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Structures and Chiroptical Properties of Block Copolymers based on Acrylamide-Containing L-Proline Moieties

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Table S1. RAFT Polymerization of *N*,*N*-dimethylacrylamide (DMA) with AIBN in the Presence of Benzyl Dithiobenzoate (BDB) in Chlorobenzene at 60 °C [a)]

run	[CTA] /[AIBN]	time h	conv.[b)] %	M_n[c)] (theory)	M_n[d)] (SEC)	M_w/M_n[d)] (SEC)
1	2	15	< 5		-	-
2	2	24	80	8200	5500	1.21
3	10	24	67	6900	5200	1.12

[a)] $[DMA]_0/[CTA]_0 = 100$, monomer concentration = 1.0 M, where AIBN = 2,2'-azobis(isobutyronitrile), CTA = benzyl dithiobenzoate (BDB). [b)] Calculated by ^1H NMR. [c)] The theoretical molecular weight ($M_{n,theory}$) = (MW of DMA) × [DMA]/[CTA] × conv. + (MW of CTA). [d)] Measured by size-exclusion chromatography (SEC) using polystyrene standards in *N*,*N*-dimethylformamide (DMF, 10 mM LiBr).

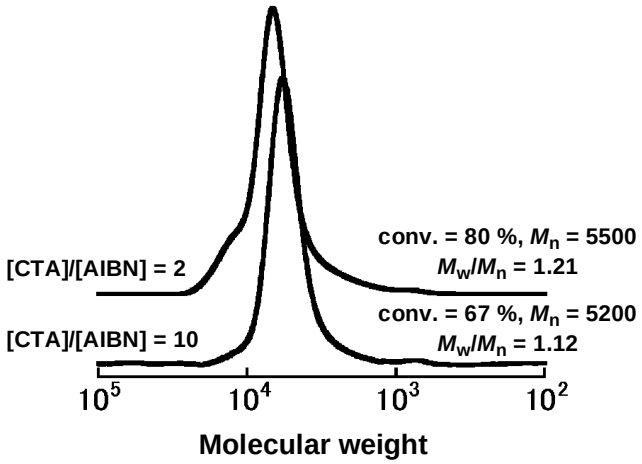

Figure S1. SEC traces of poly(DMA)s obtained by the polymerization of DMA with AIBN in the presence of benzyl dithiobenzoate (BDB) at constant monomer-to-chain transfer agent ratio, $[DMA]_0/[CTA]_0 = 100$, under different chain transfer agent-to-initiator ratios, $[CTA]_0/[AIBN]_0 = 2$ and 10, respectively. See Table S1 for detailed polymerization conditions.

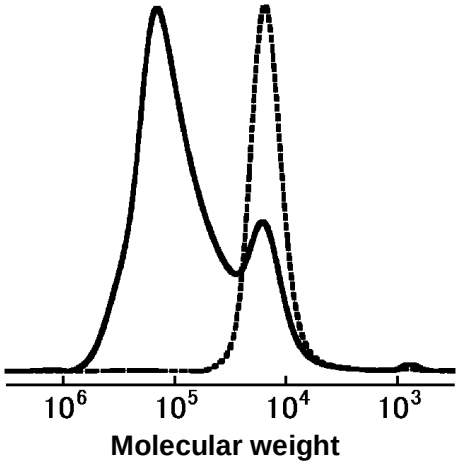

Figure S2. SEC traces of the parent poly(A-Pro-OMe) macro-CTA (dotted trace, $M_{n,GPC}$ = 12700, M_w/M_n = 1.23, conv. > 99%) and the block copolymer, poly(A-Pro-OMe)-*b*-poly(DMA), obtained after the polymerization with DMA at 60 °C at the ratio $[DMA]_0/[macro\text{-}CTA]_0/[AIBN]_0$ = 2000/10/1 for 24 h (solid trace, $M_{n,GPC}$ = 35400, M_w/M_n = 3.30, conv. = 67%).

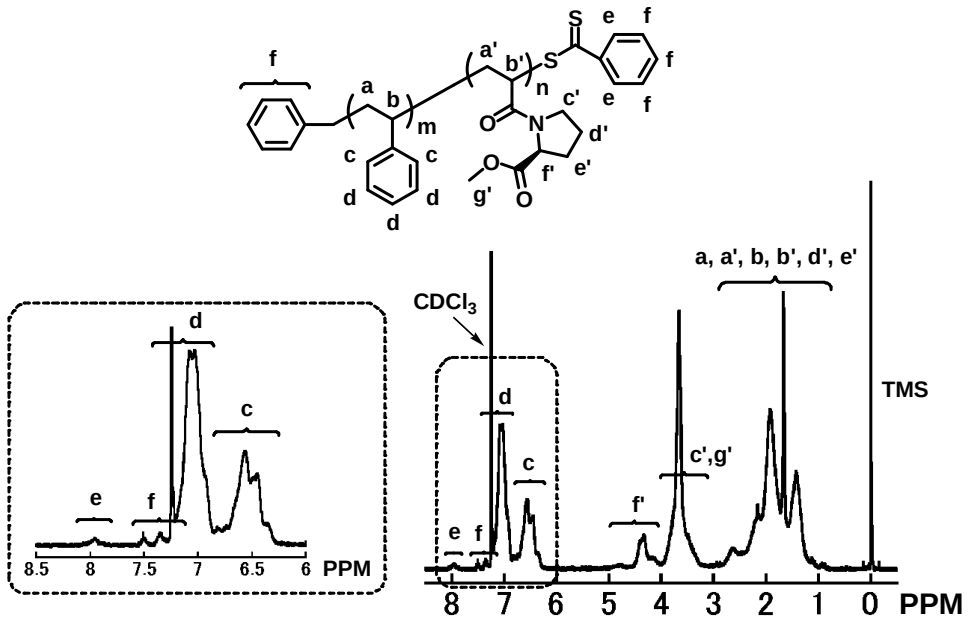

Figure S3. ^{1}H NMR spectrum ($CDCl_3$) of the block copolymer, polystyrene-*b*-poly(A-Pro-OMe) ($M_{n,GPC}$ = 6700, M_w/M_n = 1.15, conversion = 69%, A-Pro-OMe/styrene = 46/54, sample; entry 4 in Table 1).

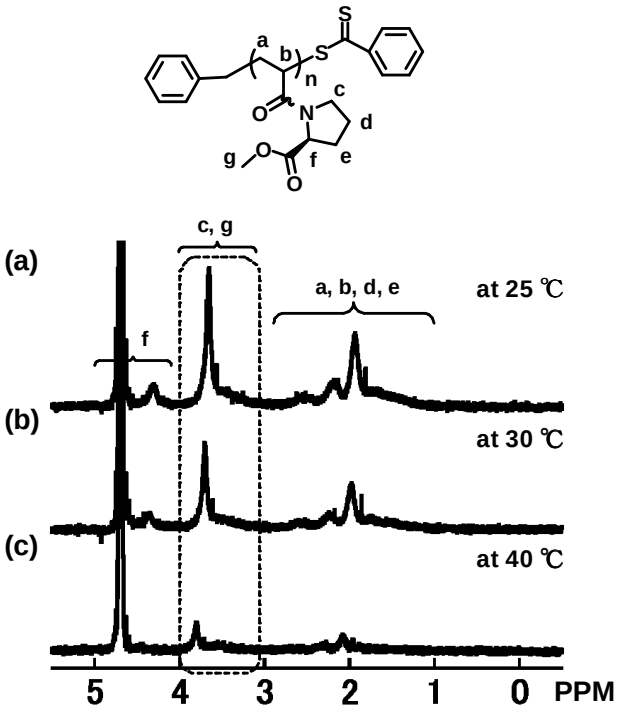

Figure S4. ^{1}H NMR spectra (D_2O) of poly(A-Pro-OMe) (M_n = 13300, M_w/M_n = 1.14) measured at different temperatures.

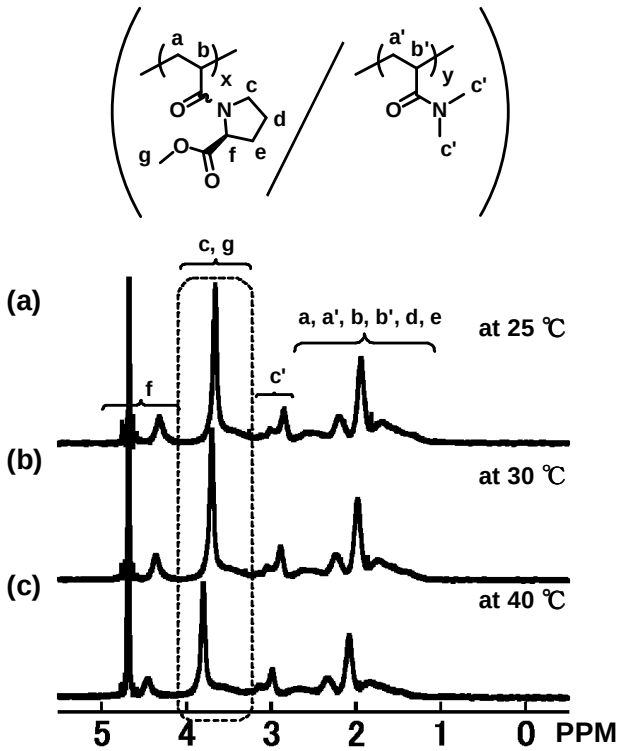

Figure S5. ^{1}H NMR spectra (D_2O) of a random copolymer, poly(DMA)-*r*-poly(A-Pro-OMe) (M_n = 15700, M_w/M_n = 1.17, A-Pro-OMe content = 89 mol %), measured at different temperatures.