Electronic Supplementary Material (ESI) for Soft Matter.

Supporting information

Evolution of mechanics in α-helical peptide conjugated linear- and star-block PEG

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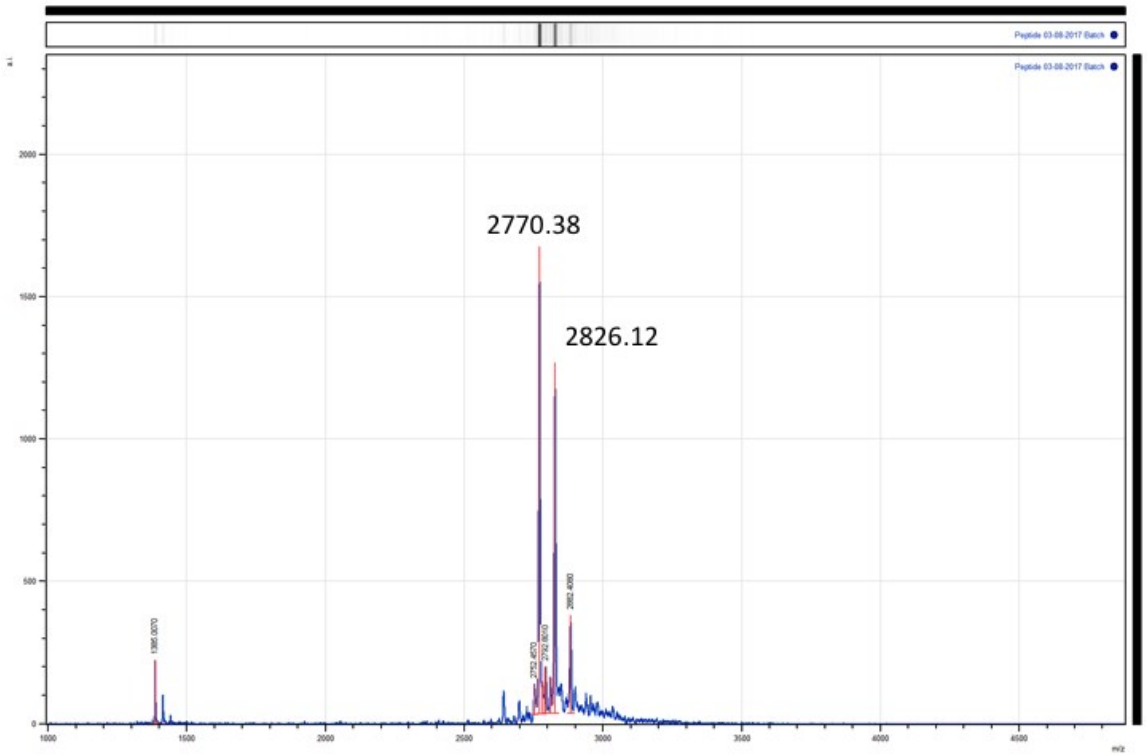

Figure S1. MALDI Characterization of peptide EKAEKLLKKLLKAWEKLLEKAEK (calculated molecular weight = 2770.35)

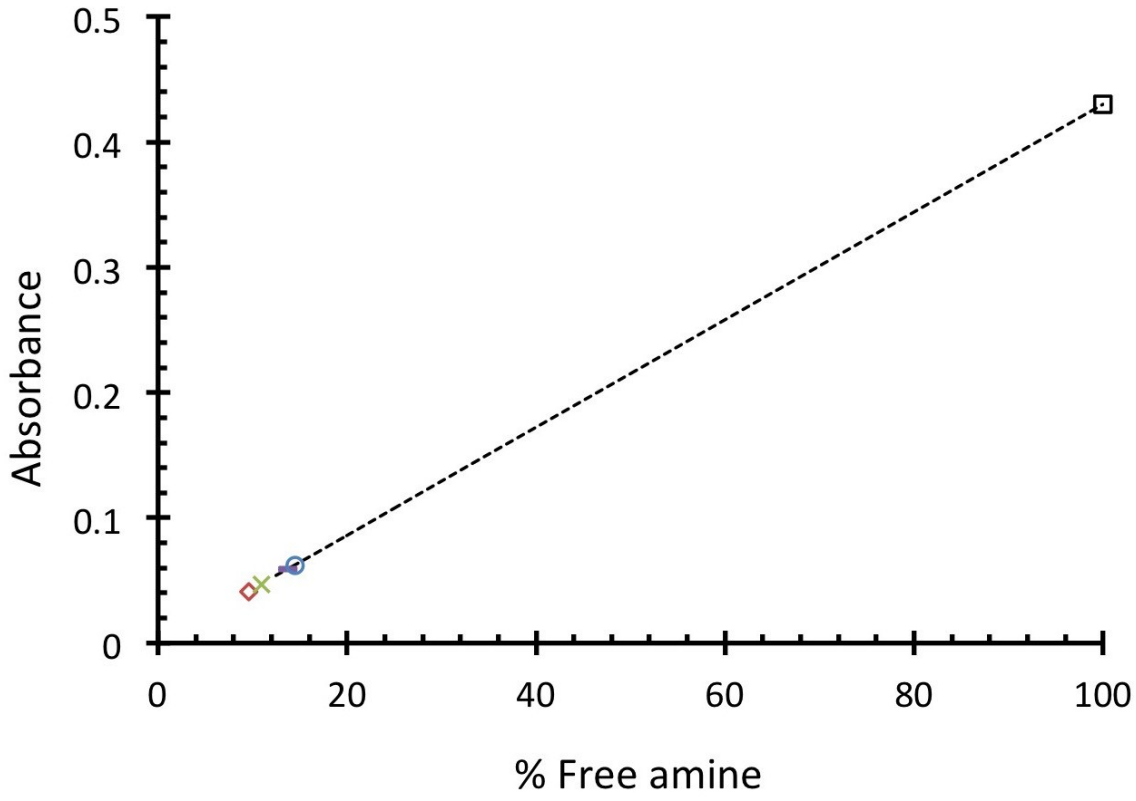

Figure S2. UV-vis spectroscopy for free peptide and peptide bioconjugates. Free amine absorbance of the unconjugated peptide was normalized against conjugated peptides to determine the extent the PEG-peptide tethering for the following molecules PEG 2,000 (blue circle), PEG 5,000 (purple dash), star PEG 10,000 (green X) and star PEG 20,000 (red diamond)

Sample (300 mg/ml)	Volume used (μl) for Kaiser test	Absorbance	Extent of Conjugation
Peptide	2.00	0.413A	N/A
Peptide-PEG 2,000-Peptide	2.72	0.062A	85.55%
Peptide-PEG 5,000-Peptide	3.8	0.059A	86.25%
Peptide-4 arm-PEG 10,000	3.8	0.047A	89.04%
Peptide-4 arm-PEG 20,000	5.6	0.041A	90.44%

Table S1. Extent of Conjugation for tethered Peptide Amphiphiles. The varying molecular weights of each Peptide-PEGylated sample, lead to polymer solutions for spectroscopy and microrheology study that required different volumes from 300 mg/ml concentrated stock solutions of each molecule.

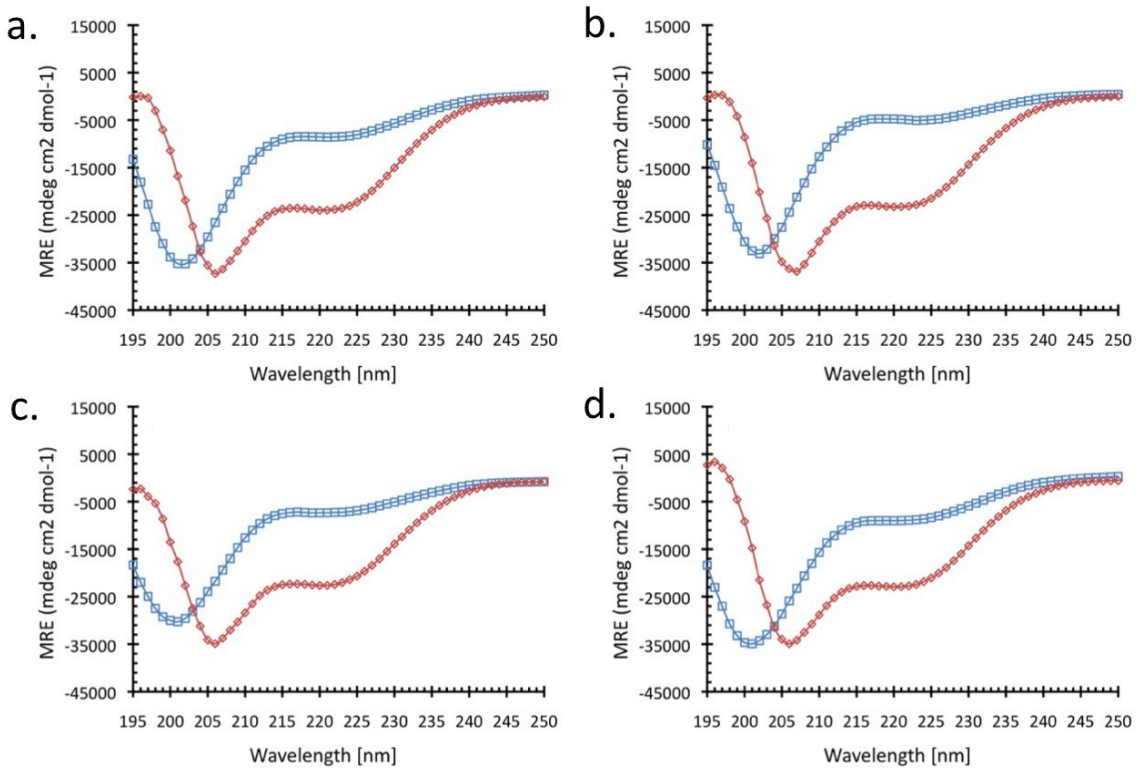

Figure S3. Circular Dichroism showing random coil and helix folded assemblies for Linear PEGylated peptide constructs (S3a & S3b) and Star PEGylated peptide constructs (S3c & S3d) at 0M NaCl (blue) and 3.5M NaCl (red) concentrations.

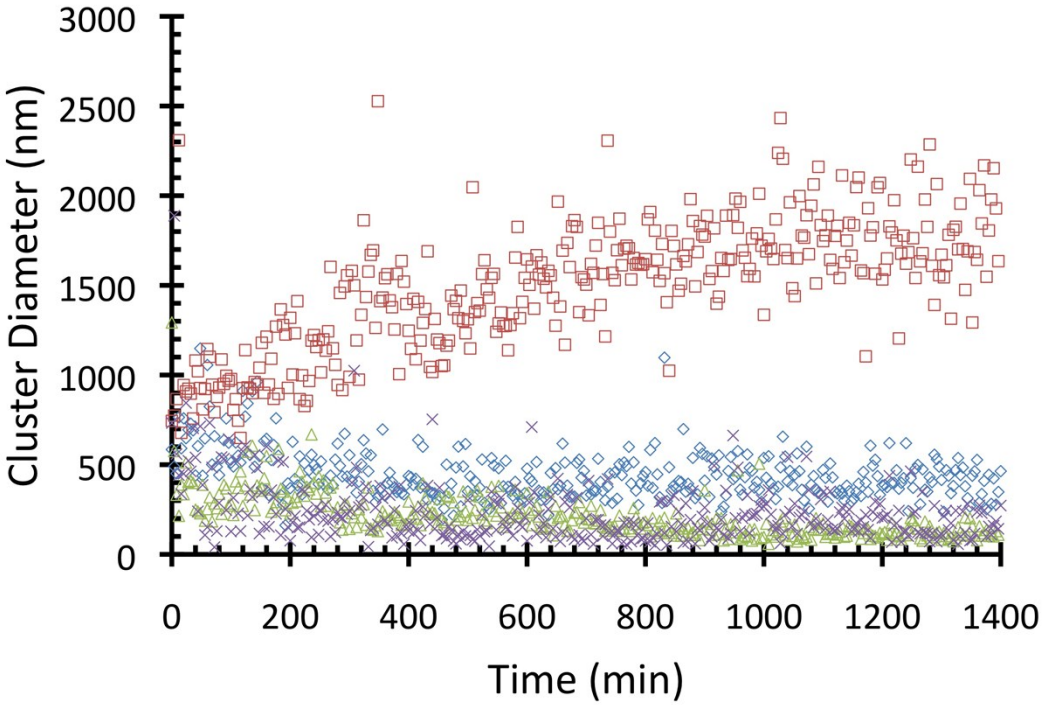

Figure S4. Dynamic light scattering showing cluster diameter v. time for linear PEG 2,000 (blue), linear PEG 5,000 (red), star PEG 10,000 (green), and star PEG 20,000 (purple). Linear molecular concentrations were 0.13mM and star molecular concentrations were 0.065mM. Sodium chloride concentrations were at 3.5M NaCl.

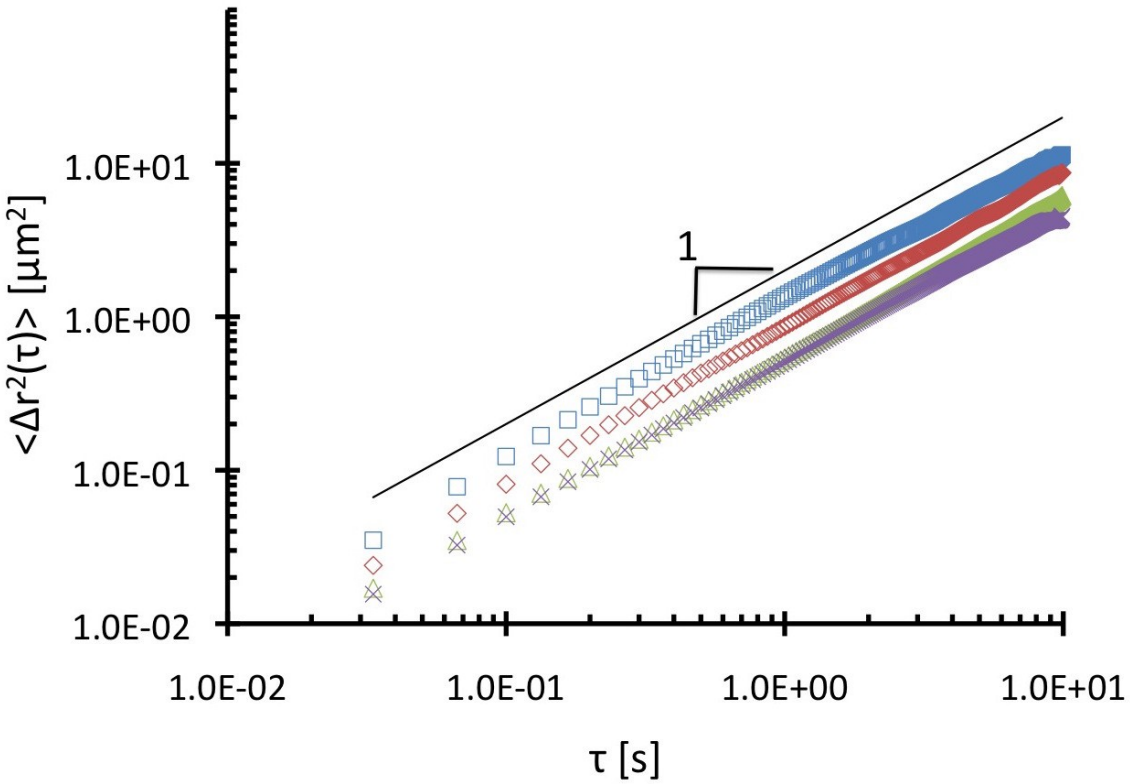

Figure S5. Particle MSD v. Tau for linear PEG 2,000 (blue), linear PEG 5,000 (red), star PEG 10,000 (green), and star PEG 20,000 (purple). All PEG polymers without peptide conjugation show only viscous properties.