

Supplementary Information

Supramolecular Hydrogels Assembled from Nonionic Poly(ethylene glycol)-*b*-Polypeptide Diblock Containing OEGylated Poly-L-glutamate

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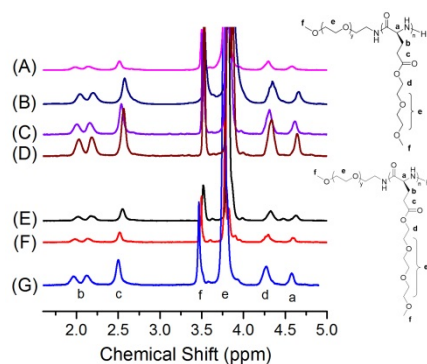


Fig. S1 ¹H NMR spectra of (A~G) P1~P7 in CDCl₃/CF₃COOD v/v 1/1

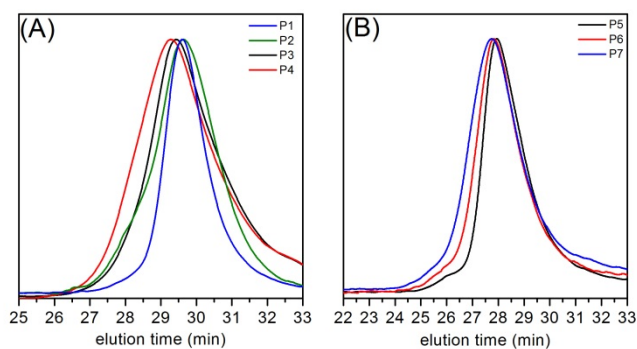


Fig. S2 GPC elution traces for (A) P1~P4 (B) P5~P7

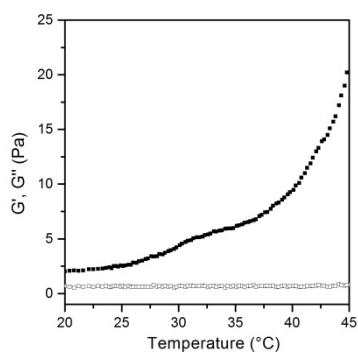


Fig. S3 G' (■) and G'' (□) of sample P7 hydrogel as function of temperature at 3.0 wt %.

Table S1 Critical gelation concentration of PEG-*b*-poly-L-EG₂Glu in water examined at 20 °C and 50 °C

Sample	^{ab} 20 °C, sol	^{ab} 50 °C
P1	7.0 %	pre
P2	4.0 %	pre
P3	3.0 %	pre
P4	2.0 %	pre
P5	4.0 %	gel
P6	2.0 %	sol
	3.0 %	gel
P7	1.5 %	sol
	2.0 %	gel

^a determined by the inverted tube method. ^b sol equals solution, pre equals precipitation.

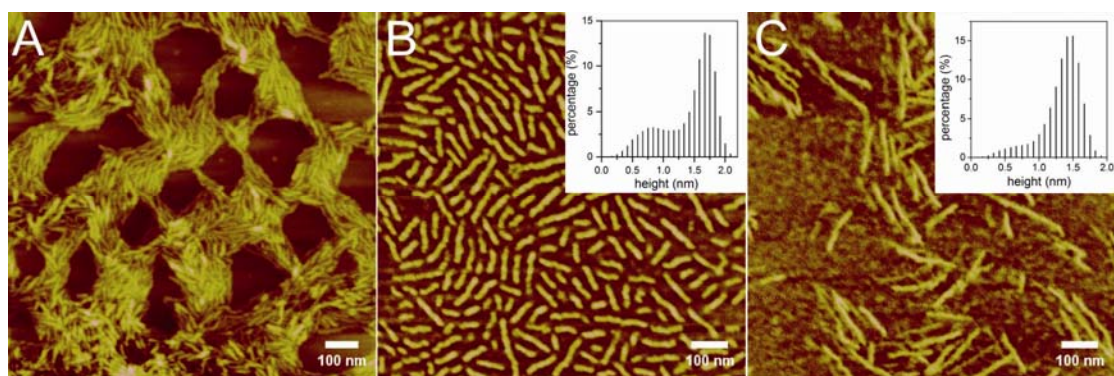


Fig. S4 AFM images of hydrogels samples **(A)** P3, **(B)** P6 and **(C)** P7 at 3.0 wt %. The insets are the height histograms of corresponding samples.

Table S2 The morphology information of nanoribbon assemblies and secondary structure of hydrogel samples at the concentration of 3.0 wt %.

samples	^a height (nm)	^a width (nm)	^b width (nm)	^c helix	^c sheet	^c irregular	^d sheet
P1				0.31	0.19	0.50	
P3	1.4 ± 0.2	9.7 ± 2.9	7.5 ± 1.0				
P4	1.1 ± 0.3	13.0 ± 3.5	9.6 ± 1.4	0.42	0.22	0.36	0.66
P5				0.25	0.30	0.45	
P6	1.4 ± 0.4	11.9 ± 3.9	-				
P7	1.3 ± 0.3	12.5 ± 4.8	-	0.48	0.15	0.39	0.68

^a The mean height was determined from the AFM height histograms and the mean width was determined from width analysis on the NanoScope Analysis software. ^b The mean width was determined from the TEM images by measuring 20 randomly chosen positions. ^c The content of secondary structure was calculated with Provencher & Glockner method using the reference database SP175.¹ ^d The content of β -sheet was calculated from the ratio of peak areas at 1655 cm⁻¹ after the Multiple Peak Fit of the amide I band in FTIR spectra.

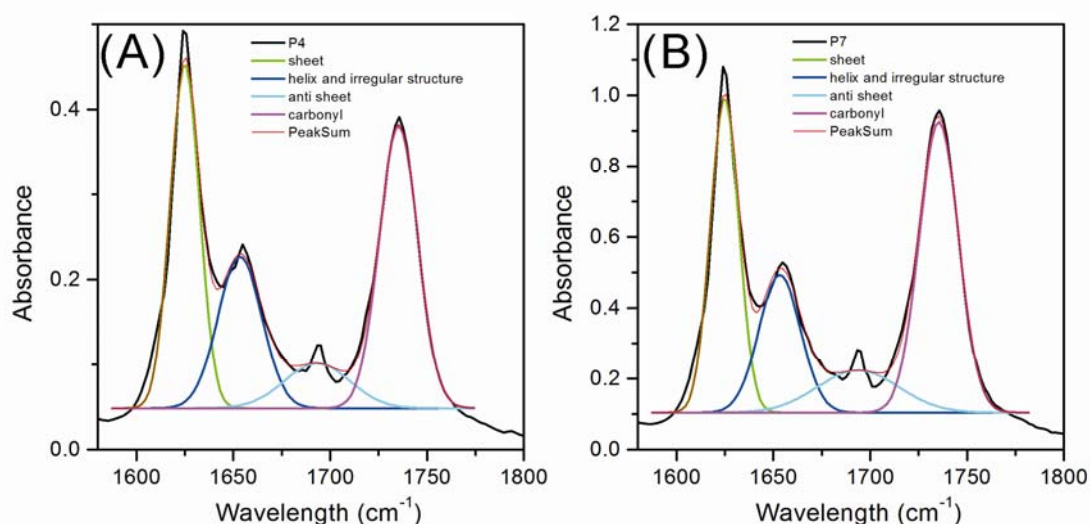


Fig. S5 FTIR spectra of (A) **P4**, (B) **P7** after the Multiple Peak Fit of the amide I bands using Gauss peak function.

Table S3 The sol-gel transition of PEG-*b*-poly-L-EG₂Glu in water examined by the inverted tube method

Sample	concentration	4 °C	20 °C	30 °C	40 °C	50 °C	70 °C
P6	2.0 %	sol	sol	sol	sol	sol	sol
	3.0 %	sol	sol	gel	gel	gel	gel
	4.0 %	gel	gel	gel	gel	gel	gel
	1.5 %	sol	sol	sol	sol	sol	sol
P7	2.0 %	sol	sol	sol	sol	gel	gel
	3.0 %	gel	gel	gel	gel	gel	gel

Reference

- 1 J. G. Lees, A. J. Miles, F. Wien and B. A. Wallace, *Bioinformatics*, 2006, **22**, 1955-1962.