

Supramolecular hydrogelators of N-terminated dipeptides selectively inhibit HeLa cells

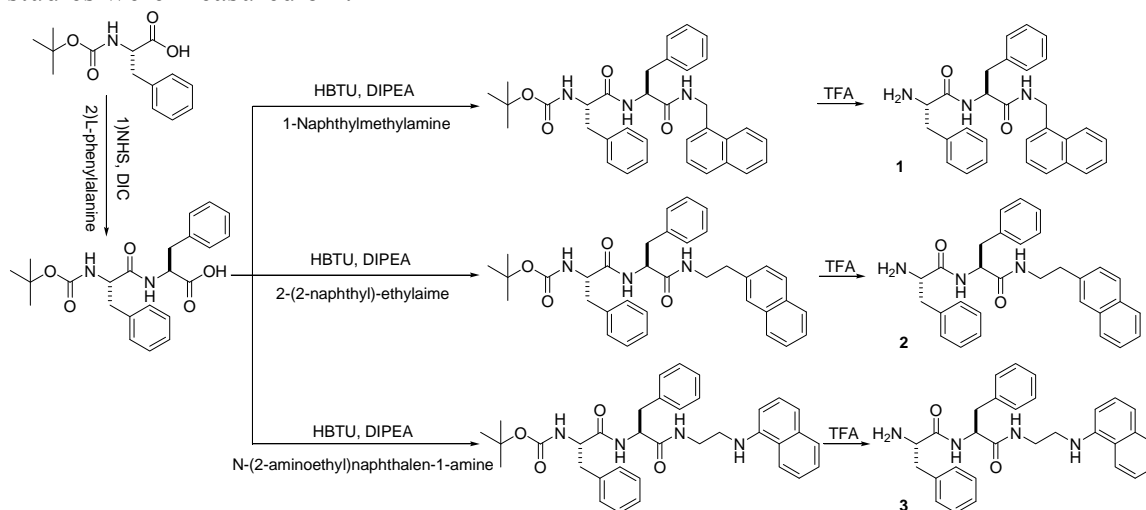
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Materials

All the chemicals used in this work were purchased from Aldrich or Fluka, and used without further purification. Nanopure water was used for all the tests of hydrogelation.

Characterization and instrumentation

NMR experiments were performed on a 400 MHz Varian Unity Inova 400 using DMSO- d_6 as the solvent. TEM images on Morgagni 268 transmission electron microscope. Rheological studies were measured on TA ARES G2 rheometer. MTT cytotoxicity studies were measured on .



Scheme S1 Synthetic scheme of the N-terminated hydrogelators.

Synthesis procedure: 1 mmol Boc-Phe, 1 mmol NHS and 1 mmol DIC were dissolved in 10 mL CHCl₃ and stirred for 2h. After the removal of CHCl₃ by rotary evaporator, the remaining white powder was dissolved in 10 mL acetone then added dropwise into 5 mL water containing 1 mmol H-Phe-OH (pH 8~9). After stirring overnight, acetone was removed by a rotary evaporator, and Boc-Phe-Phe was precipitated by acidification of the water solution. After Boc-Phe-Phe was purified by flash chromatography, 1 mmol Boc-Phe-Phe, 2 mmol HBTU, 2 mmol DIPEA and 1 mmol 1-naphthylmethylamine (for **1**), or 1 mmol 2-(2-naphthyl)-ethylamine (for **2**) or 1 mmol N-(2-aminoethyl)naphthalene-1-amine (for **3**) were dissolved in 10 mL DMF and stirred for 2h. We used air-blowing to remove most of the DMF, then 20 mL water was added into the sticky mixture to precipitate the Boc-protected product. Boc-group was removed by stirring in 5 mL TFA, and the desired product was precipitated by ample amount of ether and further purified by HPLC.

^1H NMR (400 MHz, DMSO-*d*₆) of **1**: δ 8.91 (d, $J=4.0$ Hz, 1H), 8.73 (t, $J=4.0$ Hz, 1H), 8.05 (m, 2H), 7.95 (m, 1H), 7.85 (d, $J=4.0$ Hz, 1H), 7.53 (m, 2H), 7.40 (m, 1H), 7.26 (m, 10H), 4.73 (m, 2H), 4.67 (m, 1H), 4.02 (m, 1H), 3.01 (m, 4H), 1.09 (m, 2H).

^1H NMR (400 MHz, DMSO-*d*₆) of **2**: δ 8.78 (d, $J=4.0$ Hz, 1H), 8.27 (m, 1H), 7.89 (m, 4H), 7.68 (m, 1H), 7.45 (m, 2H), 7.26 (m, 10H), 4.52 (m, 1H), 4.00 (m, 1H), 3.09 (m, 2H), 2.87 (m, 4H), 2.63 (m, 2H) 1.09 (m, 2H).

^1H NMR (400 MHz, DMSO-*d*₆) of **3**: δ 8.92 (d, $J=4.0$ Hz, 1H), 8.42 (m, 1H), 8.09 (m, 4H), 7.76 (m, 1H), 7.39 (m, 2H), 7.22 (m, 10H), 4.54 (m, 1H), 4.04 (m, 1H), 3.37 (m, 4H), 3.04 (m, 4H), 1.09 (m, 2H).

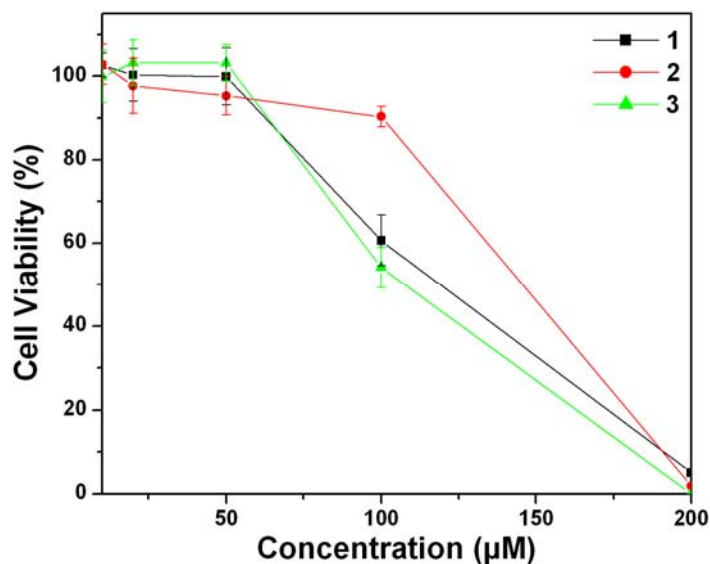


Figure S1. 48h cytotoxicity of N-terminated hydrogelators on T98G cells.