

*Electronic Supplementary Information for*

## Synthesis of Single-Walled Carbon Nanotube-Incorporated Polymer Hydrogels via Click Chemistry

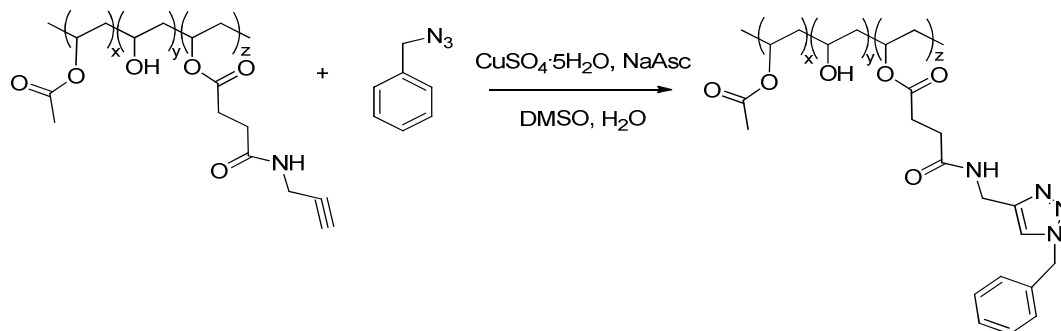
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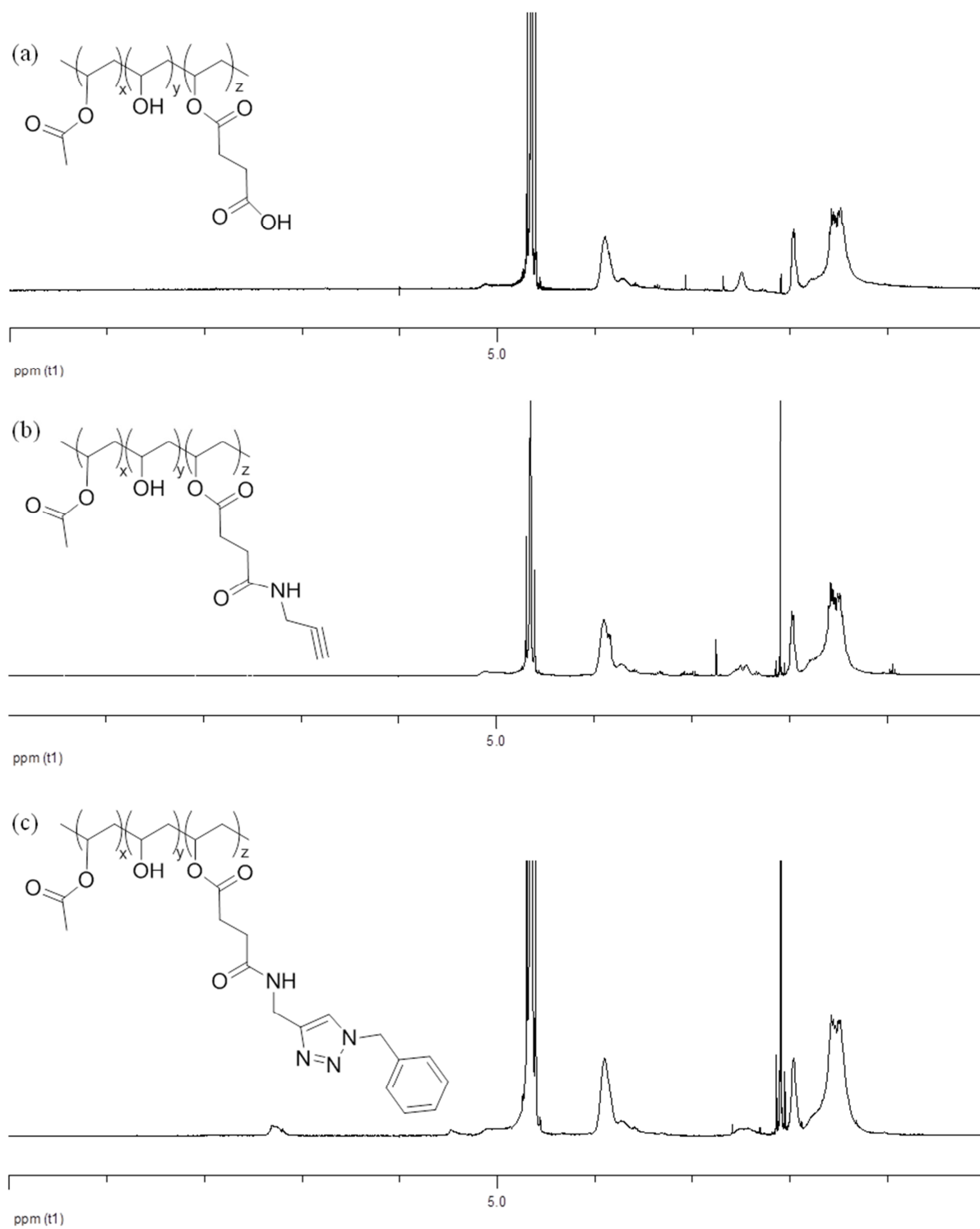
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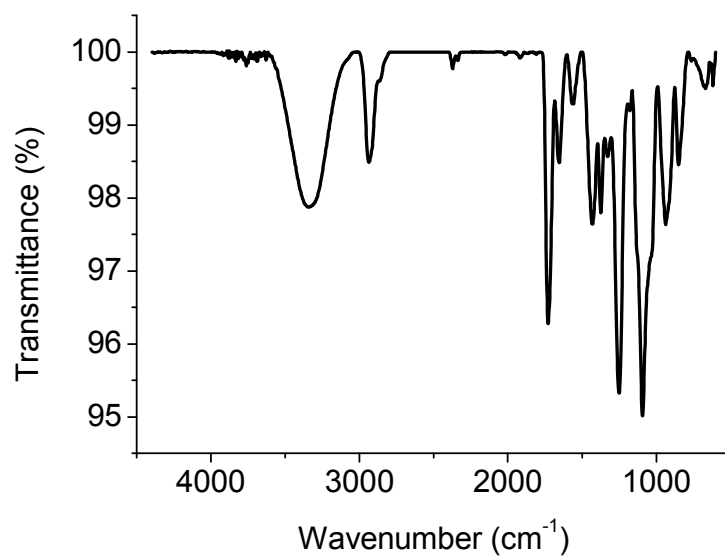
**Scheme S1.** Click test of a-PVA with benzyl azide.



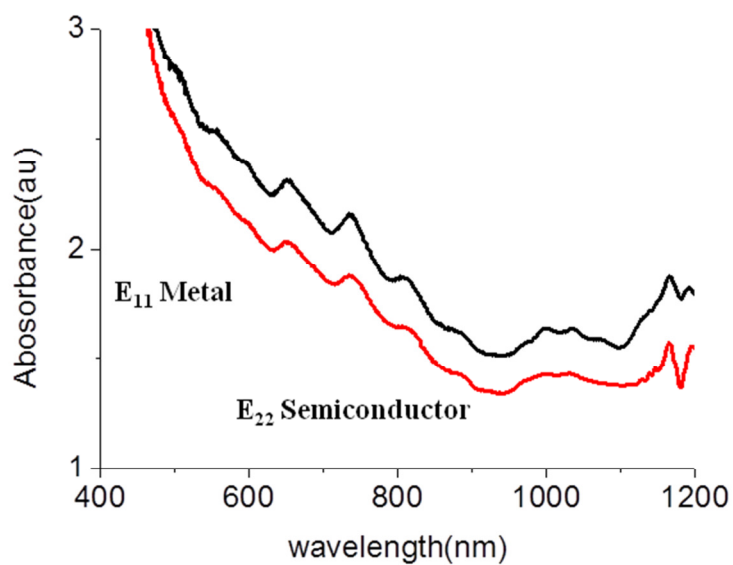
**Click Test of a-PVA.** The existence of alkyne group was verified by click test with benzyl azide from  $^1\text{H-NMR}$ . A solution of a-PVA was prepared from a-PVA powder (100 mg) in 1 mL of dimethyl sulfoxide. Benzyl azide (2.6 mg, 0.02 mmol),  $\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$  (2 mg, 0.01 mmol), and sodium ascorbate (4 mg, 0.02 mmol) were added to the a-PVA solution. The mixture was stirred for 1 hr at room temperature, and the product was precipitated in acetone, collected, and dried in air.  $^1\text{H-NMR}$  was recorded from the solid without any further purification.  $^1\text{H-NMR}$  (300 MHz,  $\text{D}_2\text{O}$ )  $\delta$ : 7.90 (s, 1H), 7.40-7.00 (m, 5H), 5.57-5.27 (s, 2H), 5.23-4.77 (m, 12.5H) 4.04-3.20 (m, 25.1H), 2.50 (m, 6H), 2.00-1.85 (m, 7.2H), 1.90 -0.75 (m, 40H)



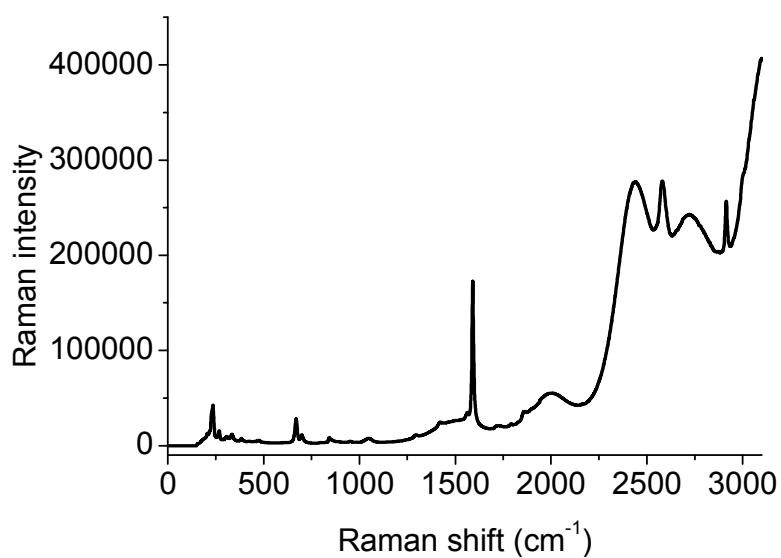
**Figure S1.** <sup>1</sup>H NMR spectra of c-PVA (a), a-PVA (b), and the polymer after the click test of a-PVA with benzyl azide (c).



**Figure S2.** FT-IR spectrum of a-PVA.



**Figure S3.** UV-vis-NIR spectra of SWNT/a-PVA in DMSO as a solution (black) and after the click gel formation (red).



**Figure S4.** Raman spectrum of SWNT/a-PVA in DMSO. The peaks after 1700 cm<sup>-1</sup> are from the fluorescence of semiconducting carbon nanotubes.