

Supporting information for:

**Multi-responsive Hydrogels Derived from the Self-assembly of
Tethered Allyl-functionalized Racemic Oligopeptides**

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Table S1 Solubility studies of ODLAG₆-*b*-PEG₆₈-*b*-ODLAG₆ in different organic solvents.

Solvent ^a	State ^b
DMF	Gel
DMSO	Gel
Methanol	Gel
TFA	Solution
CHCl ₃	Suspension
Toluene	Suspension
Ethyl acetate	Suspension
Hexane	Suspension
THF	Suspension
Isopropanol	Suspension

^a The concentration of ODLAG₆-*b*-PEG₆₈-*b*-ODLAG₆ was 5.0 wt% in each solvent.

^b Observed after resting in room temperature for 72 h.

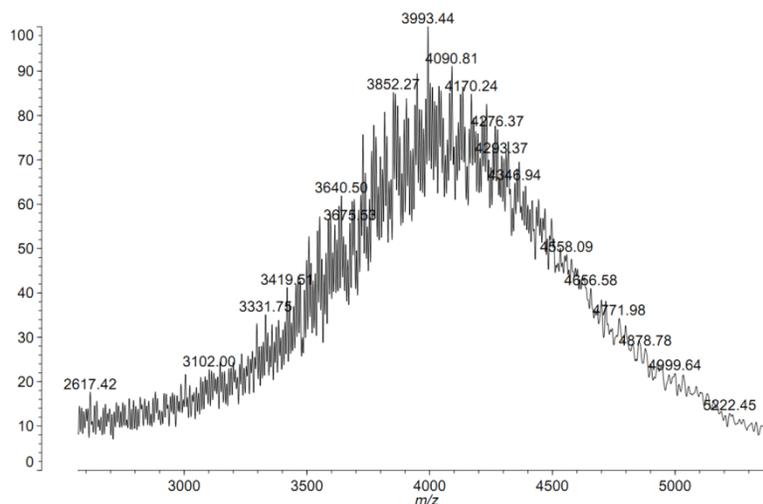


Fig. S1 MALDI-TOF mass spectrum of ODLAG₆-*b*-PEG₆₈-*b*-ODLAG₆.

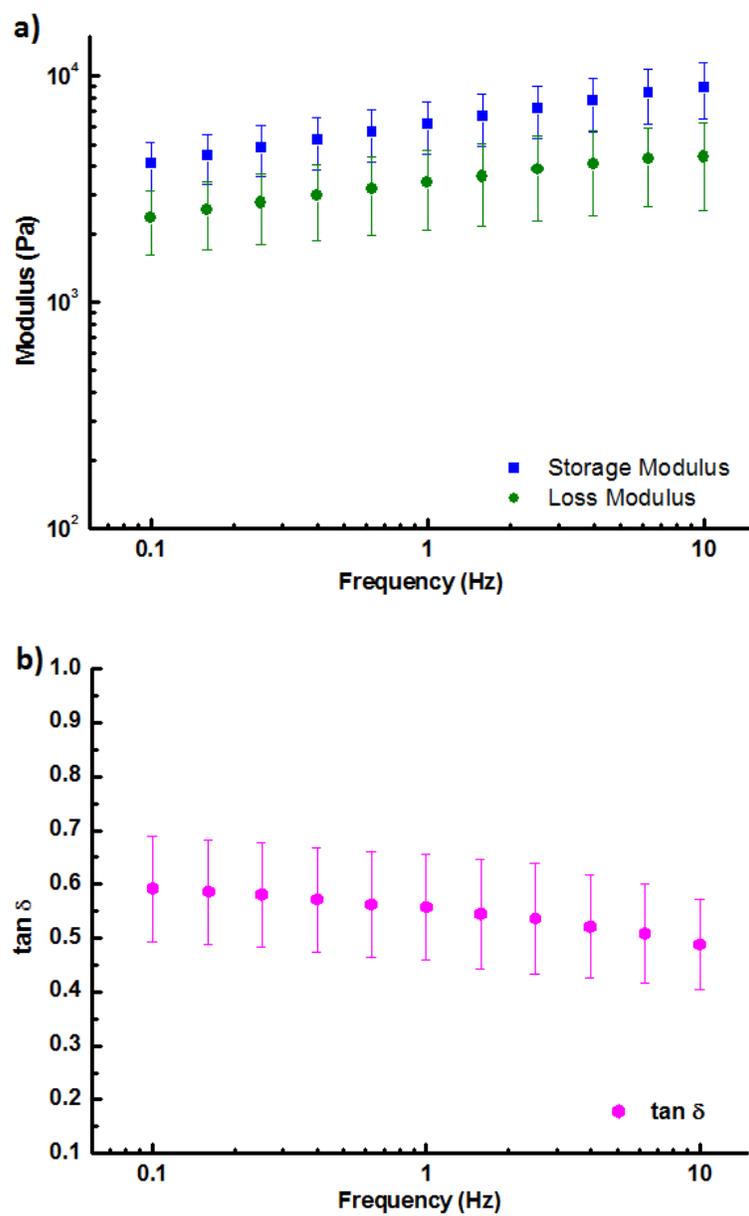


Fig. S2 (a) Storage and loss moduli, and (b) $\tan(\delta)$ of ODLAG₆-*b*-PEG₆₈-*b*-ODLAG₆ hydrogel (5 wt%) as a function of frequency conducted by DMA at room temperature.

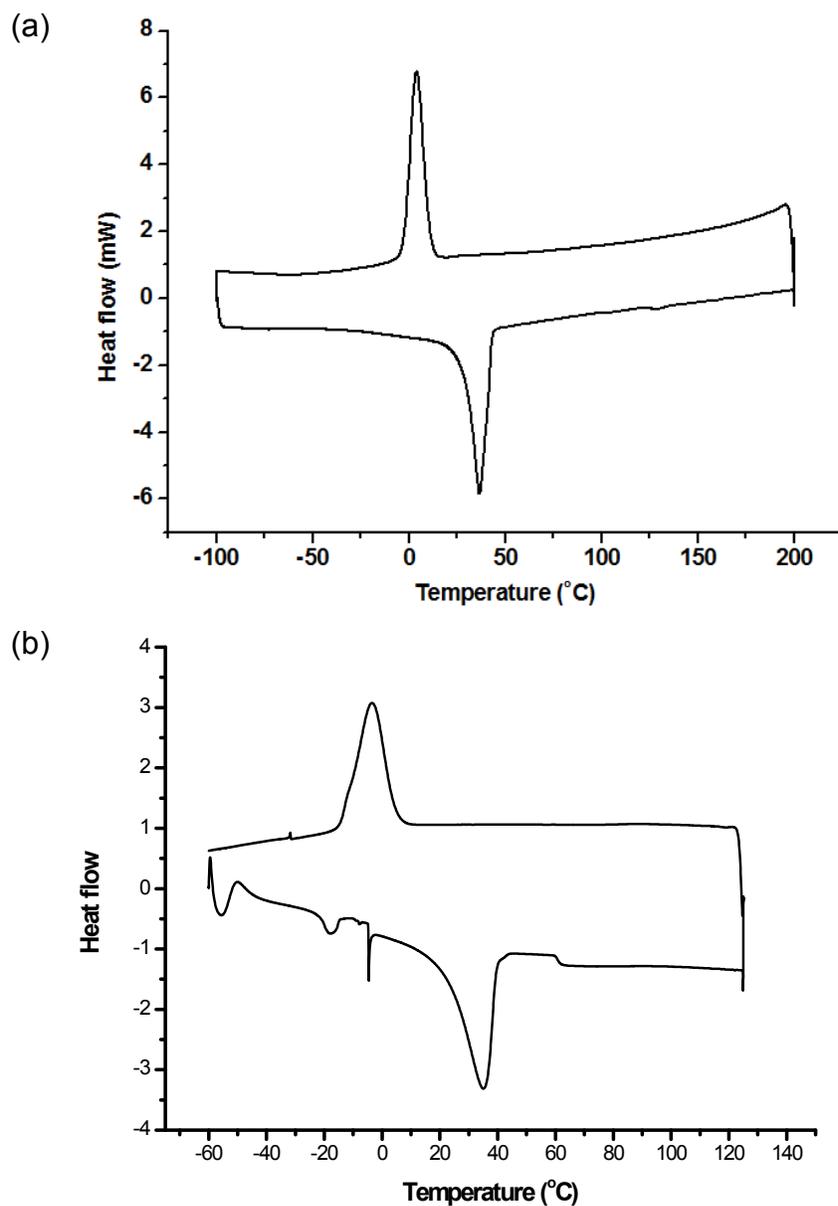


Fig. S3 (a) DSC trace of ODLAG₆-*b*-PEG₆₈-*b*-ODLAG₆ in the solid state. The samples were heated from -100 °C to 200 °C and cooled back to -100 °C with both heating and cooling rates of 10 °C/min. The third heating and cooling traces were shown here. (b) DSC trace of ODLAG₆-*b*-PEG₆₈-*b*-ODLAG₆ in the solid state, after rapid cooling above the T_m . The sample was removed from the DSC at 125 °C, immersed into liquid nitrogen and returned into the DSC during the second cycle. The third heating and cooling traces are shown here.

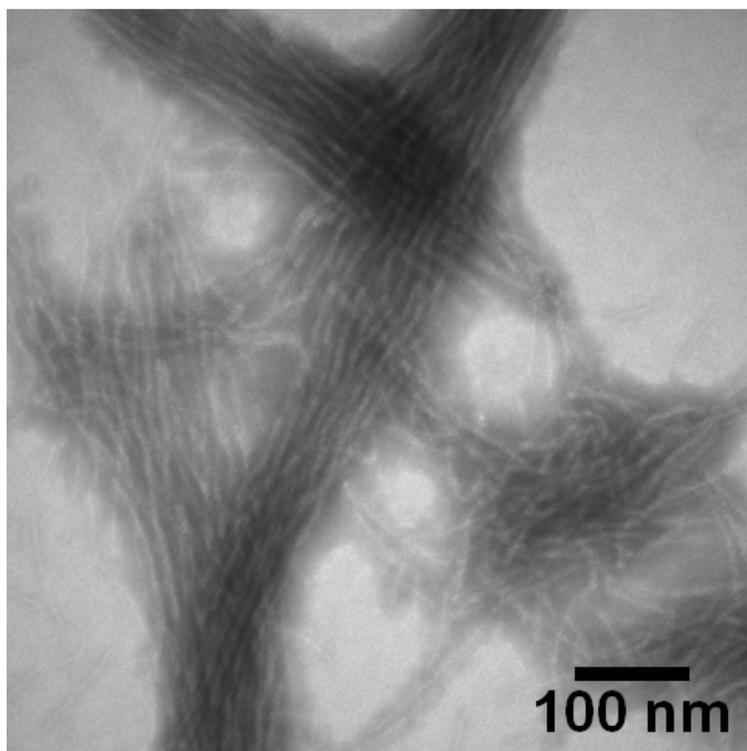


Fig. S4 TEM image of ODLAG₆-*b*-PEG₆₈-*b*-ODLAG₆ hydrogel.

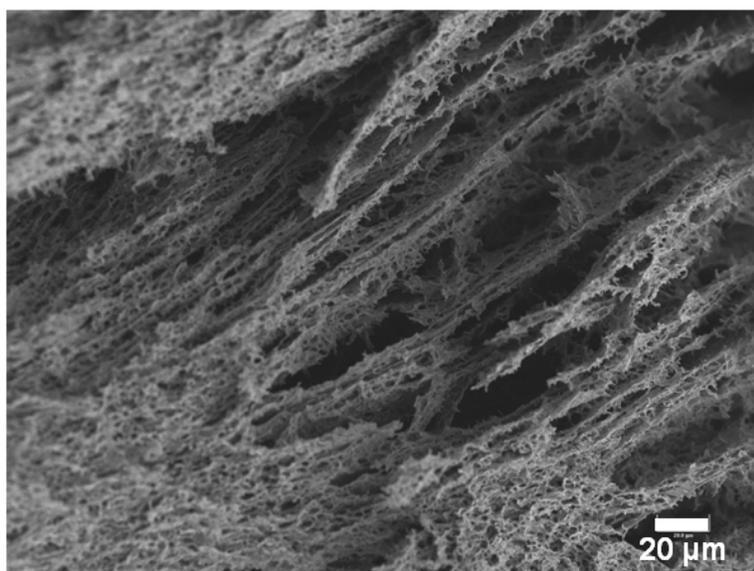


Fig. S5 SEM image of ODLAG₆-*b*-PEG₆₈-*b*-ODLAG₆ hydrogel, after slight stretching to visualize internal features.