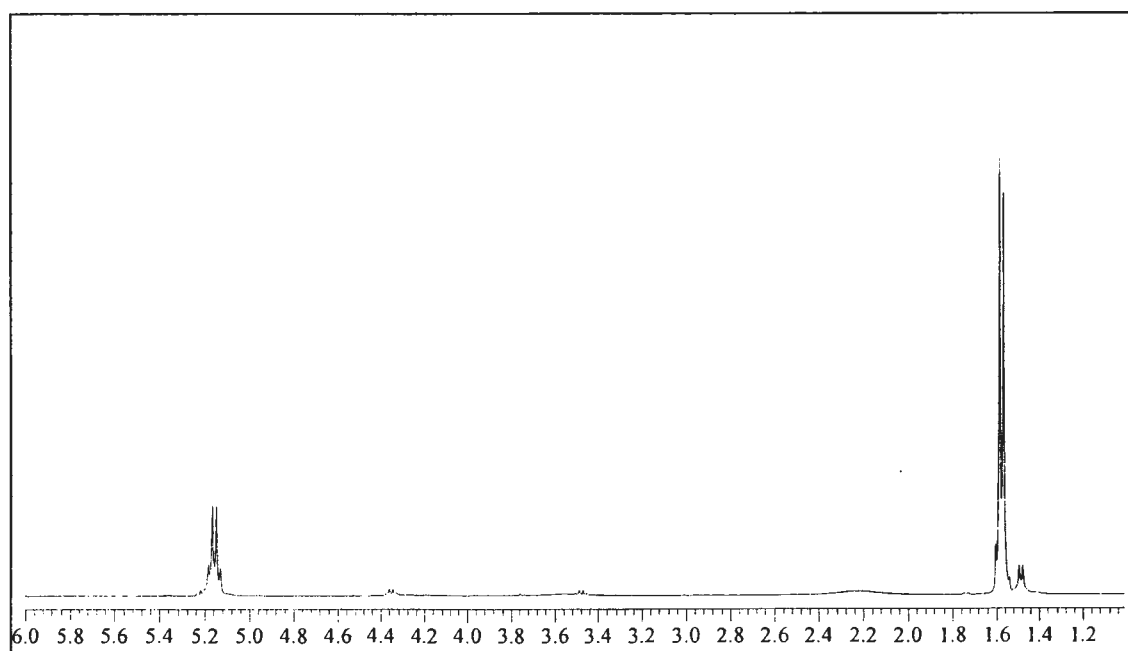


Figure A-10 ¹H NMR spectra of PLLA-*b*-PG (entry 4, MeOH-insoluble table 4.4), 10:1 LLA:G feed molar ratio, 5 mol% Sn(Oct)₂ of OH content in PG, 130 °C, 1 day.

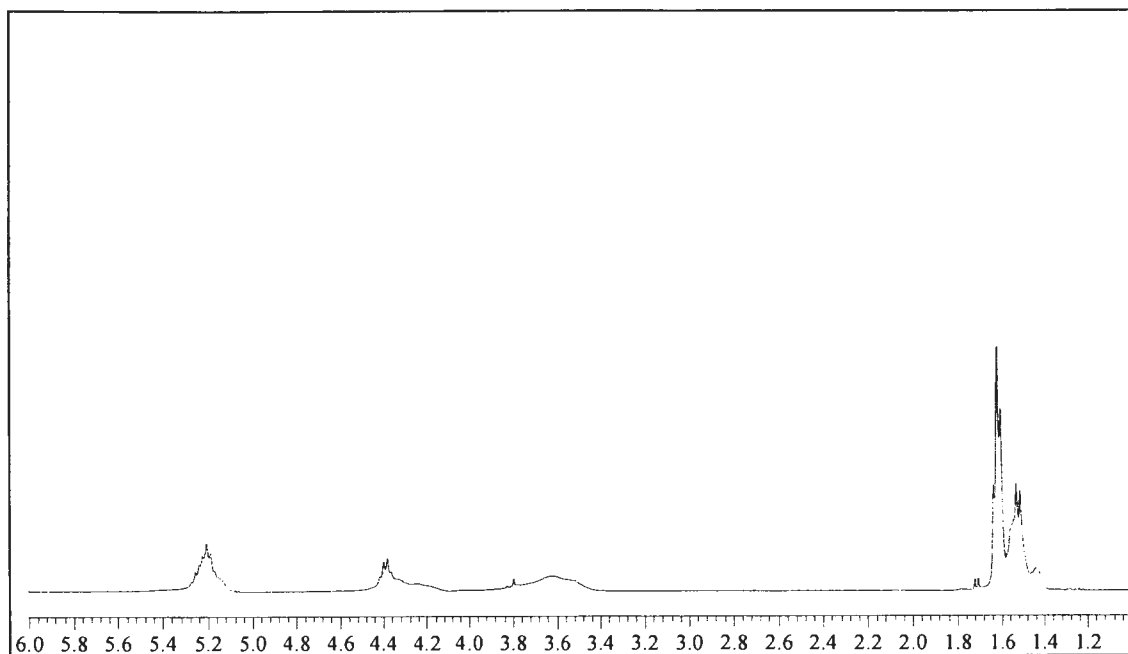


Figure A-11 ¹H NMR spectra of PLLA-b-PG (entry 1, table 4.5), 2:1 LLA:G feed molar ratio, 5 mol% Sn(Oct)₂ of OH content in PG, 130 °C, 1 day.

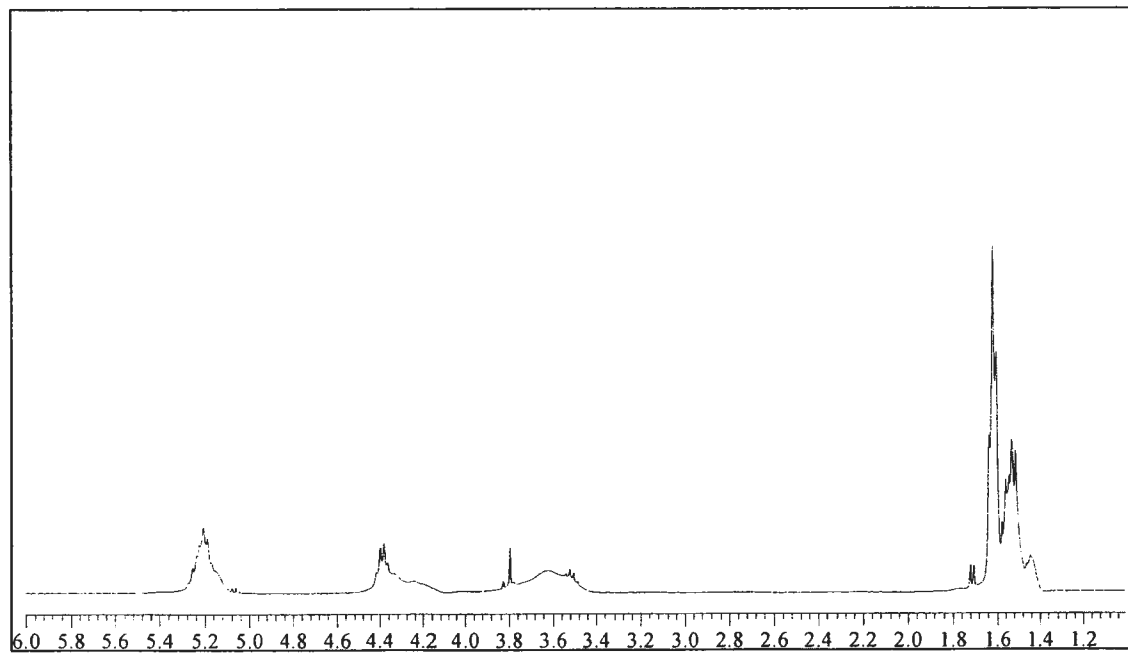


Figure A-12 ¹H NMR spectra of PLLA-b-PG (entry 2, table 4.5), 2:1 LLA:G feed molar ratio, 5 mol% Sn(Oct)₂ of OH content in PG, 140 °C, 1 day.

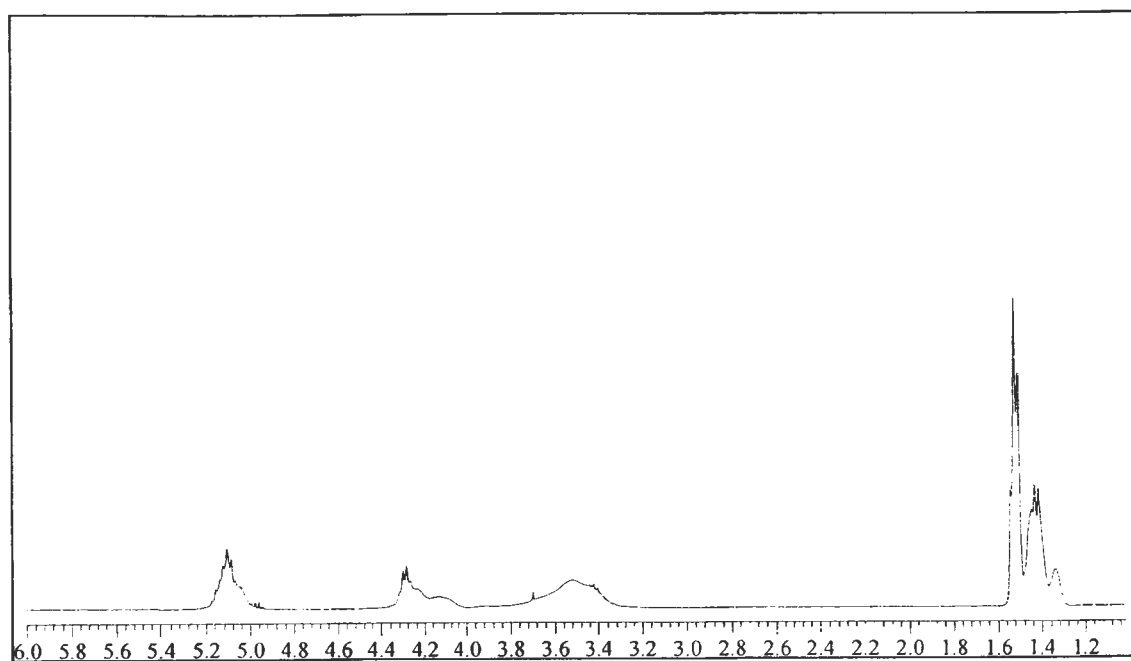


Figure A-13 ¹H NMR spectra of PLLA-b-PG (entry 3, table 4.5), 2:1 LLA:G feed molar ratio, 5 mol% Sn(Oct)₂ of OH content in PG, 150 °C, 1 day.

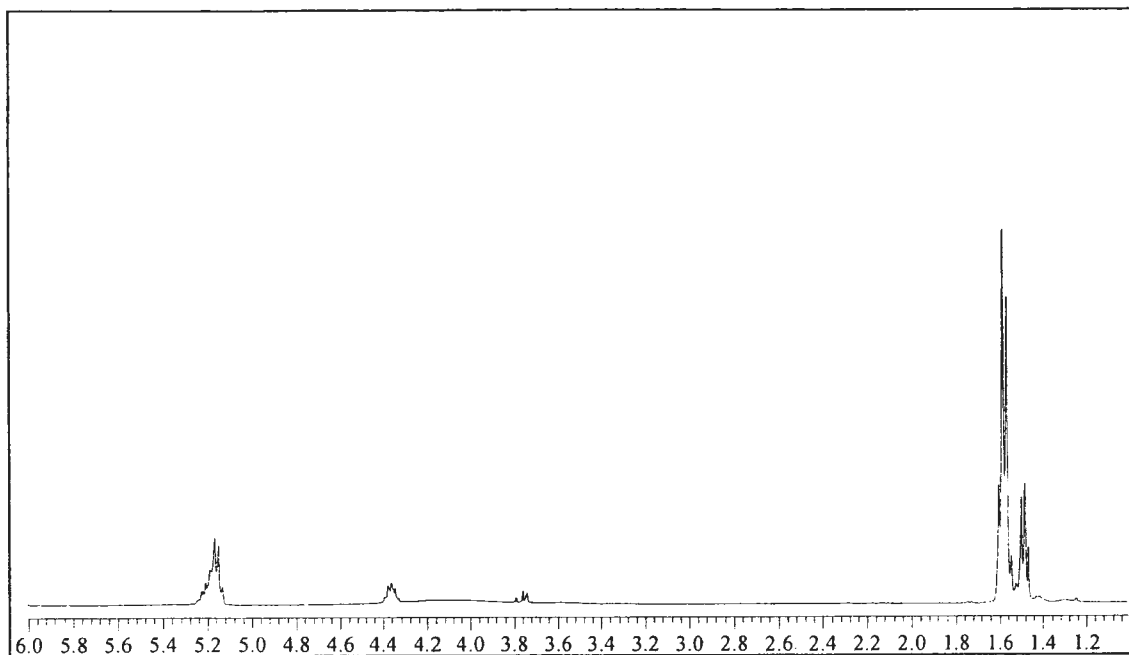


Figure A-14 ¹H NMR spectra of PLLA-b-PG (entry 5, MeOH-soluble, table 4.5), 10:1 LLA:G feed molar ratio, 5 mol% Sn(Oct)₂ of OH content in PG, 140 °C, 1 day.

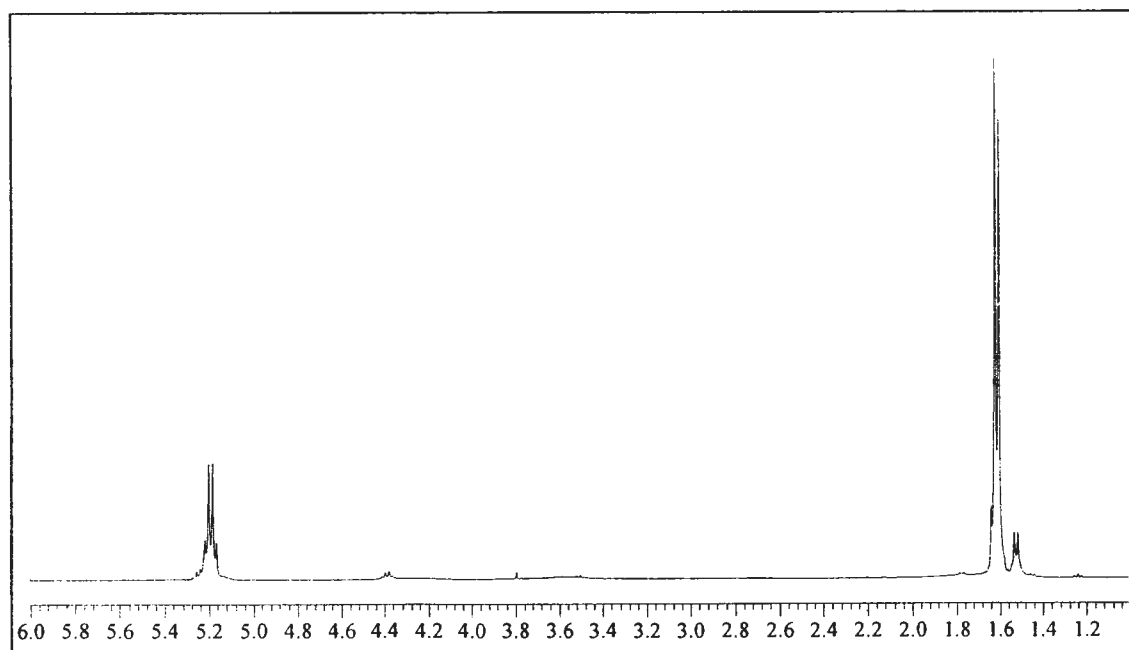


Figure A-15 ¹H NMR spectra of PLLA-b-PG (entry 5, MeOH-insoluble, table 4.5), 10:1 LLA:G feed molar ratio, 5 mol% Sn(Oct)₂ of OH content in PG, 140 °C, 1 day.

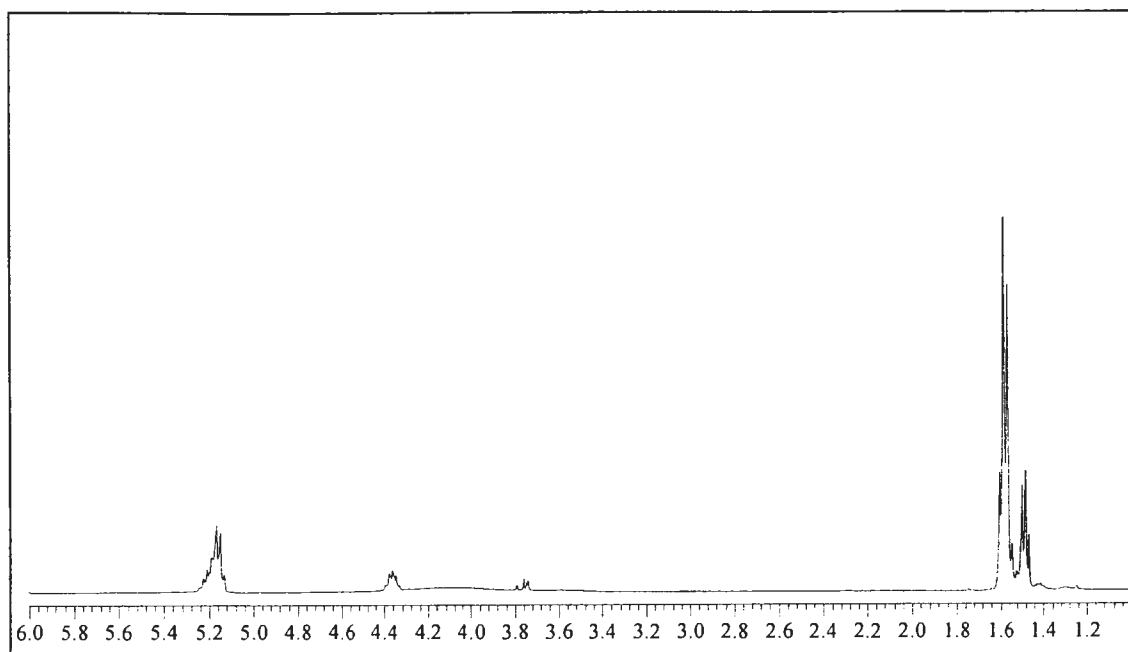


Figure A-16 ¹H NMR spectra of PLLA-b-PG (entry 6, MeOH-soluble, table 4.5), 10:1 LLA:G feed molar ratio, 5 mol% Sn(Oct)₂ of OH content in PG, 150 °C, 1 day.

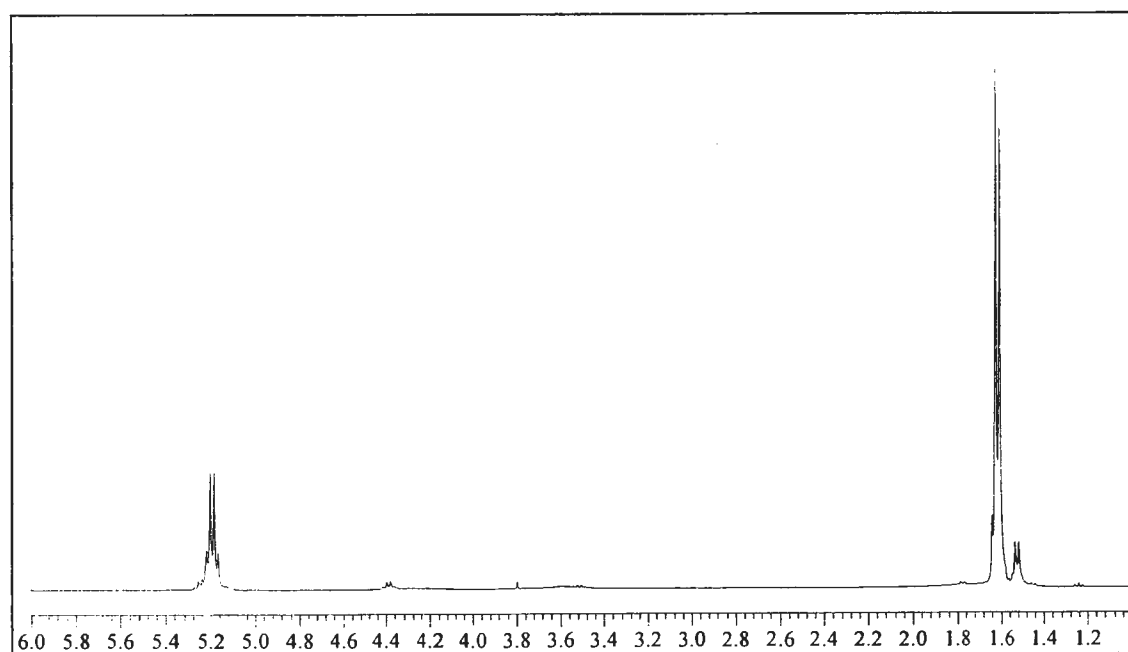


Figure A-17 ¹H NMR spectra of PLLA-b-PG (entry 6, MeOH-insoluble, table 4.5), 10:1 LLA:G feed molar ratio, 5 mol% Sn(Oct)₂ of OH content in PG, 150 °C, 1 day.

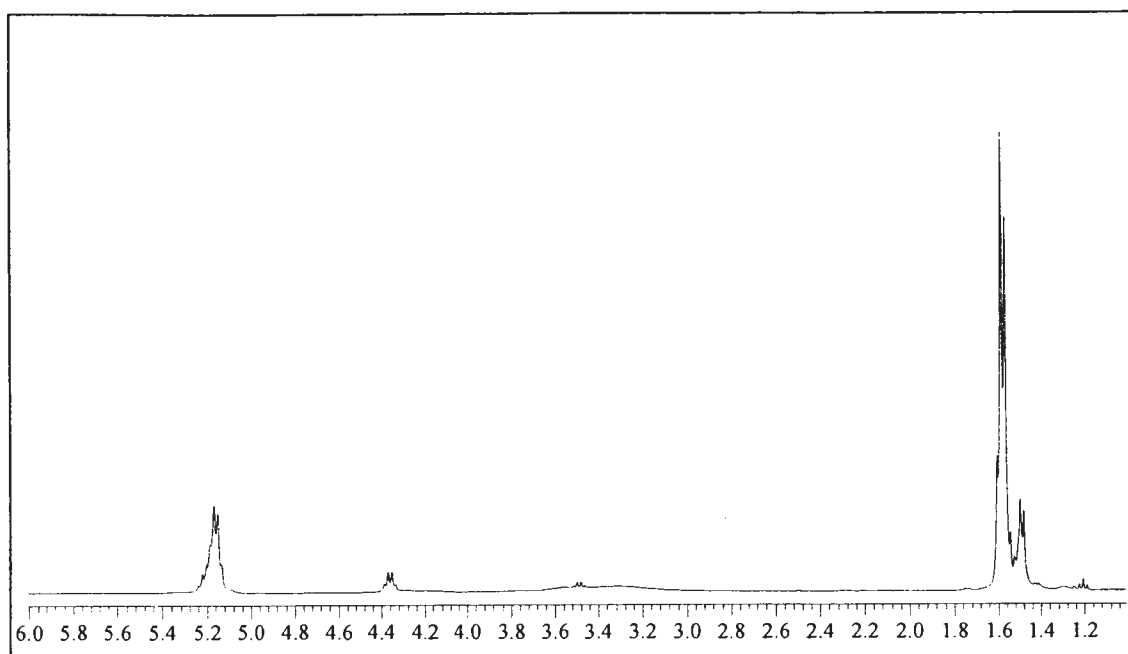


Figure A-18 ¹H NMR spectra of PLLA-b-PG (entry 2, MeOH-soluble, table 4.6), 10:1 LLA:G feed molar ratio, 5 mol% Sn(Oct)₂ of OH content in PG, 130 °C, 4 day.

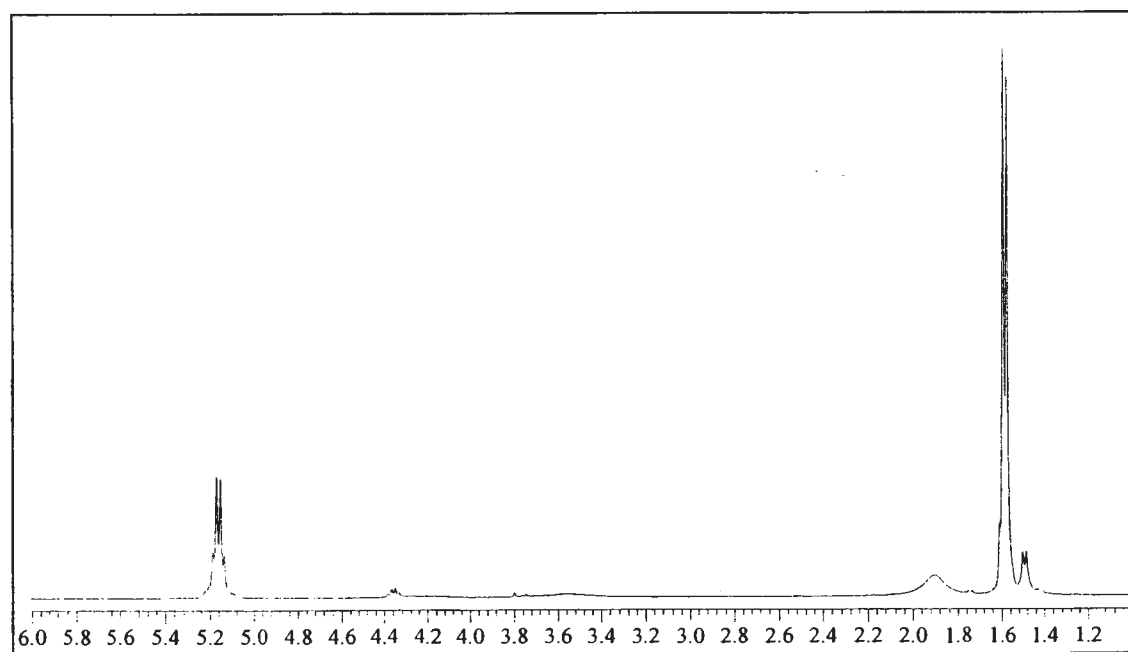


Figure A-19 ¹H NMR spectra of PLLA-b-PG (entry 2, MeOH-insoluble, table 4.6), 10:1 LLA:G feed molar ratio, 5 mol% Sn(Oct)₂ of OH content in PG, 130 °C, 4 day.

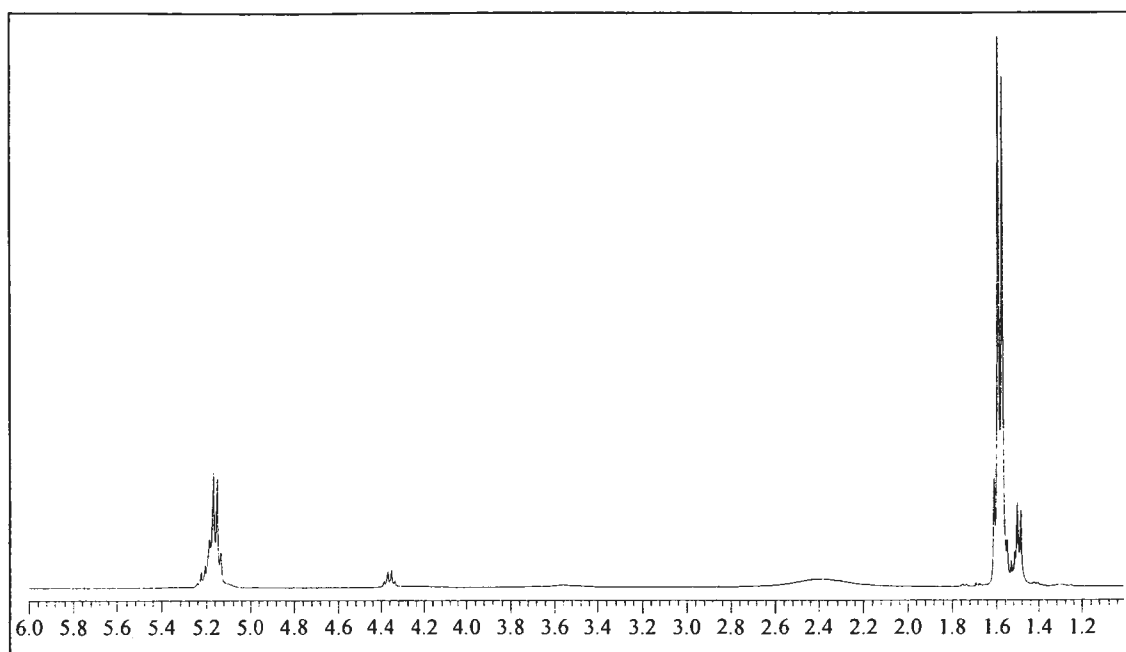


Figure A-20 ¹H NMR spectra of PLLA-b-PG (entry 3, MeOH-soluble, table 4.6), 10:1 LLA:G feed molar ratio, 5 mol% Sn(Oct)₂ of OH content in PG, 130 °C, 7 day.

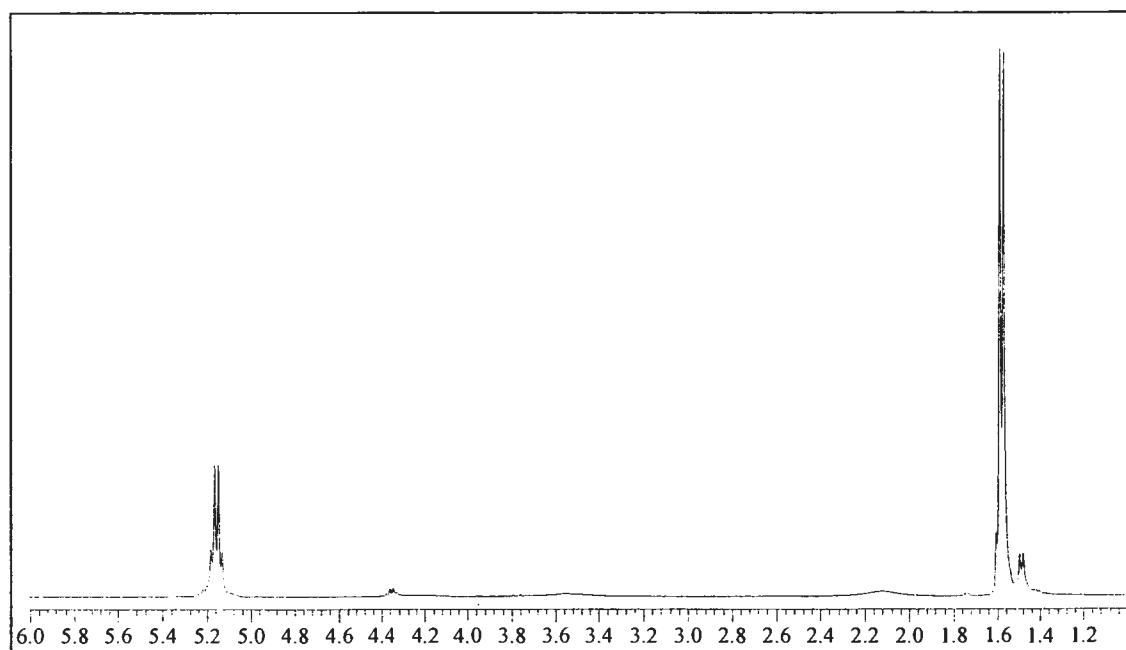


Figure A-21 ¹H NMR spectra of PLLA-b-PG (entry 3, MeOH-insoluble, table 4.6), 10:1 LLA:G feed molar ratio, 5 mol% Sn(Oct)₂ of OH content in PG, 130 °C, 7 day.

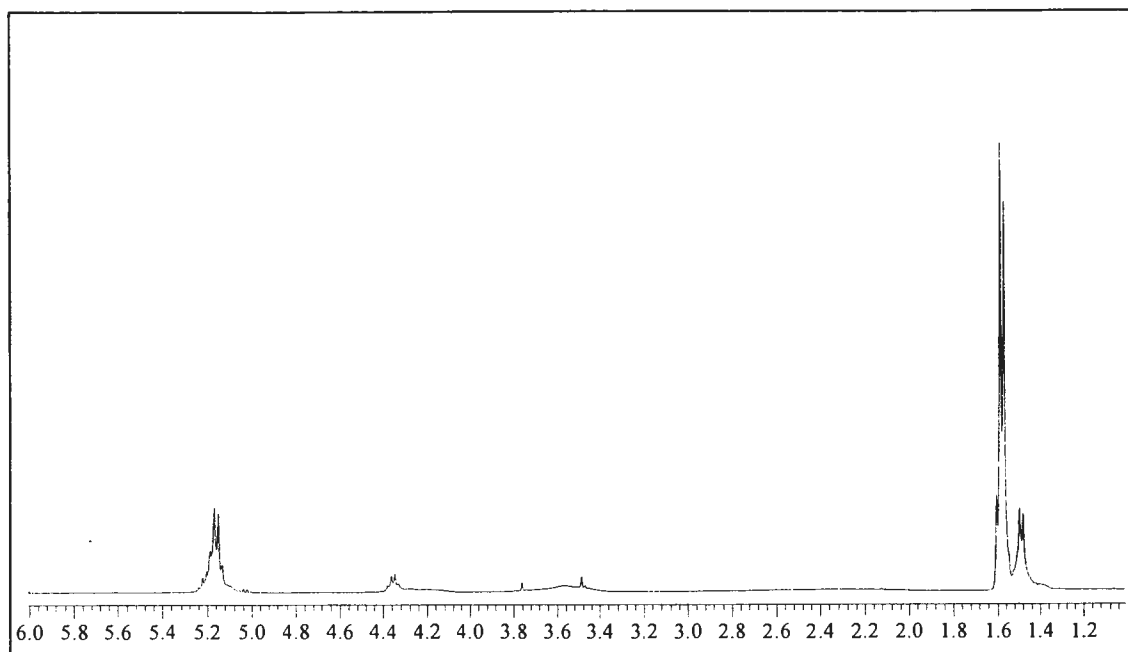


Figure A-22 ¹H NMR spectra of PLLA-b-PG (entry 1, table 4.7), 5:1 LLA:G feed molar ratio, 2 mol% Sn(Oct)₂ of OH content in PG, 130 °C, 1 day.

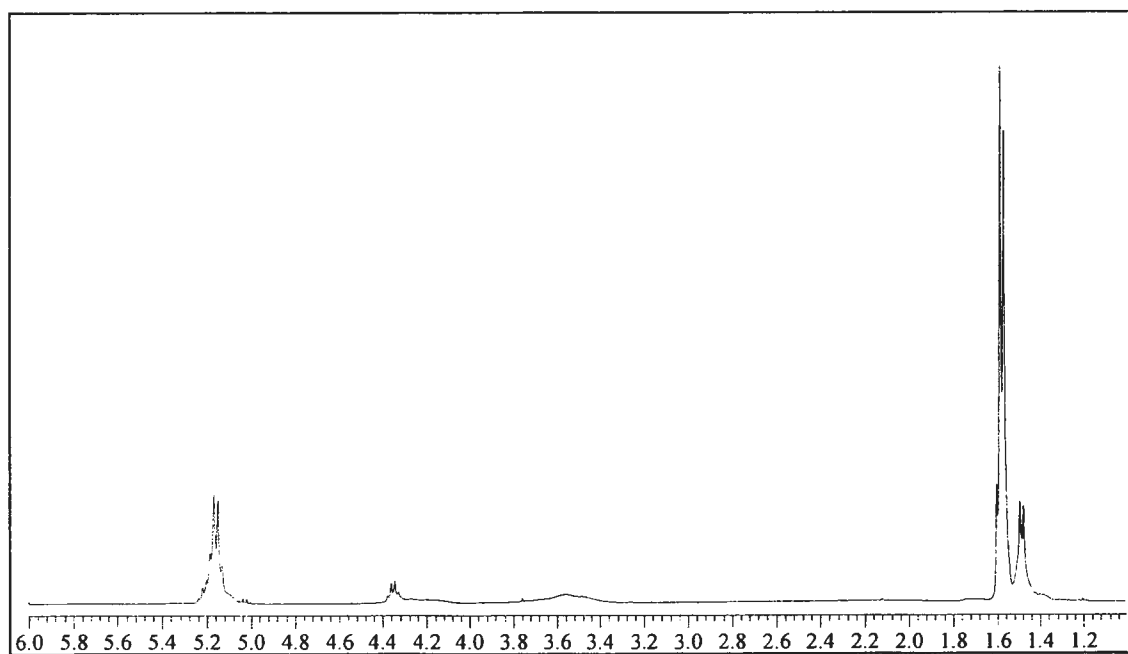


Figure A-23 ¹H NMR spectra of PLLA-b-PG (entry 2, table 4.7), 5:1 LLA:G feed molar ratio, 5 mol% Sn(Oct)₂ of OH content in PG, 130 °C, 1 day.

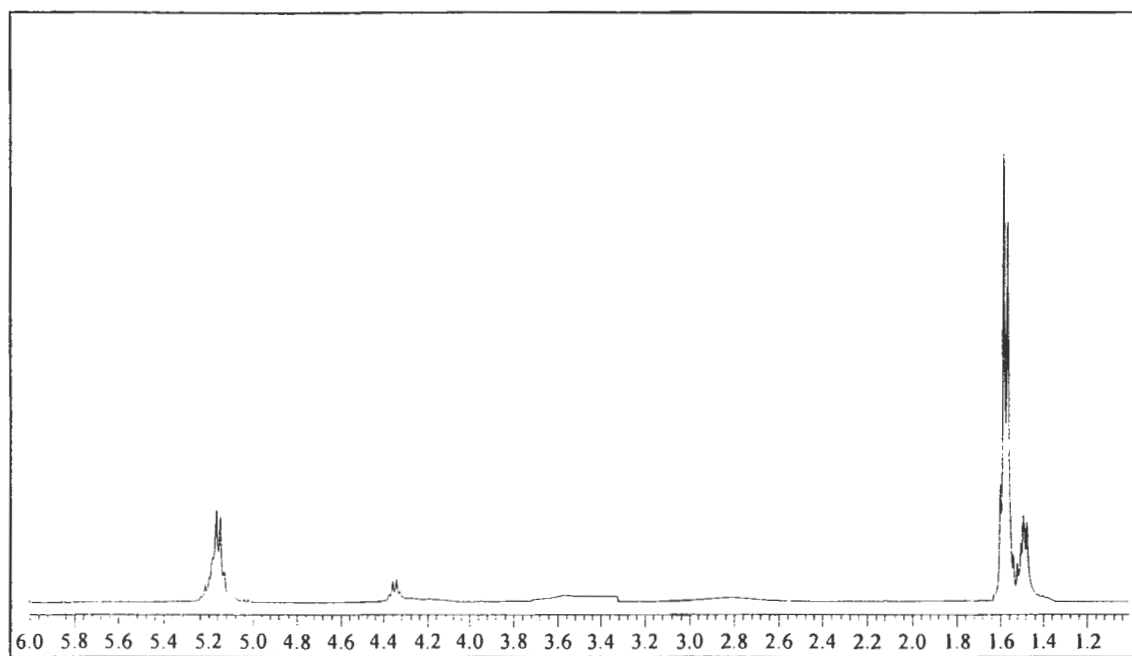


Figure A-24 ^1H NMR spectra of PLLA-b-PG (entry 3, table 4.7), 5:1 LLA:G feed molar ratio, 10 mol% $\text{Sn}(\text{Oct})_2$ of OH content in PG, 130 °C, 1 day.

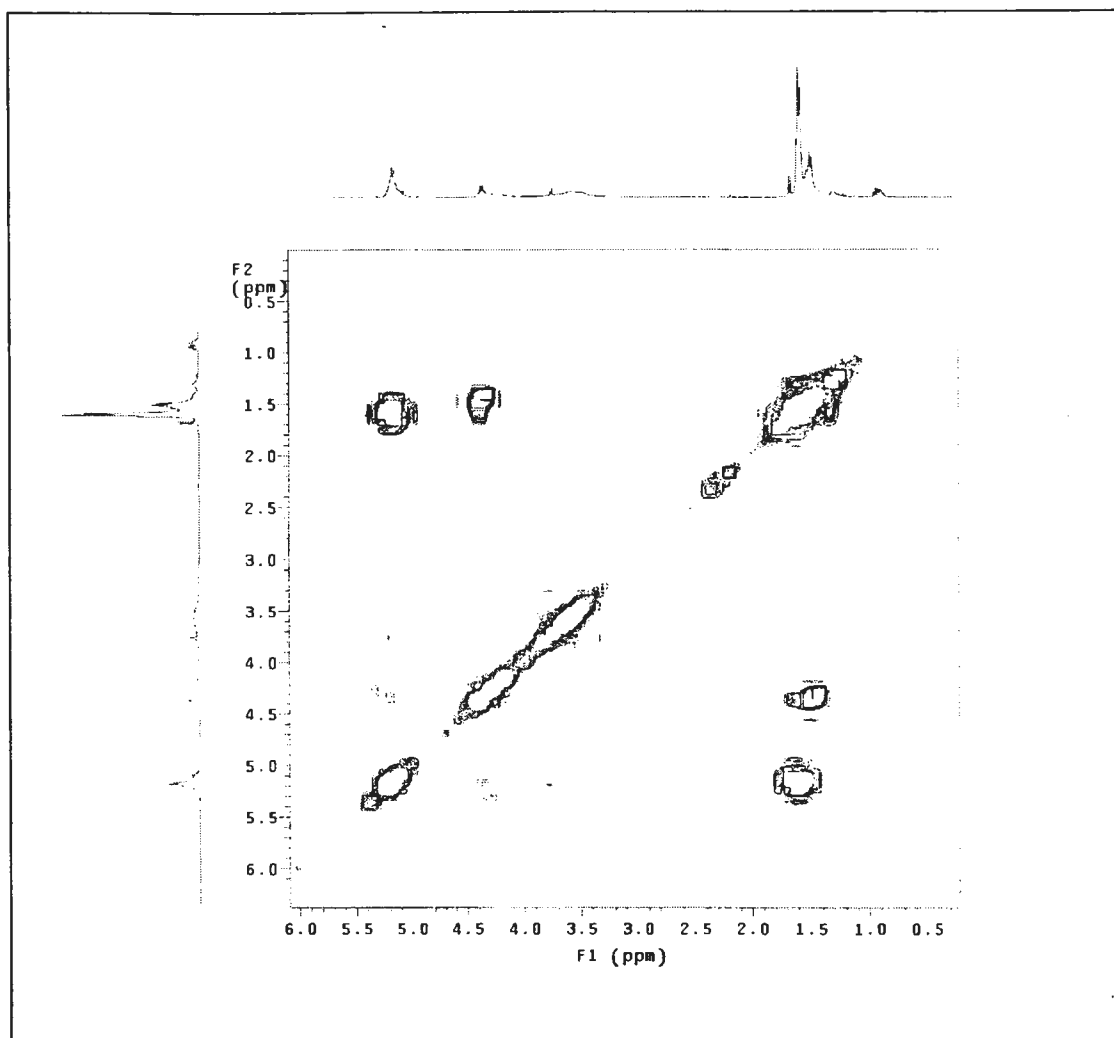


Figure A-25 COSY-NMR spectra of PLLA-*b*-PG (entry 1, table 4.3), 10:1 LLA:G feed molar ratio, 5 mol% Sn(Oct)₂ of OH content in PG, 130 °C, 1 day.

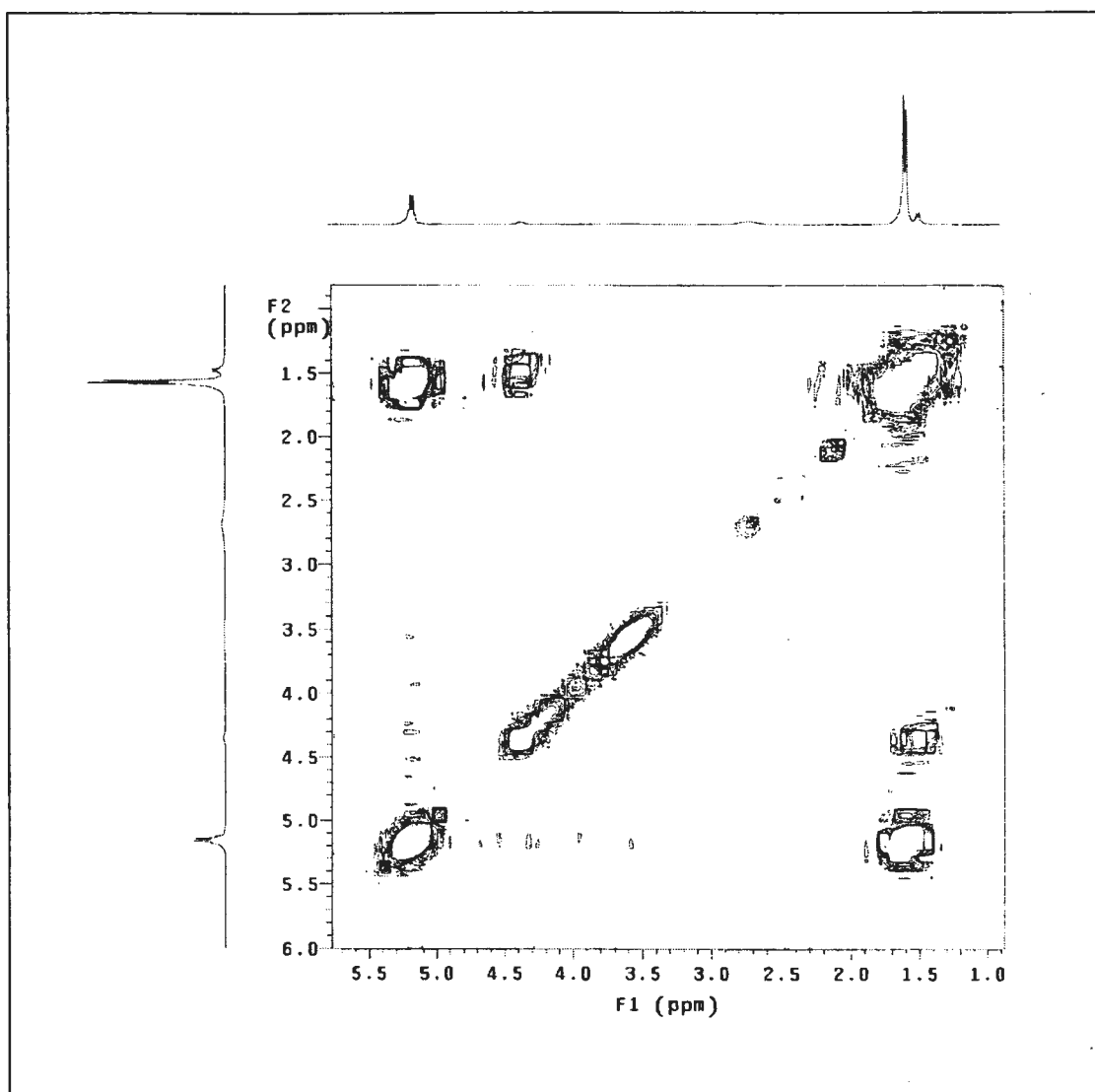


Figure A-26 COSY-NMR spectra of PLLA-*b*-PG (entry 2, table 4.3), 10:1 LLA:G feed molar ratio, 5 mol% Sn(Oct)₂ of OH content in PG, 130 °C, 1 day.

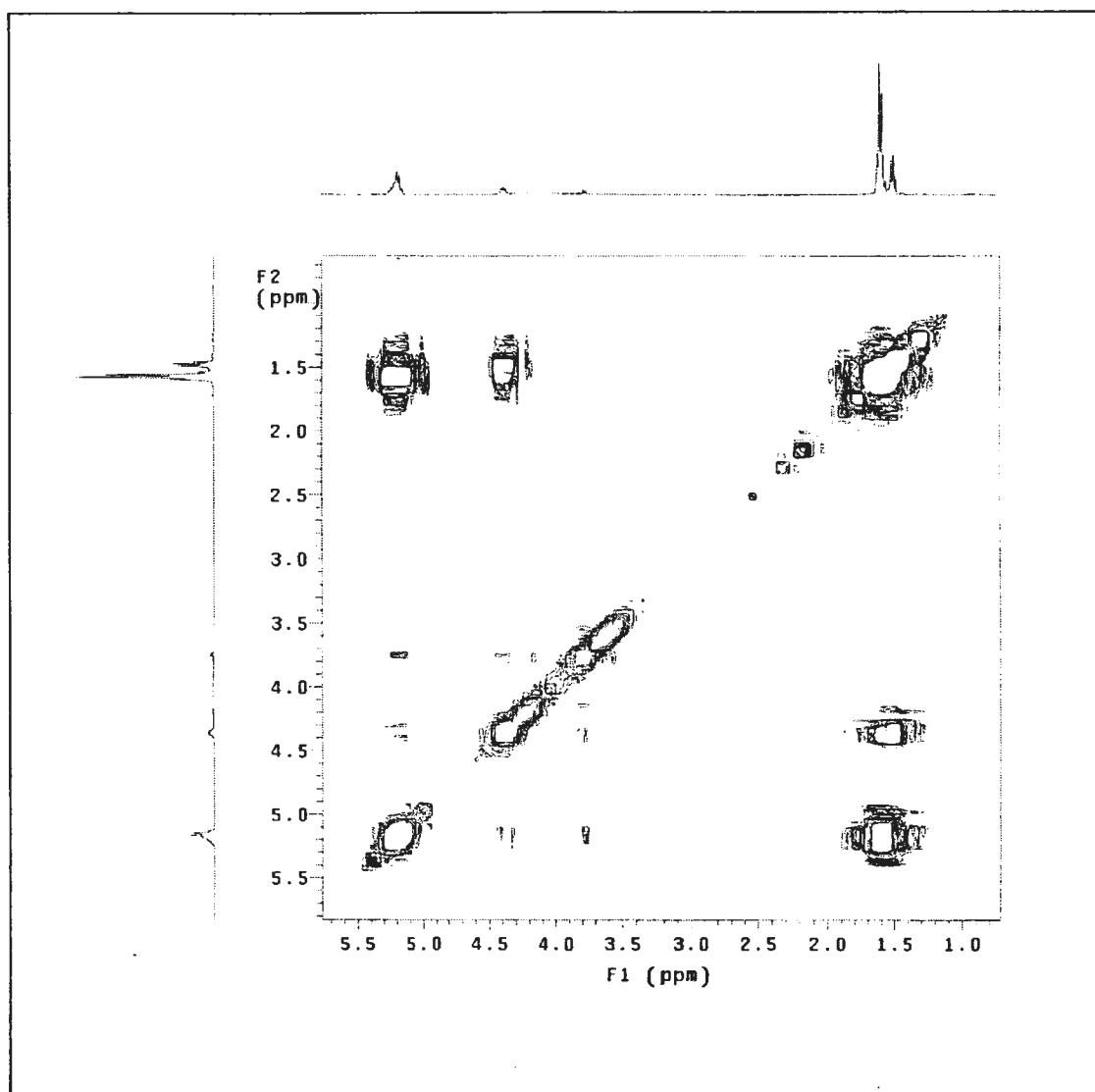


Figure A-27 COSY-NMR spectra of PLLA-*b*-PG (entry 2, MeOH-soluble table 4.4), 10:1 LLA:G feed molar ratio, 5 mol% Sn(Oct)₂ of OH content in PG, 130 °C, 1 day.

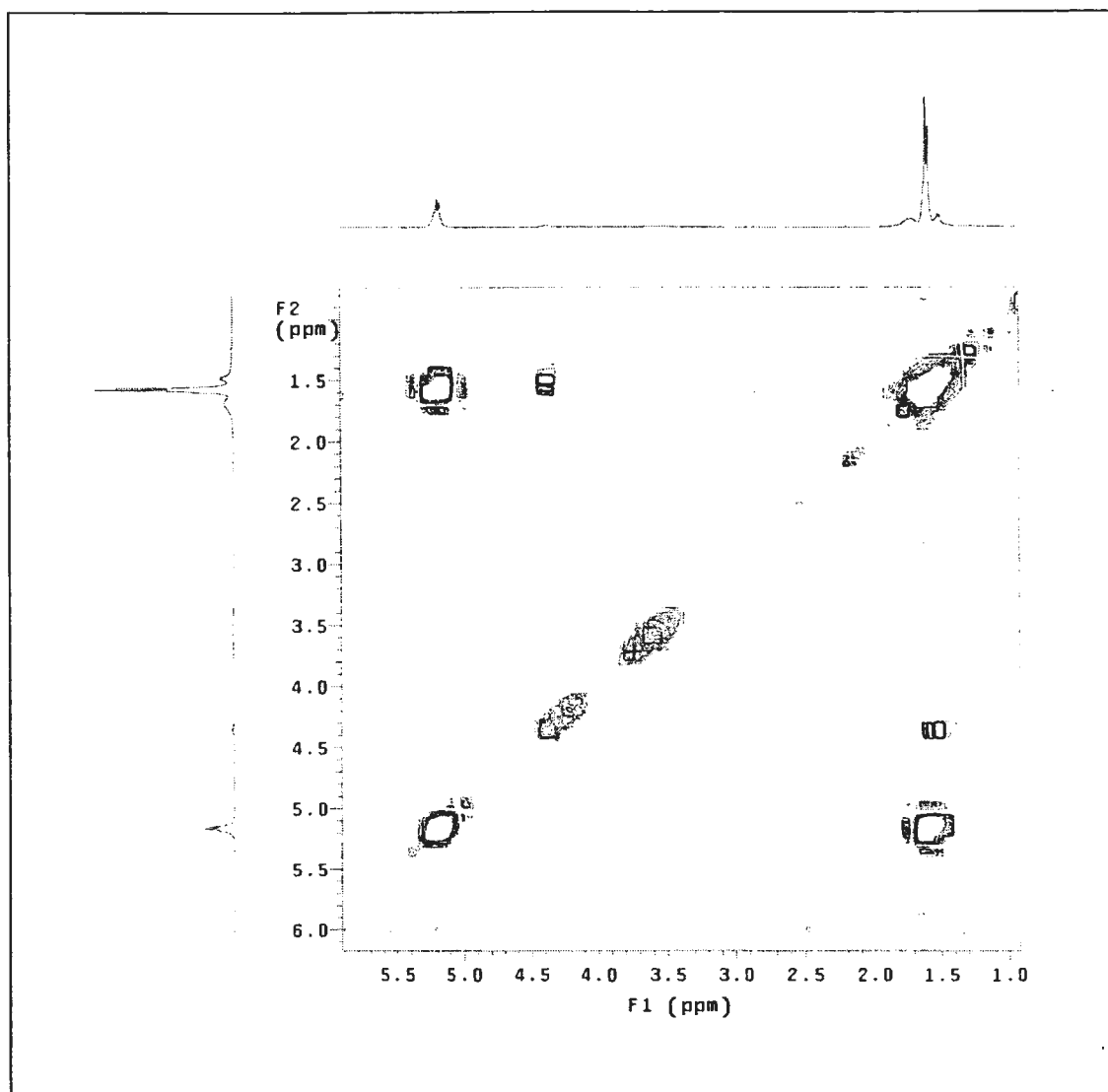


Figure A-28 COSY-NMR spectra of PLLA-*b*-PG (entry 2, MeOH-insoluble table 4.4), 10:1 LLA:G feed molar ratio, 5 mol% Sn(Oct)₂ of OH content in PG, 130 °C, 1 day.

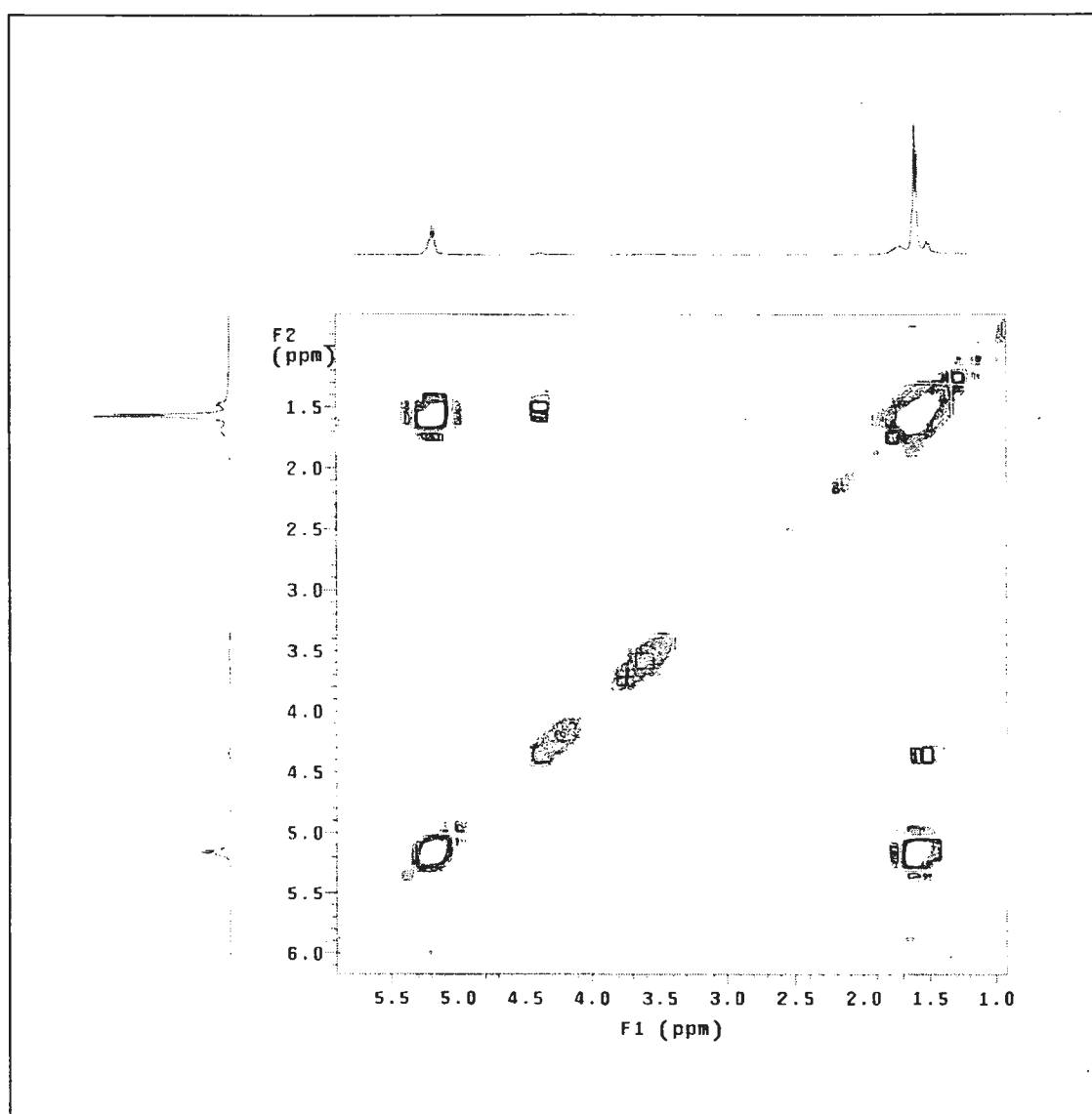


Figure A-30 COSY-NMR spectra of PLLA-*b*-PG (entry 3, MeOH-insoluble table 4.4), 10:1 LLA:G feed molar ratio, 5 mol% Sn(Oct)₂ of OH content in PG, 130 °C, 1 day.

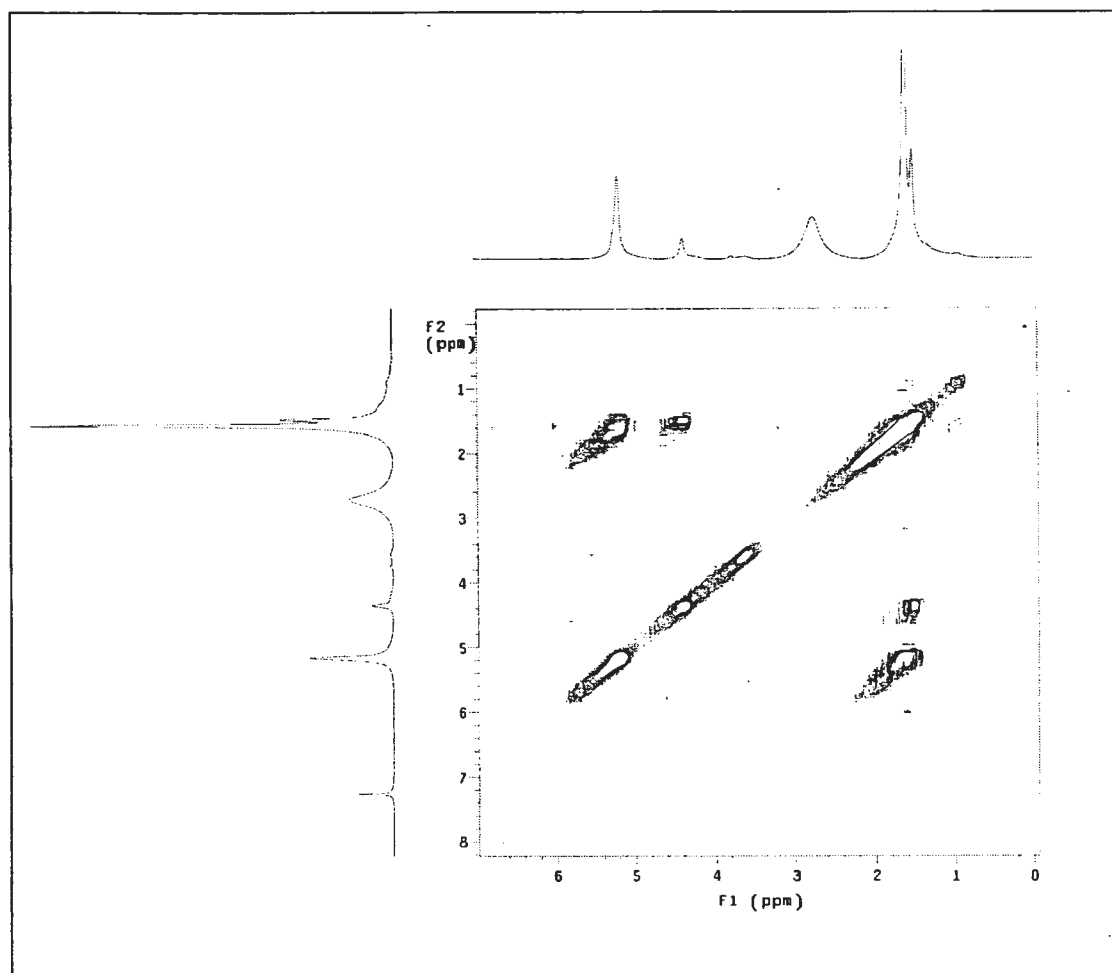


Figure A-31 COSY-NMR spectra of PLLA-*b*-PG (entry 4, MeOH-soluble table 4.4), 10:1 LLA:G feed molar ratio, 5 mol% Sn(Oct)₂ of OH content in PG, 130 °C, 1 day.

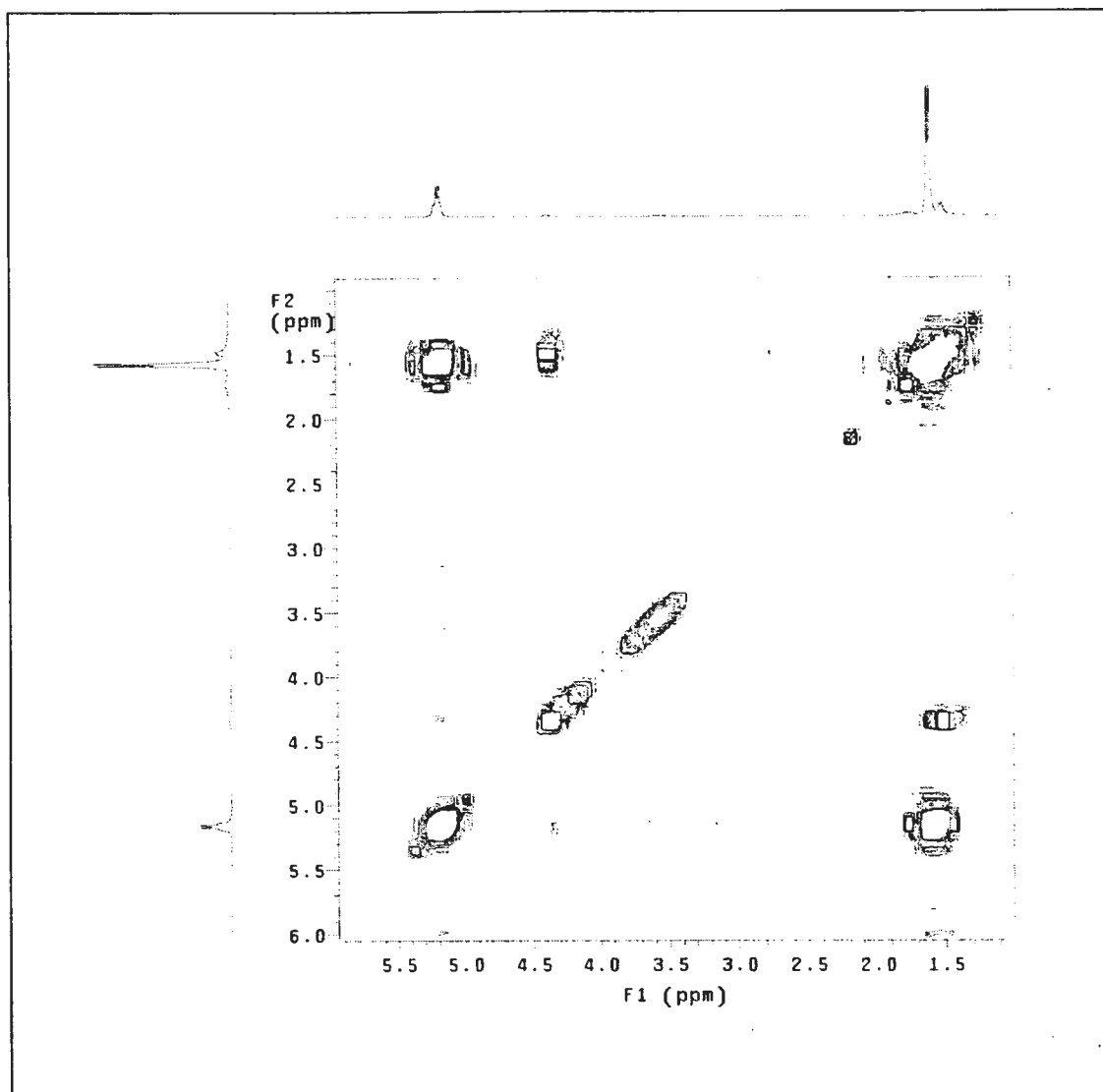


Figure A-32 COSY-NMR spectra of PLLA-*b*-PG (entry 4, MeOH-insoluble table 4.4), 10:1 LLA:G feed molar ratio, 5 mol% Sn(Oct)₂ of OH content in PG, 130 °C, 1 day.

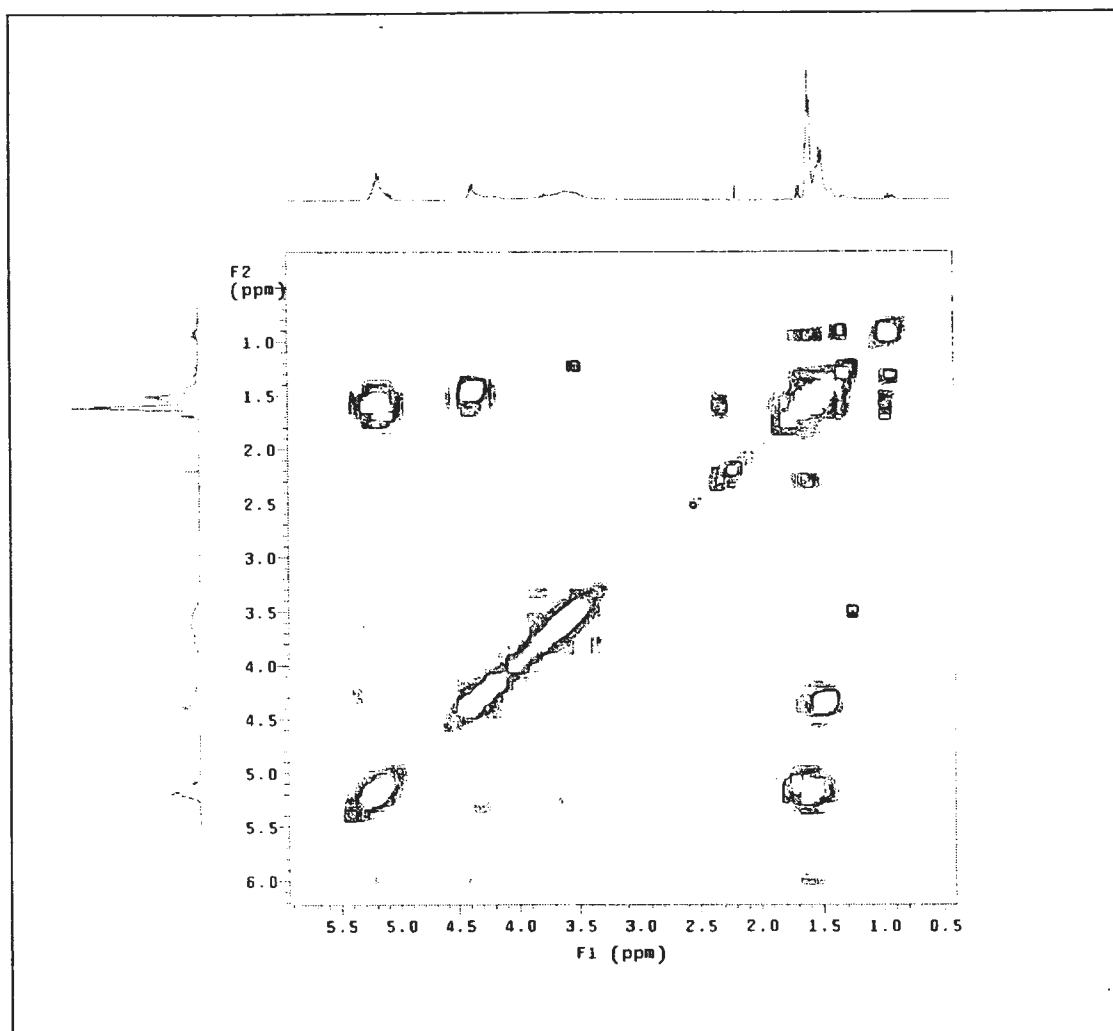


Figure A-33 COSY-NMR spectra of PLLA-b-PG (entry 1, table 4.5), 2:1 LLA:G feed molar ratio, 5 mol% Sn(Oct)₂ of OH content in PG, 130 °C, 1 day.

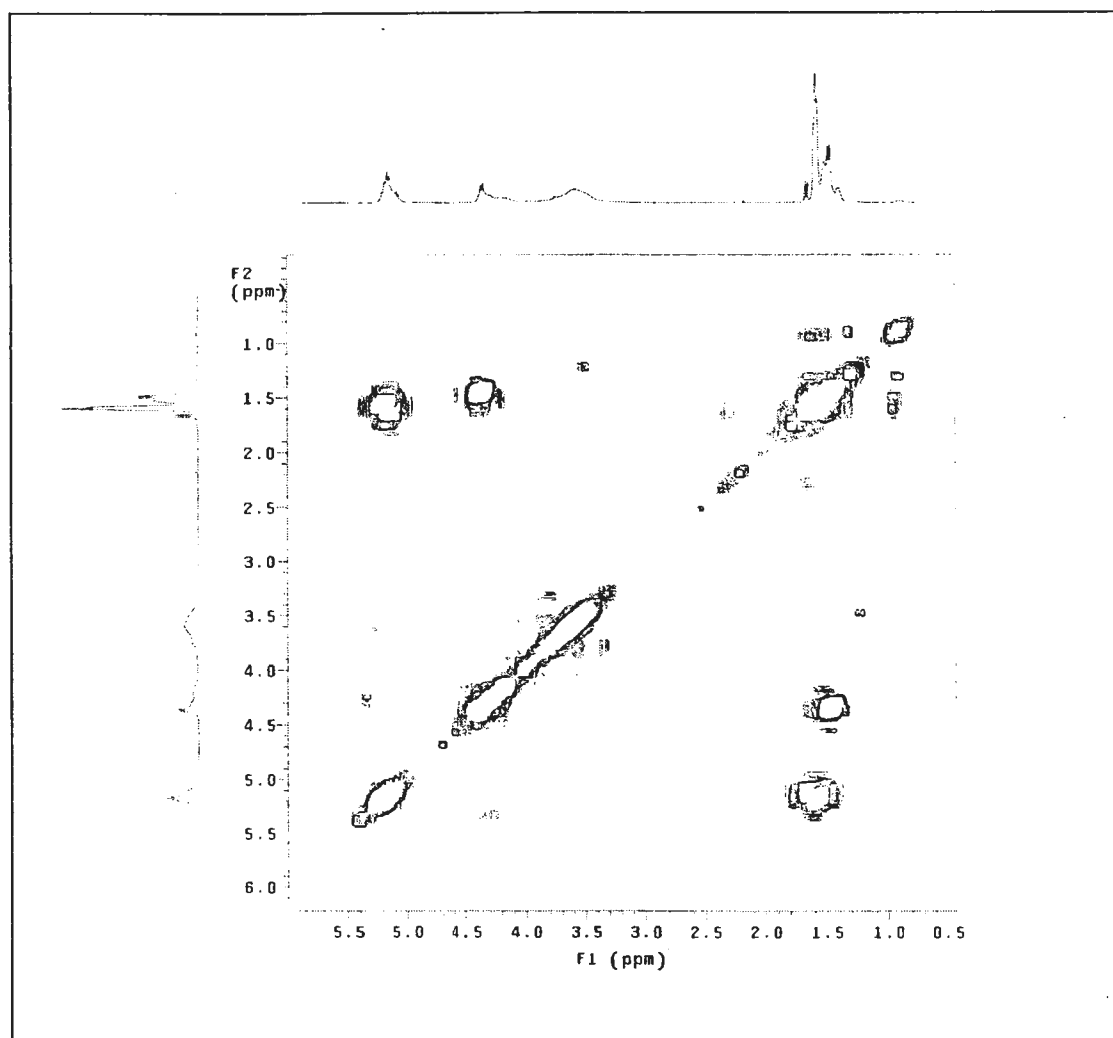


Figure A-34 COSY-NMR spectra of PLLA-b-PG (entry 2, table 4.5), 2:1 LLA:G feed molar ratio, 5 mol% Sn(Oct)₂ of OH content in PG, 140 °C, 1 day.

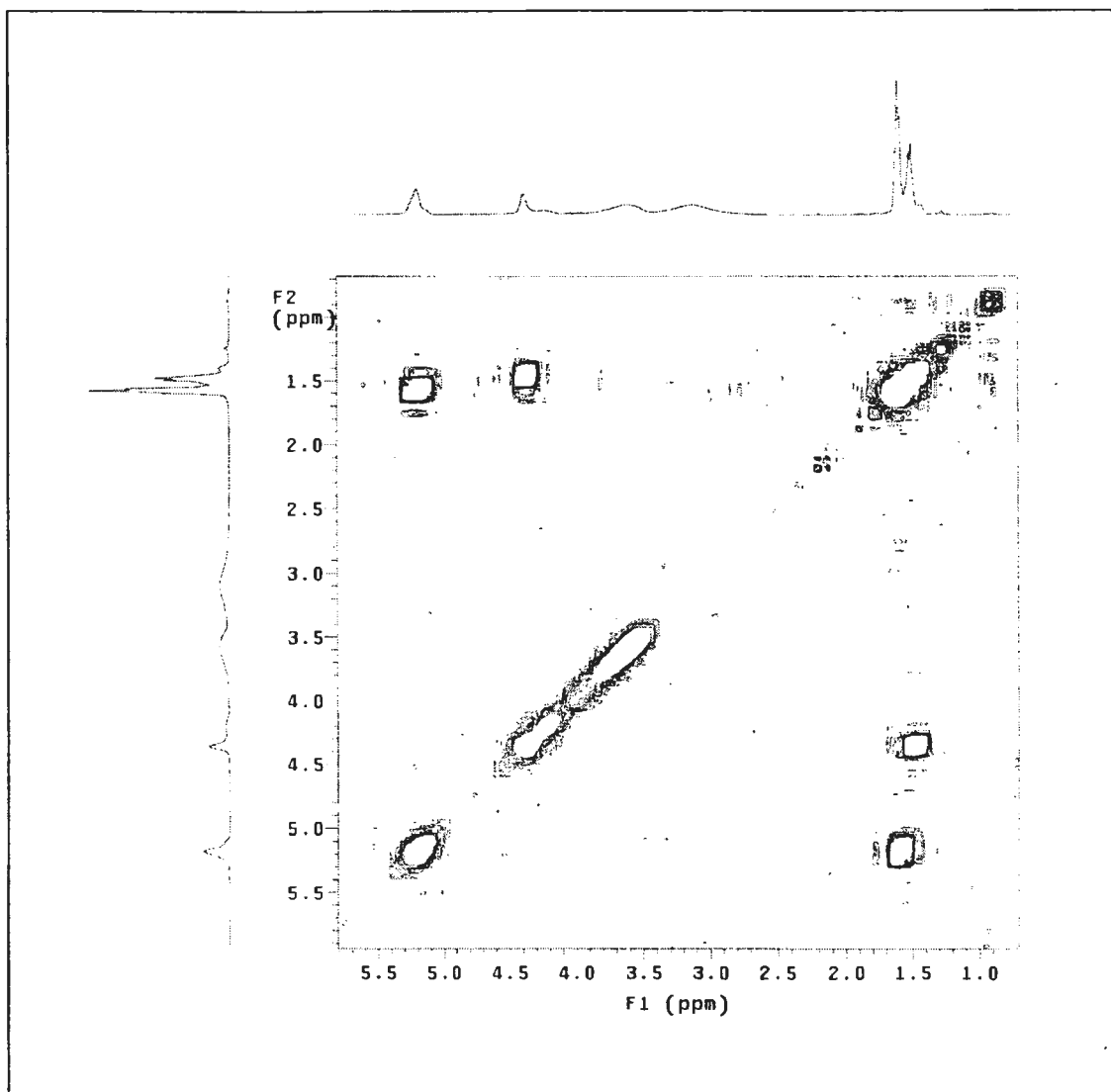


Figure A-35 COSY-NMR spectra of PLLA-b-PG (entry 3, table 4.5), 2:1 LLA:G feed molar ratio, 5 mol% Sn(Oct)₂ of OH content in PG, 150 °C, 1 day.

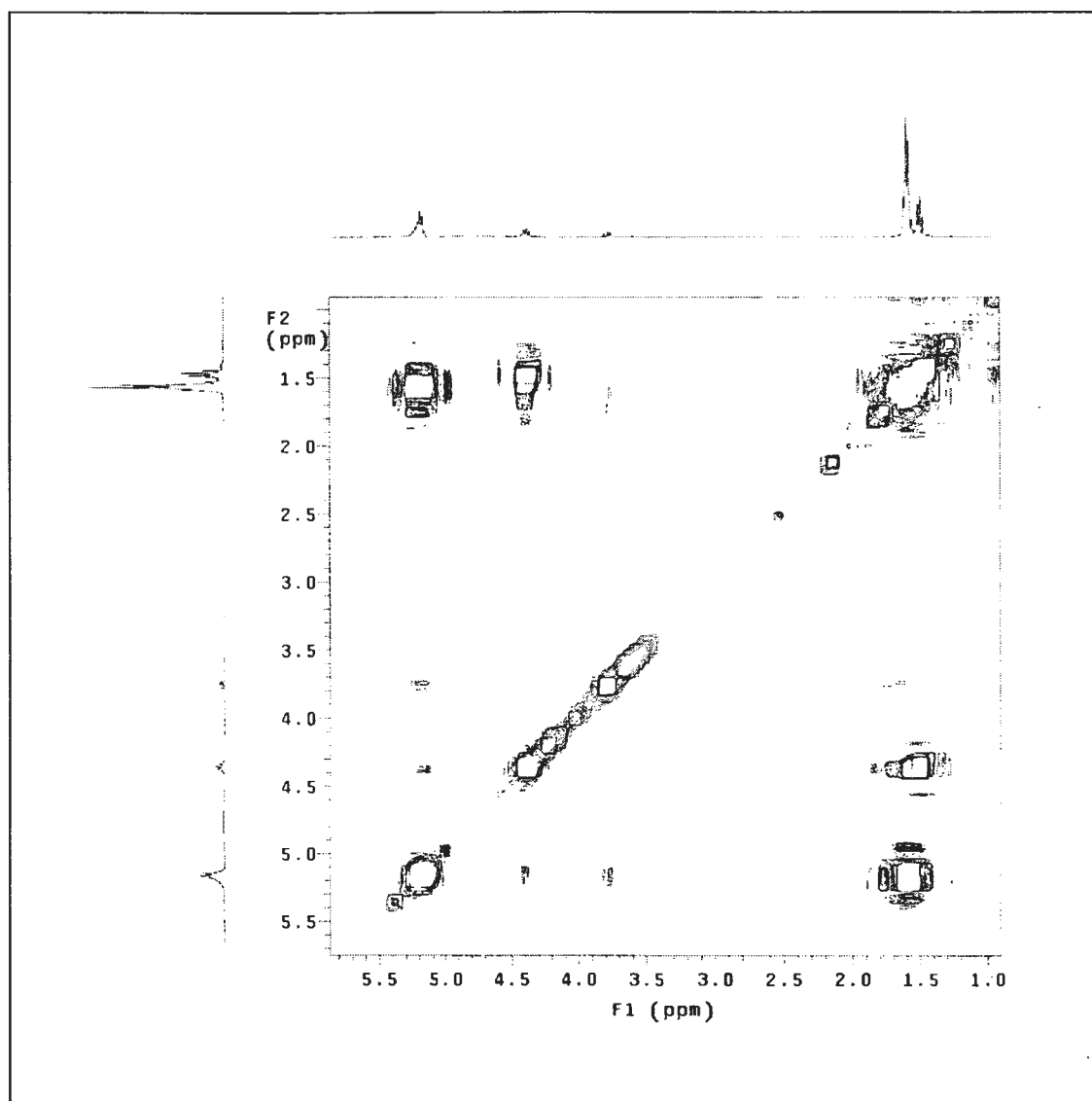


Figure A-36 COSY-NMR spectra of PLLA-b-PG (entry 5, MeOH-soluble, table 4.5), 10:1 LLA:G feed molar ratio, 5 mol% Sn(Oct)₂ of OH content in PG, 140 °C, 1 day.

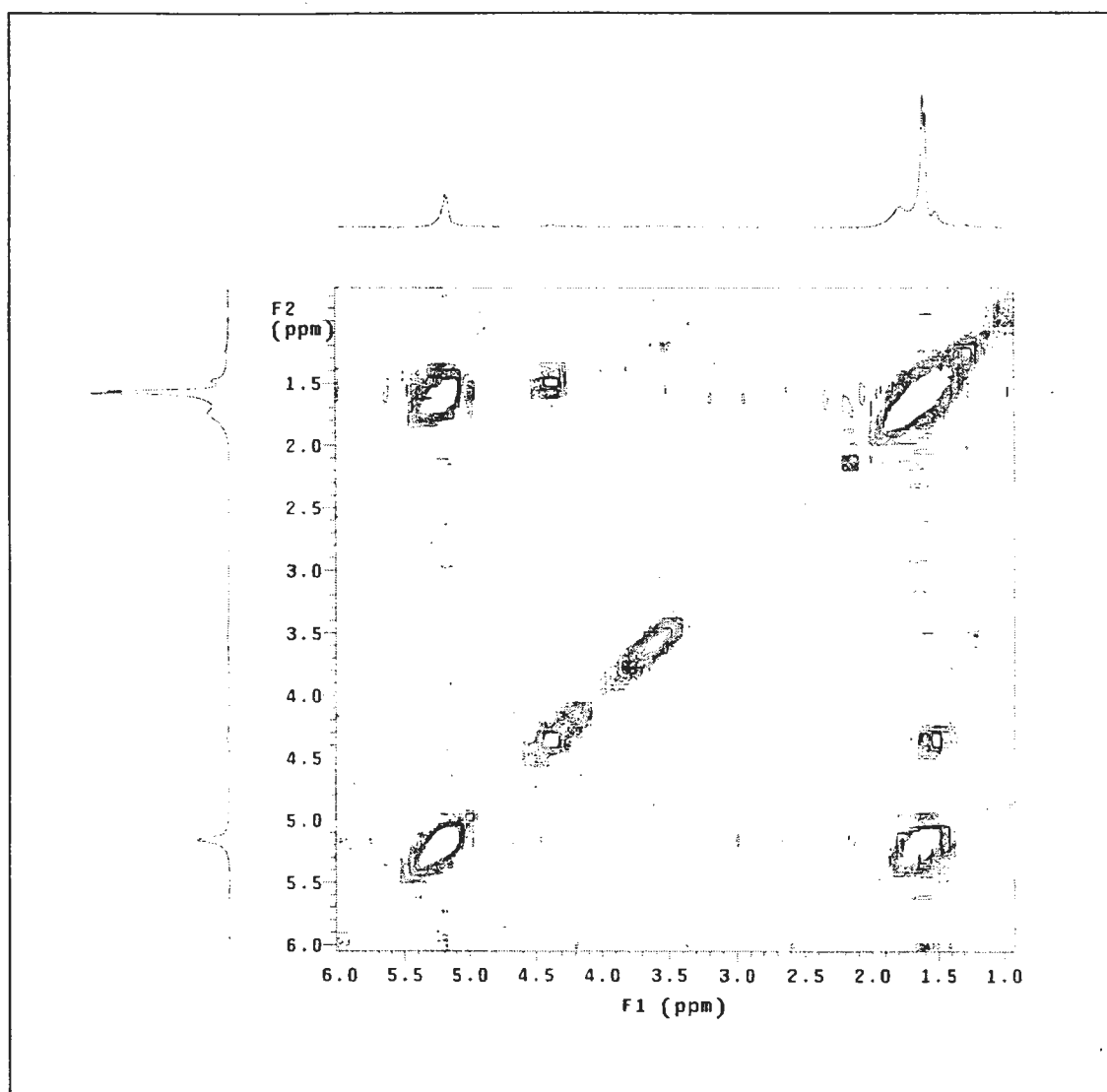


Figure A-37 COSY-NMR spectra of PLLA-b-PG (entry 5, MeOH-insoluble, table 4.5), 10:1 LLA:G feed molar ratio, 5 mol% Sn(Oct)₂ of OH content in PG, 140 °C, 1 day.

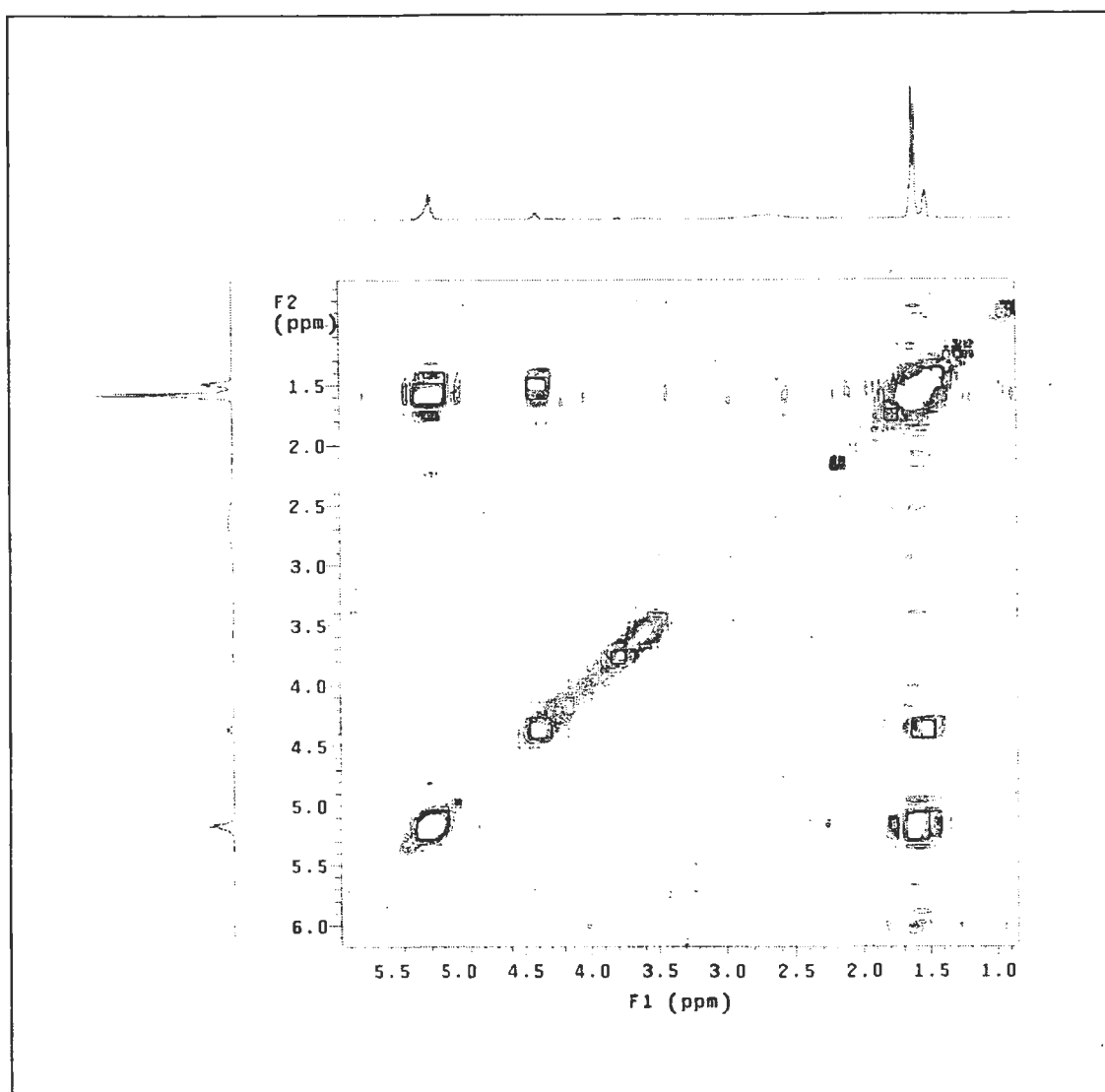


Figure A-38 COSY-NMR spectra of PLLA-b-PG (entry 6, MeOH-soluble, table 4.5), 10:1 LLA:G feed molar ratio, 5 mol% Sn(Oct)₂ of OH content in PG, 150 °C, 1 day.

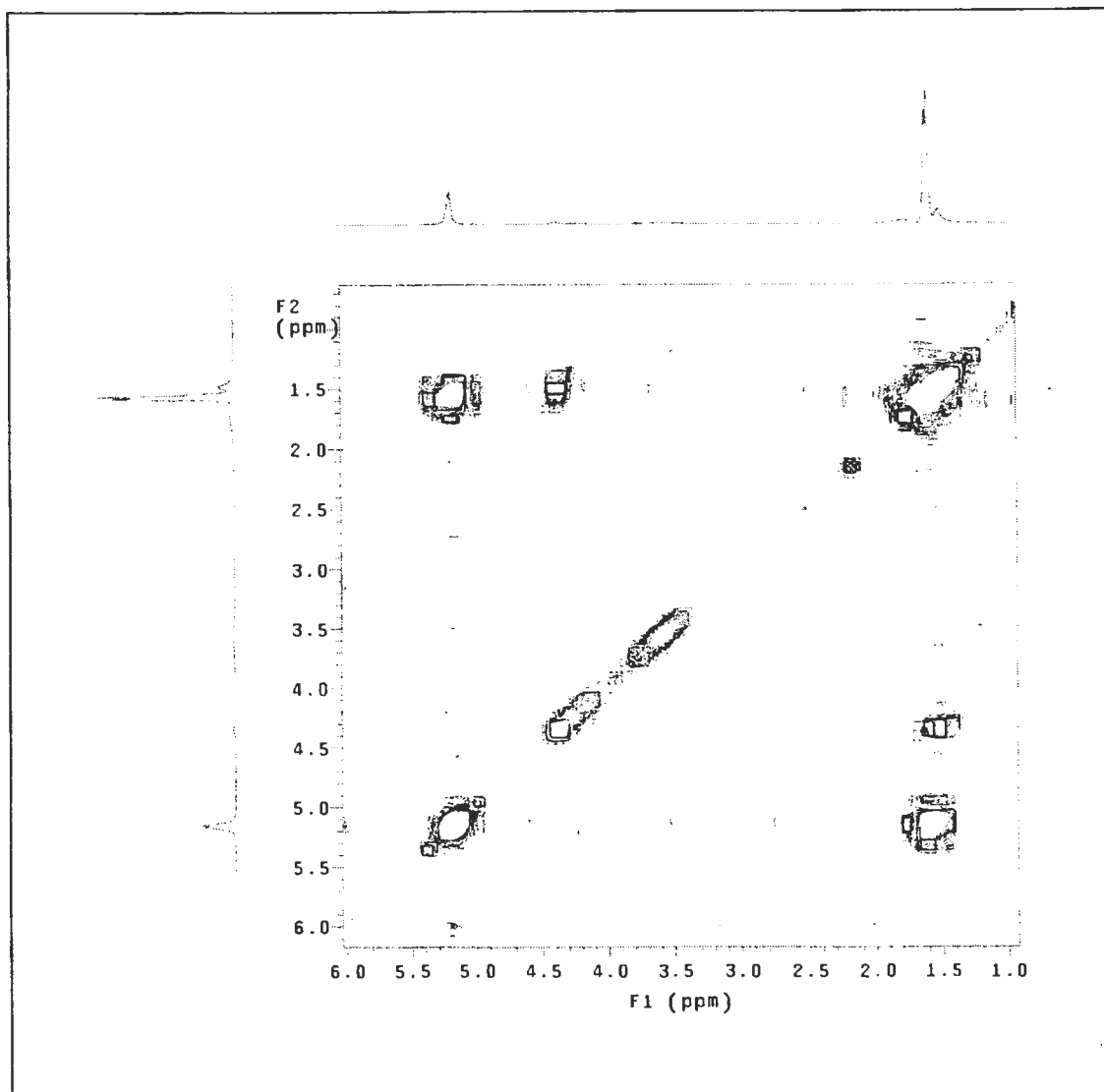


Figure A-39 COSY-NMR spectra of PLLA-b-PG (entry 6, MeOH-insoluble, table 4.5), 10:1 LLA:G feed molar ratio, 5 mol% Sn(Oct)₂ of OH content in PG, 150 °C, 1 day.

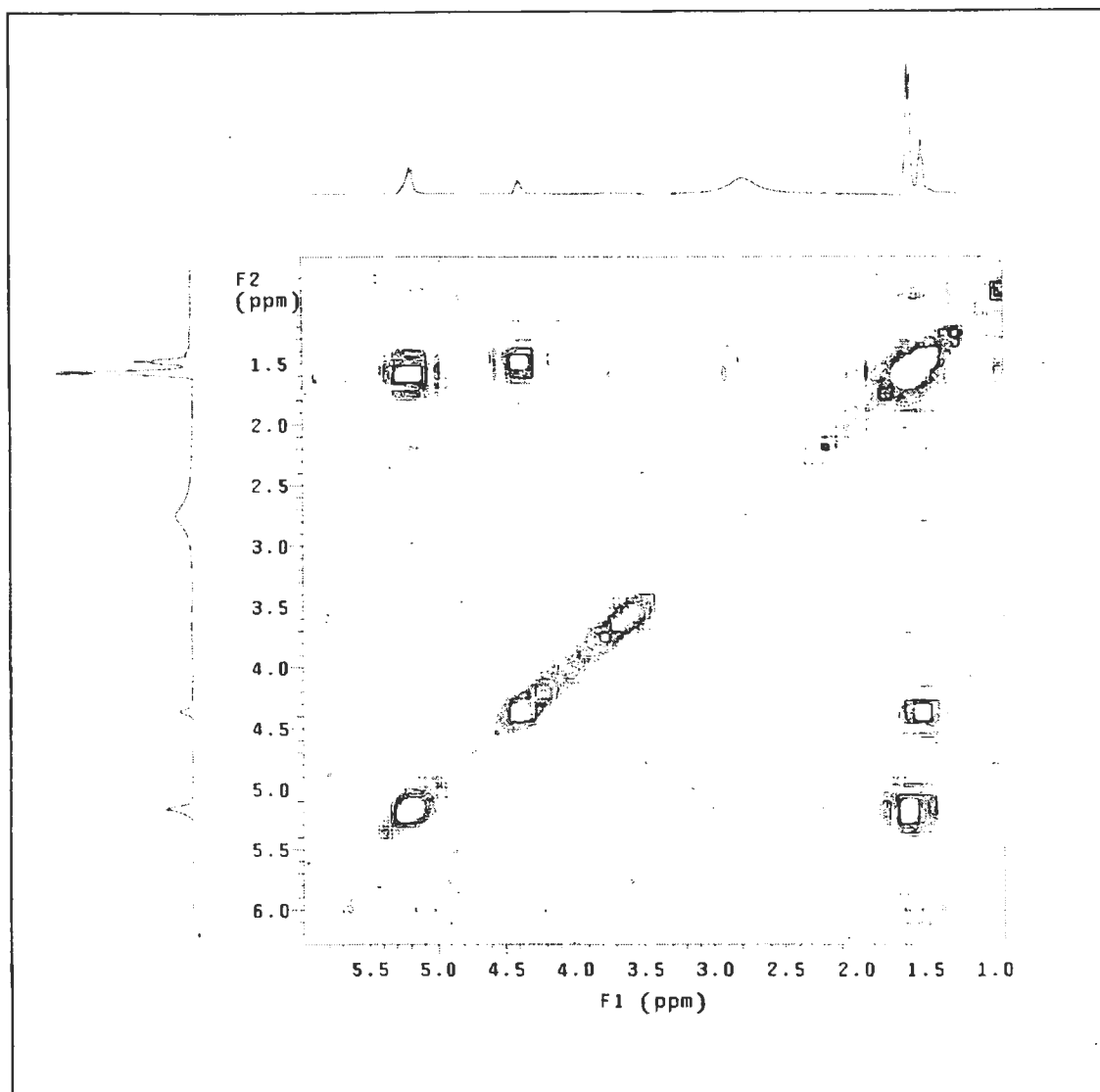


Figure A-40 COSY-NMR spectra of PLLA-b-PG (entry 2, MeOH-soluble, table 4.6), 10:1 LLA:G feed molar ratio, 5 mol% Sn(Oct)₂ of OH content in PG, 130 °C, 4 day.

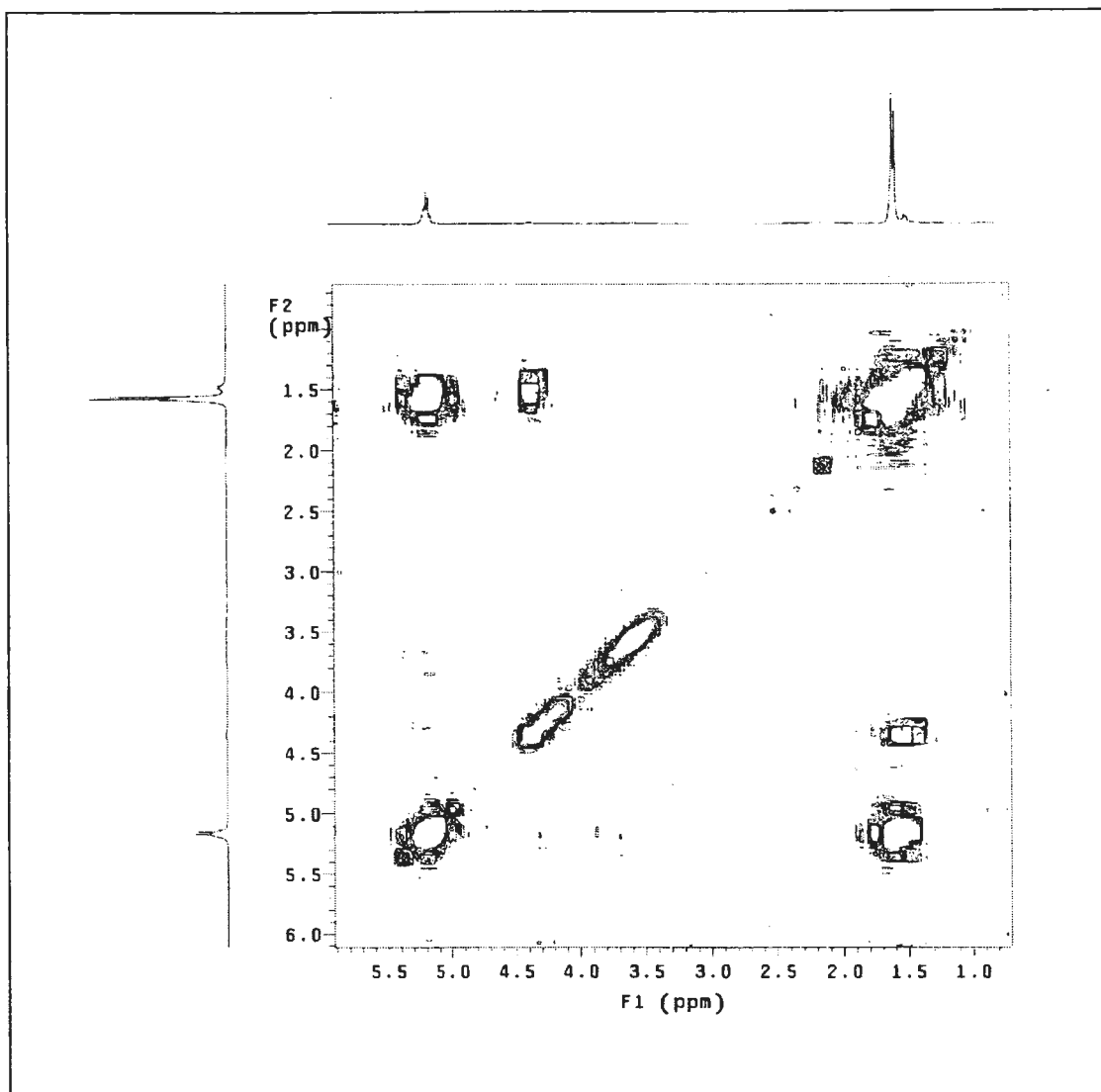


Figure A-41 COSY-NMR spectra of PLLA-b-PG (entry 2, MeOH-insoluble, table 4.6), 10:1 LLA:G feed molar ratio, 5 mol% Sn(Oct)₂ of OH content in PG, 130 °C, 4 day.

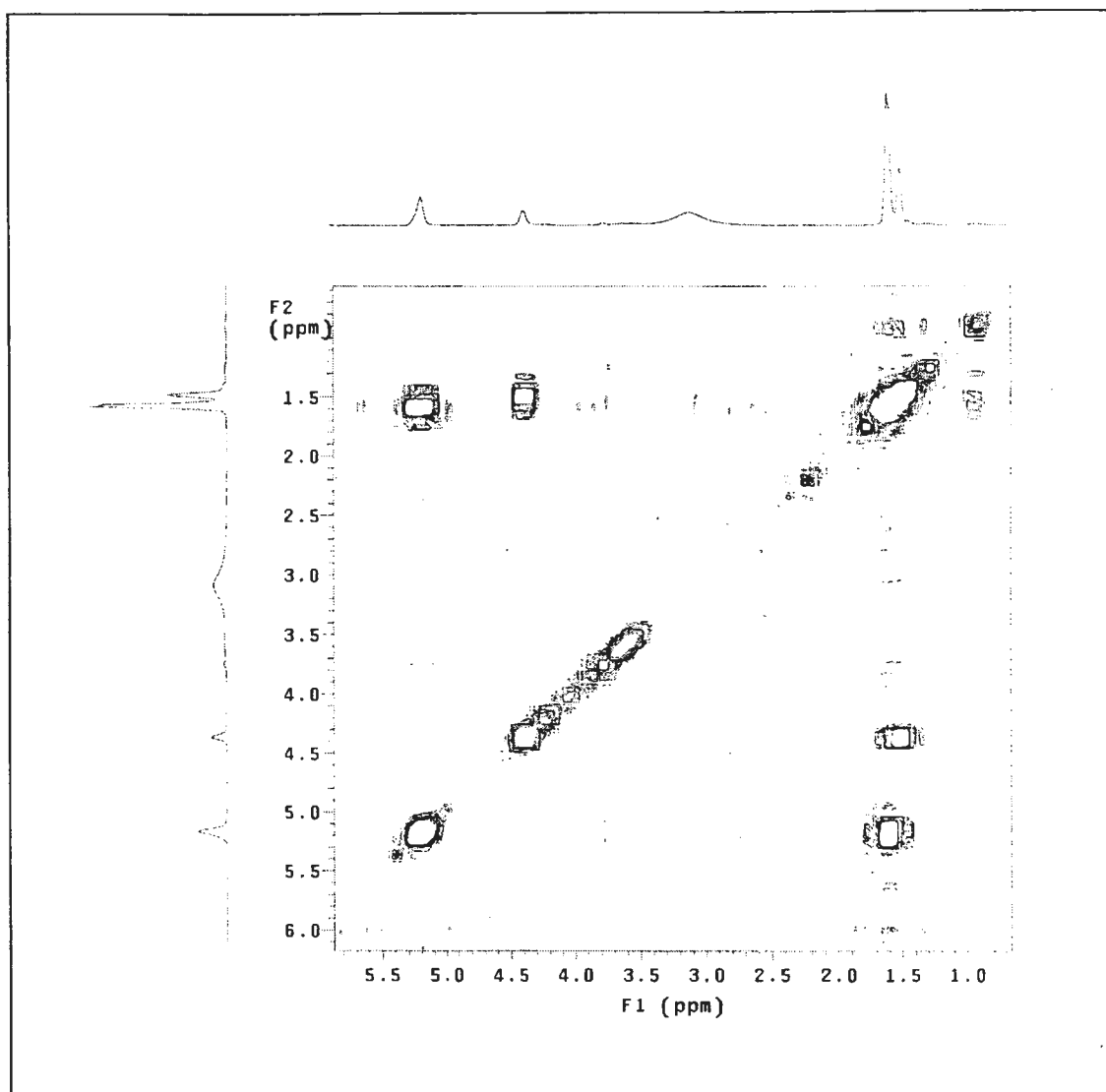


Figure A-42 COSY-NMR spectra of PLLA-b-PG (entry 3, MeOH-soluble, table 4.6), 10:1 LLA:G feed molar ratio, 5 mol% Sn(Oct)₂ of OH content in PG, 130 °C, 7 day.

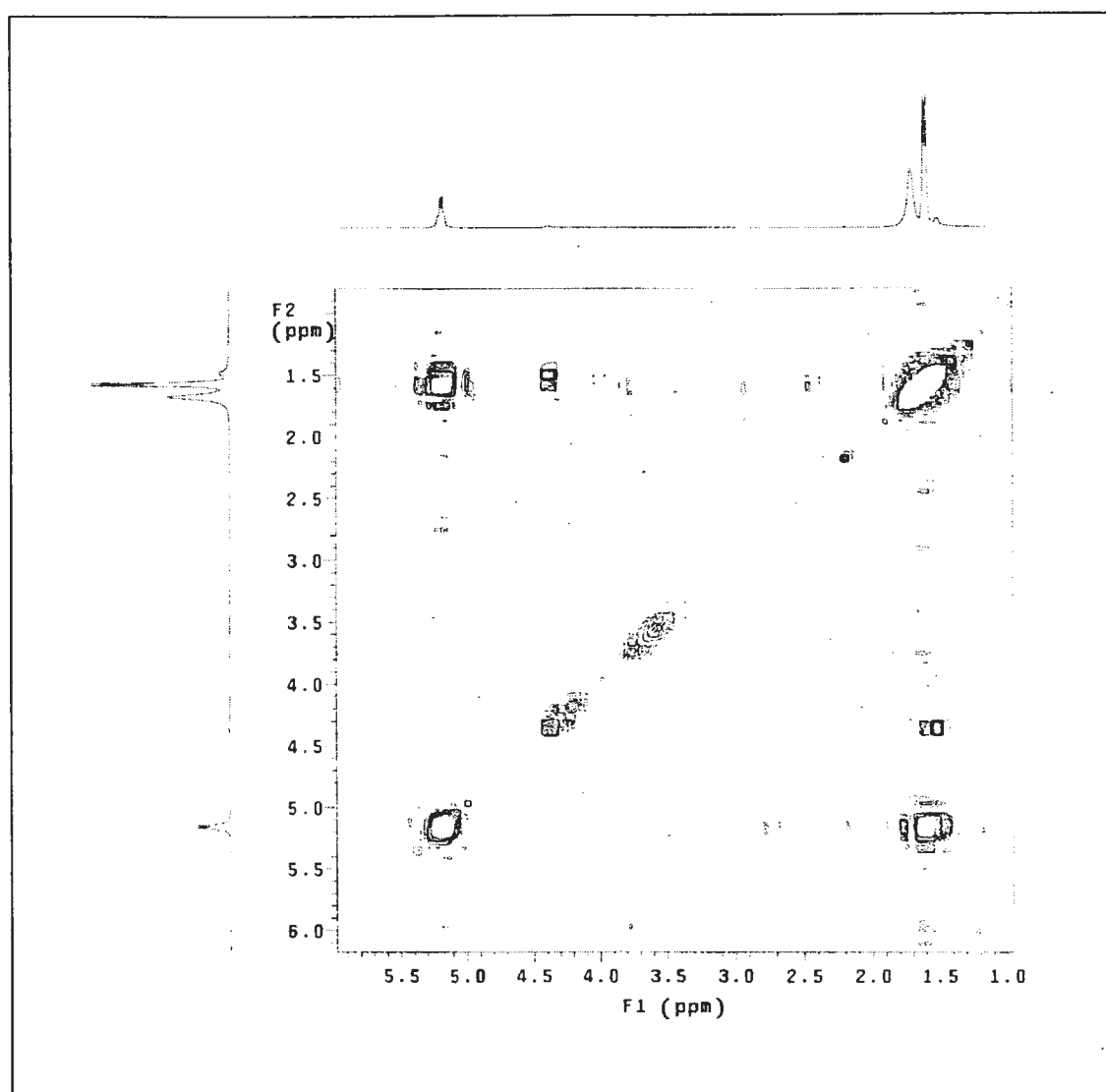


Figure A-43 COSY-NMR spectra of PLLA-b-PG (entry 3, MeOH-insoluble, table 4.6), 10:1 LLA:G feed molar ratio, 5 mol% Sn(Oct)₂ of OH content in PG, 130 °C, 7 day.

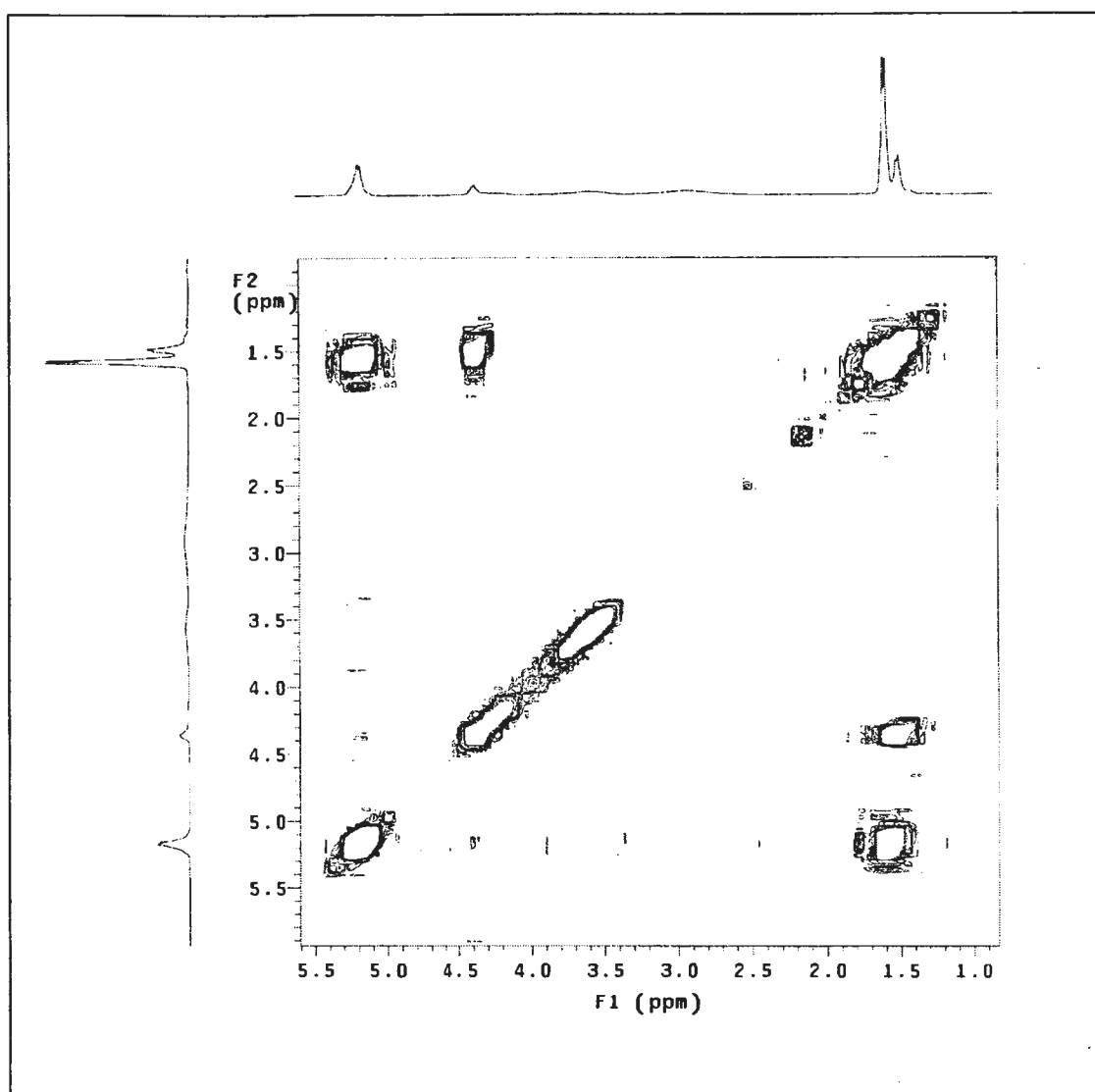


Figure A-44 COSY-NMR spectra of PLLA-b-PG (entry 1, table 4.7), 5:1 LLA:G feed molar ratio, 2 mol% Sn(Oct)₂ of OH content in PG, 130 °C, 1 day.

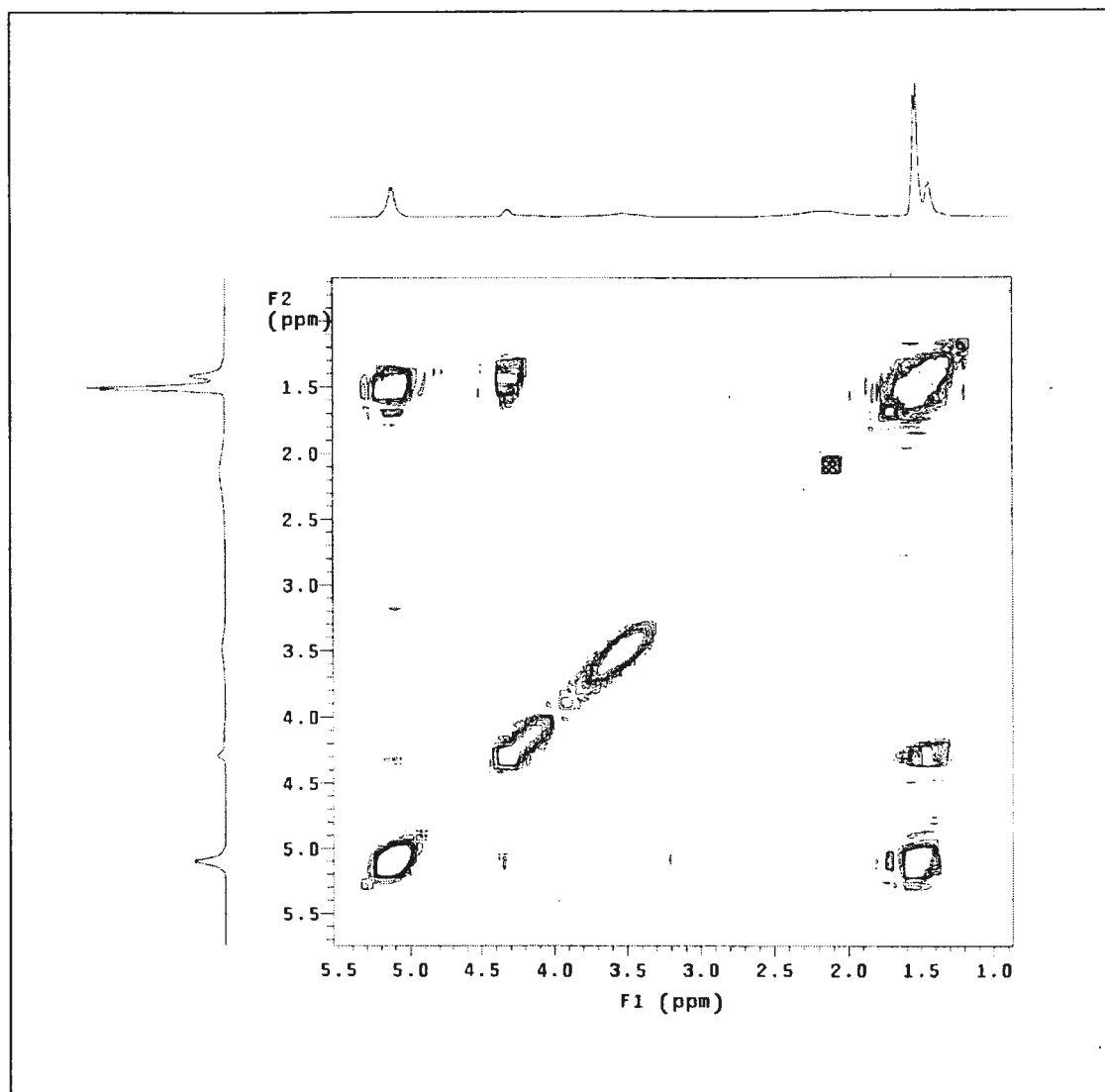


Figure A-45 COSY-NMR spectra of PLLA-b-PG (entry 2, table 4.7), 5:1 LLA:G feed molar ratio, 5 mol% Sn(Oct)₂ of OH content in PG, 130 °C, 1 day.

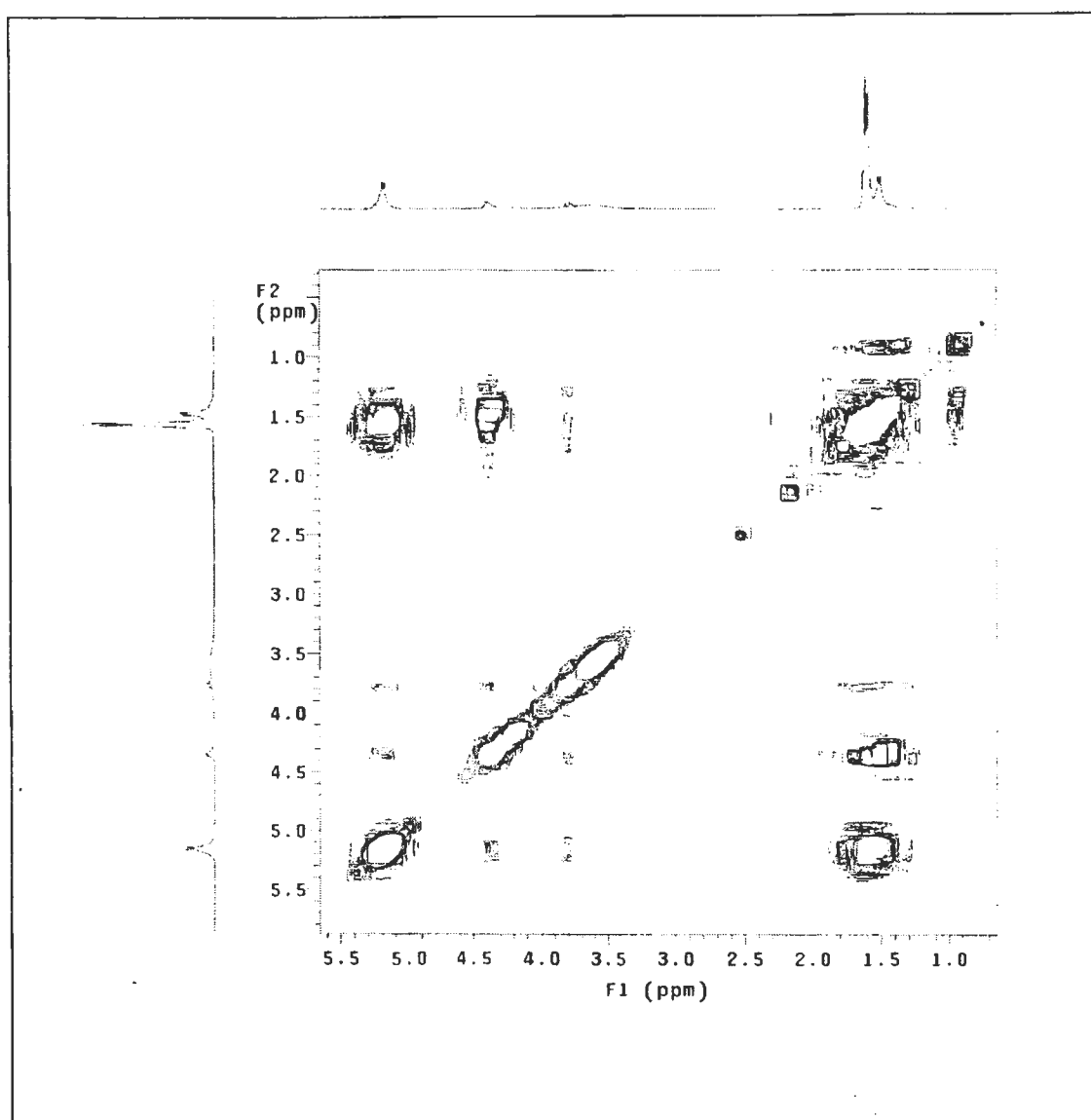


Figure A-46 COSY-NMR spectra of PLLA-b-PG (entry 3, table 4.7), 5:1 LLA:G feed molar ratio, 10 mol% Sn(Oct)₂ of OH content in PG, 130 °C, 1 day.

APPENDIX B**Table B-1** Weight loss profiles of PLLA and PLLA-*b*-PG

Degradation time (days)	PLLA- <i>b</i> -PG	PLLA
0	0.00	0.00
7	6.49 ± 3.49	3.16 ± 1.32
14	8.58 ± 4.54	2.58 ± 0.95
21	6.12 ± 0.71	0.92 ± 0.76
28	4.40 ± 3.12	0.90 ± 0.10
35	6.66 ± 0.57	2.50 ± 0.36
42	6.08 ± 1.21	5.16 ± 0.45
49	8.00 ± 1.46	4.99 ± 0.80
56	7.27 ± 0.75	3.69 ± 0.10
64	6.40 ± 1.22	5.17 ± 0.56
71	7.48 ± 1.20	6.39 ± 0.46
78	9.54 ± 1.07	6.36 ± 1.63
84	11.12 ± 1.93	7.98 ± 0.32

Table B-2 Molecular weight profiles of PLLA and PLLA-b-PG

Degradation time (days)	PLLA- <i>b</i> -PG					PLLA				
	\bar{M}_w	%	\bar{M}_n	%	PDI	\bar{M}_w	%	\bar{M}_n	%	PDI
0	27,245	100	15,298	100	1.78	20,265	100	114,522	100	1.40
7	27,149 ± 211	100	14,630 ± 332	96	1.86 ± 0.03	16,727 ± 129	83	1,217 ± 401	77	1.49 ± 0.04
14	27,068 ± 46	99	14,744 ± 119	96	1.84 ± 0.02	15,716 ± 171	78	10,427 ± 228	72	1.51 ± 0.02
21	26,591 ± 105	98	14,293 ± 126	93	1.86 ± 0.02	14,731 ± 176	73	9,720 ± 339	67	1.52 ± 0.04
28	25,307 ± 85	93	13,601 ± 144	89	1.86 ± 0.02	13,428 ± 135	66	8,743 ± 29	60	1.54 ± 0.01
35	25,347 ± 55	93	13,551 ± 55	89	1.87 ± 0.00	12,638 ± 74	62	8,033 ± 106	55	1.58 ± 0.02
42	24,202 ± 50	89	12,456 ± 30	81	1.94 ± 0.01	11,535 ± 39	57	7,504 ± 42	52	1.54 ± 0.02
49	25,077 ± 353	92	13,046 ± 371	85	1.92 ± 0.04	11,863 ± 98	59	7,814 ± 118	54	1.52 ± 0.02
56	23,798 ± 433	87	11,523 ± 1,179	75	2.08 ± 0.19	10,378 ± 195	51	6,796 ± 55	47	1.53 ± 0.03
64	22,835 ± 275	84	9,159 ± 429	60	2.50 ± 0.09	8,676 ± 213	43	5,300 ± 160	36	1.64 ± 0.06
71	22,817 ± 426	84	9,875 ± 1523	65	2.34 ± 0.29	8,539 ± 128	42	5,596 ± 200	39	1.53 ± 0.03
78	21,376 ± 196	78	8,031 ± 500	52	2.67 ± 0.14	8,049 ± 19	40	5,614 ± 29	39	1.43 ± 0.01
84	21,009 ± 164	77	8,143 ± 282	53	2.59 ± 0.07	7,798 ± 39	38	5,617 ± 39	39	1.39 ± 0.01

VITAE

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