Supporting Information

N-alkyl urea peptoid oligomers and its polymer conjugate form fibers in solutions

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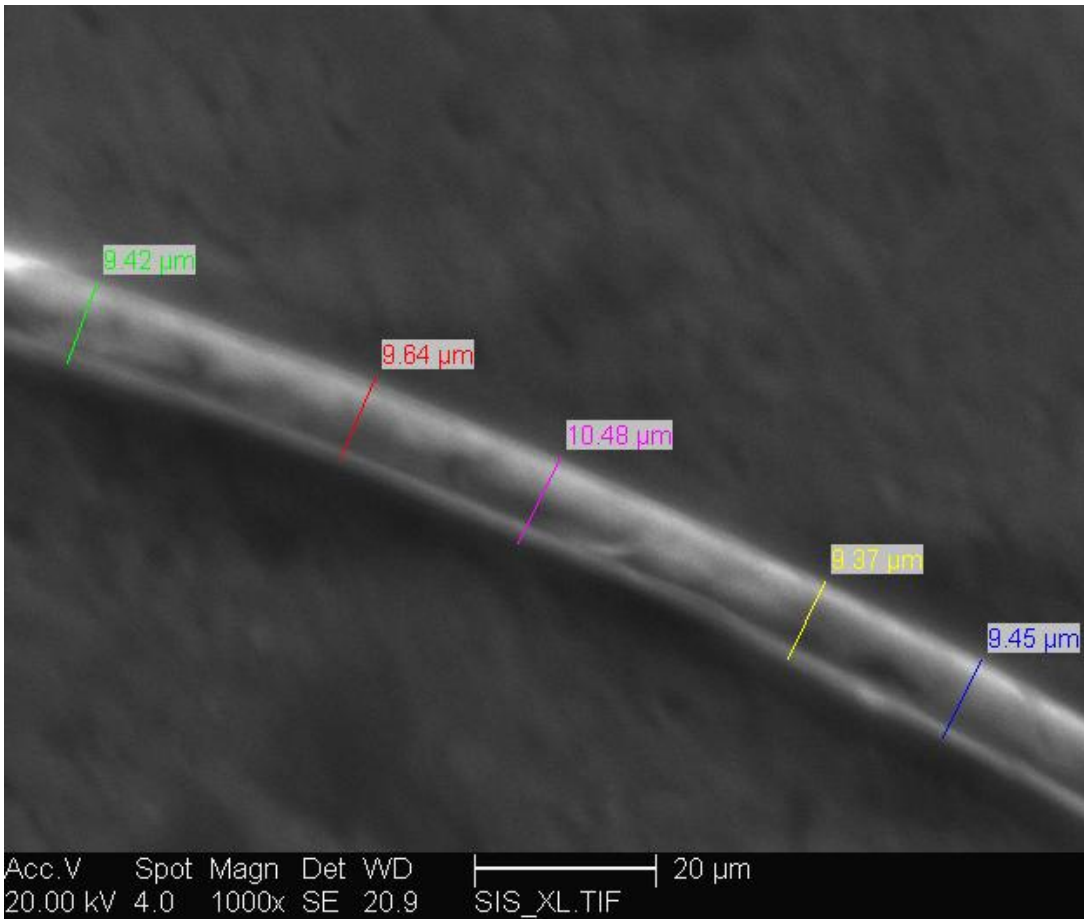

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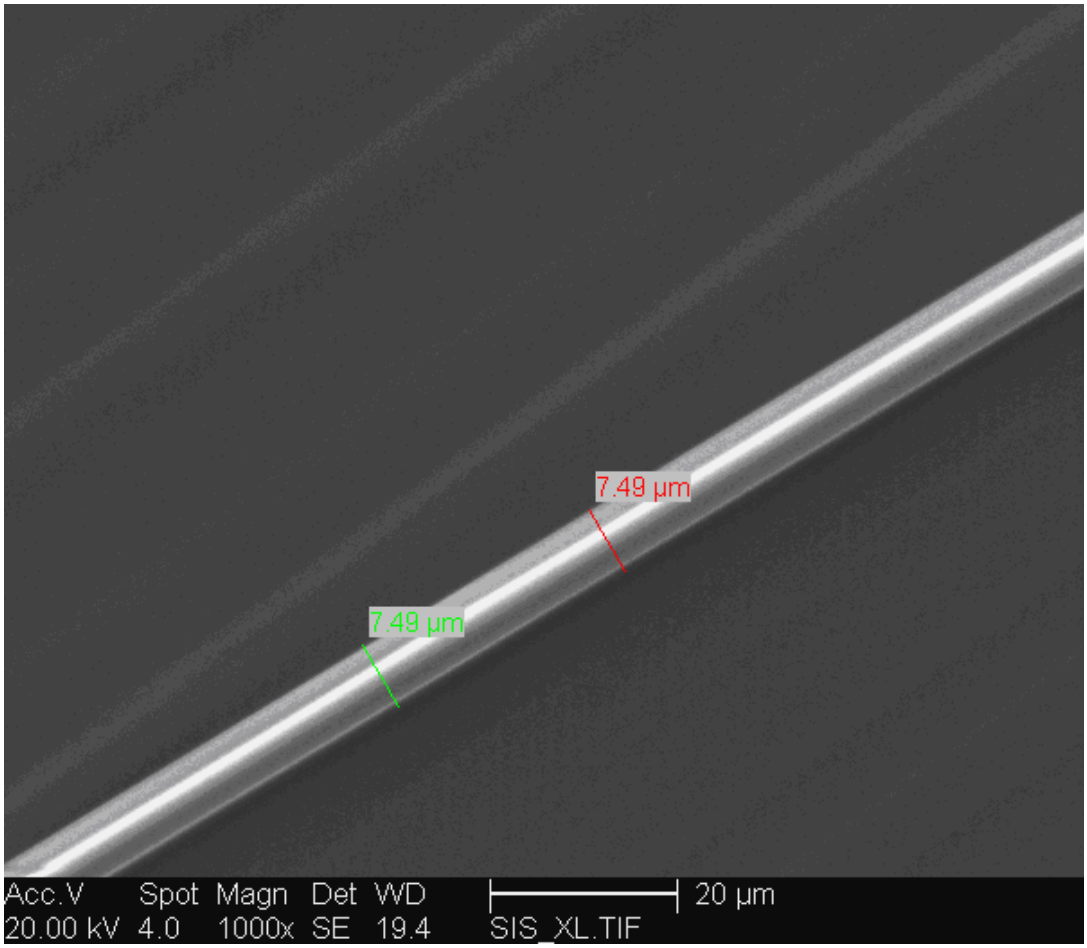

Figure S1 SEM images of (a) measurement of the diameter of a single fiber of **1** in DMF and (b) measurement of the diameter of a single fiber formed from compound **3** in H_2O.

NOESY Spectra

Compound **1** was dissolved in CD_2Cl_2 at a concentration of 10 mg/ml (7.7 µM) in a sealed NMR tube. An equimolar amount of ethyl acetate to **1** was added to the NMR tube purposely to test the stability of the hydrogen bonding between molecules. No effect was seen. The full NOESY spectrum of compound **1** was shown in Figure S2a.

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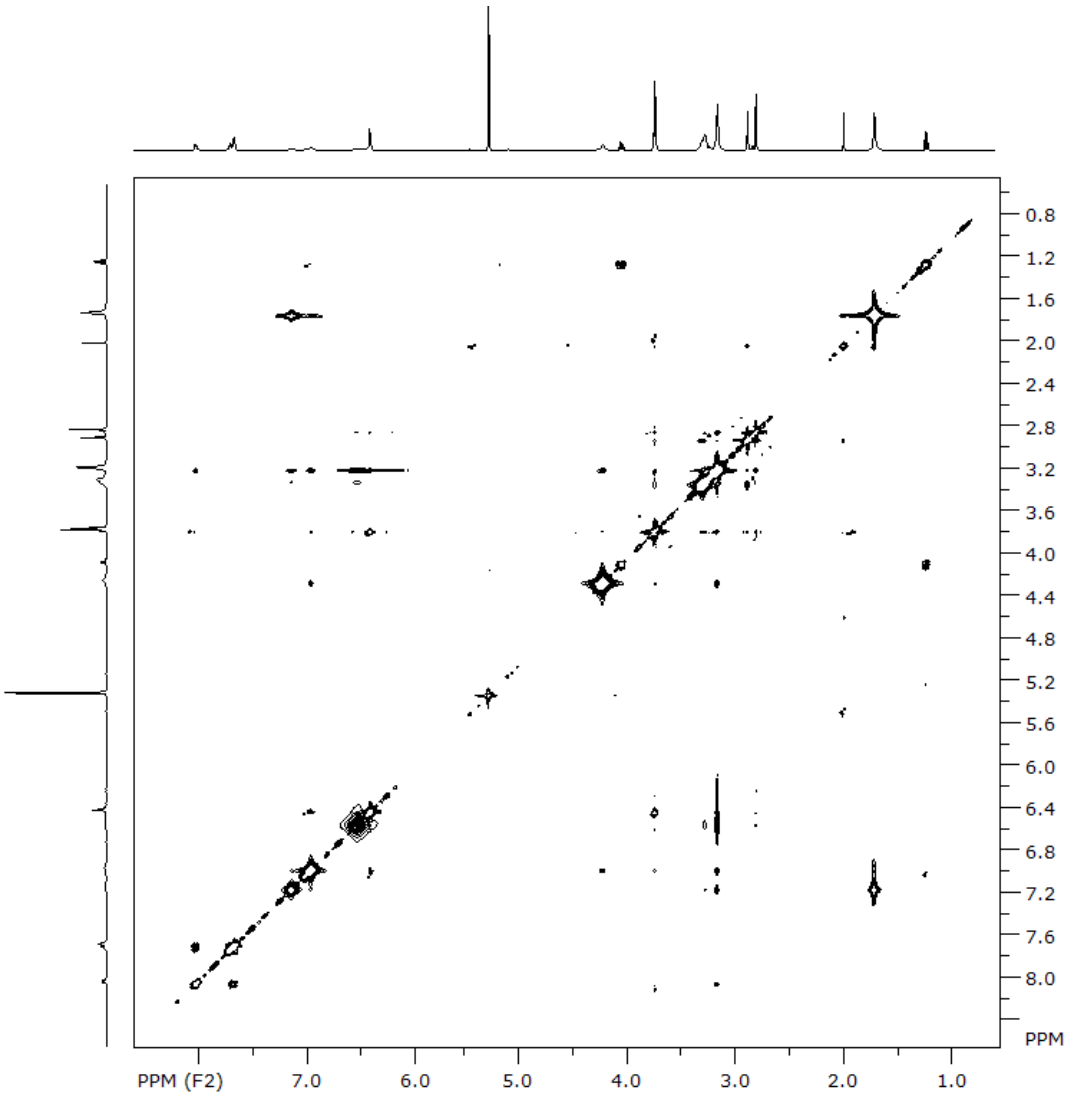
a



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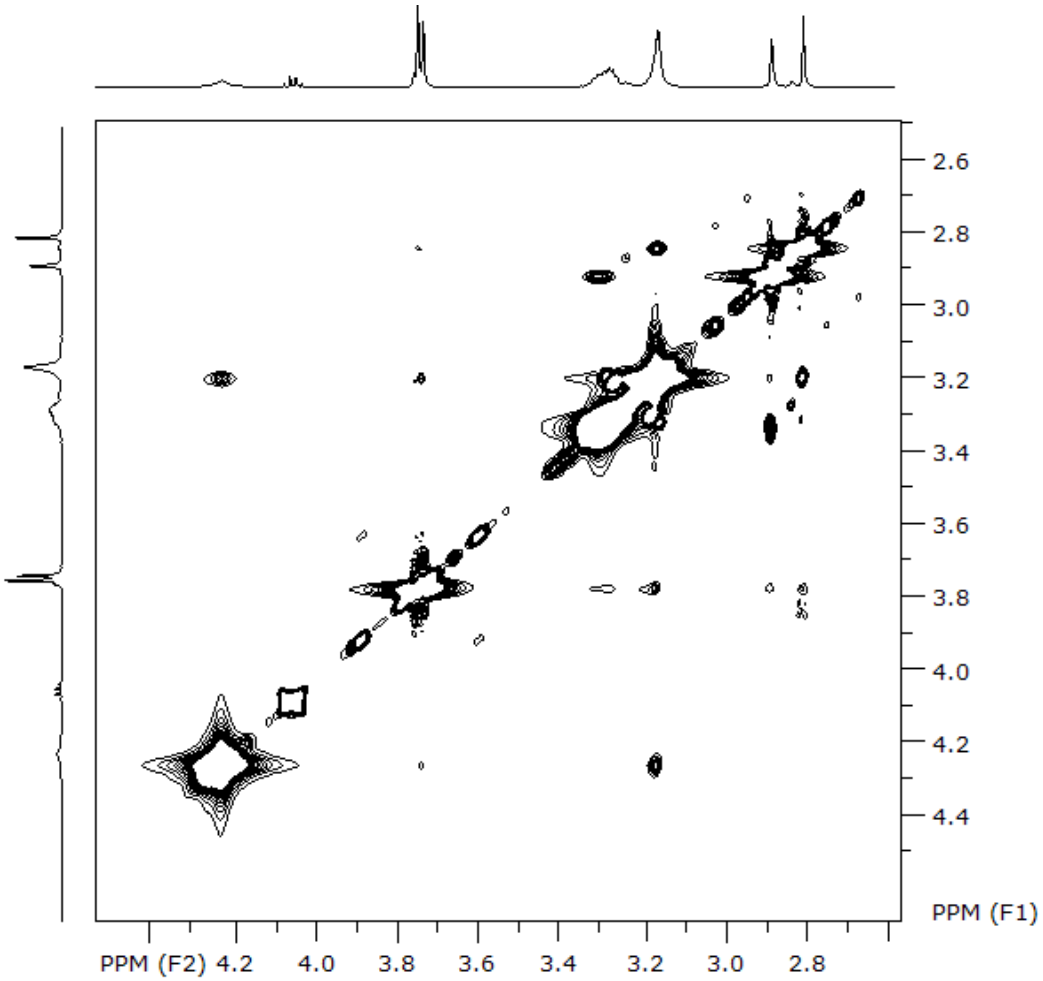

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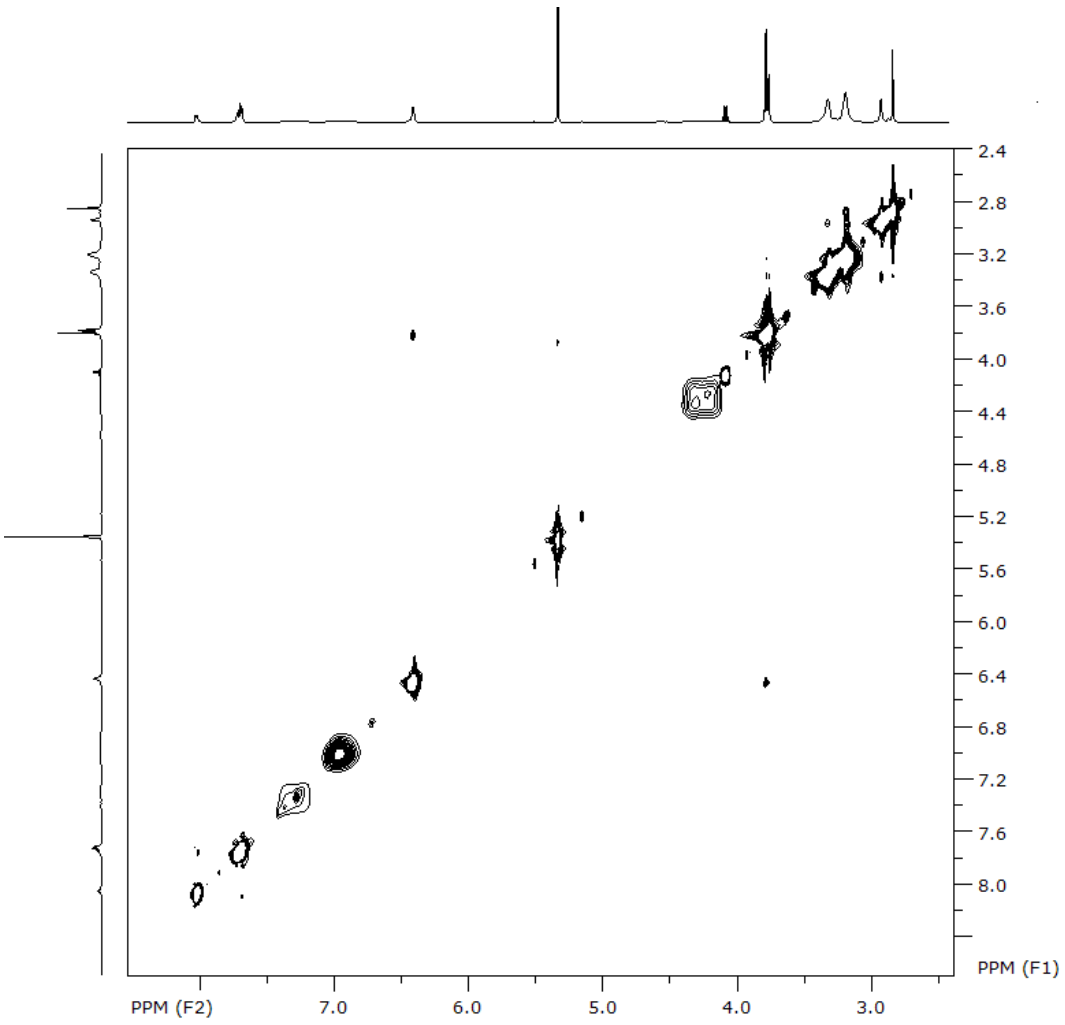

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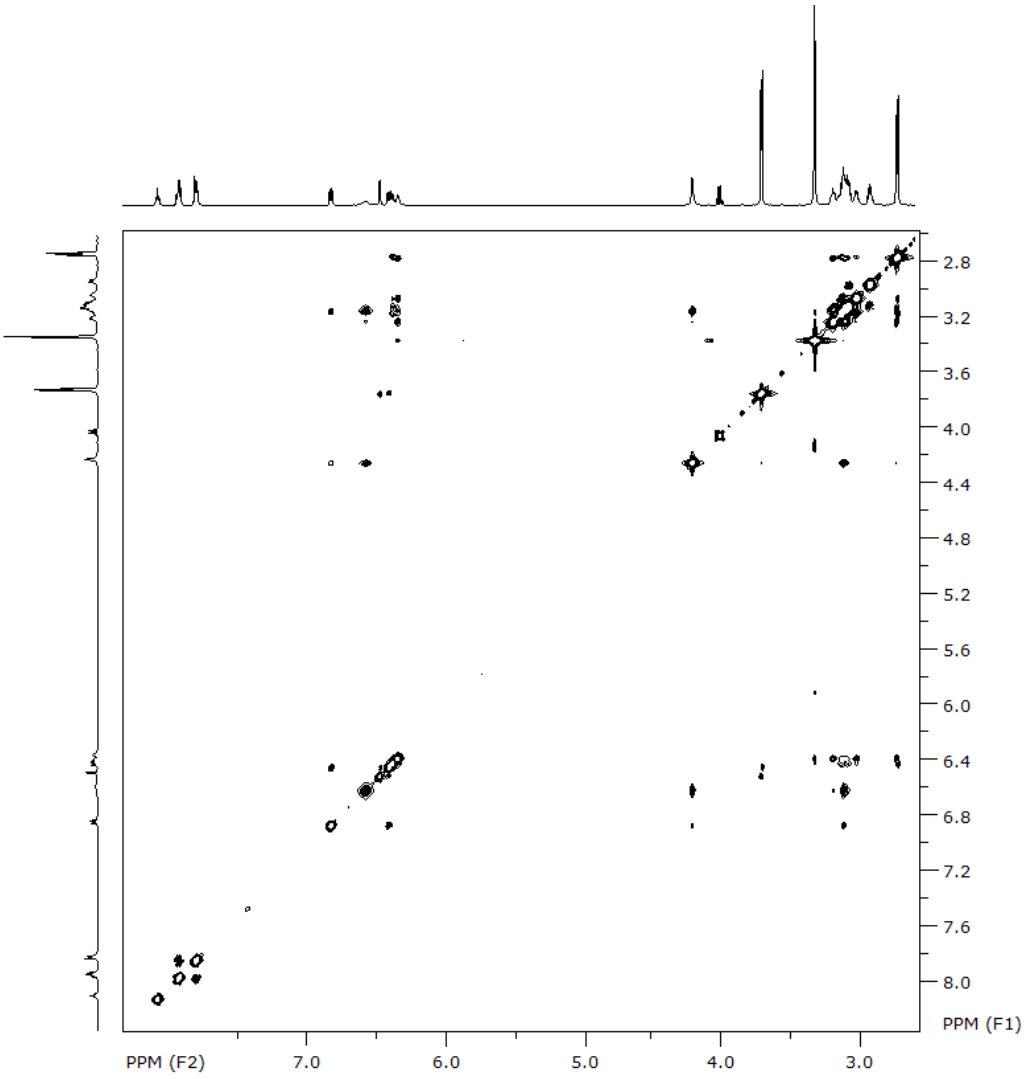

Figure S2. (a) NOESY spectrum of compound **1** in CD_2Cl_2; (b) magnification of the coupling of -N-C$\underline{H}_2$- and -N-C$\underline{H}$3 groups on urea-peptoid backbone; (c) NOESY spectrum of compound **1** in CD_2Cl_2 at concentration of 4 mg/ml; (d) NOESY spectrum of compound **1** in d_6-DMSO

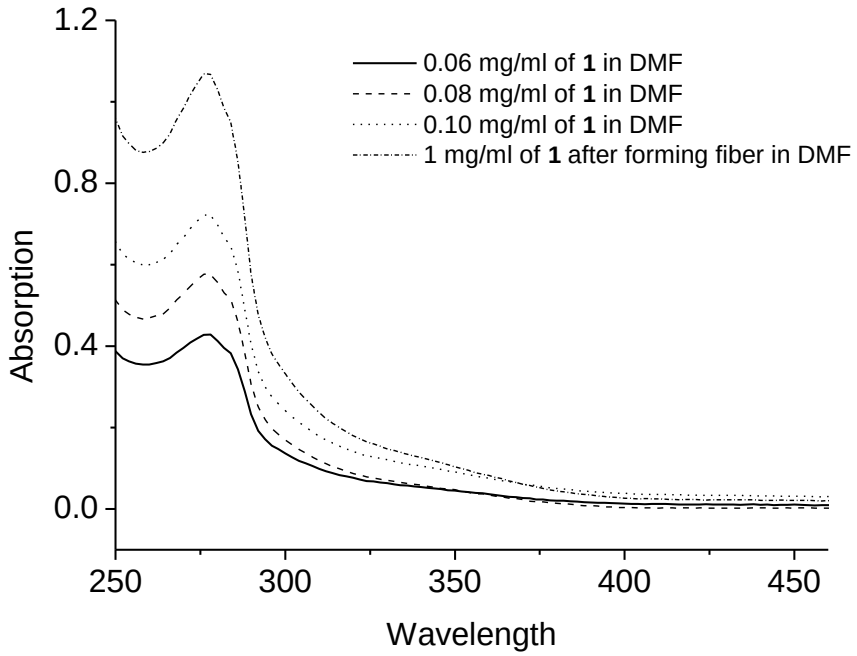

Figure S3. UV-Vis absorption spectrum of urea-peptoid **1** at various concentrations. The absorption of the same solution decreased after forming fiber because of the concentration decreased since **1** formed fibers and fibers were out of solution.

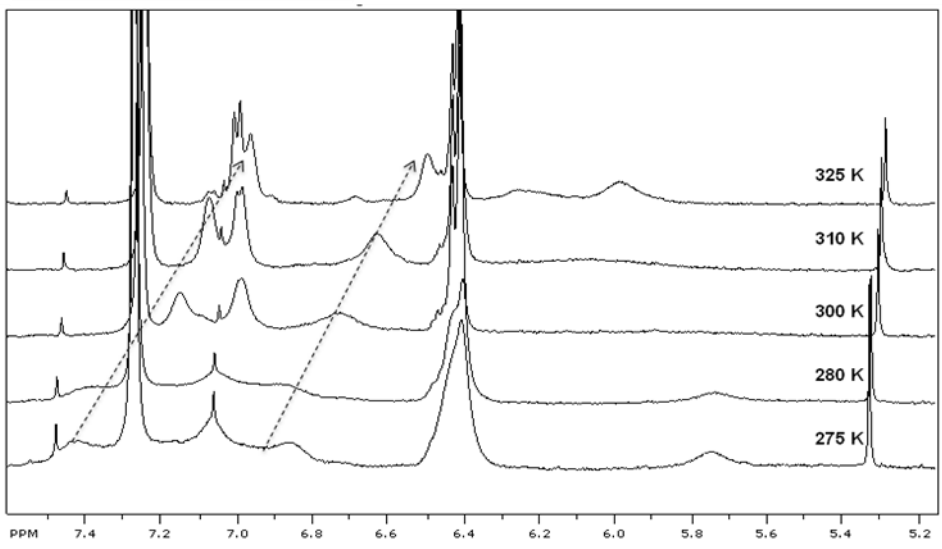

Figure S4. Variable temperature ^{1}H NMR spectra of oligomer **8** in $CDCl_3$ at 275 (bottom spectrum), 280, 300, 310, and 325 K (top spectrum). Dashed arrows have been added to guide the eye.

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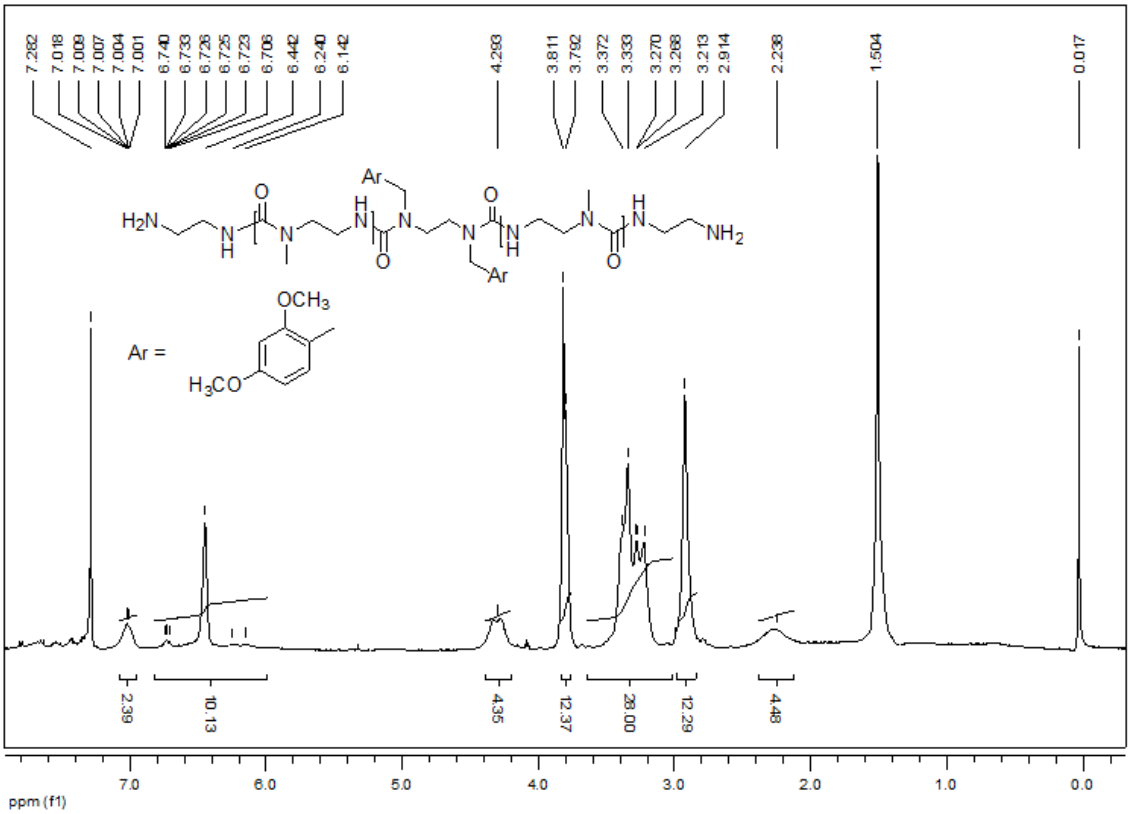

Figure S5. ^{1}H NMR of Compound **2**

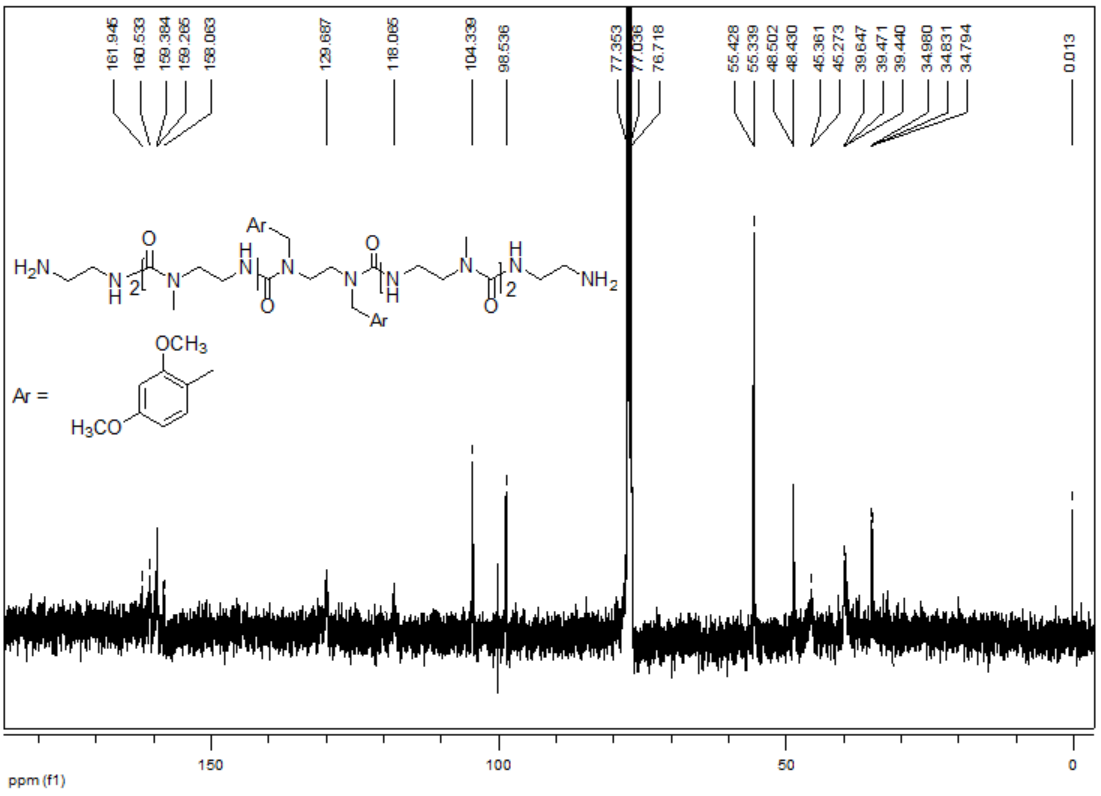

Figure S6. ^{13}C NMR of Compound **2**

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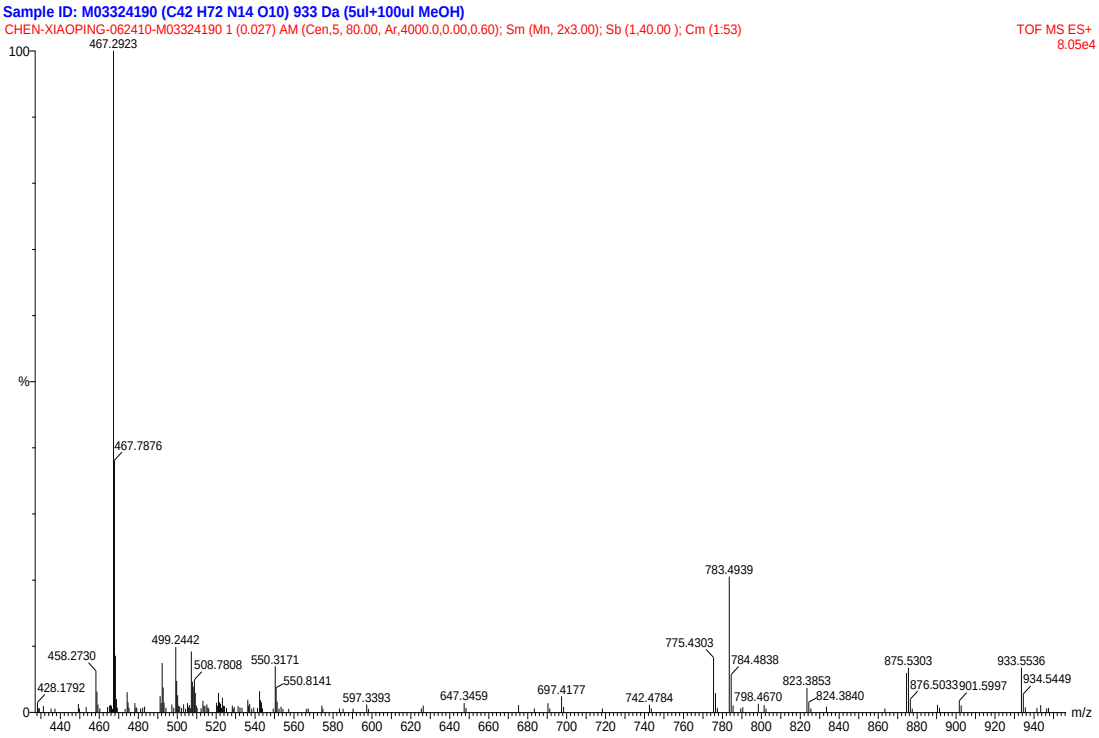

Figure S7. Mass Spectrum of Compound **2**

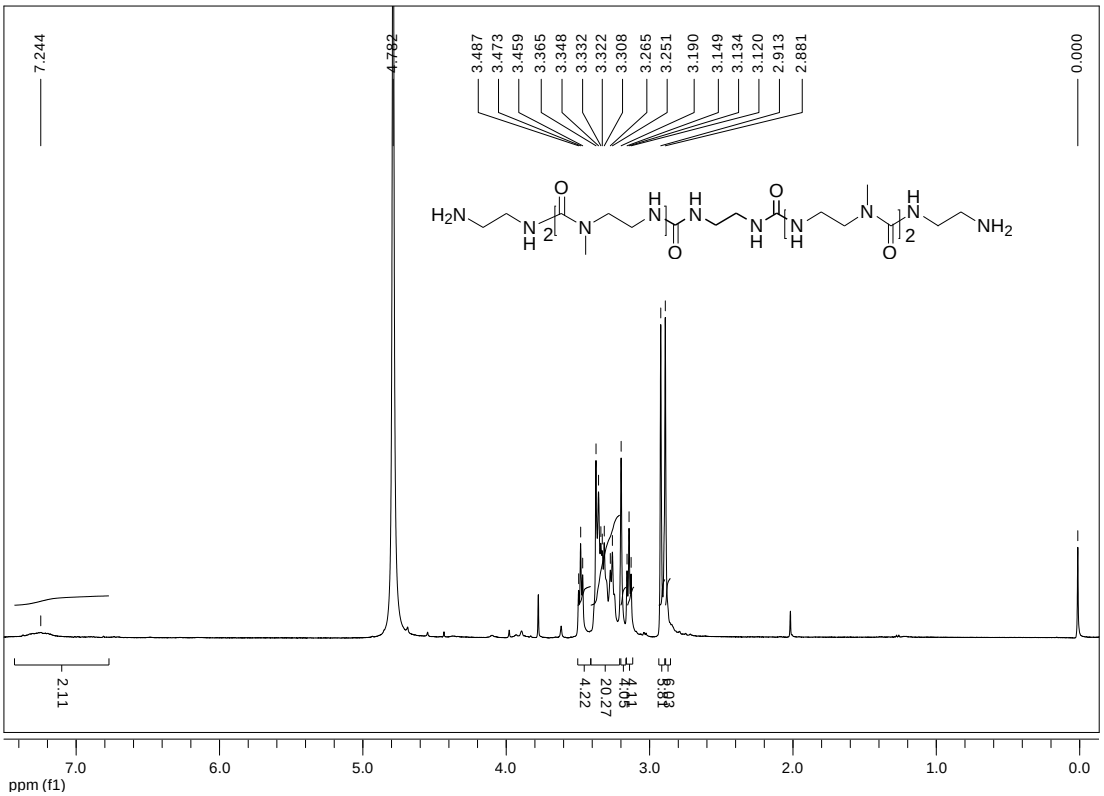

Figure S8. ^{1}H NMR of Compound **3**

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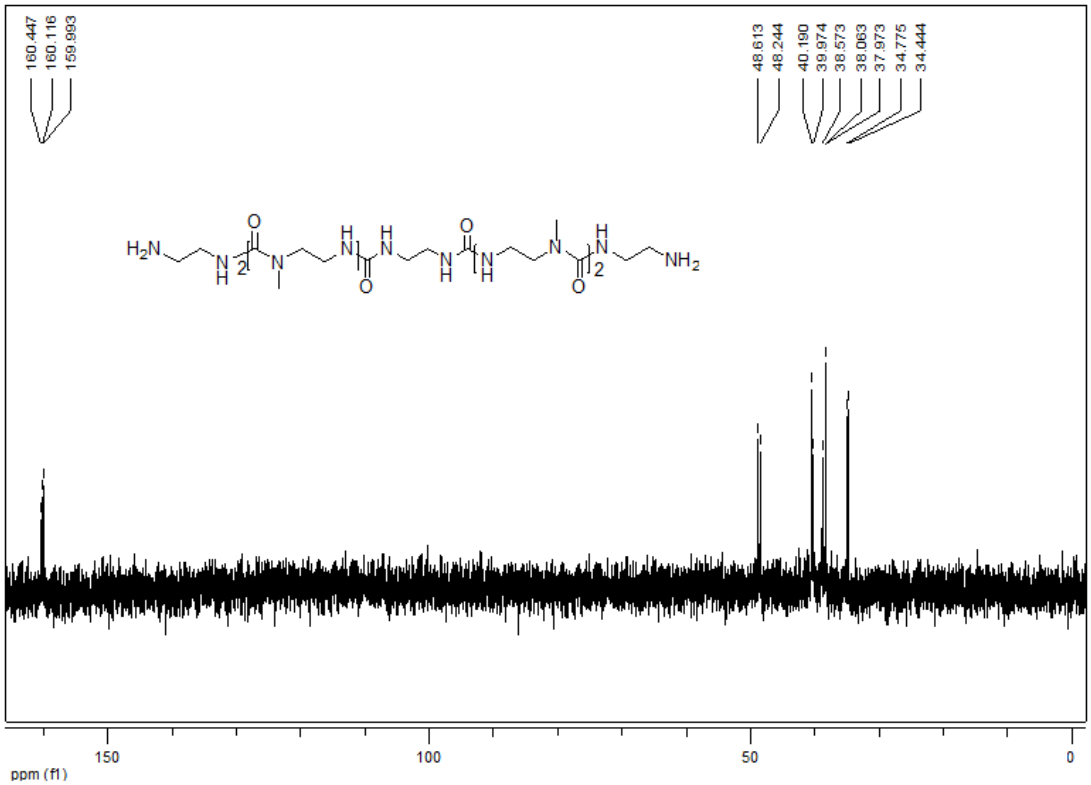

Figure S9. ^{13}C NMR of Compound **3**

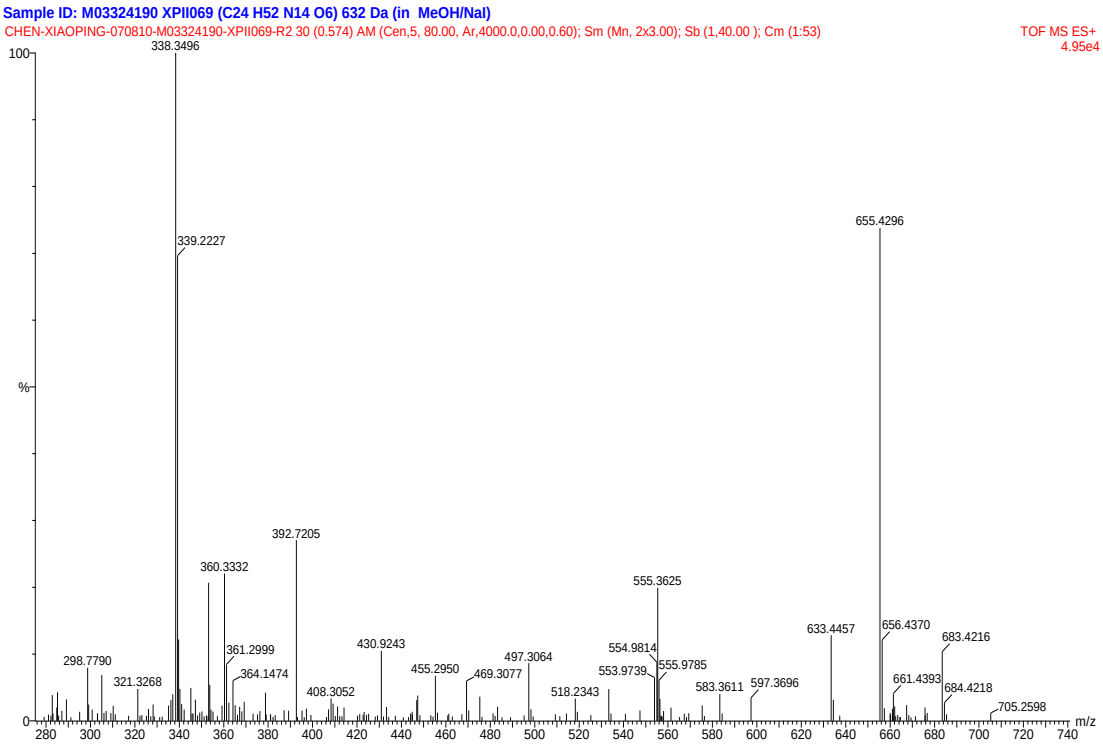

Figure S10. Mass Spectrum of Compound **3**

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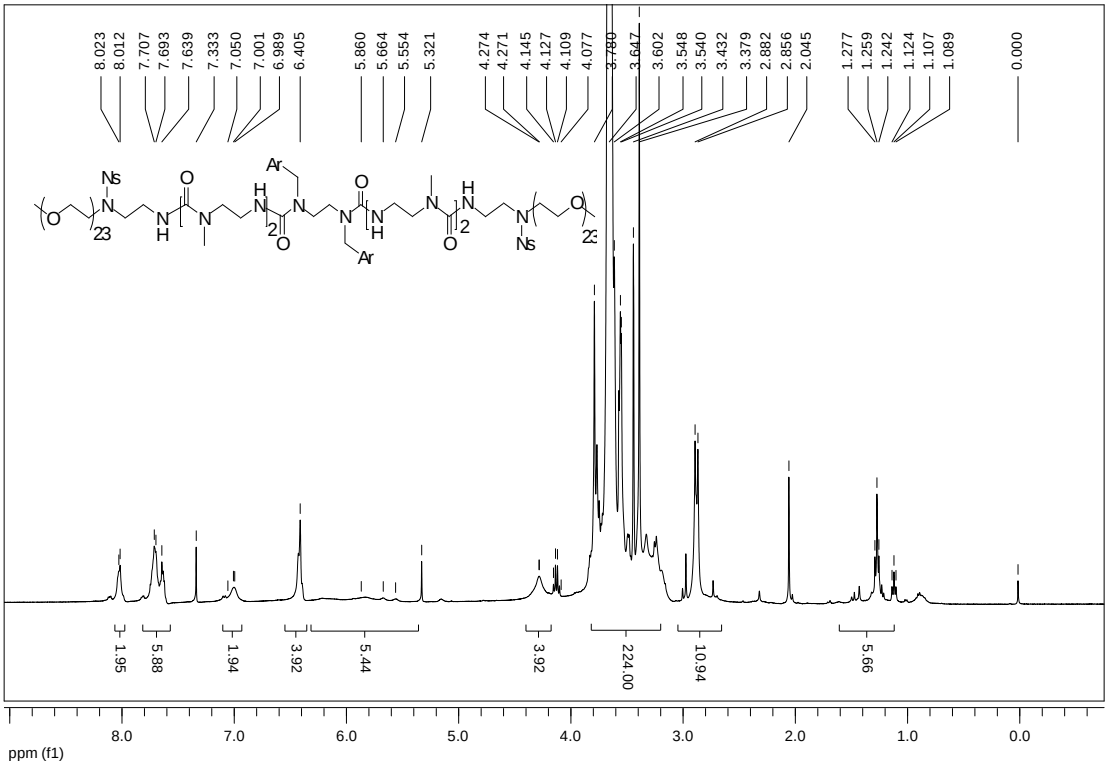

Figure S11. ^{1}H NMR of PEG conjugates **4**

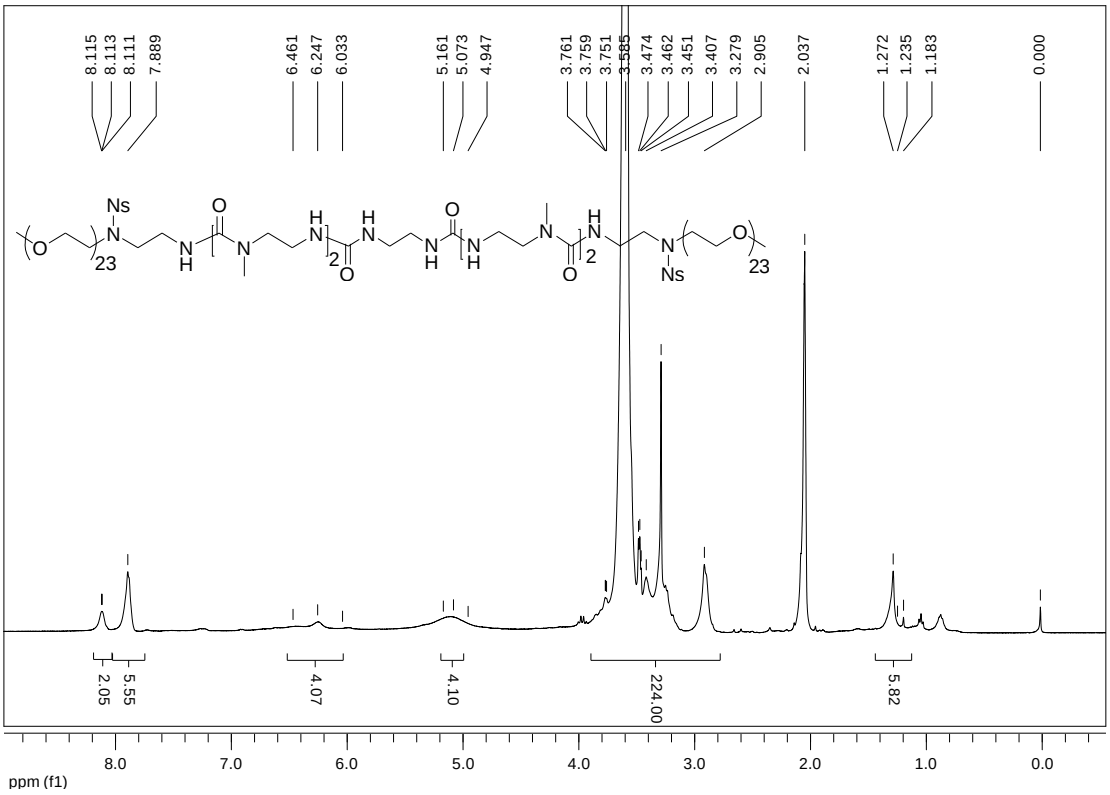

Figure S12. ^{1}H NMR of PEG conjugates **5**

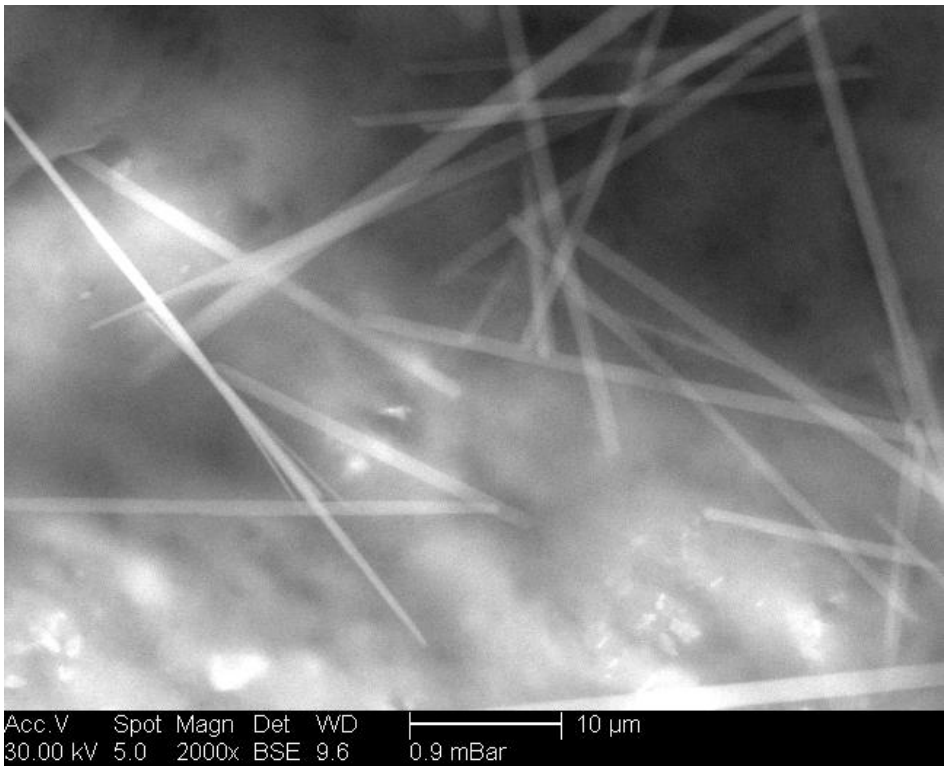

Figure S13. SEM image of fibers resulting from the self-assembly of conjugate **5** in water at lower magnification.

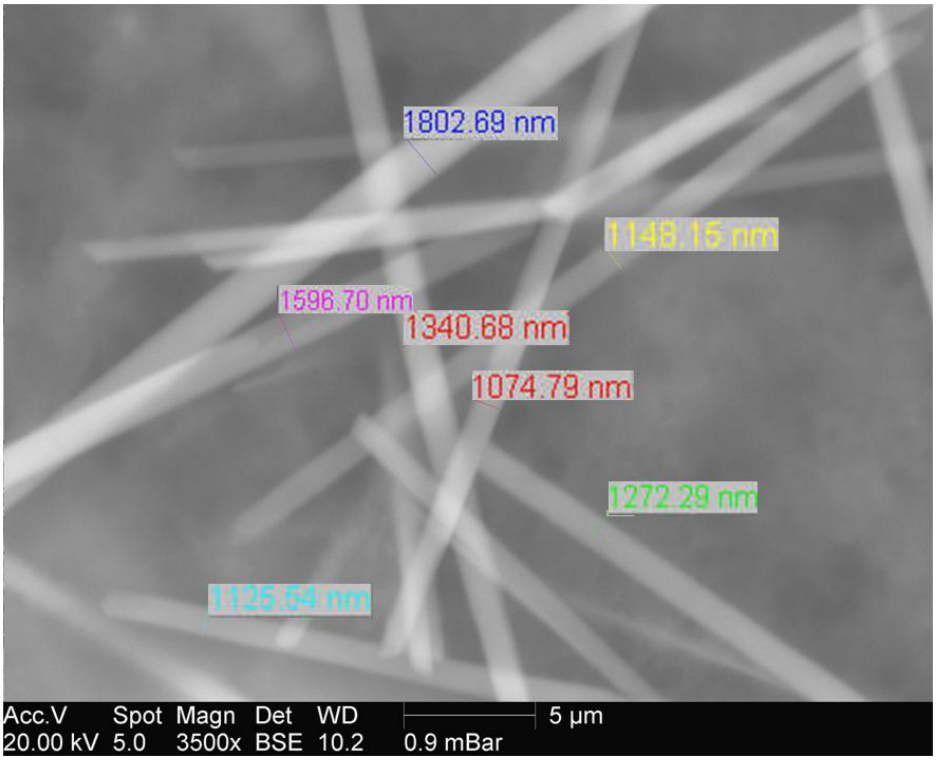

Figure S14. Diameters of fibers resulting from the self-assembly of conjugate **5** in water.