

Electronic Supplementary Information

Tweaking of Peripheral Moieties in Catalytic Amyloid for Modulating Hydrogel Strength and Hydrolase Activity

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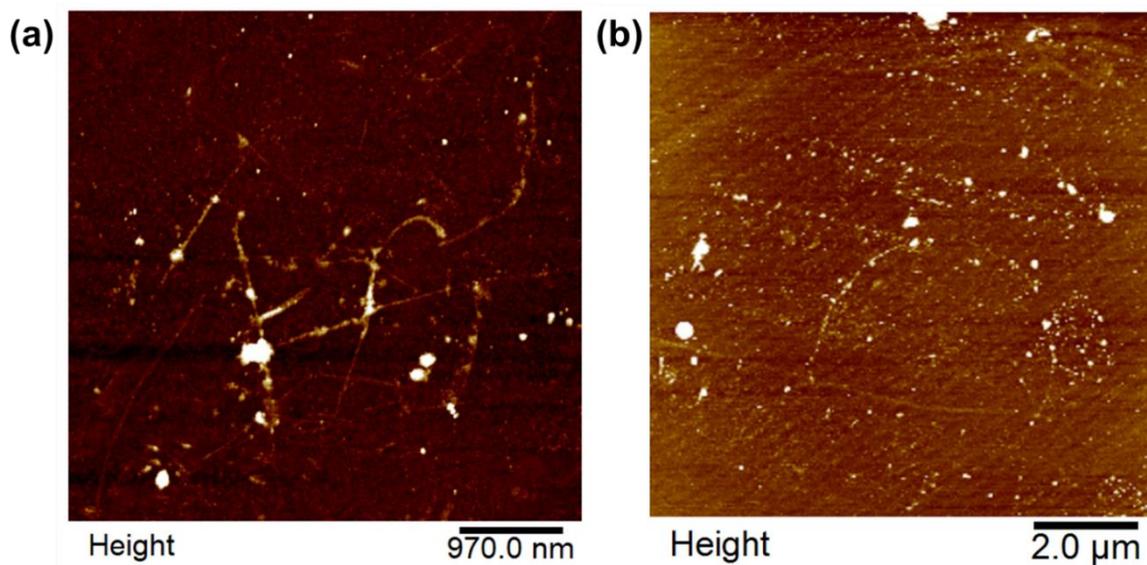


Figure S1: AFM images of 1 (concentration 0.001 mM) in (a) ethanol-water and (b) 10 % DMSO-water at initial stages of the assembly. Initiation of fibrillar growth can be seen in case of ethanol-water medium; however, in presence of DMSO, no fibrillar assembly is noted, rather presence of nanoparticles is observed.

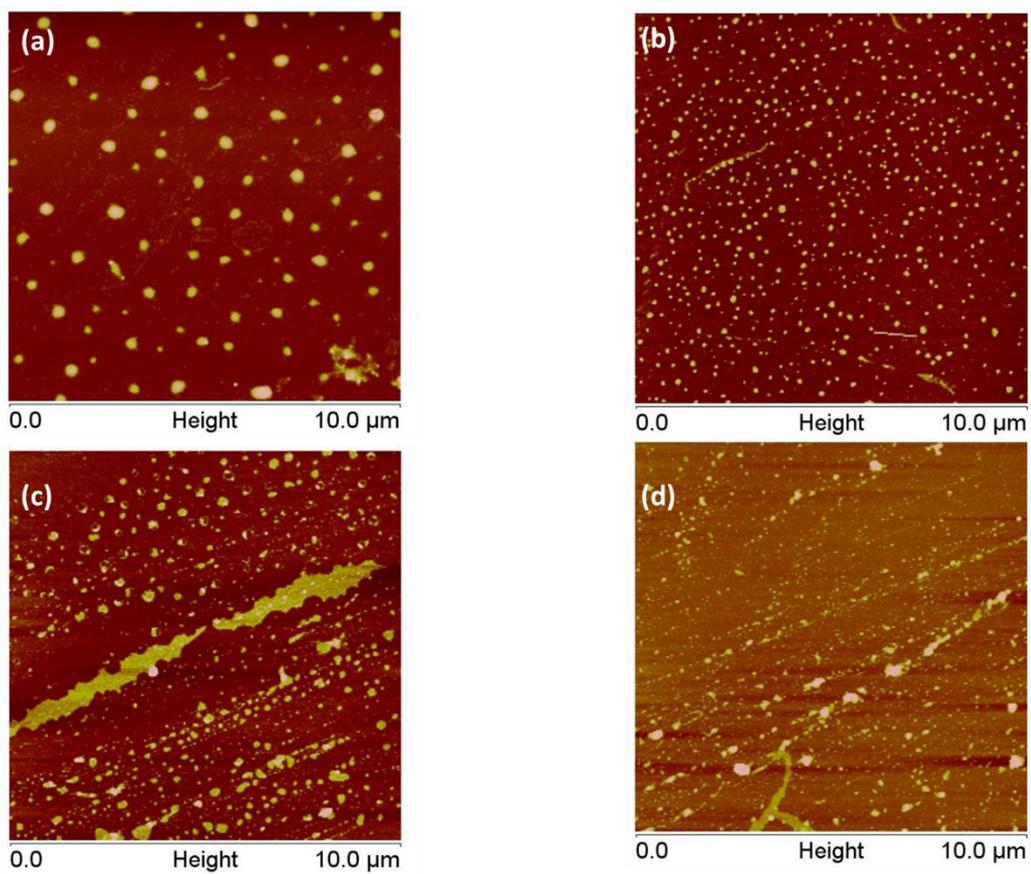


Figure S2: AFM images of (a) 1+Cu, (b) 1+Zn, (c) 2+Cu and (d) 2+Zn in 10% DMSO-water (0.01 mM) showing presence of nanoparticles and lack of fibrillar assembly.

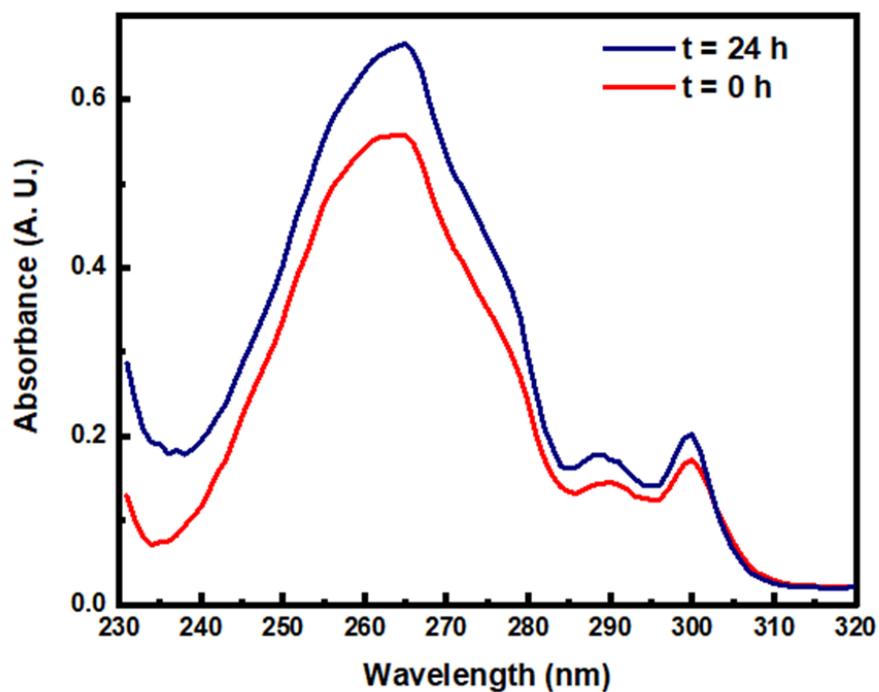


Figure S3: UV-vis absorption spectra of **1**, for freshly prepared solution in EtOH/water and after 24-hour of incubation period showing increase in intensity upon assembly. A slight redshift in the absorption maximum near 265 nm is also noted.

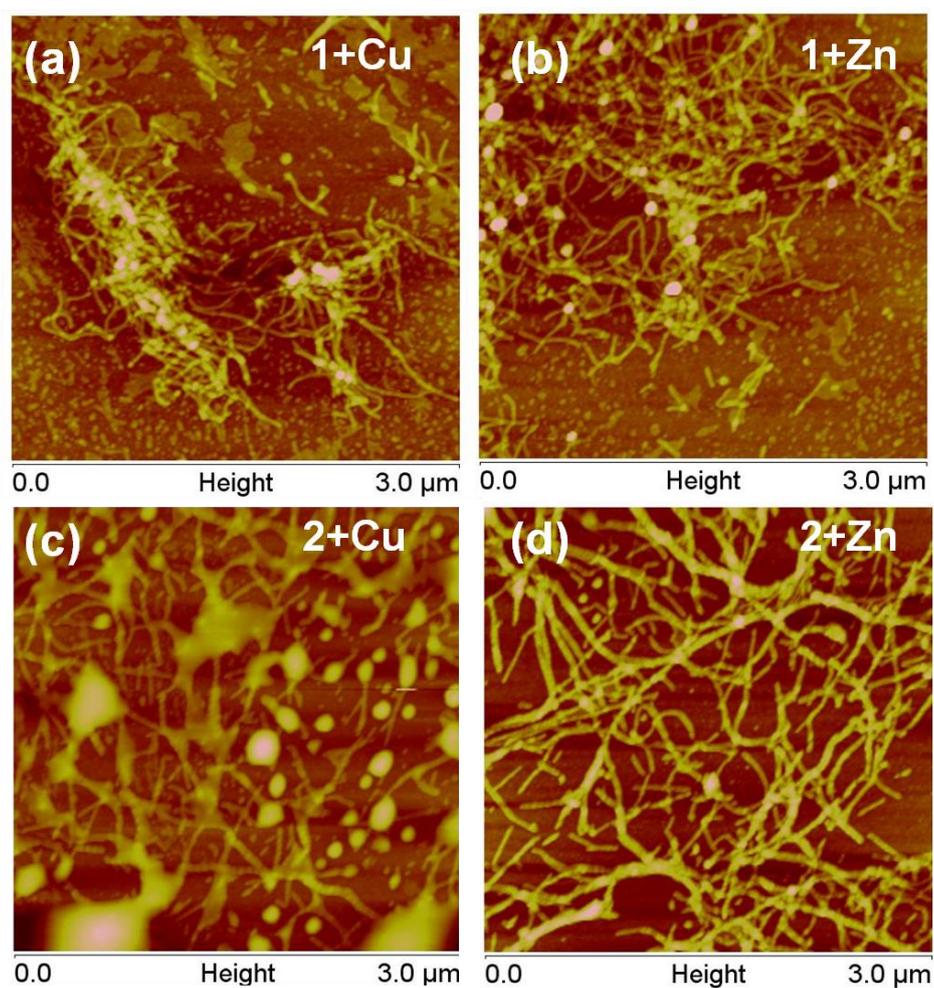


Figure S4: AFM images of (a) 1+Cu, (b) 1+Zn, (c) 2+Cu and (d) 2+Zn in EtOH/water showing formation of fibrillar morphology upon co-assembly. Diminished network density for 1 and enhanced density for 2 upon self-assembly with metals is observed (as compared to without metal ions).

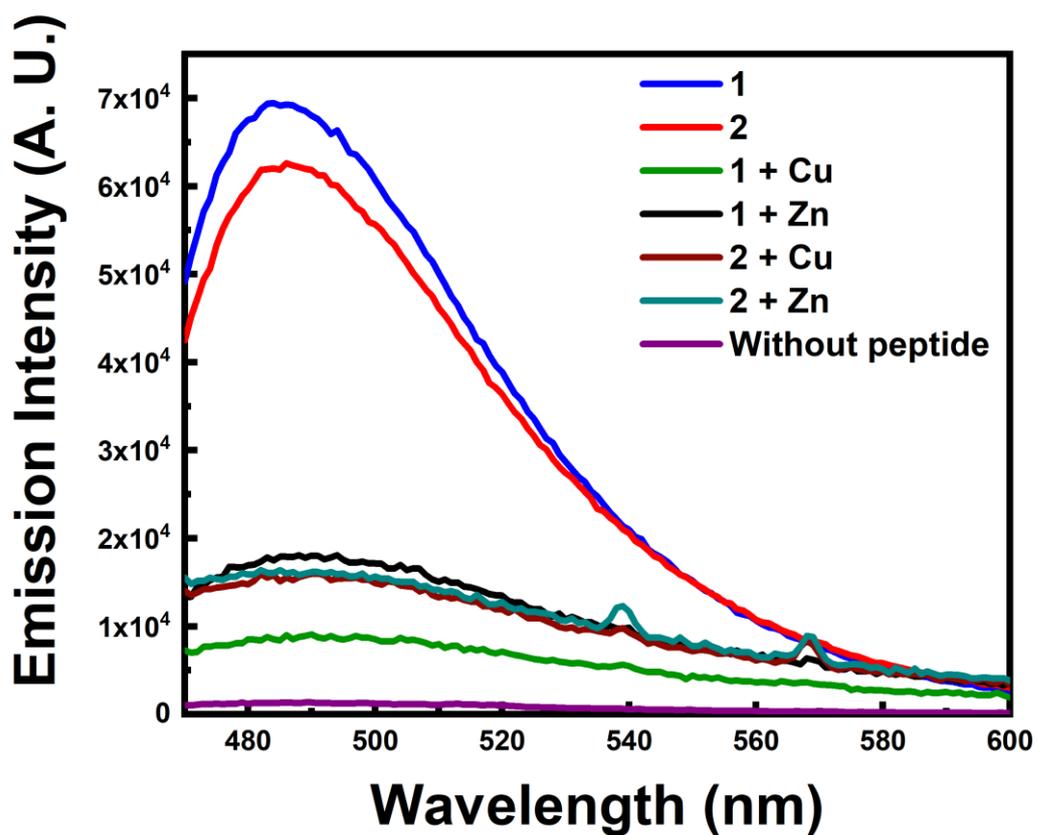


Figure S5: ThT fluorescence emission spectra of samples with and without metal ions and that of ThT in water not bound to any self-assembled peptide.

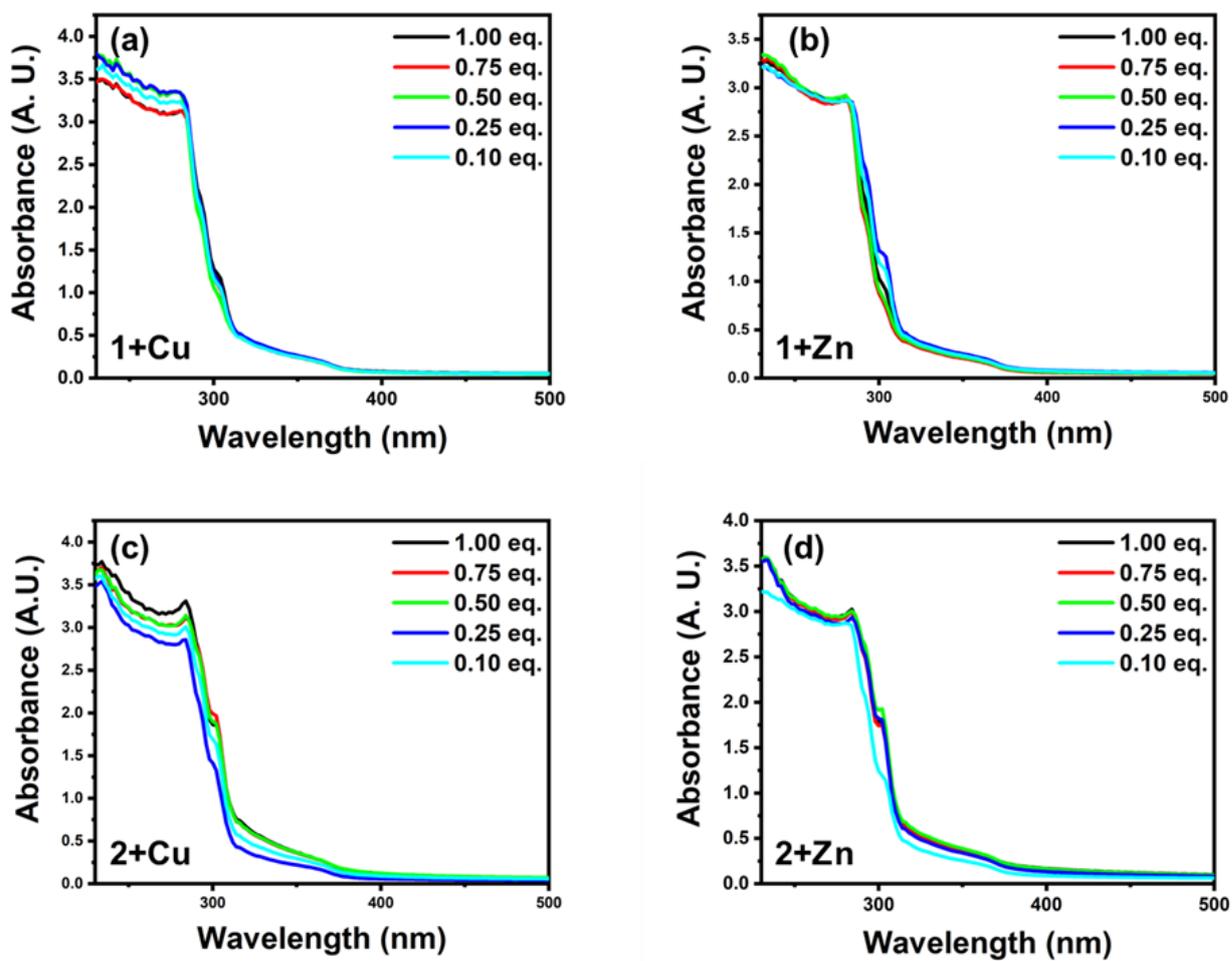


Figure S6: UV-vis spectrophotometric titration of peptides 1 and 2 with different concentrations of Cu(II) and Zn(II).

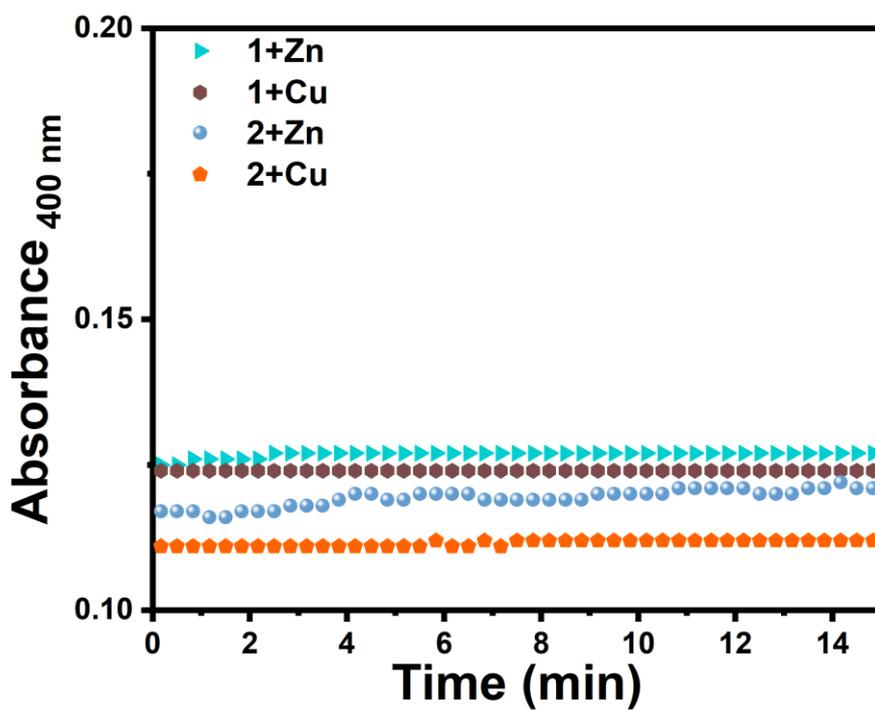


Figure S7: Absorbance *vs.* time plot for *p*-NPA hydrolysis by co-assemblies of **1** and **2** with metals in DMSO, showing diminished catalytic activity due to lack of nanofibrous assembly in this unsuitable solvent.

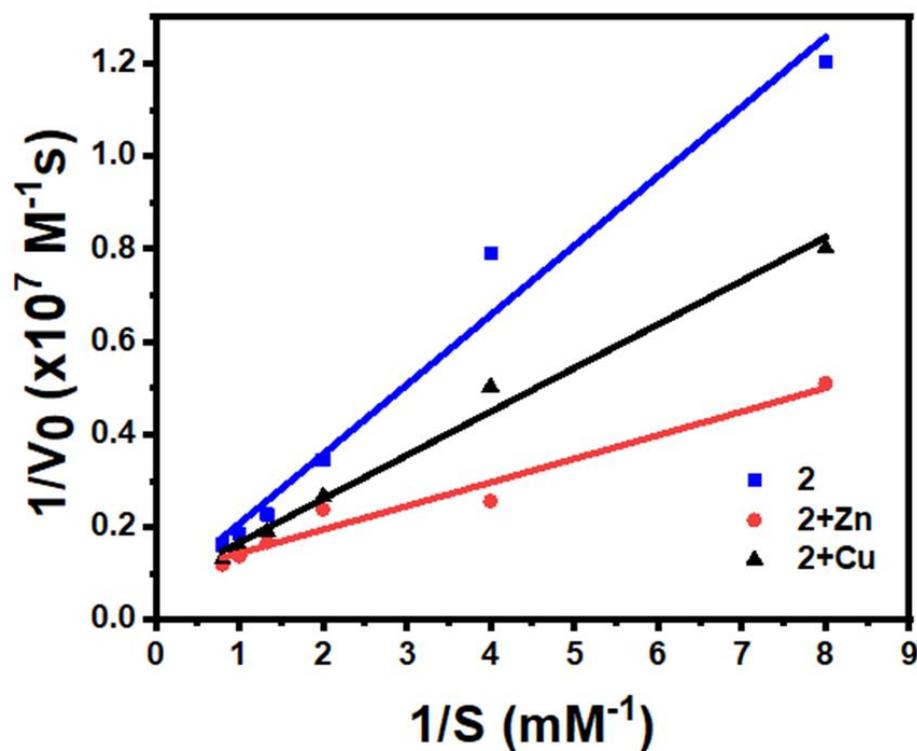


Figure S8: Lineweaver-Burk plots for the catalysts **2**, **2+Cu** and **2+Zn** . The values of y-axis intercept and slope yields the values of $1/V_{max}$ and K_M/V_{max} respectively.

Table S1: Kinetic parameters obtained from Lineweaver-Burk plots for **2**, **2+Cu** and **2+Zn**

Sample	V_{max} (M ⁻¹ s ⁻¹)	K_M (mM)	k_{cat}/K_M (mM ⁻¹ s ⁻¹)	R^2
2	17.27	2.59	26.68	0.975
2+Cu	13.67	1.29	42.51	0.989
2+Zn	10.73	0.55	78.57	0.963