

Supporting Information

Co-assembly of aromatic dipeptides into spherical structures that are similar in morphology to red and white blood cells

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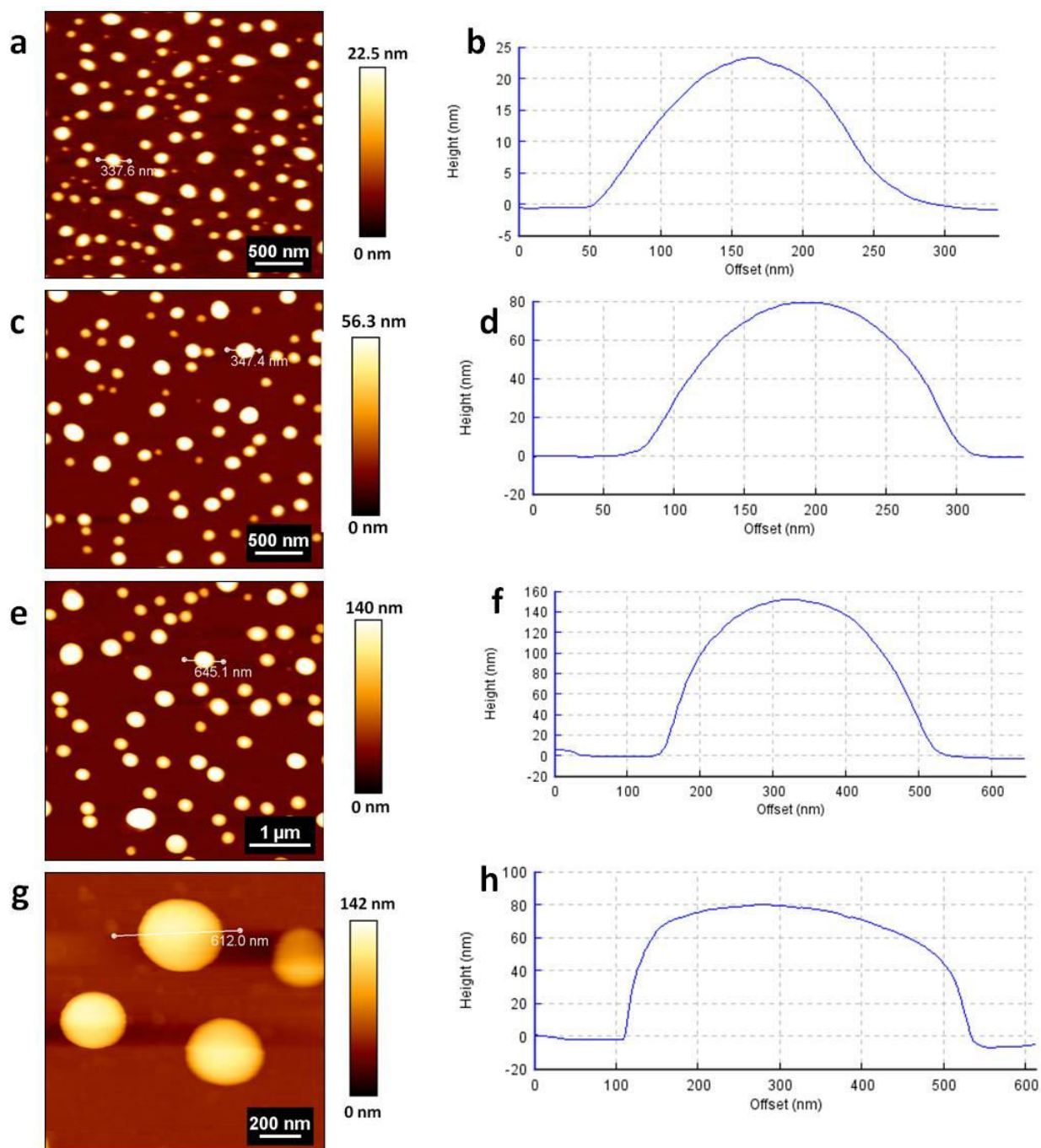


Figure S1. AFM images and height analysis of the self-assembled nanostructure formed by peptide **1** at different concentrations (a,b) 0.25 mg/mL, (c,d) 0.5 mg/ mL (e,f) 1.0 mg/mL (g,h) 2.0 mg/mL.

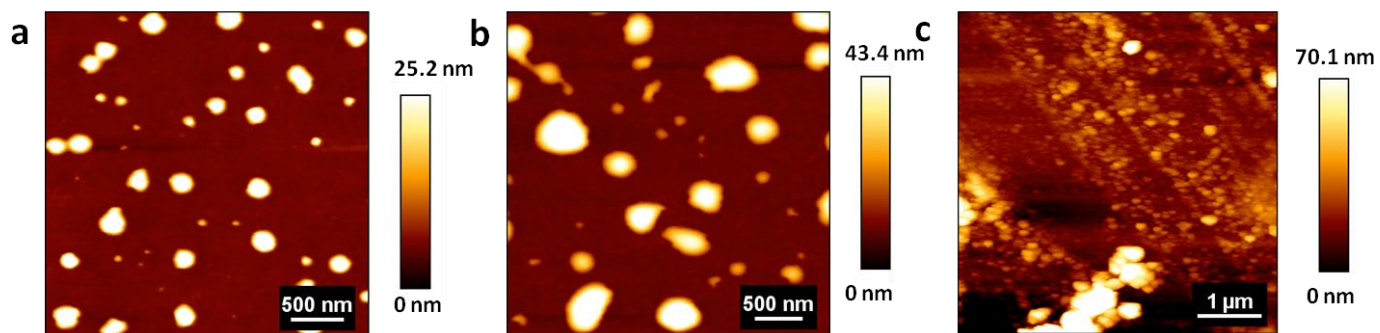


Figure S2. AFM topography images of self-assembled structures formed by peptide **2** at (a) 0.25 mg/mL (b) 0.5 mg/mL and (c) 1.0 mg/mL.

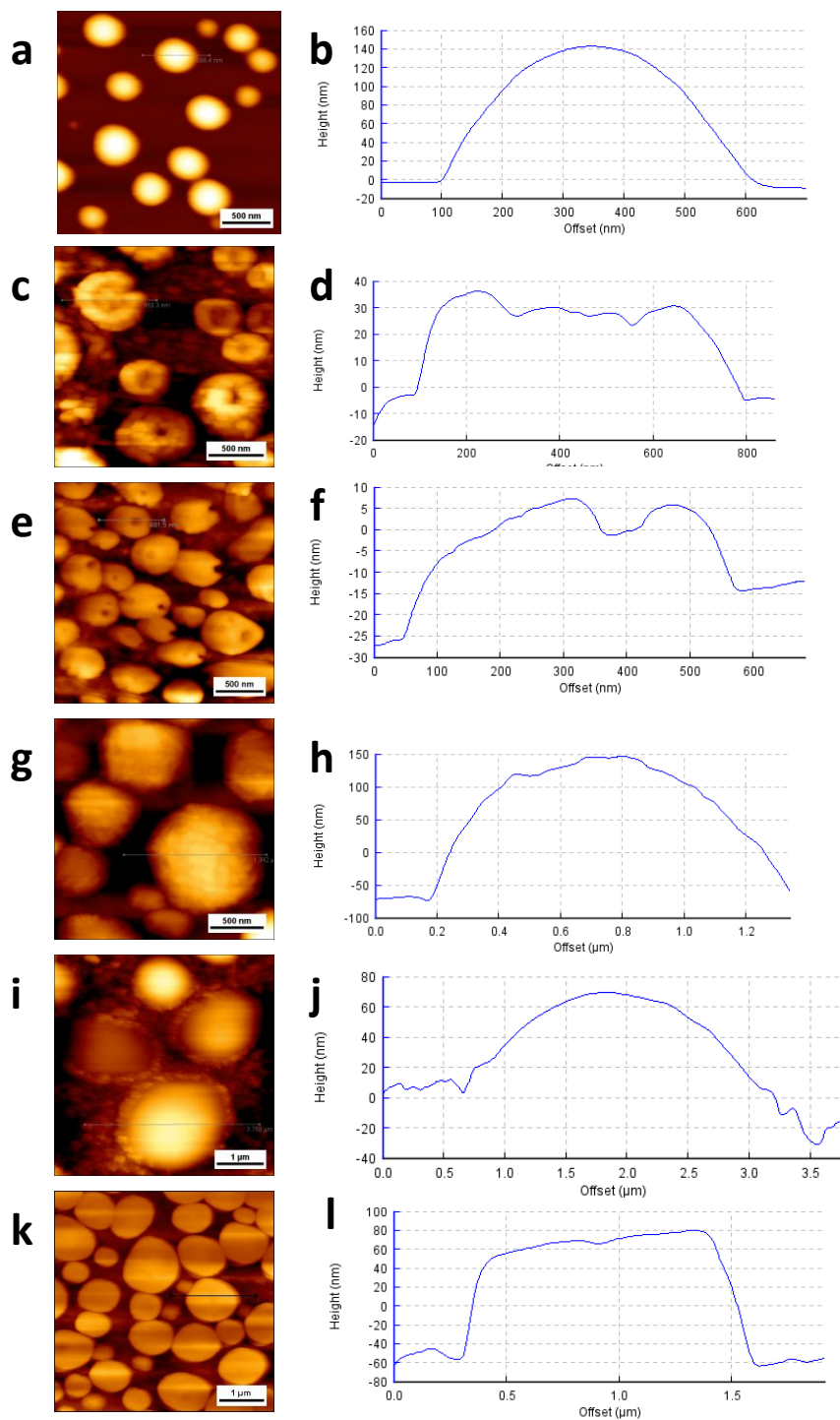


Figure S3. AFM images and height analysis of the co-assembled nanostructure formed by peptide **1** and diphenylalanine (a,b) condition 1, (c,d) condition 2 (e,f) condition 3 (g,h) condition 4, (i,j) condition 5 (k,l) condition 6.

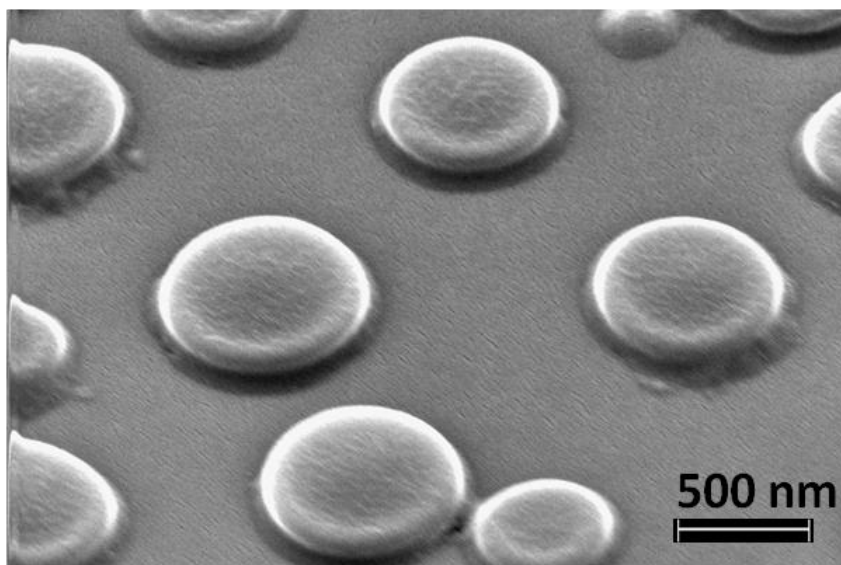


Figure S4. An SEM micrograph of the disk-like structure formed under experimental conditions 6. The SEM holder was tilted at an angle of 45°

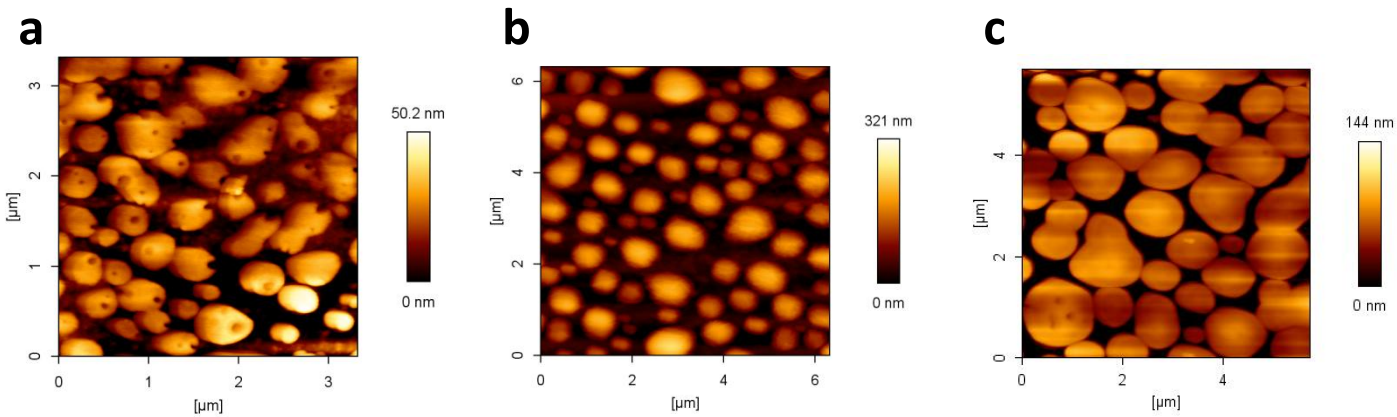


Figure S5: Large AFM scans of the co-assembled nanostructures formed by Peptide 1 and diphenylalanine at a concentrations (a) 1.5+1.5 (b) 2.0+2.0 and (c) 2.0+1.0 mg/mL.

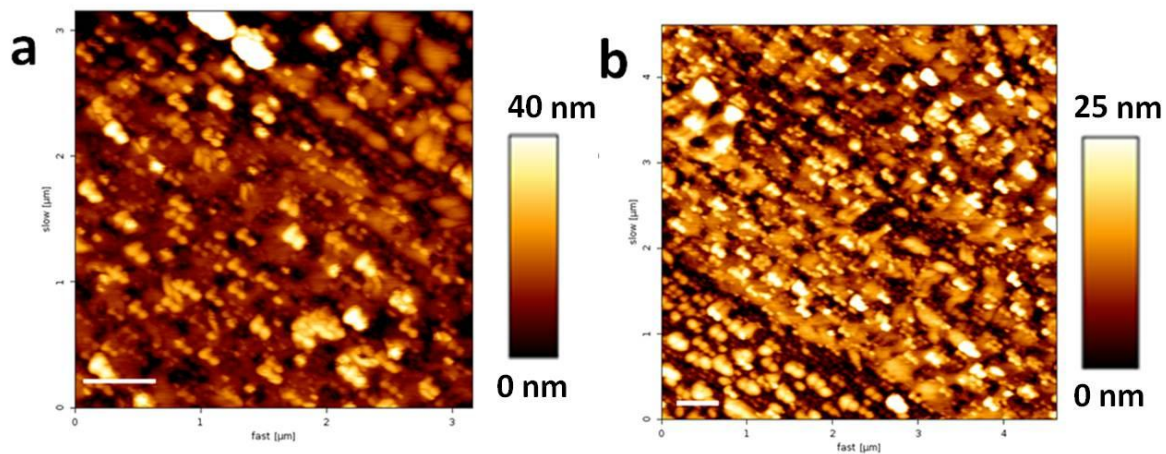


Figure S6. AFM topography images of the structures formed by the co-assembly of peptide **2** and diphenylalanine at (a) 0.5 mg/mL and (b) 1.0 mg/mL each. The scale bar represents 500 nm.

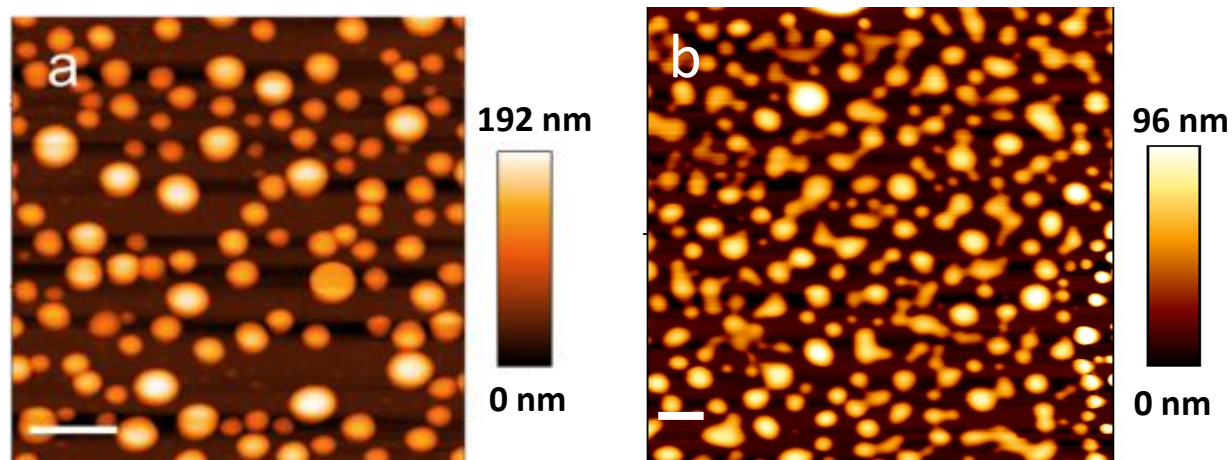


Figure S7. AFM topography images of the structures formed by the co-assembly of (a) Peptide 1 and Boc-Phe-Phe-COOH, (b) Peptide 1 and Fmoc-Phe-Phe-COOH. The peptide concentration was 1 mg/mL for each peptide. The scale bar represents 500 nm.

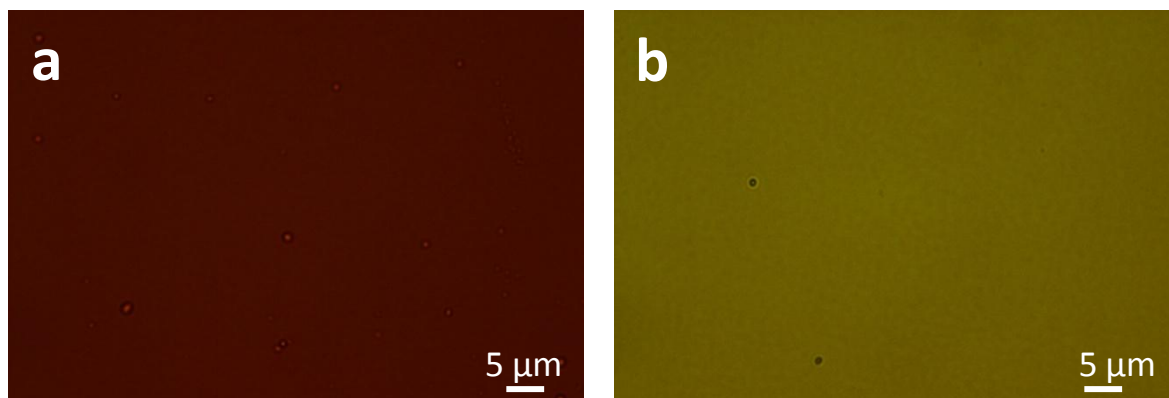


Figure. S8: Fluorescence micrographs of Doxorubicin (a) before and (b) after washing with water.

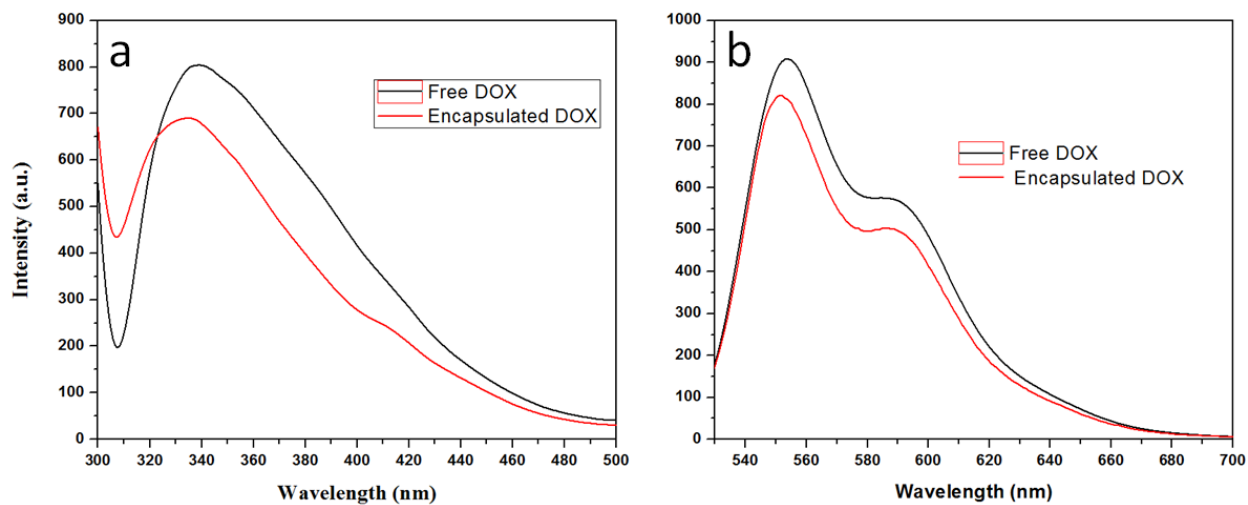


Figure S9. Emission spectra of free drug and drug adsorbed to the RBCs like nanomaterials (a) excited at 293 nm (b) at 500 nm.

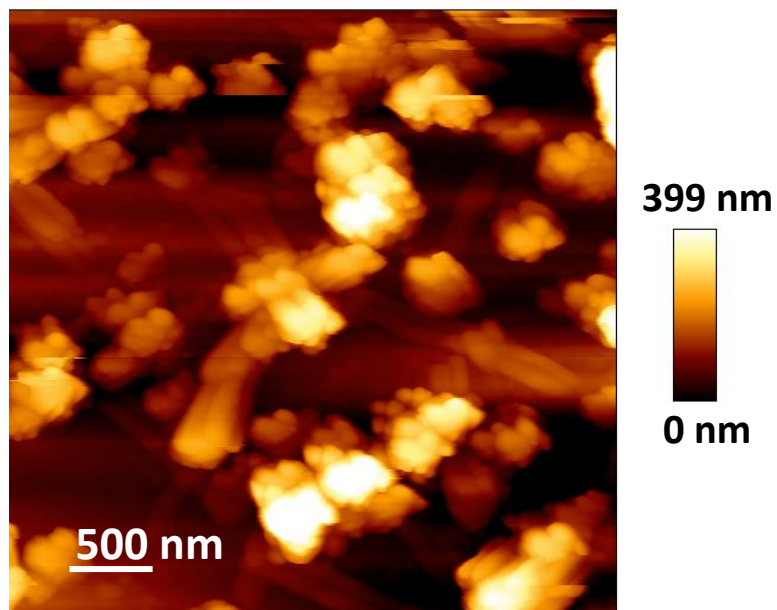


Figure S10. Representative AFM image of the co-assembled nanostructured (condition 2) after incubation for 24h in sodium phosphate buffer (pH 7.38, 10 mM, 150 mM NaCl)

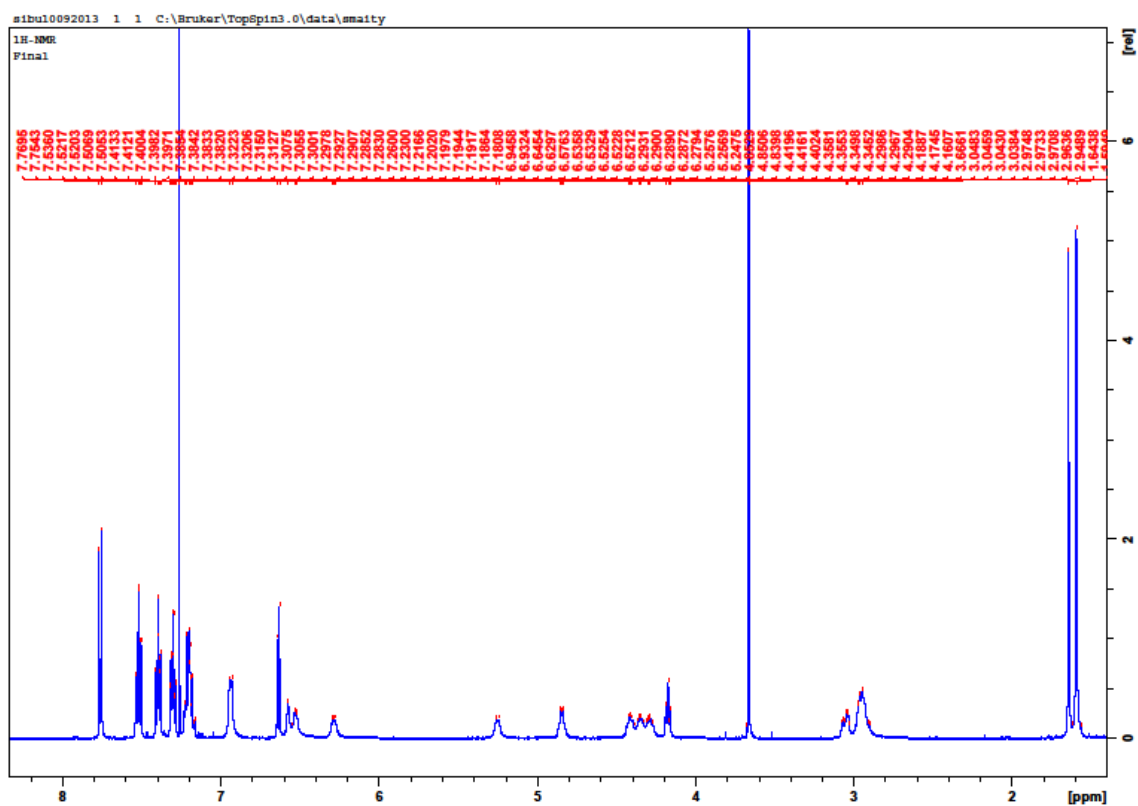


Figure S11. ¹H NMR (CDCl₃, 500 MHz, δppm) of Fmoc-L-DOPA(ac)-D-Phe-OMe, peptide 1.

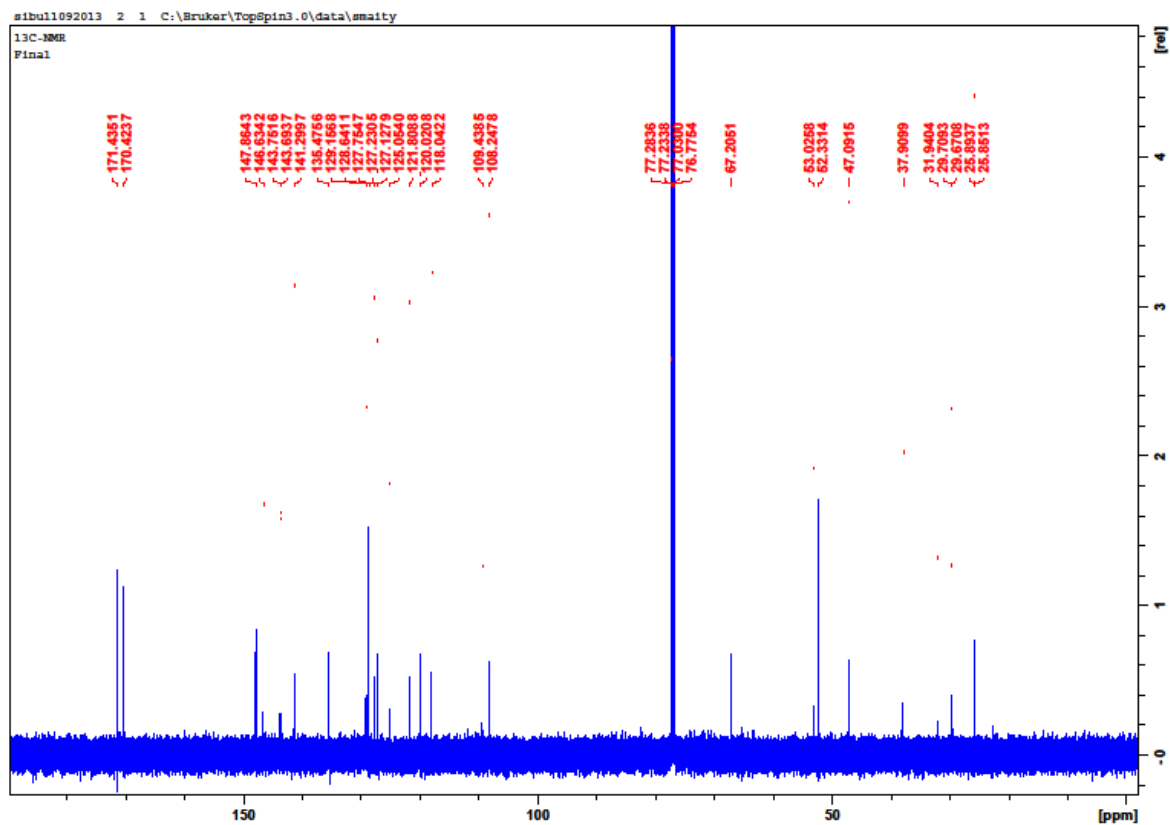


Figure S12. ¹³C NMR (CDCl₃, 125 MHz, δppm) spectrum of Fmoc-L-DOPA(ac)-D-Phe-OMe, peptide **1**.

Voyager Spec #1[BP = 659.1, 2166]

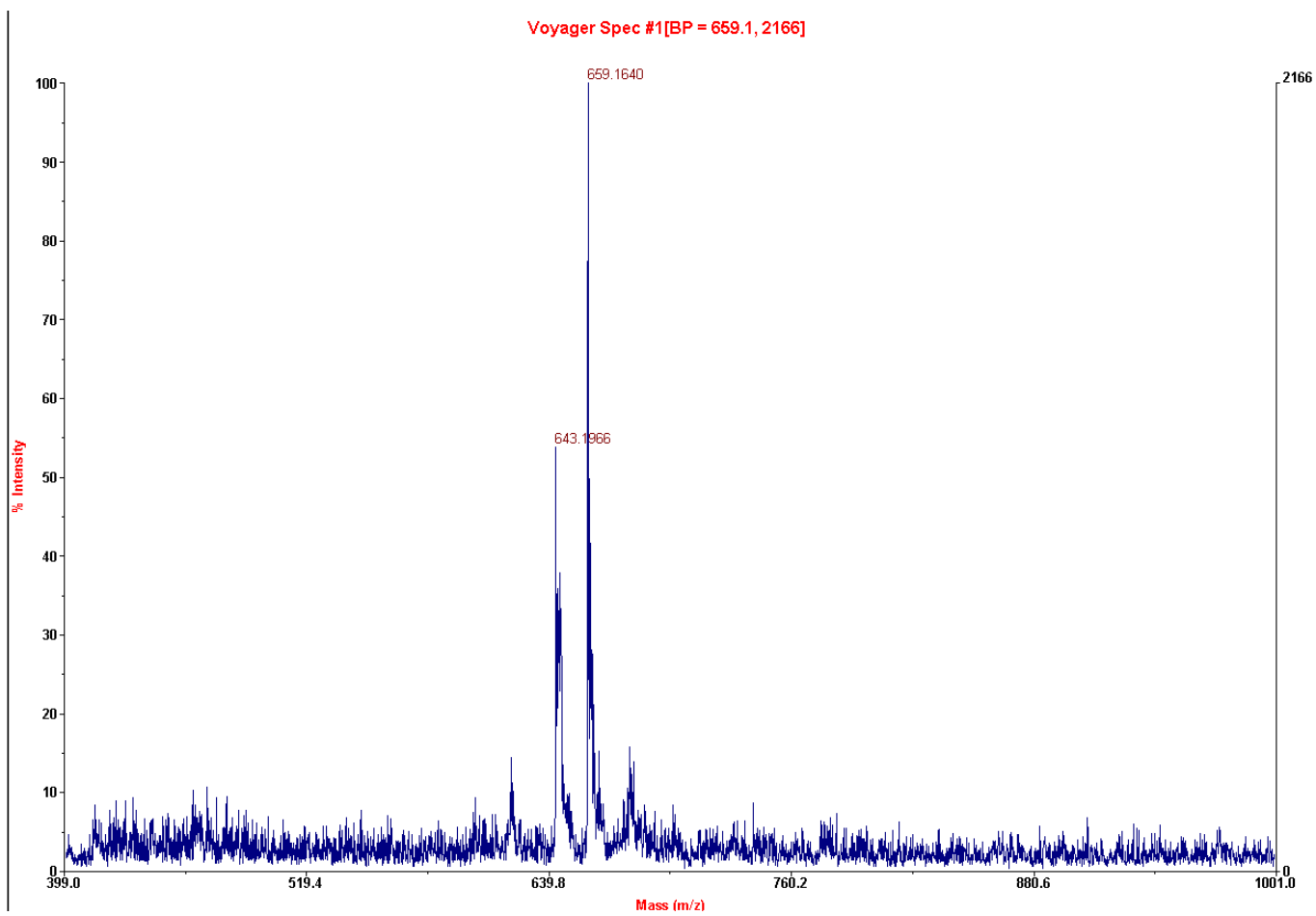


Figure S13. MALDI-TOF spectra of peptide **1**.

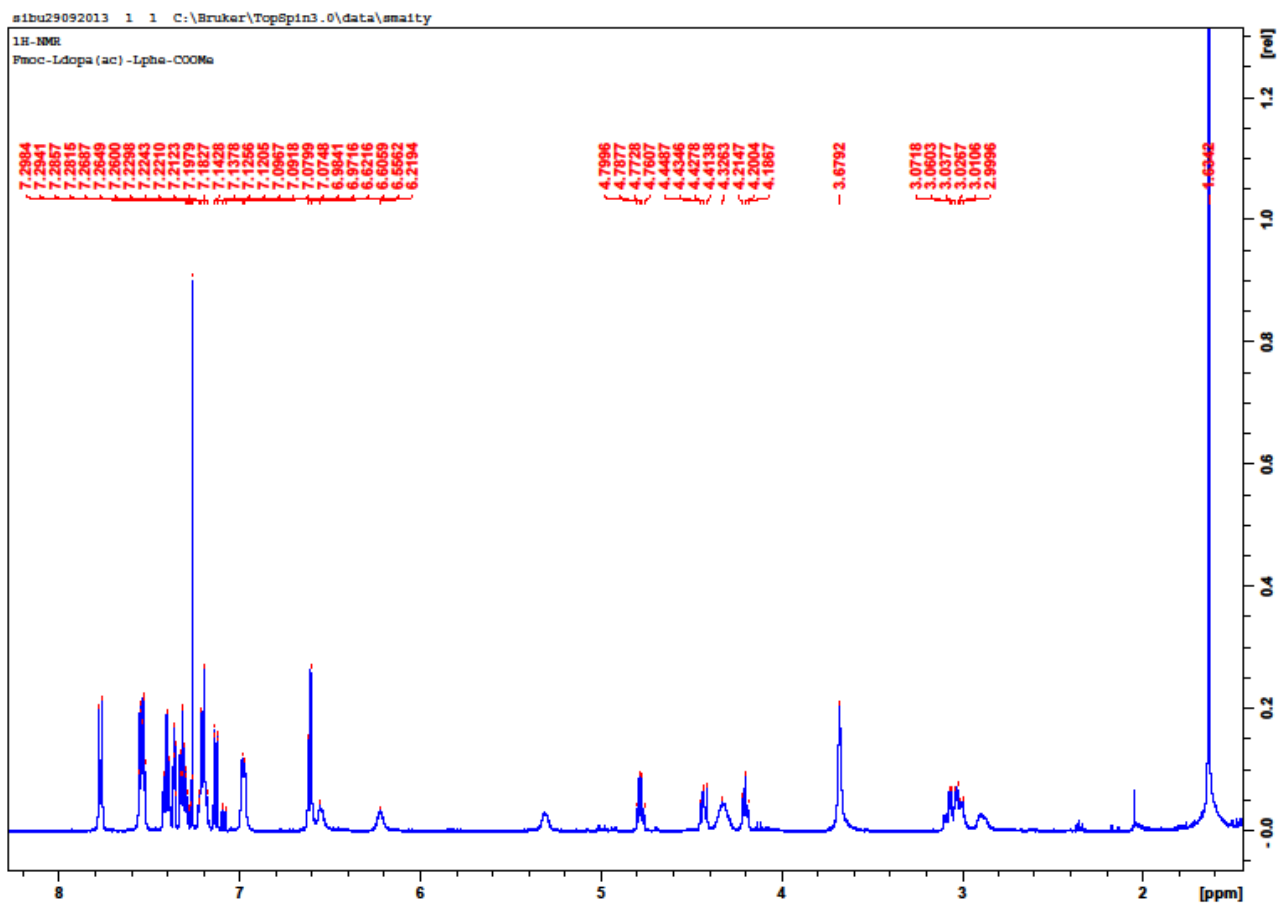


Figure S14. ¹H NMR (CDCl₃, 500 MHz, δppm) of Fmoc-L-DOPA(ac)-L-Phe-OMe, peptide 2.

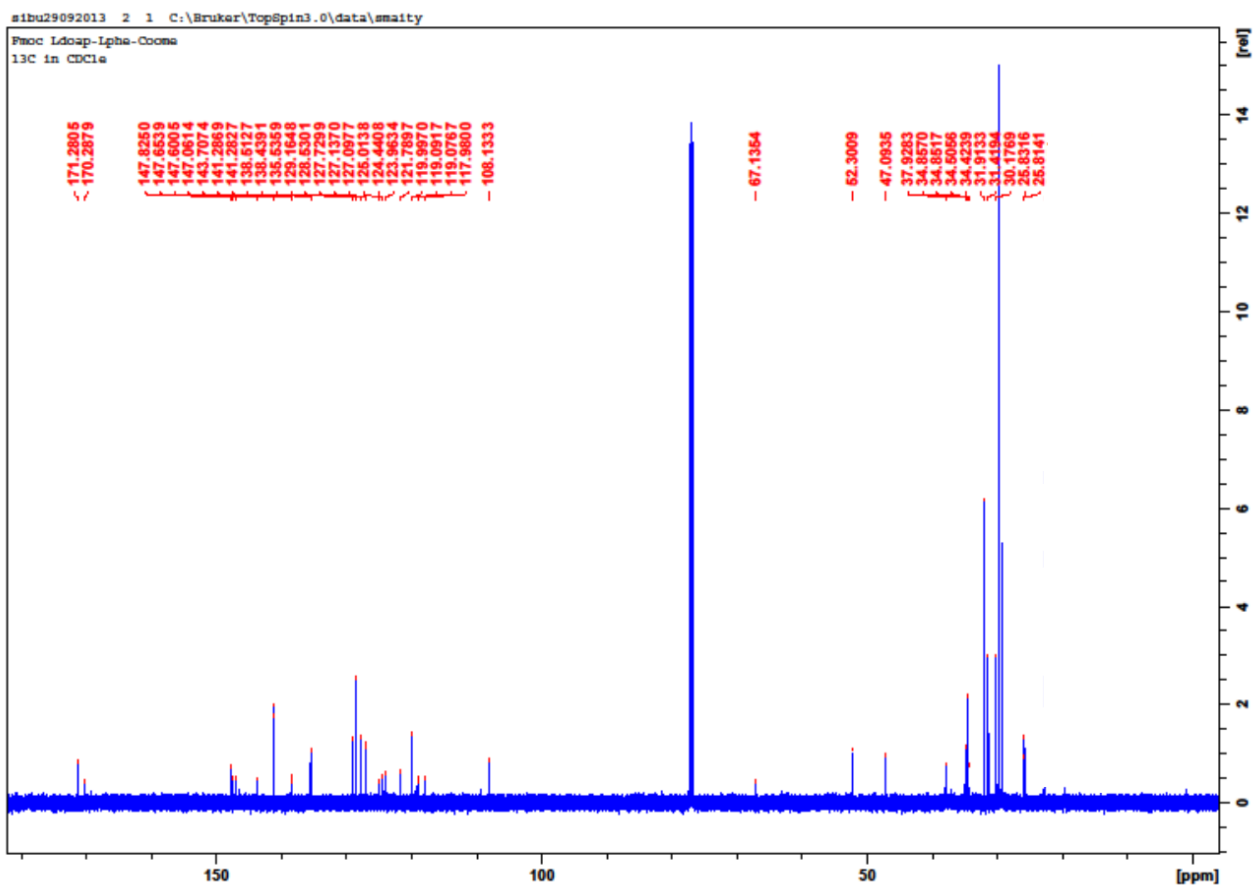


Figure S15. ¹³C NMR (CDCl₃, 125 MHz, δppm) spectrum of Fmoc-L-DOPA(ac)-L-Phe-OMe, peptide **2**.

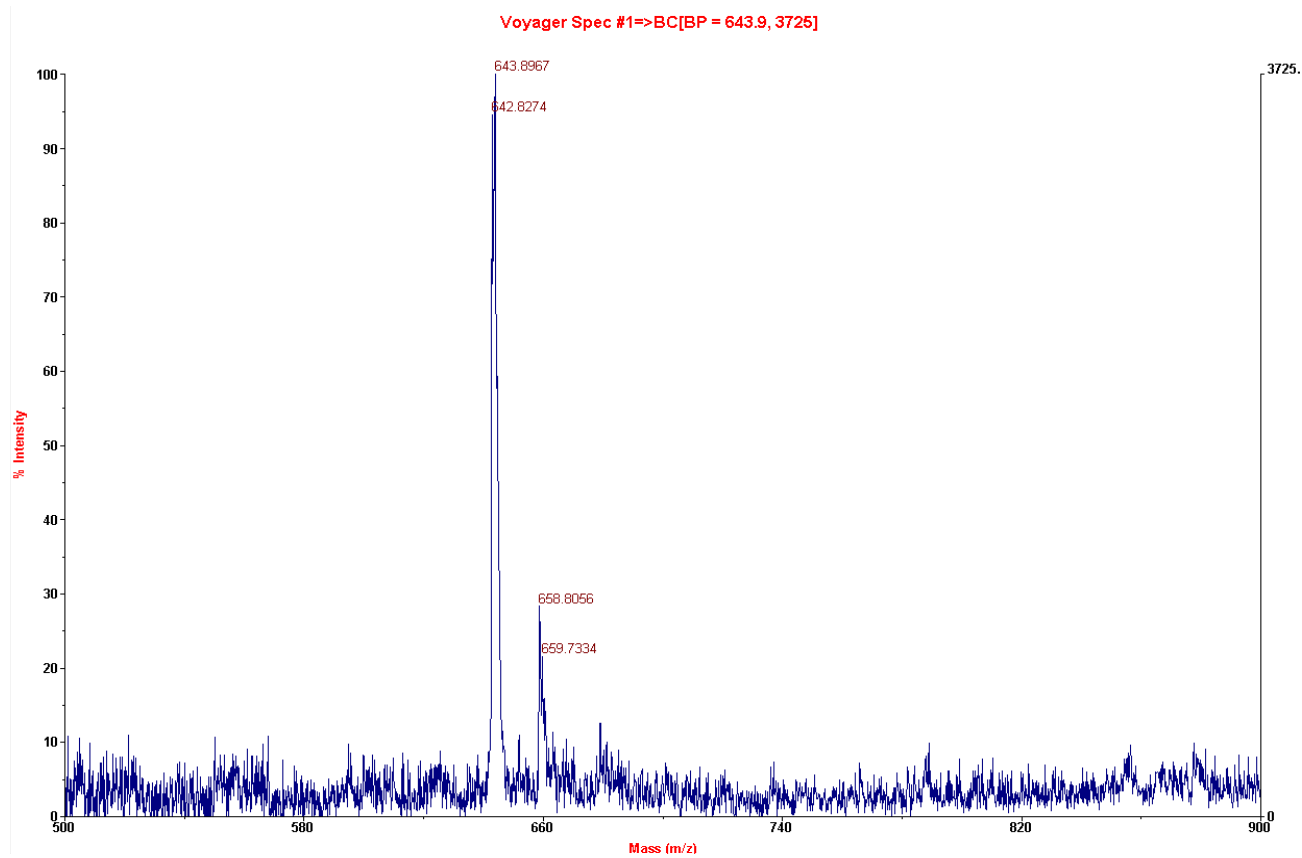


Figure S16: MALDI-TOF spectra of peptide **2**.