

Supplementary Files

## ***N*-Cyclohexyl-11-(octylthio)undecanamide**

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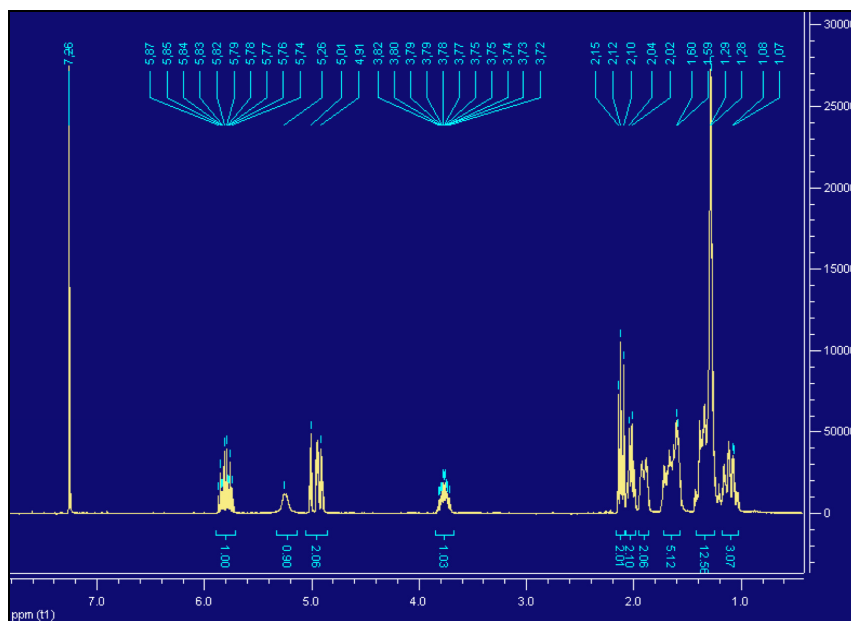
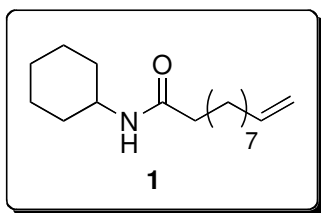
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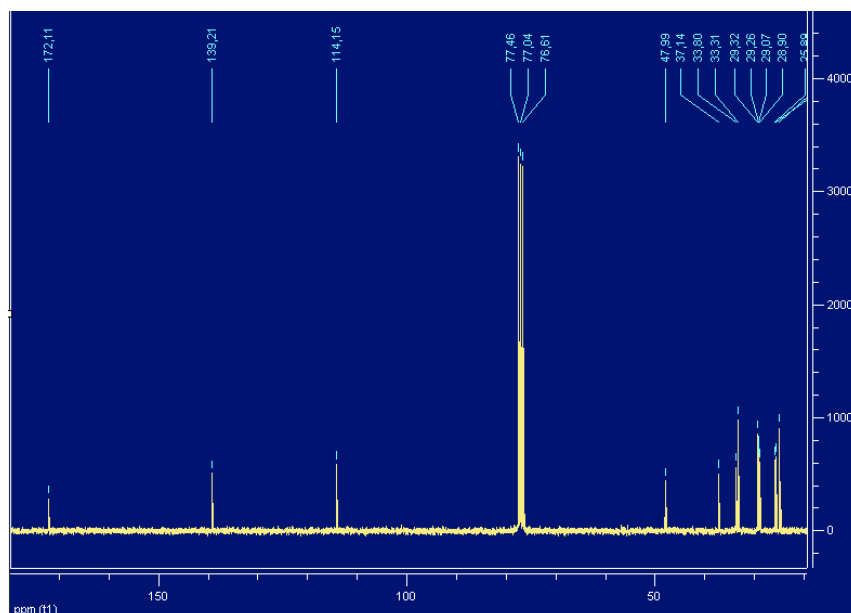
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# 1. $^1\text{H}$ and $^{13}\text{C}$ NMR spectra of starting material 1 and product 4


 *N*-cyclohexylundec-10-enamide (**1**)

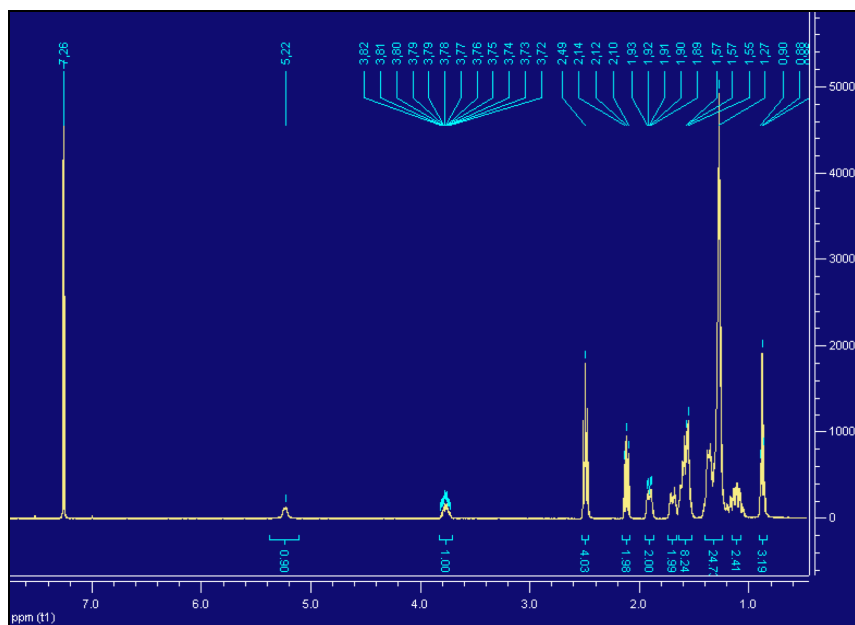
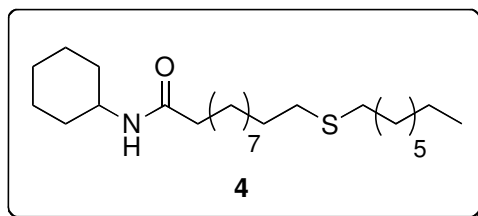


**Figure S 1.**  $^1\text{H}$  NMR spectrum of **1** (300 MHz,  $\text{CDCl}_3$ ).

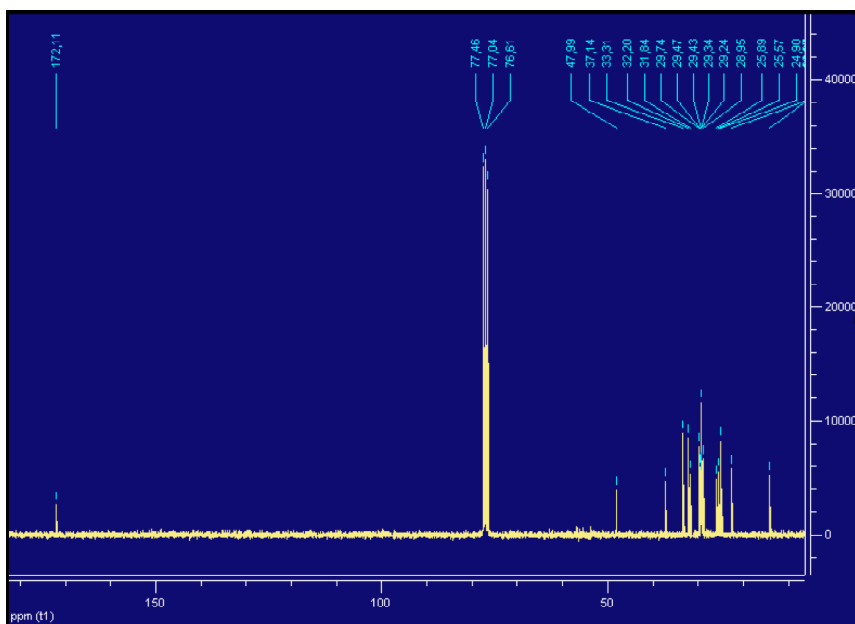


**Figure S 2.**  $^{13}\text{C}$  NMR spectrum of **1** (125 MHz,  $\text{CDCl}_3$ ).

 *N*-cyclohexyl-11-(octylthio)undecanamide (**4**)

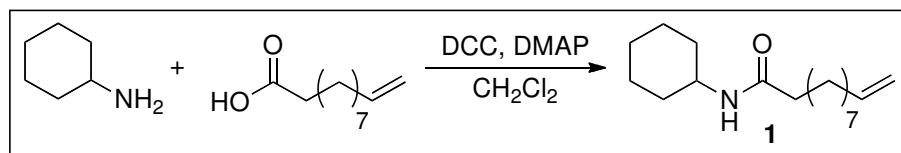


**Figure S 3.**  $^1\text{H}$  NMR spectrum of **4** (300 MHz,  $\text{CDCl}_3$ ).



**Figure S 4.**  $^{13}\text{C}$  NMR spectrum of **4** (125 MHz,  $\text{CDCl}_3$ ).

## 2. Synthesis and characterization of starting material 1

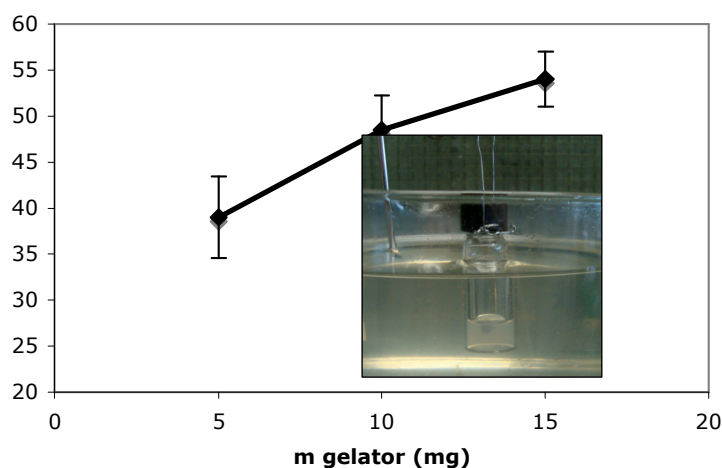


**Scheme S 1.** Synthesis of *N*-cyclohexylundec-10-enamide (**1**).

Experimental procedure for the synthesis of **1** (Scheme S 1): To a clear solution of cyclohexylamine (1 g, 10.1 mmol), DMAP (2.46 g, 20.2 mmol), and DCC (2.23 g, 10.1 mmol) in dry CH<sub>2</sub>Cl<sub>2</sub> (40 mL), 10-undecenoic acid (1.85 g, 10.1 mmol) was added at 0 °C (ice-bath) under nitrogen. The ice-bath was removed and the white suspension stirred for 20 h. After this time, the formed white precipitate was filtered out and the solvent removed by evaporation under reduced pressure. The residue dissolved in AcOEt and subsequently extracted with saturated solutions of NH<sub>4</sub>Cl and NaHCO<sub>3</sub>. The combined organic layers were dried with Na<sub>2</sub>SO<sub>4</sub>, filtered and concentrated. The crude residue was purified by column chromatography on silica gel using *n*-hexane/AcOEt 70/30 (v/v) as eluent, affording **1** (1.81 g, 68% yield) as a white solid: TLC *R<sub>f</sub>*(*n*-hexane/ethyl acetate=70/30) = 0.325; mp = 69 ± 1 °C; <sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) δ/ppm = 1.03–1.17 (m, 3H), 1.28–1.38 (m, 12H), 1.59–1.73 (m, 5H), 1.91 (dd, *J* = 3.6 Hz, *J* = 12.3, 2H), 2.03 (dd, *J* = 6.8 Hz, *J* = 14.3 Hz, 2H) 2.12 (t, *J* = 7.65 Hz, 2H), 3.77 (tdt, *J* = 4.0 Hz, *J* = 8.1 Hz, *J* = 12.3 Hz, 1H), 4.90–5.02 (m, 2H), 5.25 (brd, *J* = 6.0 Hz, 1H), 5.81 (tdt, *J* = 6.7 Hz, *J* = 10.2 Hz, *J* = 16.9 Hz, 1H); <sup>13</sup>C NMR (125 MHz, CDCl<sub>3</sub>) δ/ppm = 24.9, 25.6, 25.9, 28.9, 29.1, 29.3(2C), 33.3, 33.8, 37.1, 48.0, 114.1, 139.2, 172.1; FT-IR *v*<sub>max</sub> (cm<sup>-1</sup>) 3296 (N–H stretching), 3077 (=C–H stretching), 1634 (C=O stretching, amide I band), 1545 (N–H bending, amide II band), 992 (=C–H bending); MS (ESI) *m/z* 266 [MH<sup>+</sup>]. Elemental analysis calculated for C<sub>17</sub>H<sub>31</sub>NO: C, 76.92; H, 11.77; N, 5.28; found: C, 76.77; H, 11.69; N, 5.15.

## 4. Sol-to-gel (*T<sub>gel</sub>*) transition temperature

*T<sub>gel</sub>* values of different concentrations were determined by the dropping-ball-method as described in the main paper (Figure S 5).



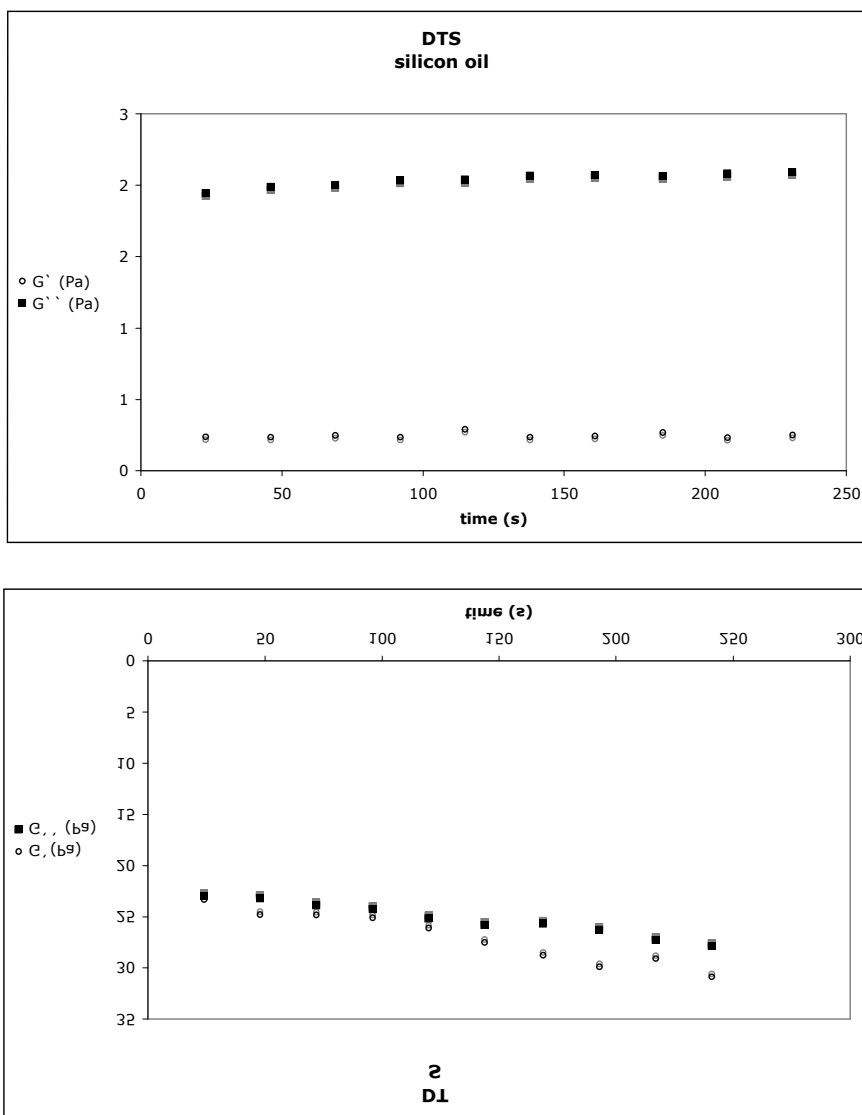
**Figure S 5.** Plot of *T<sub>gel</sub>* values obtained for the gel made of gelator **4** in silicon oil at different concentrations. Inset: photograph showing the measurement of the *T<sub>gel</sub>* by the dropping ball method.

#### 4. Rheological experiments

Samples were equilibrated at room temperature for at least 12 hours before measurement. The following three experiments were carried out using 1.5 g of gel at the MGC. The material is considered a gel if storage modulus ( $G'$ , elastic component) > loss modulus ( $G''$ , viscous component). Pure oil (1.5 g) was used as control:

a) *Dynamic Frequency Sweep (DFS)*: evolution of  $G'$  and  $G''$  with frequency (from 0.1 to 100 rad/sec), performed to make sure that the frequency used in DTS (see experiment b) was within the linear viscoelastic regime.

b) *Dynamic Time Sweep (DTS)*: plot of  $G'$  and  $G''$  with time. In this experiment the shear stress (0.1 Pa) and the frequency (10 rad/sec) were kept constant (**Figure S 6**).



**Figure S 6.** Top: DTS profile for silicon oil ( $G'' > G'$ ). Bottom: DTS profile for the gel made of **4** in silicon oil at the MGC within the viscoelastic regime ( $G' > G''$ ).