Supplementary Materials: Synthesis of Optically Active Poly(diphenylacetylene)s Using Polymer Reactions and an Evaluation of Their Chiral Recognition Abilities as Chiral Stationary Phases for HPLC

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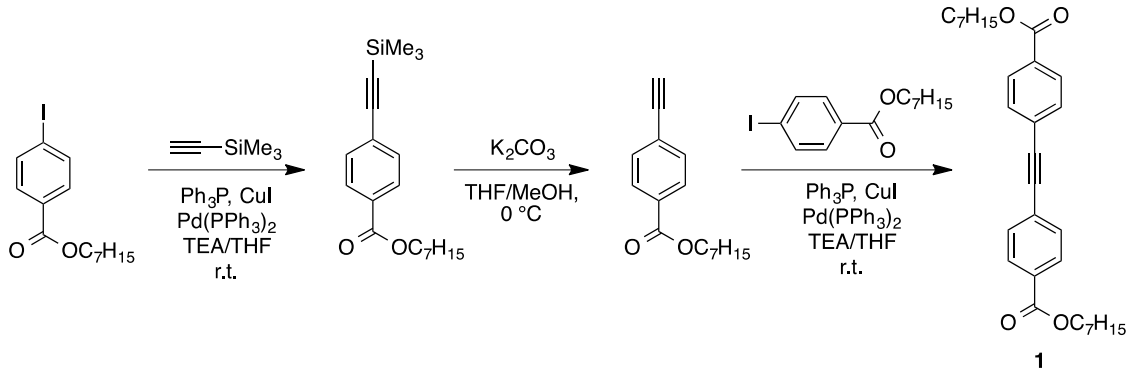

Scheme S1. Synthesis of **1**.

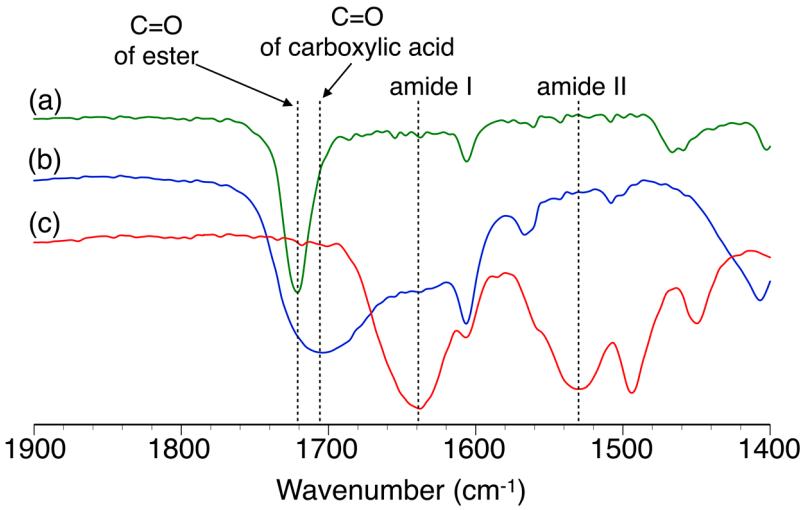

Figure S1. Infrared (IR) spectra of poly-**1** (**a**); poly-**1**-H (**b**) and poly-**2***S* (**c**) as KBr pellets.

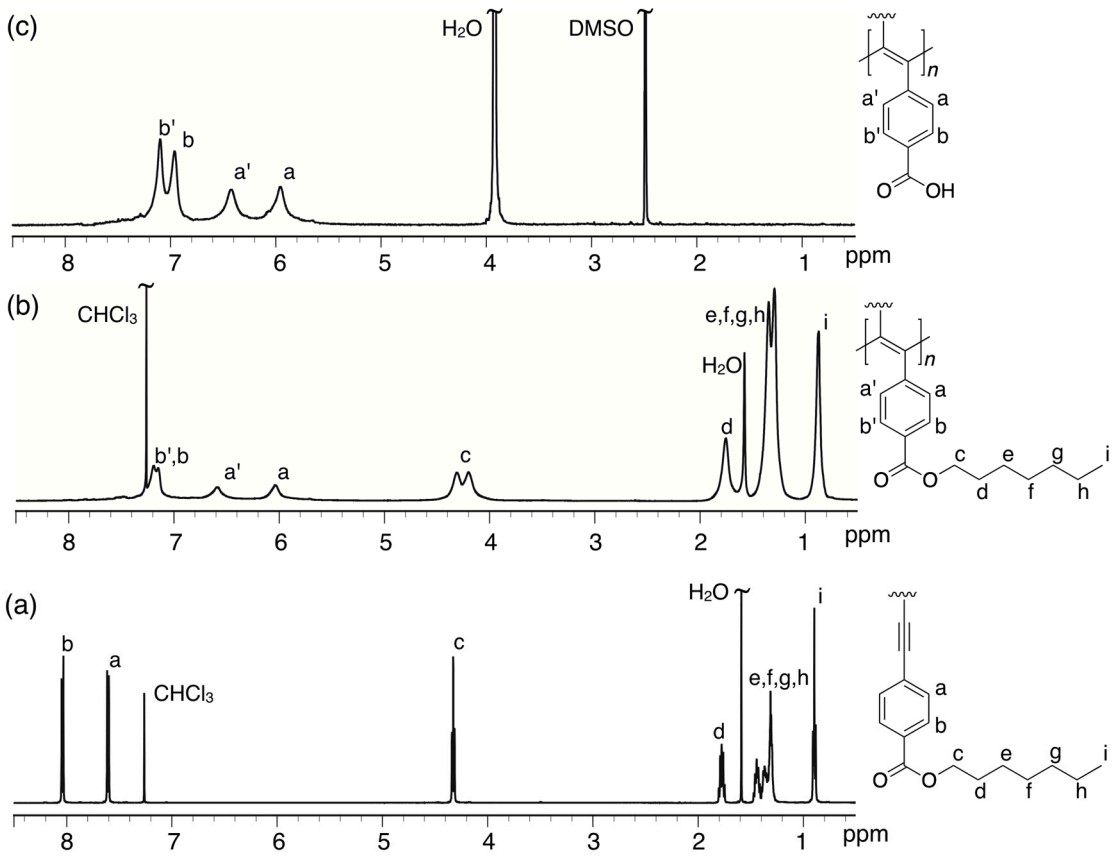

Figure S2. ^{1}H-NMR (500 MHz) spectra of **1** (**a**); poly-**1** (**b**) and poly-**1**-H (**c**) at r.t. These spectra were measured in $CDCl_3$ (**a**,**b**) and DMSO-d_6/D_2O (9/1, *v*/*v*) (**c**).

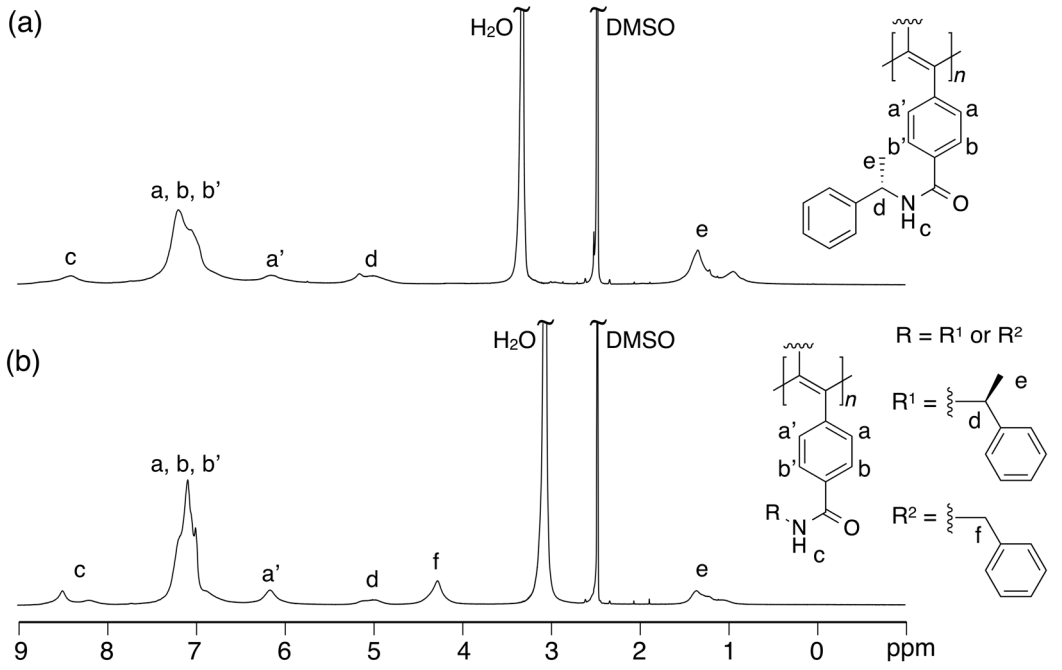

Figure S3. ^{1}H-NMR (500 MHz) spectra of poly-**2***S* (**a**) and poly-(**2***S*$_{0.36}$-*co*-**3**$_{0.64}$) (**b**) in DMSO-d_6 at 25 °C.

Table S1. Synthesis of poly-(**2***S*$_x$-*co*-**3**$_{1-x}$)s by the polymer reaction of poly-**1**-H with (*S*)-**2** followed by the reaction of the product with **3** using DMT-MM as a condensing reagent [a].

Run	[DMT-MM]/[poly-1-H]	[(*S*)-2]/([(*S*)-2] + [3]) in Copolymer (x) [b]	Copolymer [c]
1	2.25	0.71	poly-(**2***S*$_{0.71}$-*co*-**3**$_{0.29}$)
2	1.80	0.64	poly-(**2***S*$_{0.64}$-*co*-**3**$_{0.36}$)
3	1.05	0.45	poly-(**2***S*$_{0.45}$-*co*-**3**$_{0.55}$)
4	0.72	0.36	poly-(**2***S*$_{0.36}$-*co*-**3**$_{0.64}$)
5	0.60	0.21	poly-(**2***S*$_{0.21}$-*co*-**3**$_{0.79}$)
6	0.30	0.09	poly-(**2***S*$_{0.09}$-*co*-**3**$_{0.91}$)
7	0.15	0.06	poly-(**2***S*$_{0.06}$-*co*-**3**$_{0.94}$)

[a] The reactions were carried out in DMSO at room temperature for 12 h. [(*S*)-**2**]/[DMT-MM] = 2, [poly-**1**-H] = 0.05 M (runs 1–3, 5–7) and 0.06 M (run 4). After the reaction with (*S*)-**2**, the resulting polymers were reacted with an excess of **3** in the presence of DMT-MM ([**3**]/[DMT-MM]/[poly-**1**-H] = 4/2.5/1) in DMSO at room temperature for 12 h; [b] Estimated by ^{1}H-NMR; [c] The subscript numbers represent the molar ratios of the corresponding units in the copolymers.

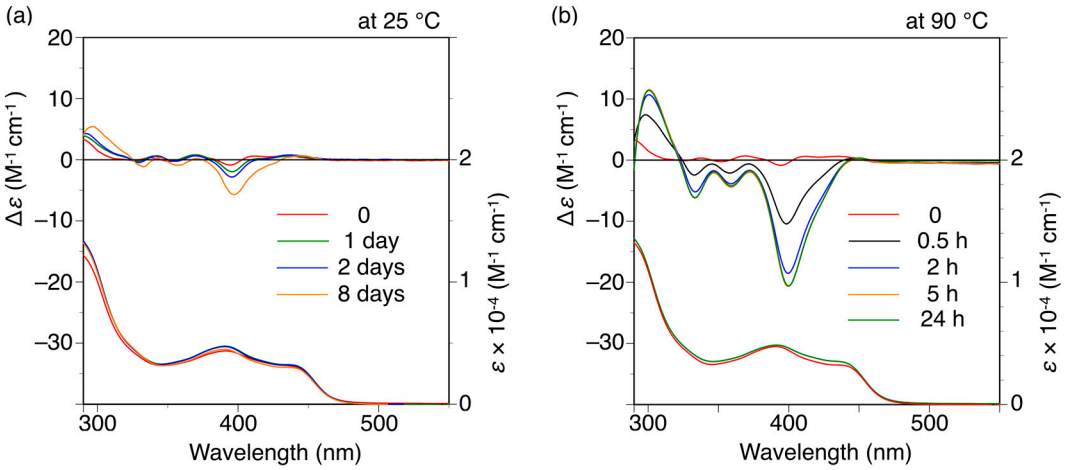

Figure S4. Time-dependent changes in the CD spectra of poly-**2***S* at 25 °C (**a**) and 90 °C (**b**) in DMF.

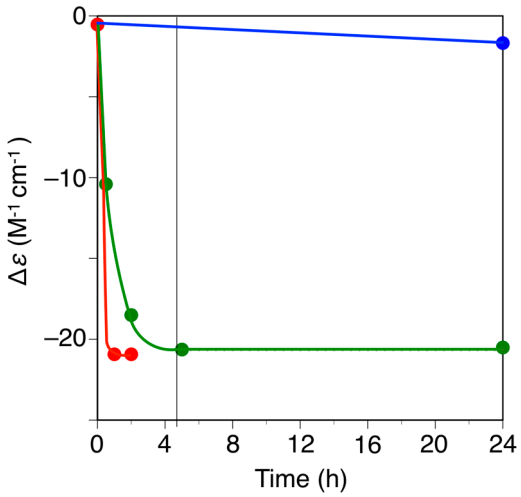

Figure S5. Plots of the CD intensity ($\Delta\varepsilon_{1st}$) of poly-**2***S* at 120 °C (red), 90 °C (green) and 25 °C (blue) in DMF with time.

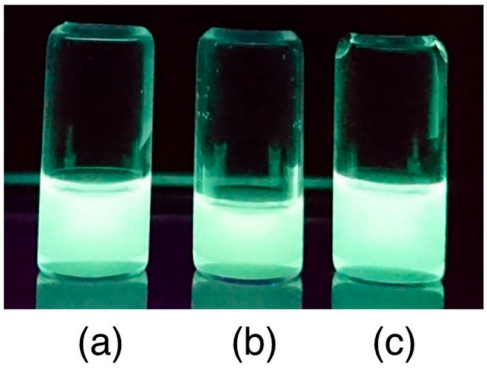

Figure S6. Photographs of *h*-poly-**2***S* (**a**); *h*-poly-(**2***S*$_{0.36}$-*co*-**3**$_{0.64}$) (**b**) and poly-(**2***S*$_{0.36}$-*co*-**3**$_{0.64}$) (**c**) in DMF at 25 °C under irradiation of 365 nm UV light.