

Table S1. Polymerization of GPE with **1**, **2**, and **3** (1mol %) in the persence of ZnCl₂ (0.2 mol %)

initiator	temp (°C)	conv ^a (%)	yield ^b (%)	M _n ^c (MWD)	M _{top} of high MW
1	110	10	3	5800 (1.52) ^d	24700
	130	36	23	2900 (1.76) ^d	10300
	150	83	68	3000 (1.15) ^e	
	160	93	89	2800 (1.22) ^e	
2	110	13	<1	6800 (1.61) ^d	35600
	130	19	2	5900 (1.44) ^e	
	150	64	41	2700 (1.13) ^e	
	170	100	68	2700 (1.24) ^e	
3	170	18	<2	2000 (1.58) ^d	3700
	190	97	81	3100 (1.40) ^e	

^a Determined by ¹H NMR. ^b Methanol-insoluble part.^c Estimated by GPC based on polystyrene standard samples.^d Contained a shoulder at a high molecular weight region.^e Unimodal GPC chart

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Table S2. Concentration effect of ZnCl₂ on the polymerization of GPE with **2** ^a

run	amount of ZnCl ₂ (mol %)	conv ^b (%)	yield ^c (%)	M _n ^d	M _w /M _n ^d
1	0	4	-	-	-
2	0.1	21	trace	2900	1.12
3	0.2	64	41	2700	1.13
4	0.6	95	88	2600	1.16
5	1	100	92	3600	2.32

^a Condition; **2** 1 mol %, 150 °C, 12 h. ^b Determined by ¹H NMR.^c Methanol-insoluble part. ^d Estimated by GPC based on polystyrene standard samples.

Table S3. Effect of polymerization time on the polymerization of GPE with **2** in the presence of ZnCl₂ ^a

temp (°C)	time (h)	conv ^b (%)	yield ^c (%)	<i>M_n</i> ^d	<i>M_w</i> / <i>M_n</i> ^d
150	6	37	6	2100	1.10
	12	64	41	2700	1.13
	16	82	42	2600	1.09
	24	99	77	3400	1.22
170	4	55	30	2900	1.20
	8	84	59	2700	1.25
	12	100	88	2700	1.24

^a Condition: **2** 1 mol%, ZnCl₂ 0.2 mol%, for 12 h. ^b Determined by ¹H NMR.

^c Methanol-insoluble part. ^d Estimated by GPC based on polystyrene standard samples.

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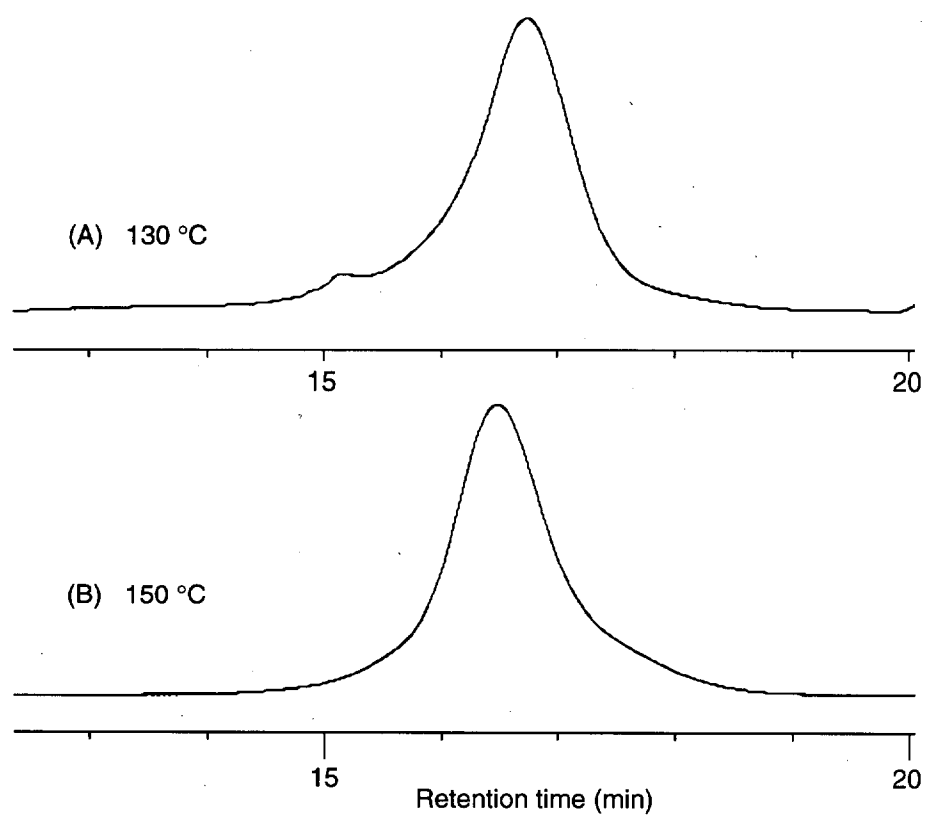


Figure S6. GPC profiles of the polymers obtained by the polymerization of GPE with **1** (1 mol %) in the presence of ZnCl_2 (0.2 mol %) at (A) 130 °C and (B) 150 °C for 12 h.