

Electronic supplementary information (ESI)

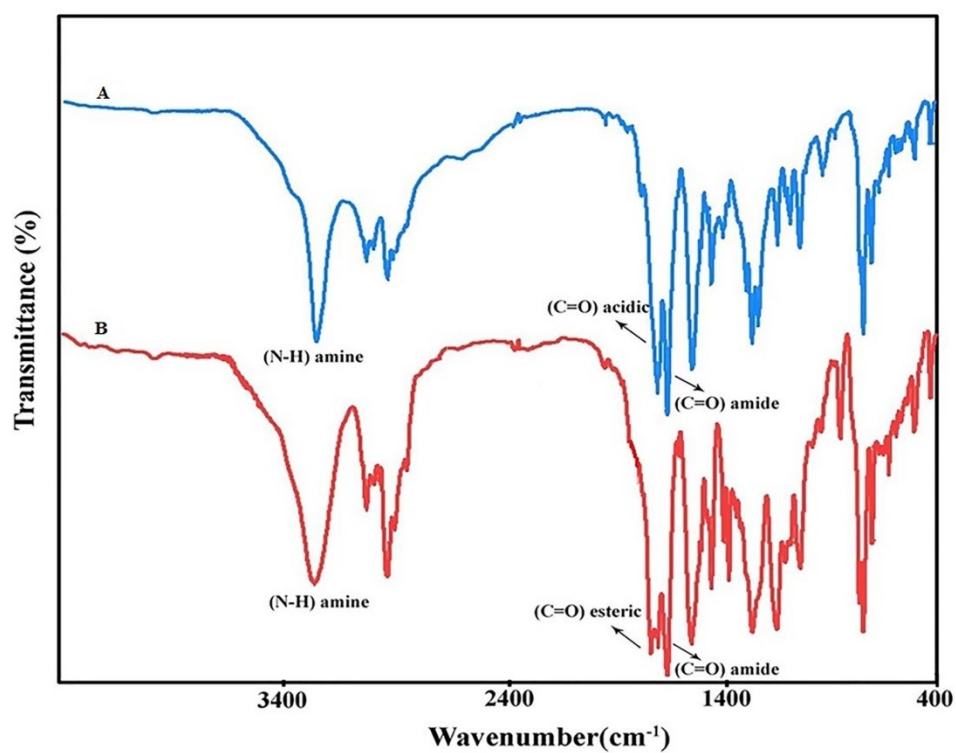
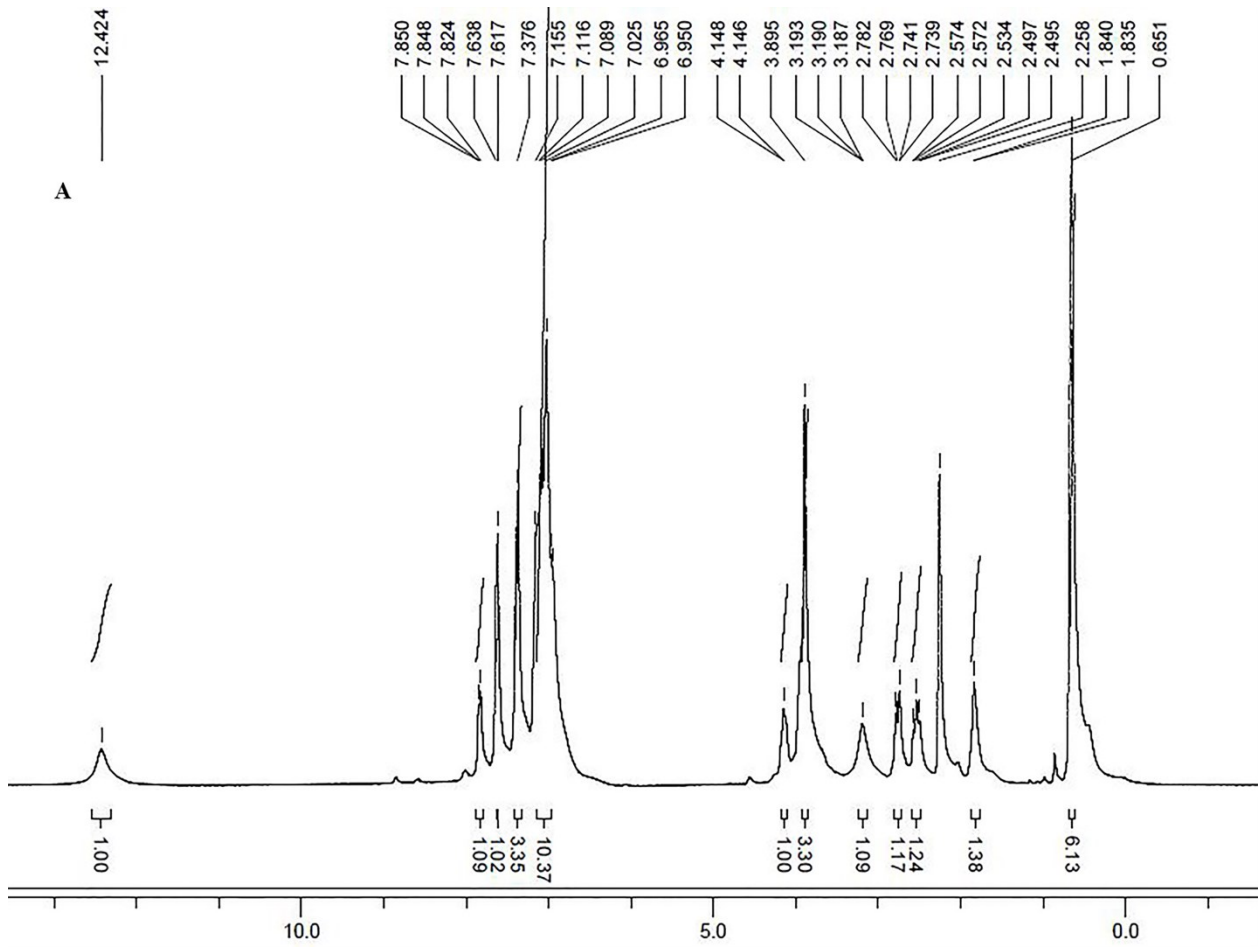
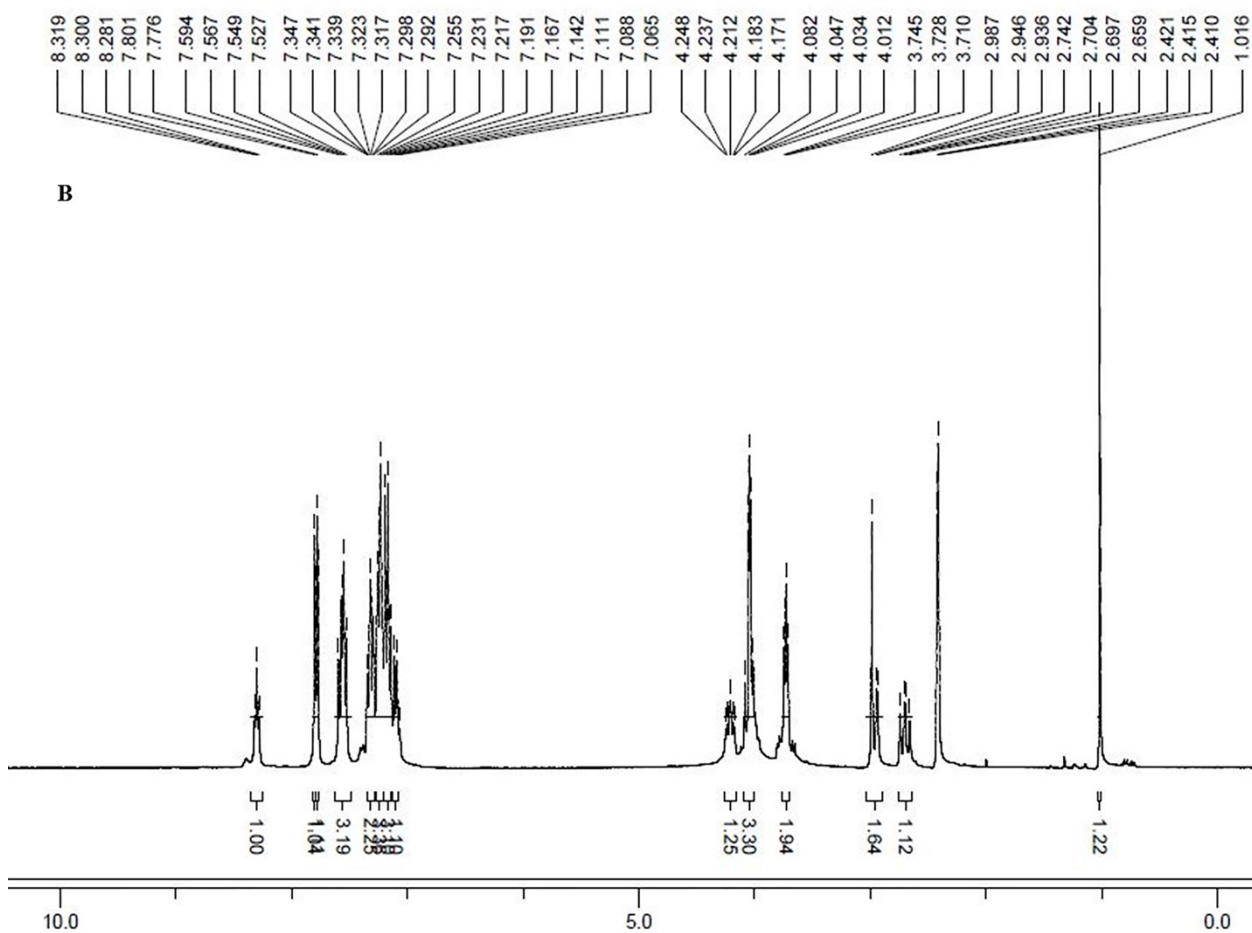


Fig 1. FT-IR Spectra of Fmoc-dipeptide (e.g. Fmoc-FV) after (A) and before (B) hydrolysis of tert-butyl ester precursor

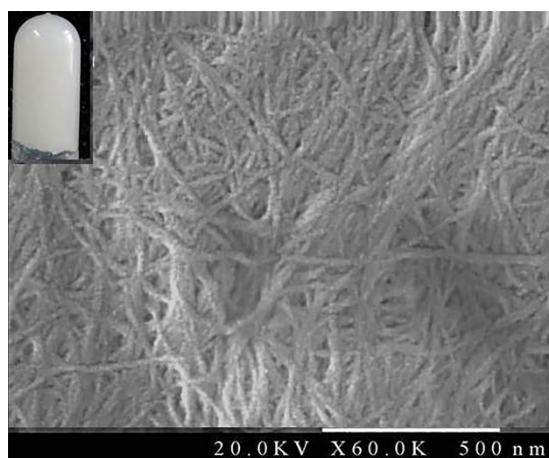




**Fig 2.**  $^1\text{H-NMR}$  spectra of the Fmoc-dipeptides: (A) Fmoc-FV and (B) Fmoc-FG in DMSO- $d_6$

Fmoc-FV:  $^1\text{H NMR}$  (DMSO, 350 MHz)  $\delta$ : 12.42 (s, 1H, -OH), 7.83 (s, 1H, NH), 7.62 (s, 1H, NH), 7.38 (m, 3H, Ar), 7.15-6.95 (m, 10H, Ar), 4.14 (brs, 1H, Al), 3.89 (m, 3H, Al), 3.19 (brs, 1H, Al), 2.78-2.49 (m, 2H, Al), 1.83 (s, 1H, Al), 0.65 (m, 6H, Al).

Fmoc-FG:  $^1\text{H NMR}$  (DMSO, 350 MHz)  $\delta$ : 8.30 (t, 1H, Ar), 7.80 (s, 1H, NH), 7.78 (s, 1H, NH), 7.59-7.53 (m, 3H, Ar), 7.35-7.29 (m, 2H, Ar), 7.25-7.22 (m, 3H, Ar), 7.19-7.14 (m, 3H, Ar), 7.11-7.06 (d, 1H, Ar), 4.25-4.17 (m, 1H, Al), 4.08-4.01 (m, 3H, Al), 3.74-3.71 (m, 2H, Al), 2.99-2.94 (m, 2H, Al), 2.70 (t, 1H, Al), 1.02 (s, 1H, Al).



**Fig 3.** FE-SEM image of self-assembled Fmoc-FG hydrogel (thickness=  $10 \pm 7$  nm)