

Supporting Information for:

## **Linear Viscoelasticity of Weakly Hydrogen-Bonded Polymers Near and Below Sol-Gel Transition**

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## 1. Experimental Section

### 1.1. Quantities of the compounds used for RAFT polymerization

**Table S1.** Amounts of reagents used for the synthesis of the (co)polymers.

<b>Sample ID</b>	<b>AIBN (mg)</b>	<b>DBTTC (mg)</b>	<b>DMF (mL)</b>	<b>nBA (g)</b>	<b>THY (g)</b>
<b>PnBA</b>	0.82	14.5	5.0	1.28	0
<b>PTHY10</b>	0.82	14.5	5.0	1.15	0.32
<b>PTHY30</b>	0.82	14.5	5.0	0.64	1.62
<b>PTHY100</b>	0.82	14.5	5.0	0	3.24

## 2. Characterization

### 2.1. $^1\text{H}$ NMR of PTHYi

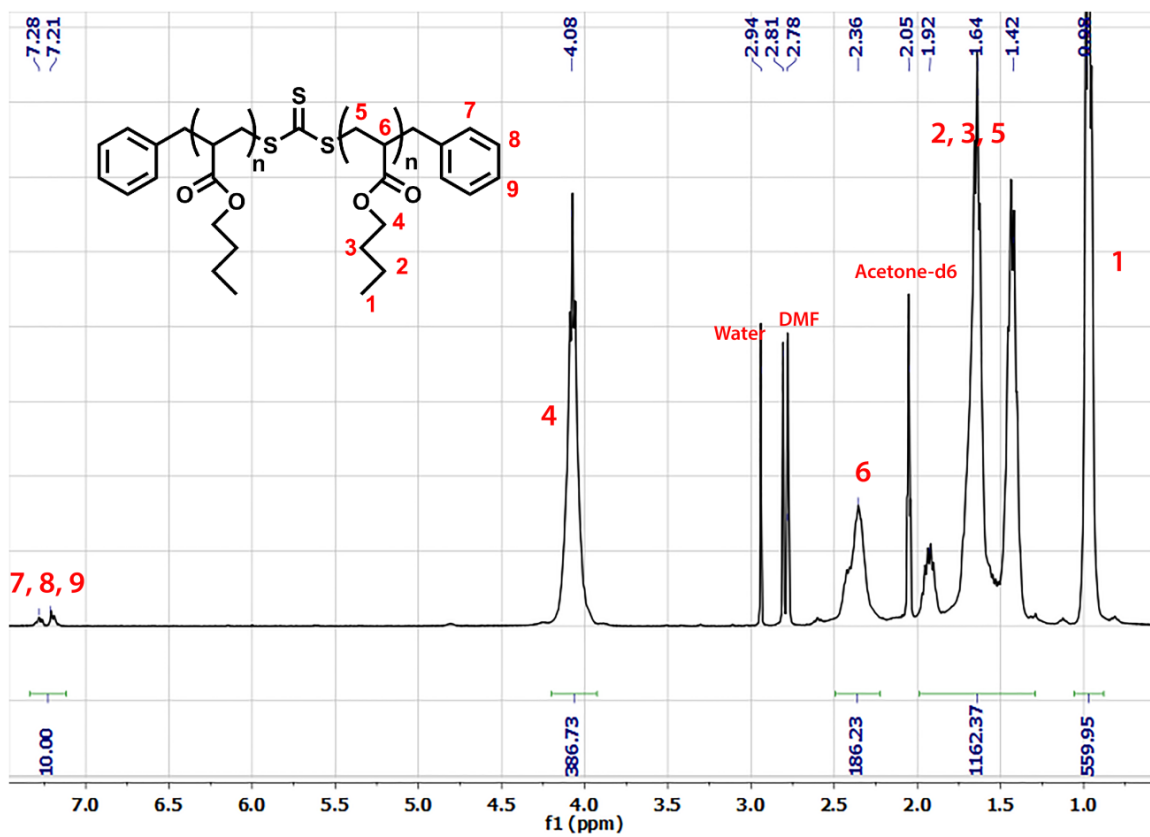
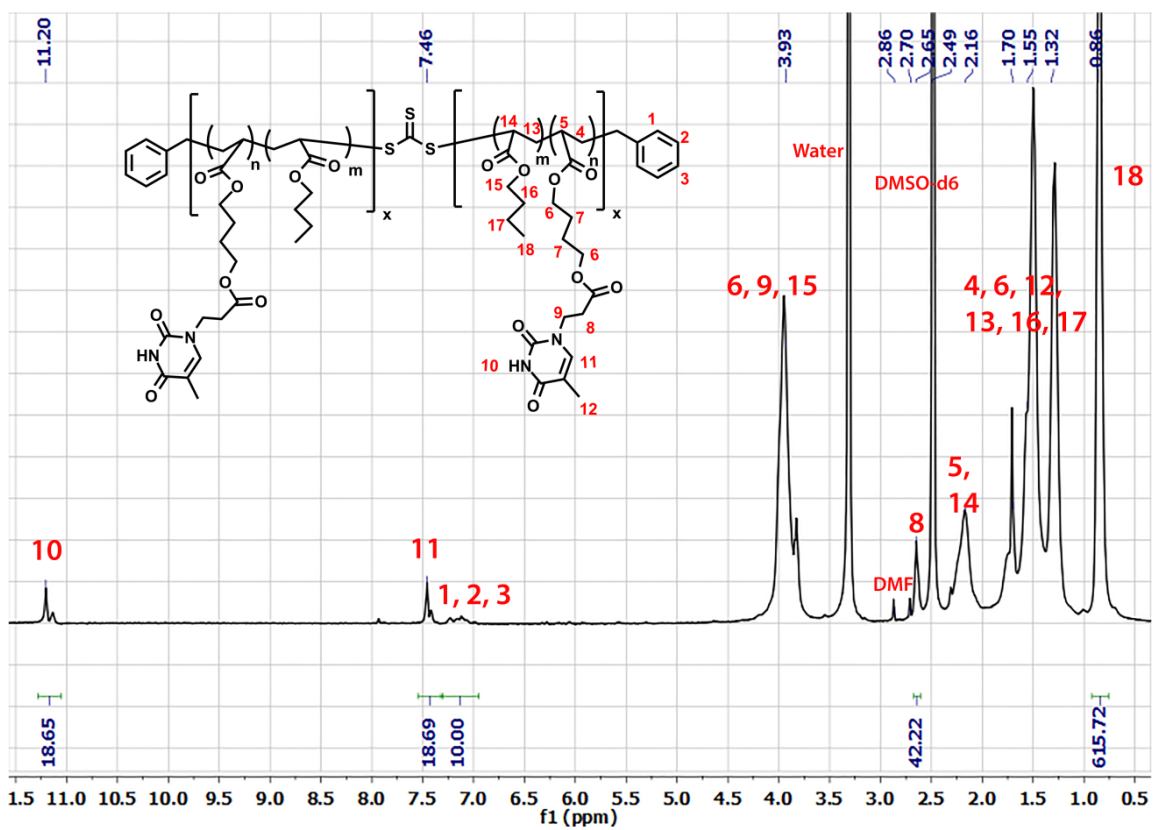


Figure S1.  $^1\text{H}$  NMR spectrum of PnBA.



**Figure S2.** <sup>1</sup>H NMR spectrum of PTHY10.

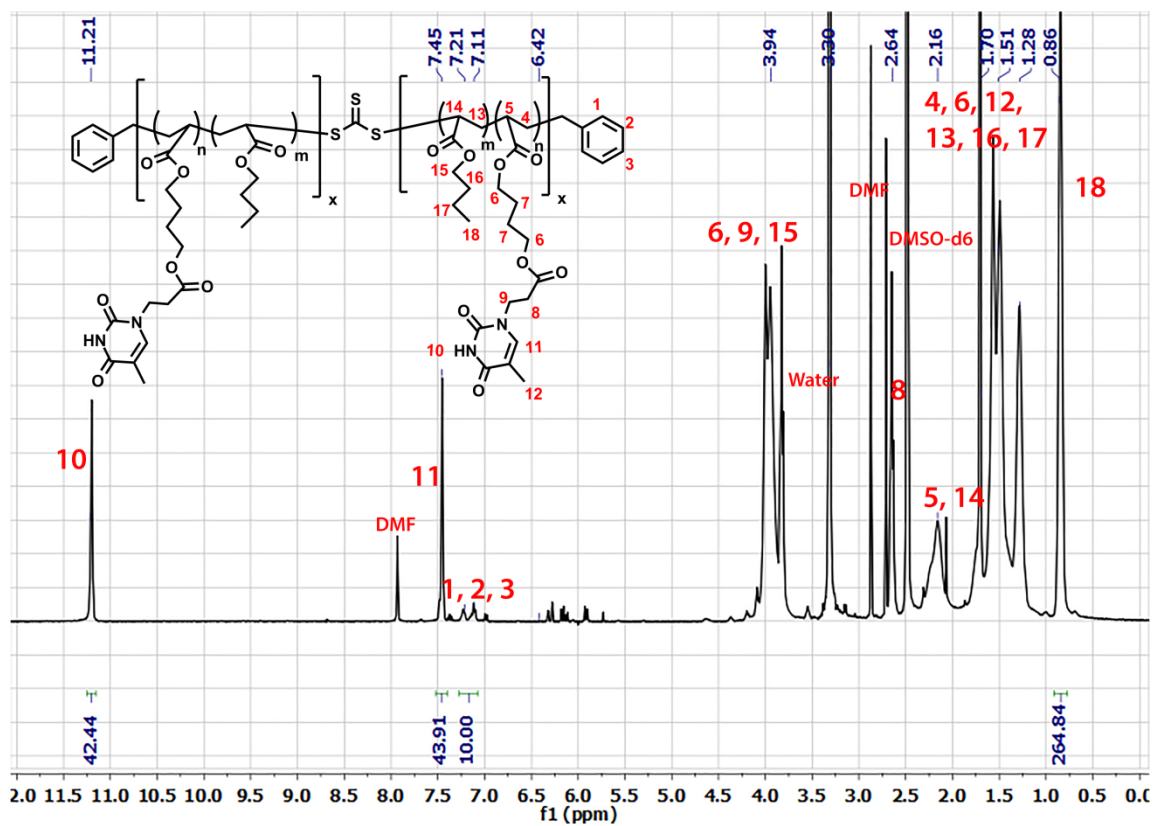
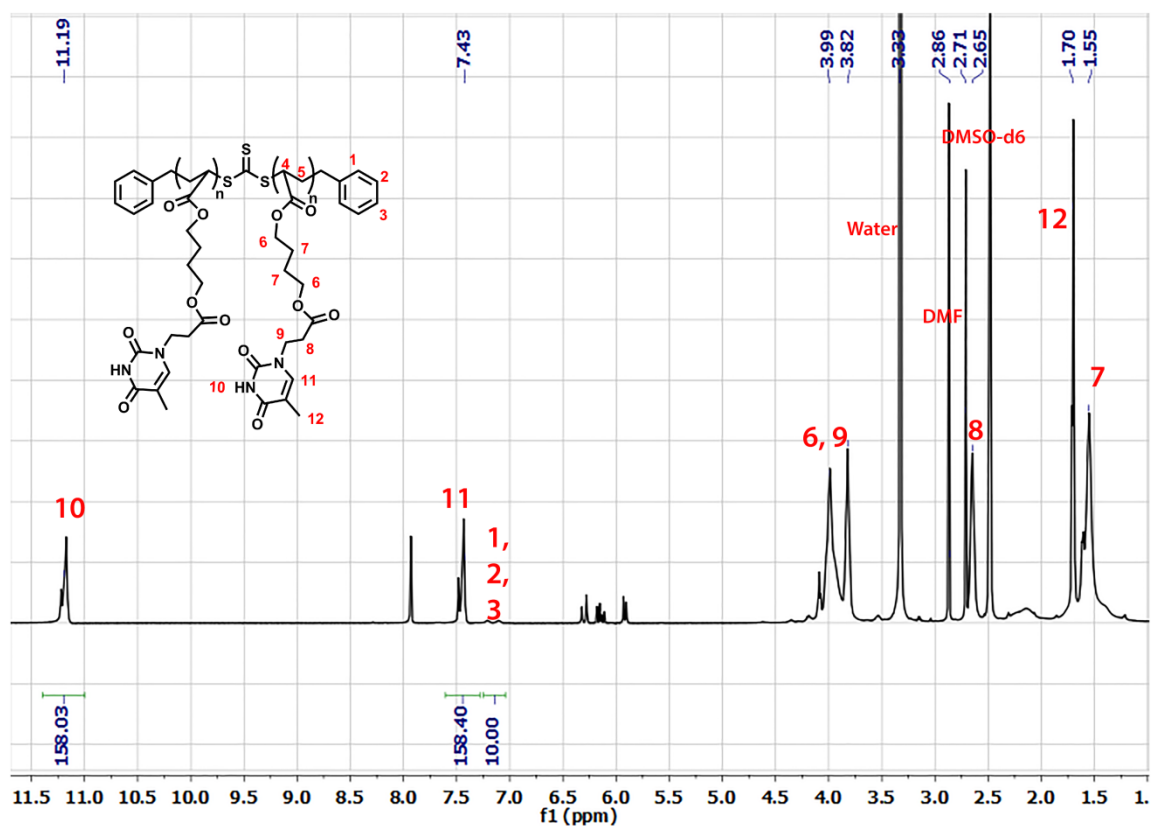
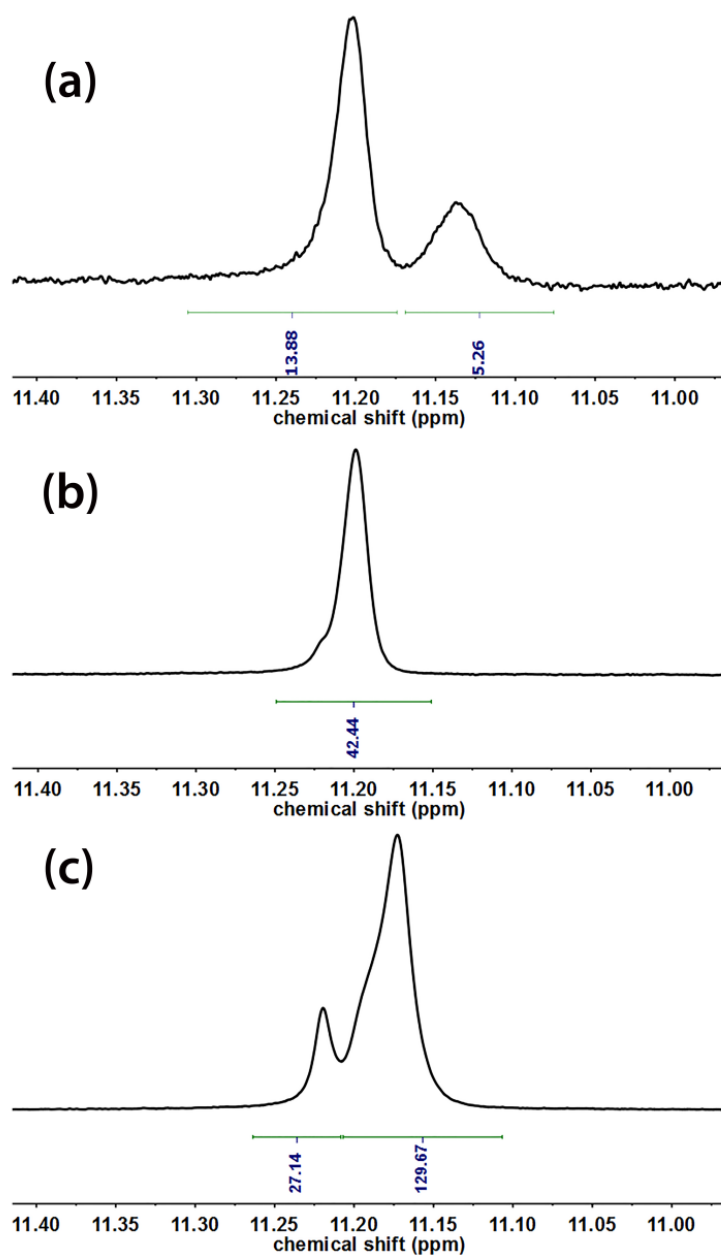


Figure S3. <sup>1</sup>H NMR spectrum of PTHY30.



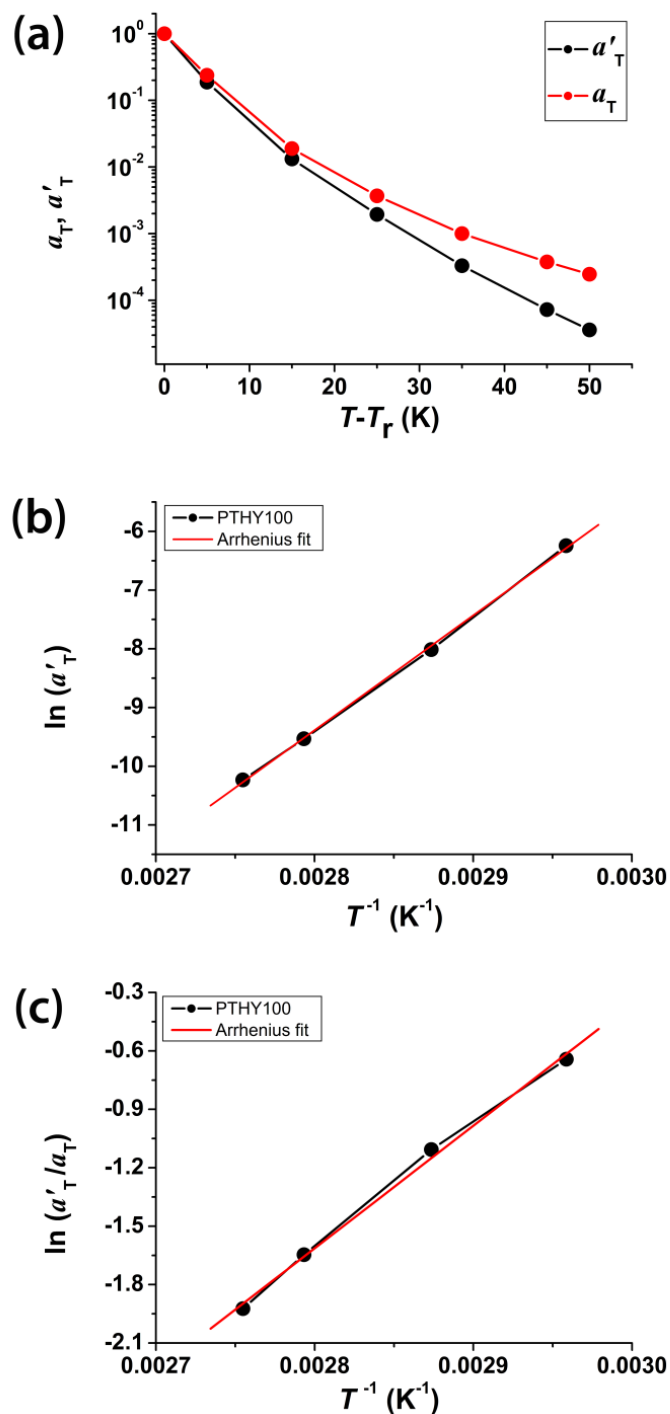
**Figure S4.** <sup>1</sup>H NMR spectrum of PTHY100.

## 2.2. Comparison of low field chemical shifts for the copolymers



**Figure S5.**  $^1\text{H}$  NMR spectrum of (a) PTHY10, (b) PTHY30, and (c) PTHY100, enlarged at high chemical shifts belonging to the hydrogen bondings of thymine.

### 3. Shift factors and the Arrhenius fitting



**Figure S6.** Shift factors  $a_T$  and  $a'_T$  vs. (a)  $T - T_r$  and (b)  $1/T$  for PTHY100 (c) ratio of shift factors obtained from the two methods  $a'_T/a_T$  vs.  $1/T$ .