Supporting information

Disulphide Crosslinked Star Block Copolypeptide Hydrogels: Influence of Block Sequence Order on Hydrogel Properties

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Table S1. Molecular weight and polydispersity of polypeptides.

polymer	M_n^{SEC}	$M_n^{\text{theor.}}$	dispersity $Đ^{\text{SEC}}$
32-PZLL$_{40}$-b-OBLC$_5$	321 kDa	366 kDa	1.17
32-OBLC$_5$-b-PZLL$_{40}$	346 kDa	366 kDa	1.11
64-OBLC$_5$-b-PZLL$_{40}$	714 kDa	733 kDa	1.13
64-PZLL$_{40}$	640 kDa	671 kDa	1.13
1-PBLC$_{50}$-b-PZLL$_{400}$	103 kDa	114 kDa	1.32
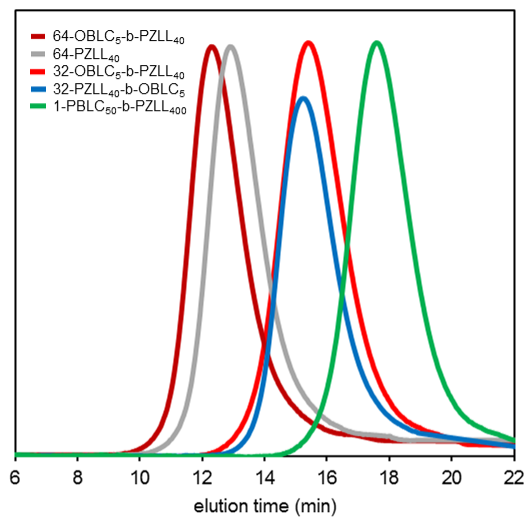
Fig. S1. SEC traces of homopolypeptide and copolypeptides.
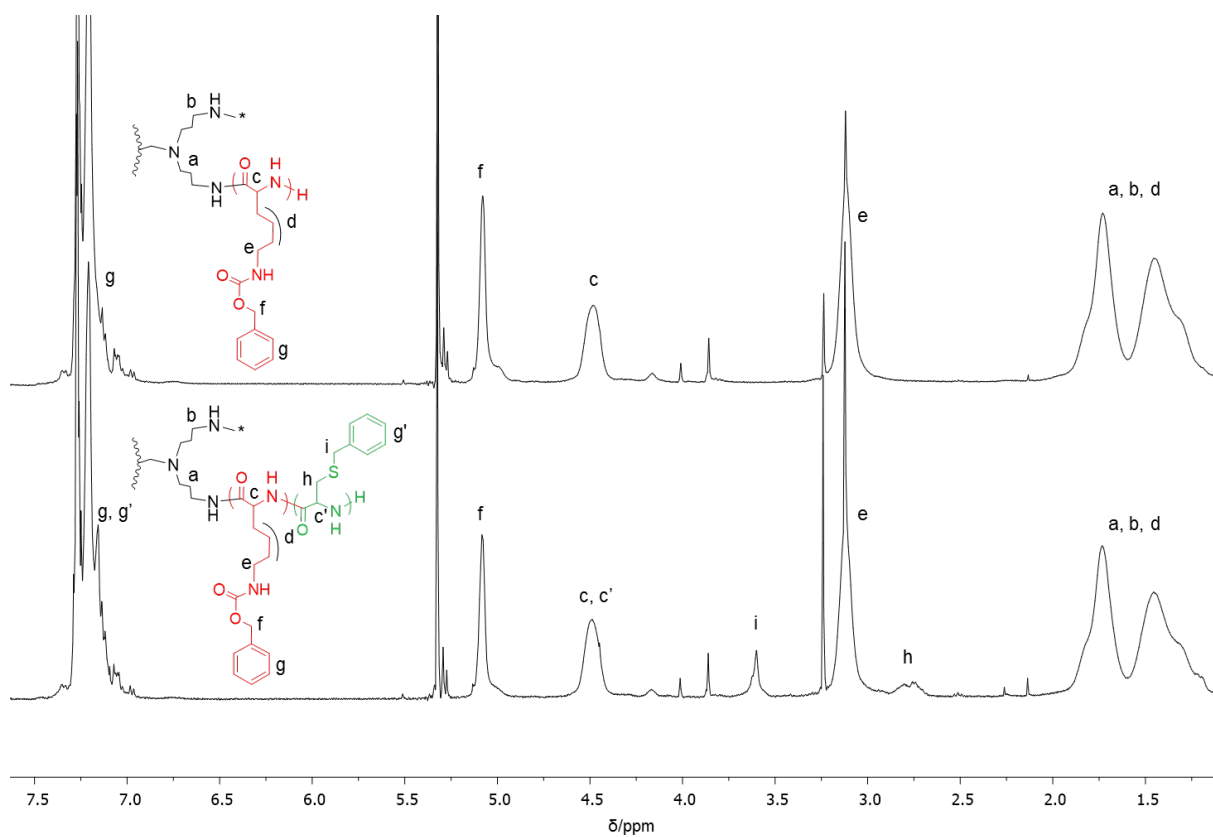
Fig. S2. ^{1}H-NMR spectra of 32-PZLL$_{40}$ and 32-PZLL$_{40}$-b-OBLC$_5$ in TFA-d.
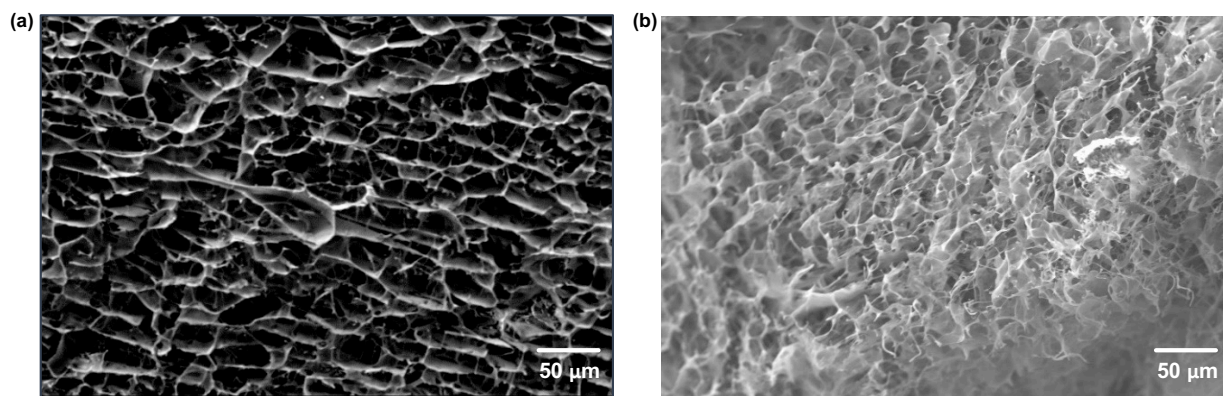
Fig. S3. Scanning electron microscope (SEM) micrograph from cross section of (a) 32-OLC$_5$-b-PLL$_{40}$ hydrogel and (b) 32-PLL$_{40}$-b-OLC$_5$

ν(C=O)
1647 cm^{-1}

ν(N-H)
1532 cm^{-1}
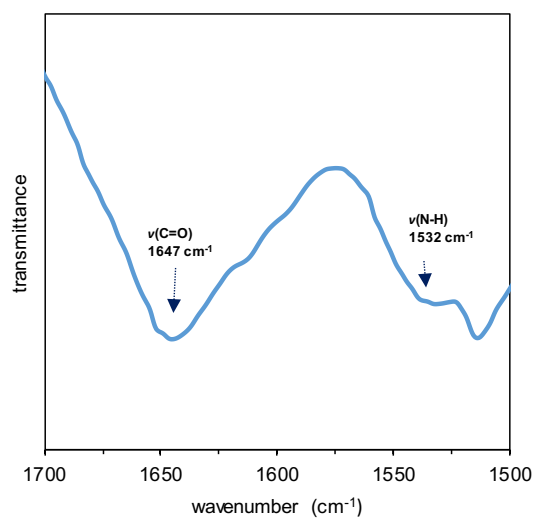
transmittance

wavenumber (cm^{-1})

Fig. S4. FT-IR spectra of lyophilised 64-PLL$_{40}$ star polypeptide.
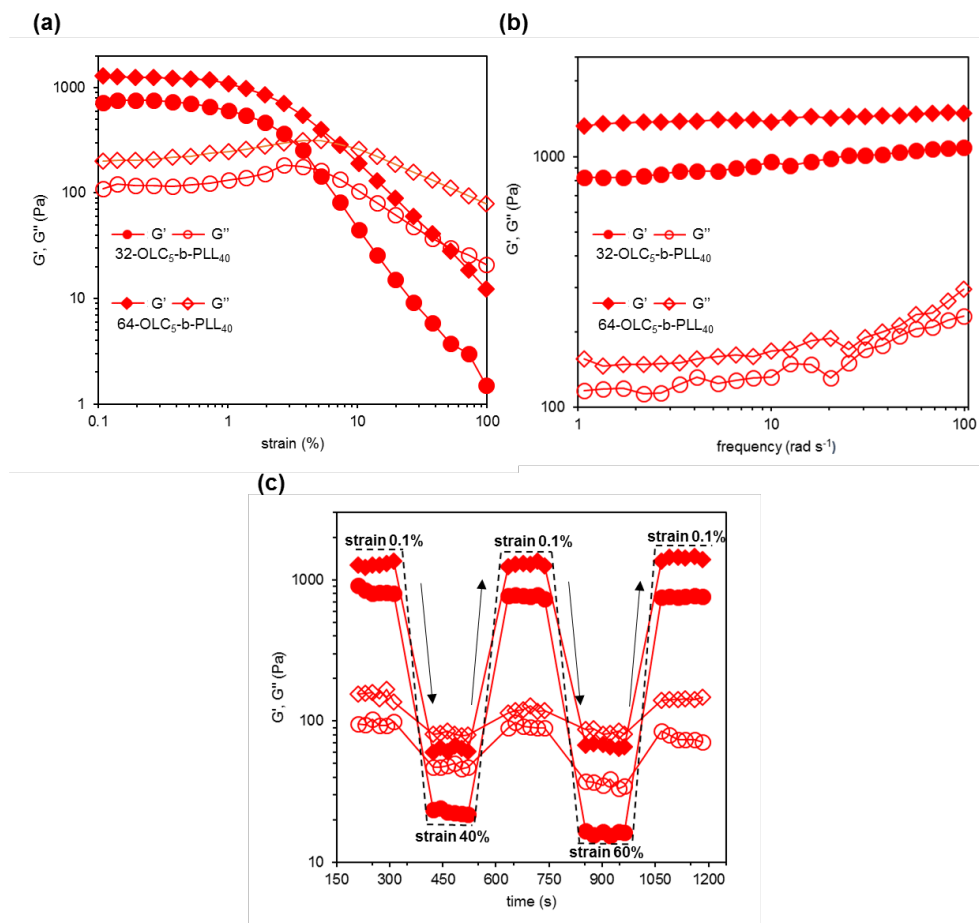
Fig. S5. Rheological properties of 64 and 32 arm core crosslinked copolypeptides hydrogels. Amplitude sweep (a) of core disulphide crosslinked star copolypeptides hydrogels with storage and loss modulus as a function of increasing strain and constant frequency (sheared at γ = 0.1–100, ω = 1 rad s^{-1}). Frequency sweep (b) of core disulphide crosslinked star copolypeptides hydrogels with storage and loss modulus as a function of increasing angular frequency and constant strain (sheared at γ = 0.1, ω = 1–100 rad s^{-1}). Stepping strain sweep (c) of core disulphide crosslinked star copolypeptides (at constant frequency ω = 1 rad s^{-1}).