

# Direct Synthesis of Partially Chain-Straightened Propylene Oligomers and P-MA Co-Oligomers Using Axially Flexible Shielded Iminopyridyl Palladium Complexes

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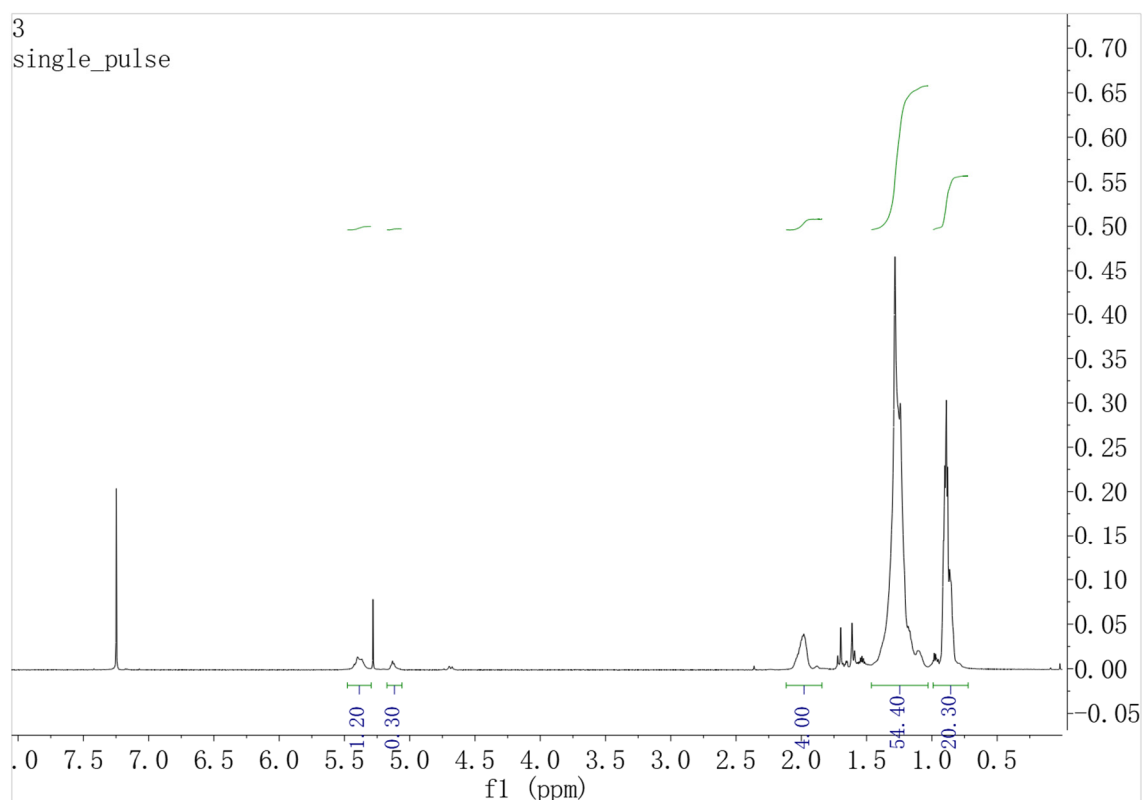
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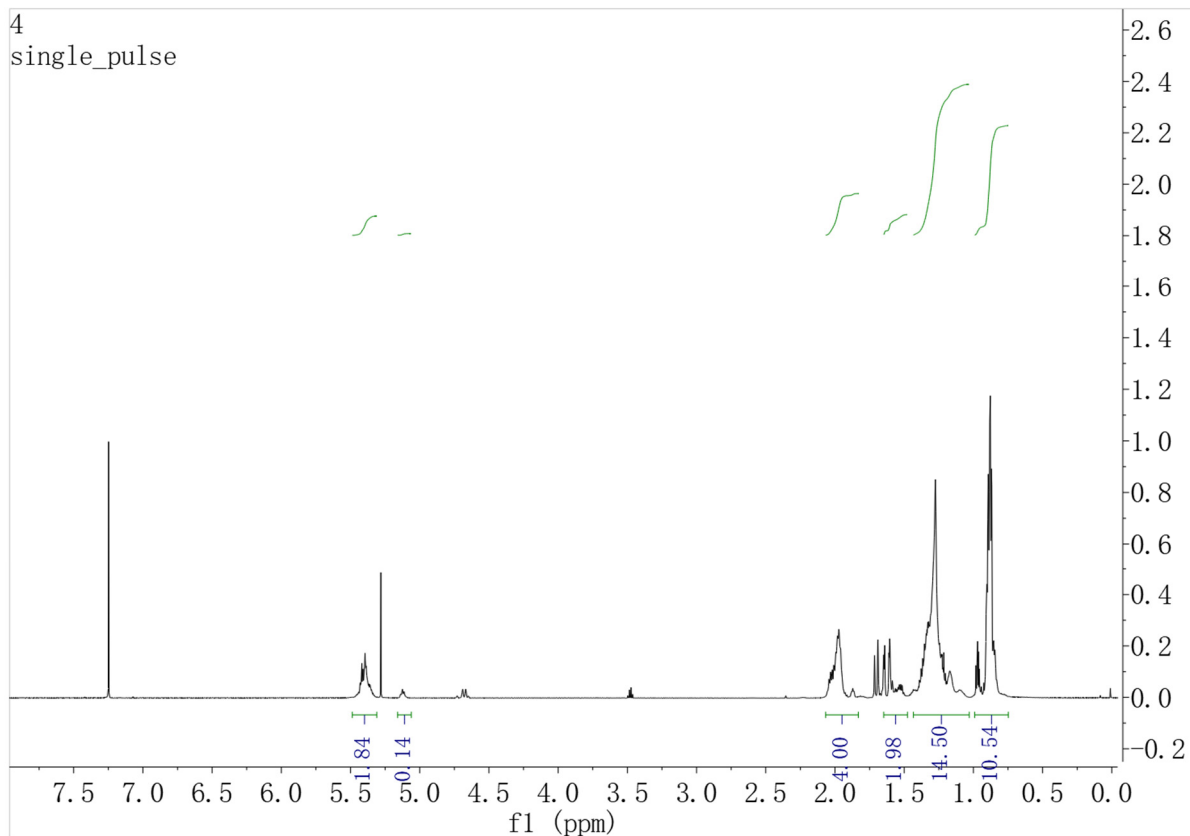
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## 1. Spectra Data

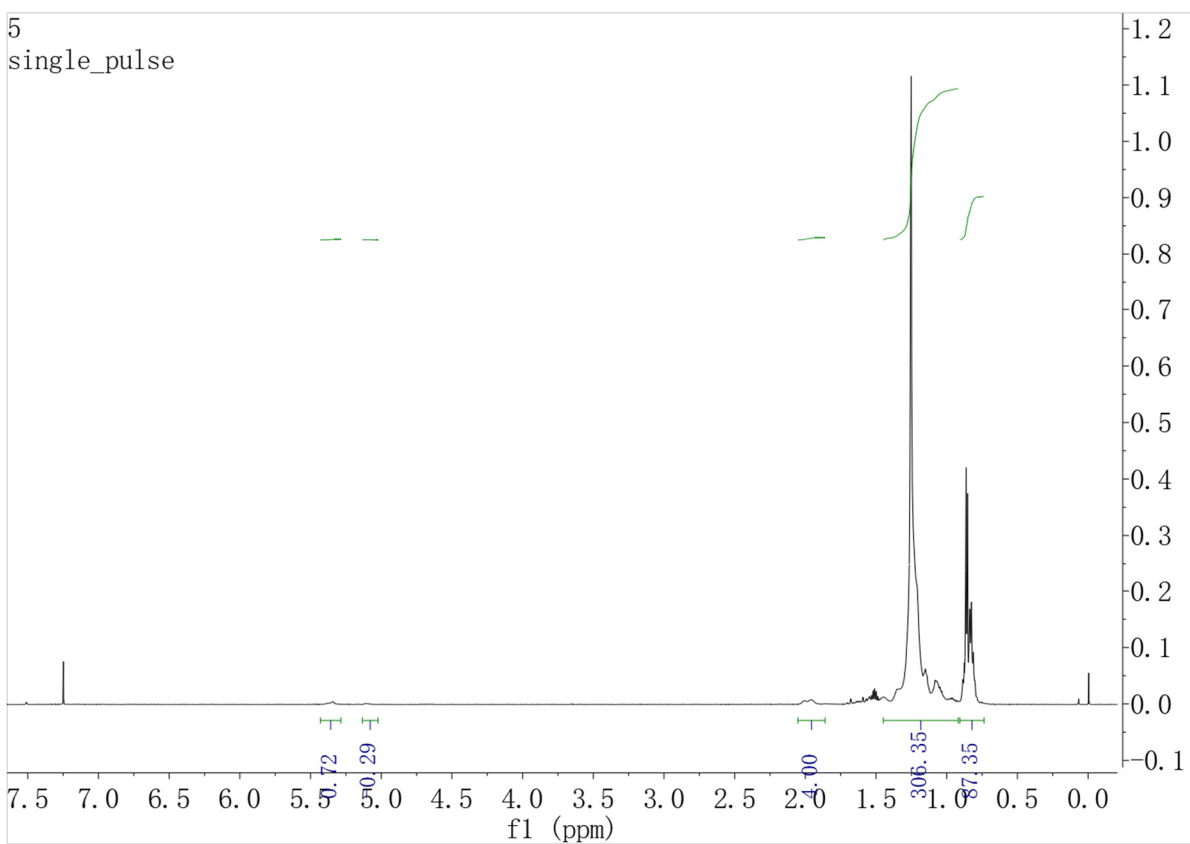
### 1.1 <sup>1</sup>H and <sup>13</sup>C NMR of Some Representative Propylene Oligomers and P-MA Co-oligomers.



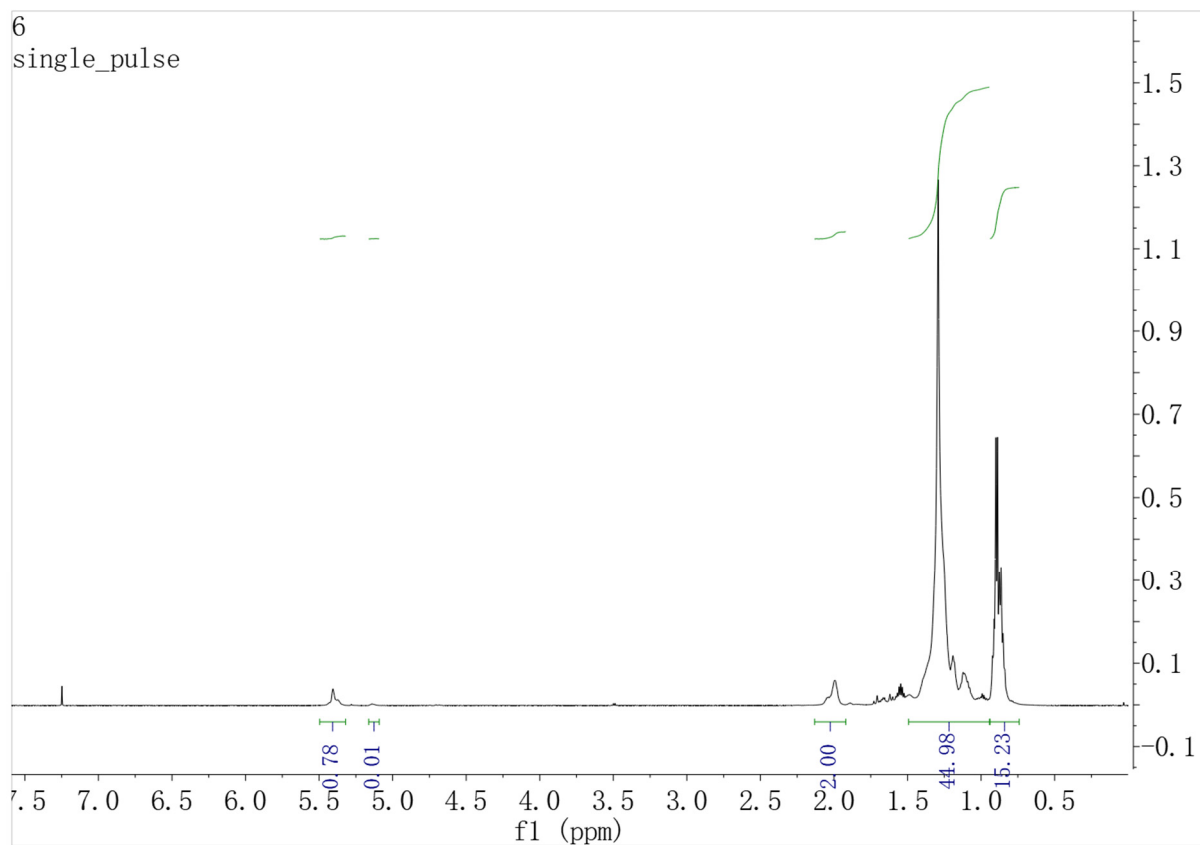
**Figure S1.** <sup>1</sup>H NMR spectrum of the propylene oligomer from table 1, entry 1.



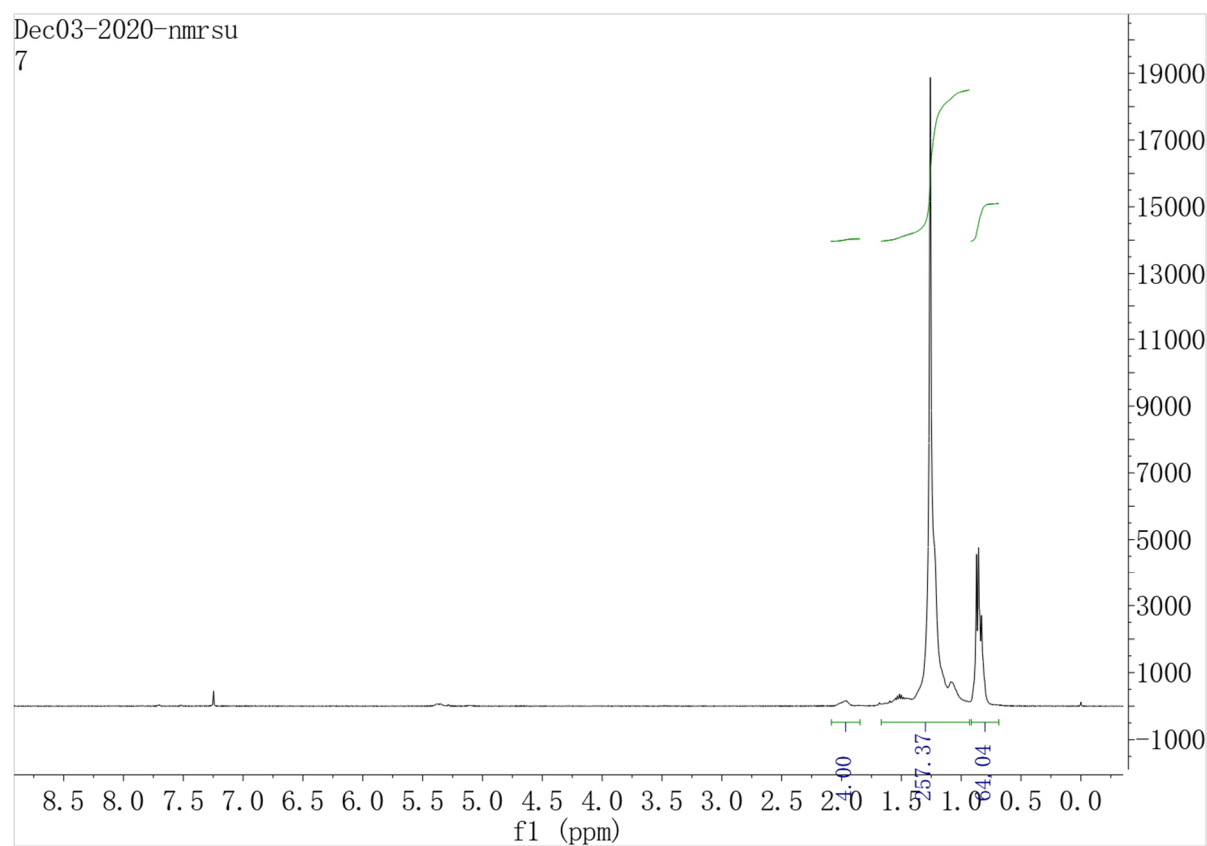
**Figure S2.**  $^1\text{H}$  NMR spectrum of the propylene oligomer from table 1, entry 2.



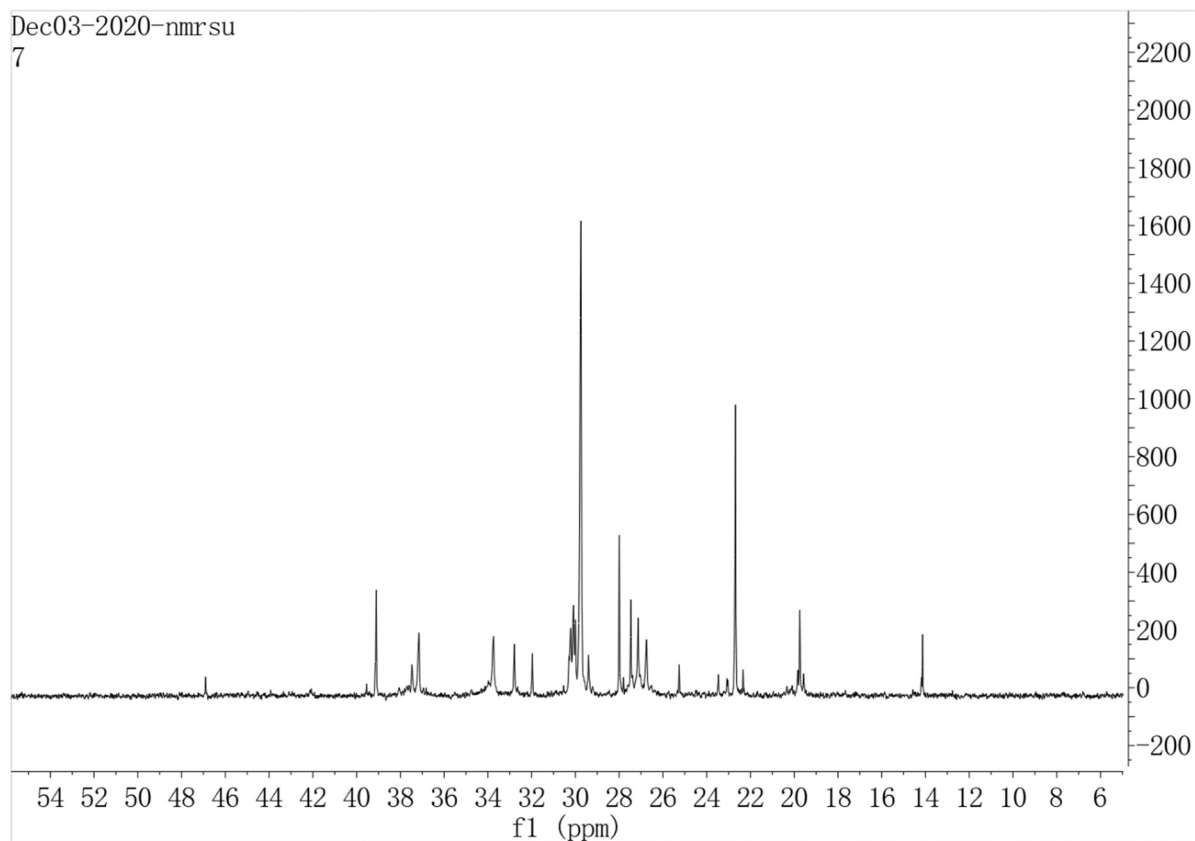
**Figure S3.**  $^1\text{H}$  NMR spectrum of the propylene oligomer from table 1, entry 3.



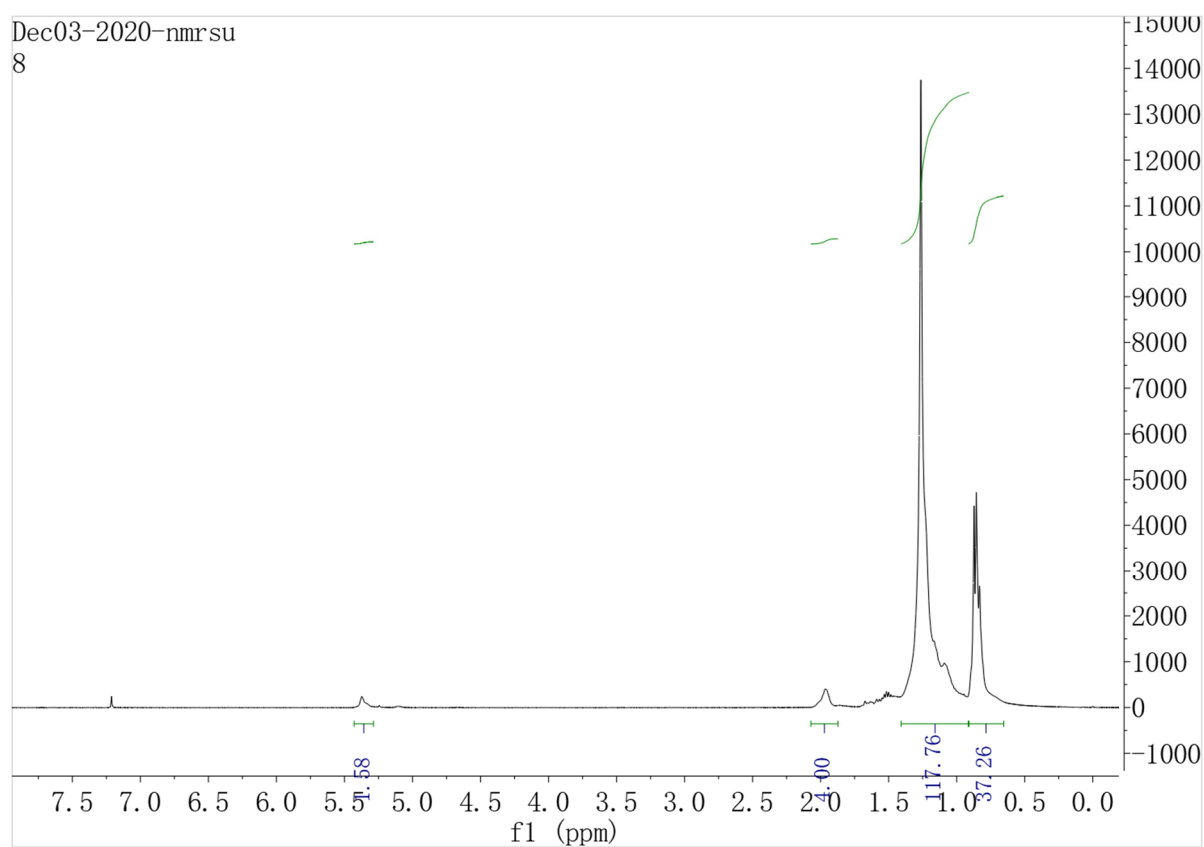
**Figure S4.**  $^1\text{H}$  NMR spectrum of the propylene oligomer from table 1, entry 4.



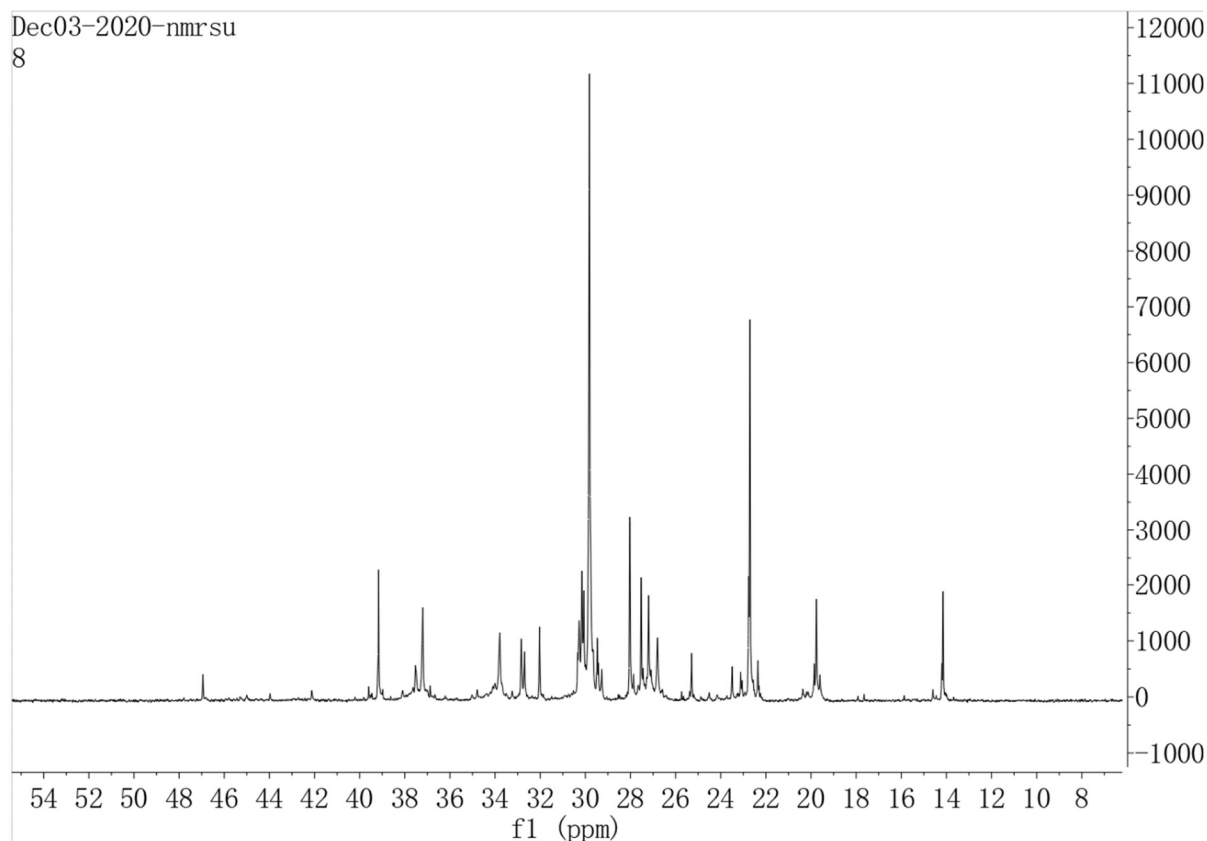
**Figure S5.**  $^1\text{H}$  NMR spectrum of the propylene oligomer from table 1, entry 5.



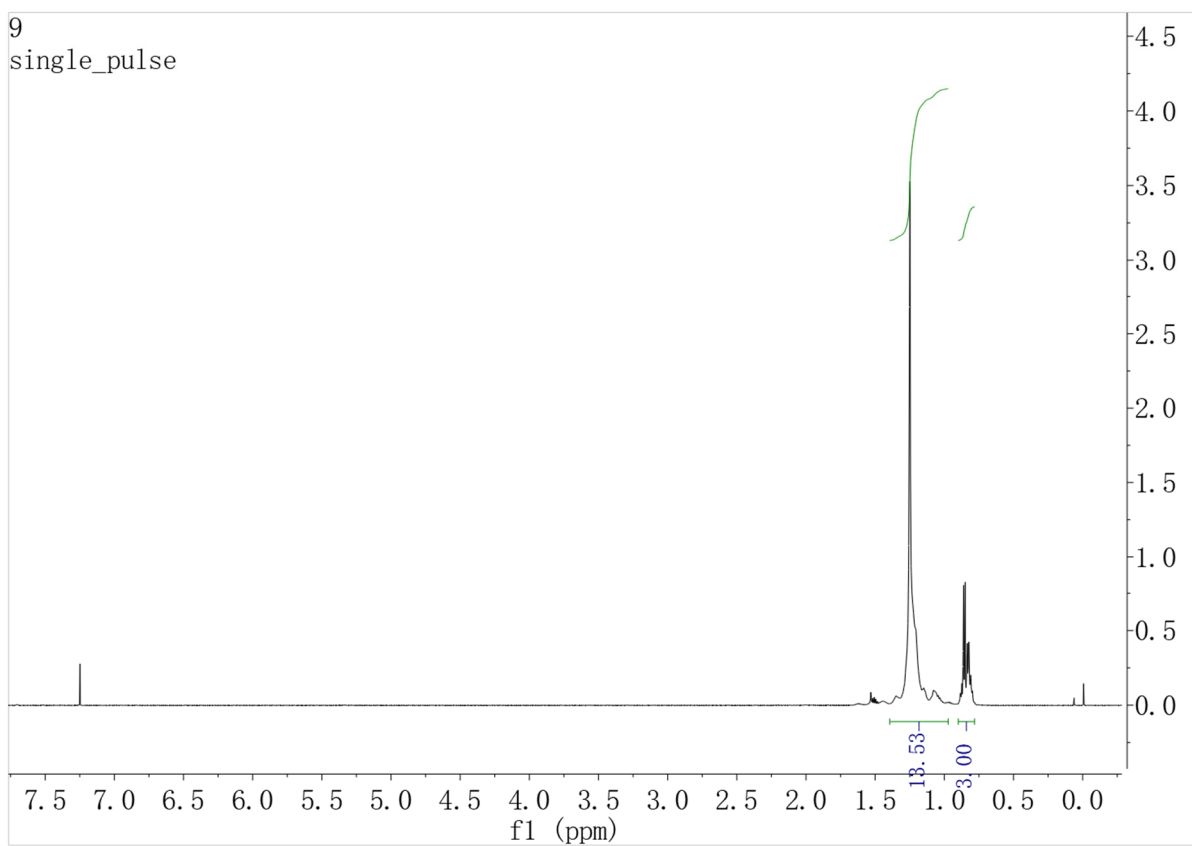
**Figure S6.**  $^{13}\text{C}$  NMR spectrum of the propylene oligomer from table 1, entry 5.



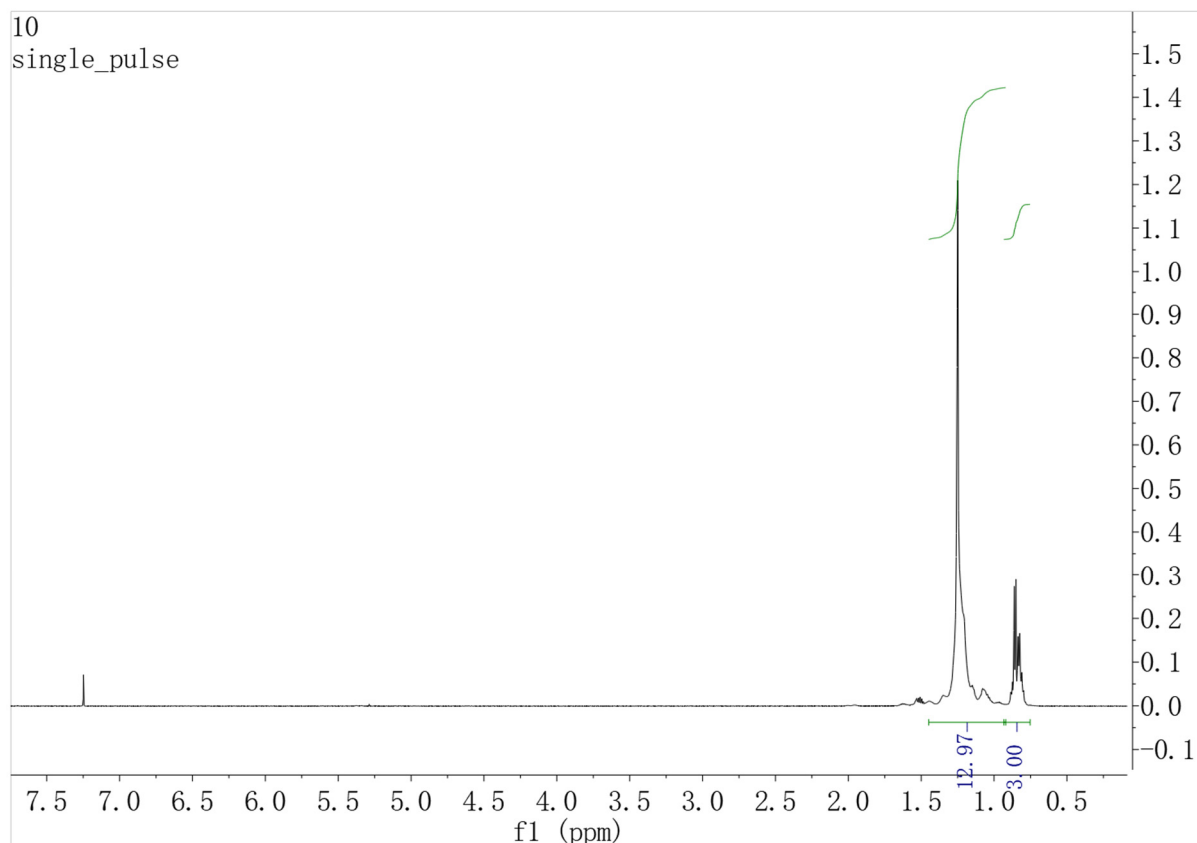
**Figure S7.**  $^1\text{H}$  NMR spectrum of the propylene oligomer from table 1, entry 6.



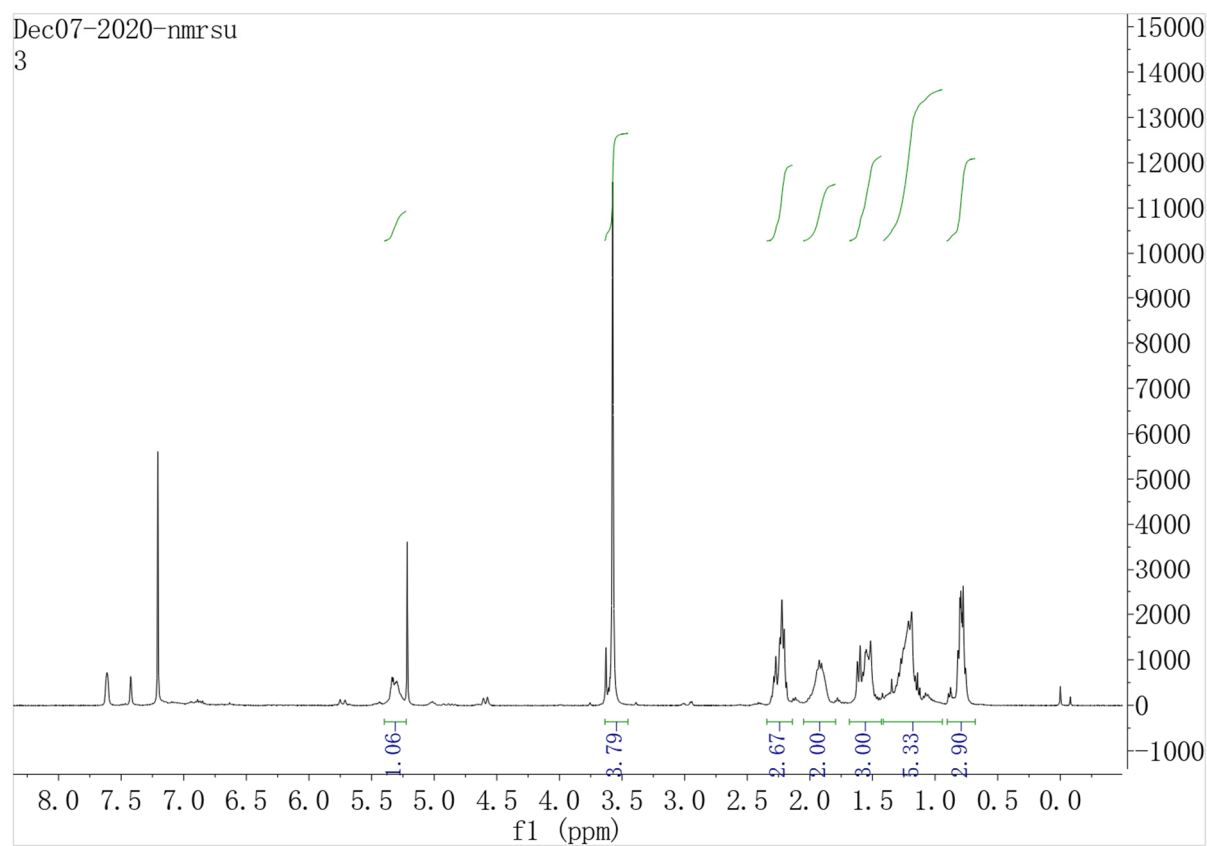
**Figure S8.**  $^{13}\text{C}$  NMR spectrum of the propylene oligomer from table 1, entry 6.



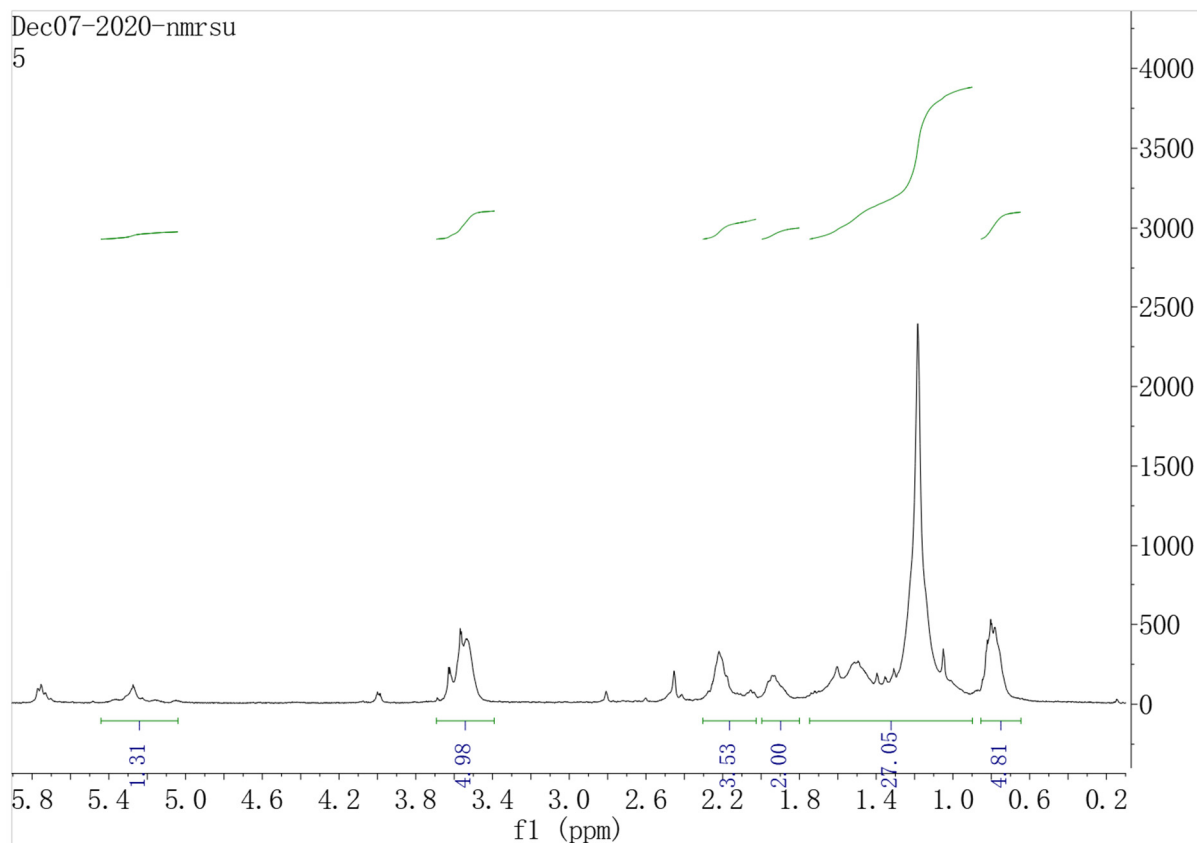
**Figure S9.**  $^1\text{H}$  NMR spectrum of the polypropylene from table 1, entry 7.



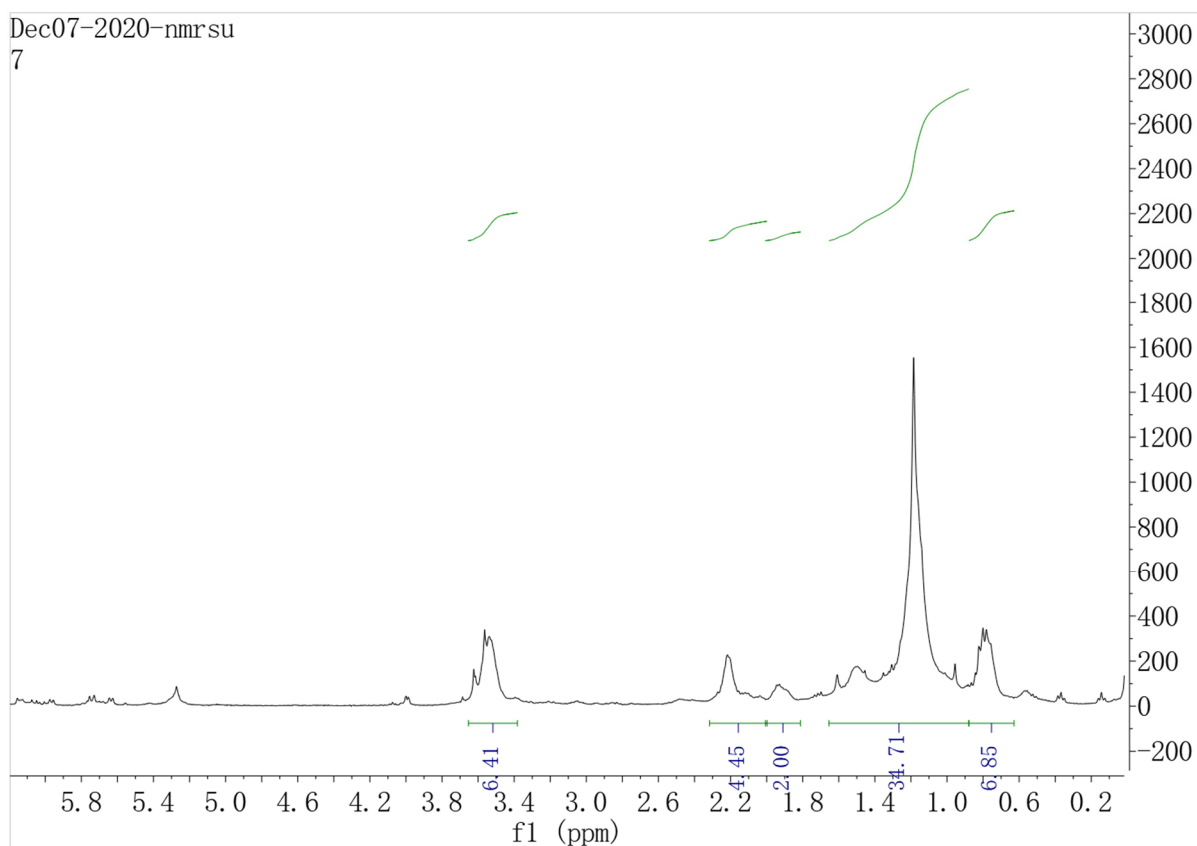
**Figure S10.**  $^1\text{H}$  NMR spectrum of the polypropylene from table 1, entry 8.



**Figure S11.**  $^1\text{H}$  NMR spectrum of the P-MA co-oligomer from table 2, entry 1.



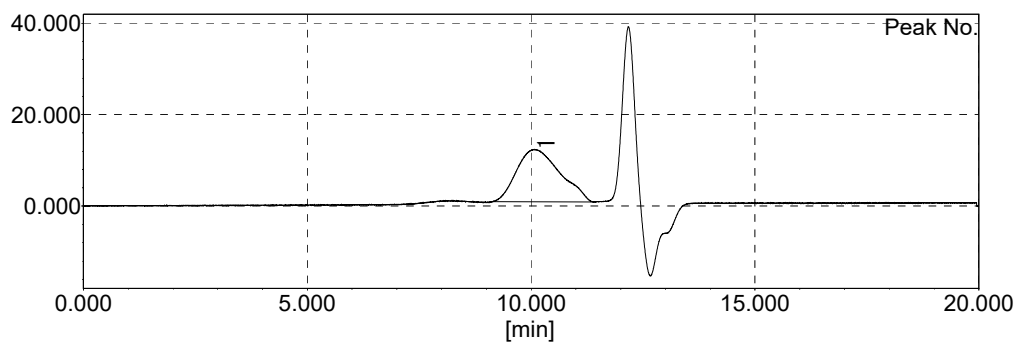
**Figure S12.**  $^1\text{H}$  NMR spectrum of the P-MA co-oligomer from table 2, entry 3.



**Figure S13.**  $^1\text{H}$  NMR spectrum of the P-MA co-oligomer from table 2, entry 5.

## 1.2 SEC of Some Representative Propylene Oligomers and P-MA Co-oligomers.

[mV]



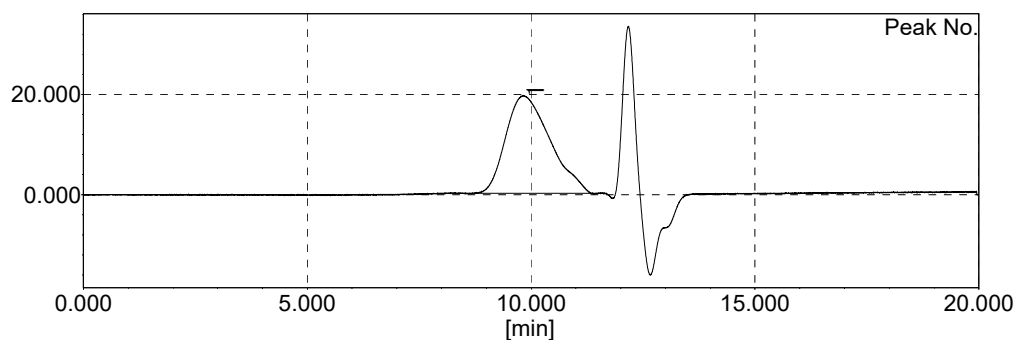
Result of molecular weight calculation (RI)

Peak 1 Base Peak

	[min]	[mV]	[mol]	Mn	
Peak start	9.118	0.956	6,640	Mw	1,036
Peak top	10.072	12.395	1,590	Mz	2,161
Peak end	11.397	0.898	218	Mz+1	2,730
				Mv	1,563
Height [mV]			11.463	Mp	1,591
Area [mV*sec]			772.999	Mz/Mw	1.383
Area% [%]			100.000	Mw/Mn	1.508
[eta]			1562.59726	Mz+1/Mw	1.747

**Figure S14.** SEC of the propylene oligomer from table 1, entry 3.

[mV]



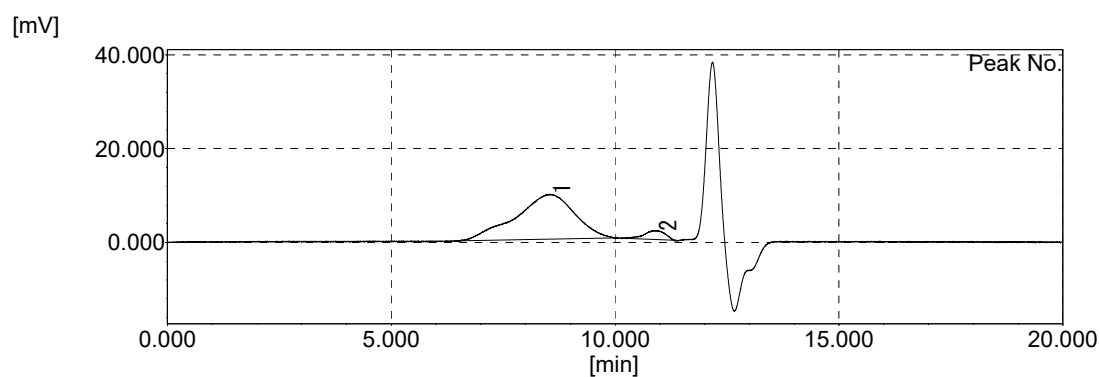
Result of molecular weight calculation (RI)

Peak 1 Base Peak

	[min]	[mV]	[mol]	Mn	
Peak start	8.745	0.279	11,620	Mw	1,397
Peak top	9.832	19.722	2,279	Mz	2,220
Peak end	11.517	0.307	182	Mz+1	3,143
				Mv	4,052
Height [mV]			19.432	Mp	2,220
Area [mV*sec]			1336.045	Mz/Mw	2,279
Area% [%]			100.000	Mw/Mn	1.416
[eta]			2219.67740	Mz+1/Mw	1.589

**Figure S15.** SEC of the propylene oligomer from table 1, entry 6.



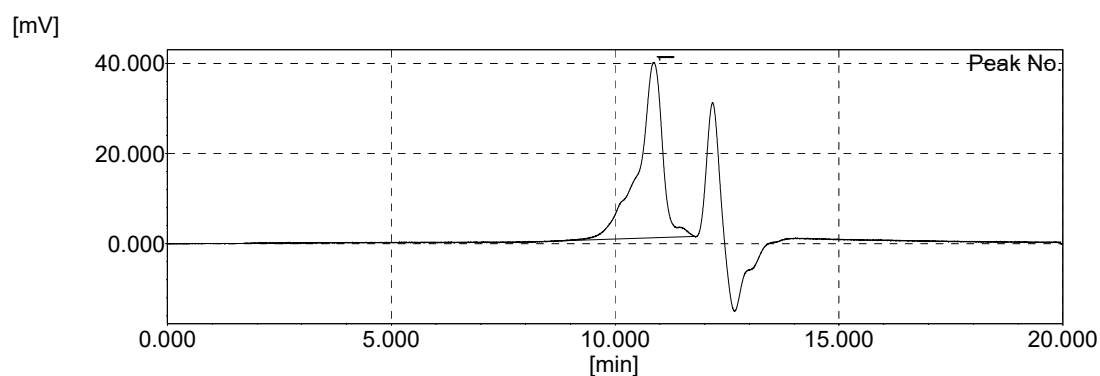


Result of molecular weight calculation (RI)

Peak 1 Base Peak

	[min]	[mV]	[mol]	Mn	13,572
Peak start	6.462	0.313	356,251	Mw	32,921
Peak top	8.543	10.234	15,722	Mz	77,329
Peak end	10.077	0.961	1,578	Mz+1	128,529
				Mv	32,921
Height [mV]			9.548	Mp	15,723
Area [mV*sec]			876.898	Mz/Mw	2.349
Area% [%]			93.393	Mw/Mn	2.426
[eta]			32920.53959	Mz+1/Mw	3.904

Figure S16. SEC of the polypropylene from table 1, entry 7.

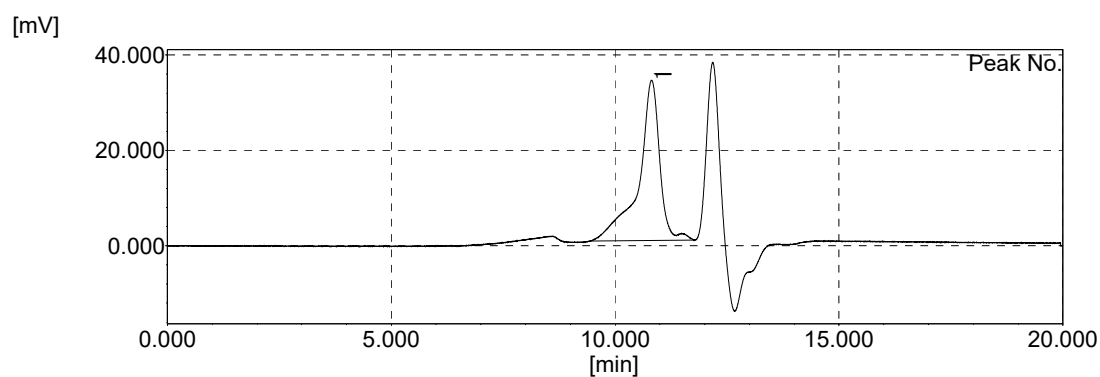


Result of molecular weight calculation (RI)

Peak 1 Base Peak

	[min]	[mV]	[mol]	Mn	540
Peak start	8.787	0.670	10,917	Mw	741
Peak top	10.865	40.257	484	Mz	1,194
Peak end	11.830	1.635	113	Mz+1	2,190
				Mv	741
Height [mV]			38.928	Mp	484
Area [mV*sec]			1467.768	Mz/Mw	1.610
Area% [%]			100.000	Mw/Mn	1.373
[eta]			741.29876	Mz+1/Mw	2.955

Figure S17. SEC of the P-MA co-oligomer from table 2, entry 3.

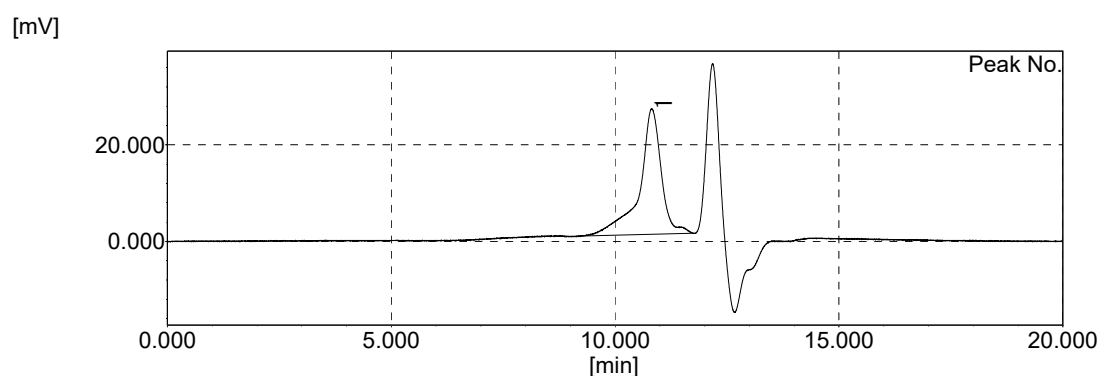


Result of molecular weight calculation (RI)

Peak 1 Base Peak

	[min]	[mV]	[mol]	Mn	
Peak start	9.448	0.997	4,049	Mw	562
Peak top	10.808	34.676	527	Mz	739
Peak end	11.787	1.198	121	Mz+1	1,063
				Mv	1,538
Height [mV]			33.562	Mp	739
Area [mV*sec]			1099.336	Mz/Mw	527
Area% [%]			100.000	Mw/Mn	1.439
[eta]			739.09892	Mz+1/Mw	1.316
					2.080

**Figure S18.** SEC of the P-MA co-oligomer from table 2, entry 5.



Result of molecular weight calculation (RI)

Peak 1 Base Peak

	[min]	[mV]	[mol]	Mn	
Peak start	9.822	1.472	2,313	Mw	476
Peak top	10.890	19.865	466	Mz	576
Peak end	11.743	2.201	129	Mz+1	709
				Mv	881
Height [mV]			17.988	Mp	576
Area [mV*sec]			617.993	Mz/Mw	466
Area% [%]			100.000	Mw/Mn	1.230
[eta]			576.07861	Mz+1/Mw	1.210
					1.530

**Figure S19.** SEC of the P-MA co-oligomer from table 2, entry 7.