

## Supplementary Materials:

# Development of Poly(Sorbitol Adipate)-g-Poly(Ethylene Glycol) Monomethyl Ether based Hydrogel Matrices for Model Drug Release

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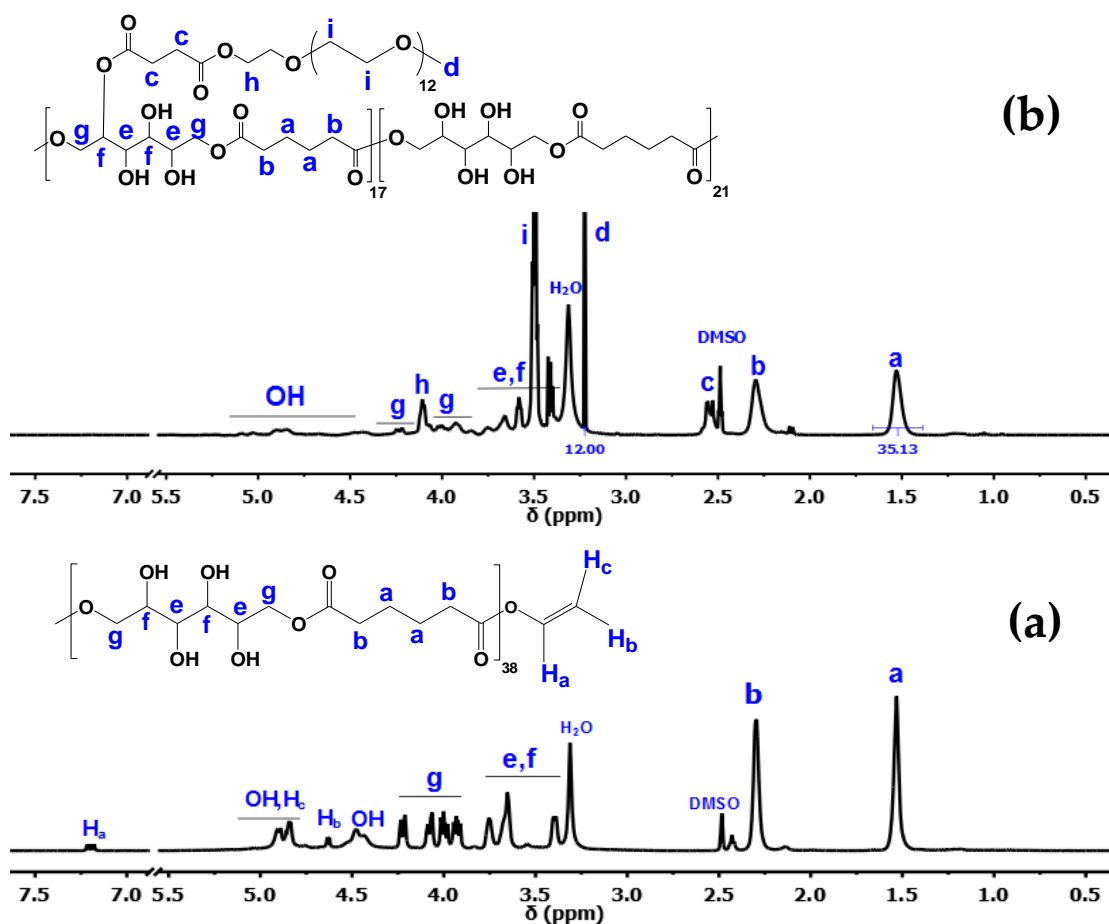


Figure S1. <sup>1</sup>H NMR spectra of (a) PSA and (b) PSA-g-mPEG measured at 27 °C using DMSO-d<sub>6</sub> as solvent.

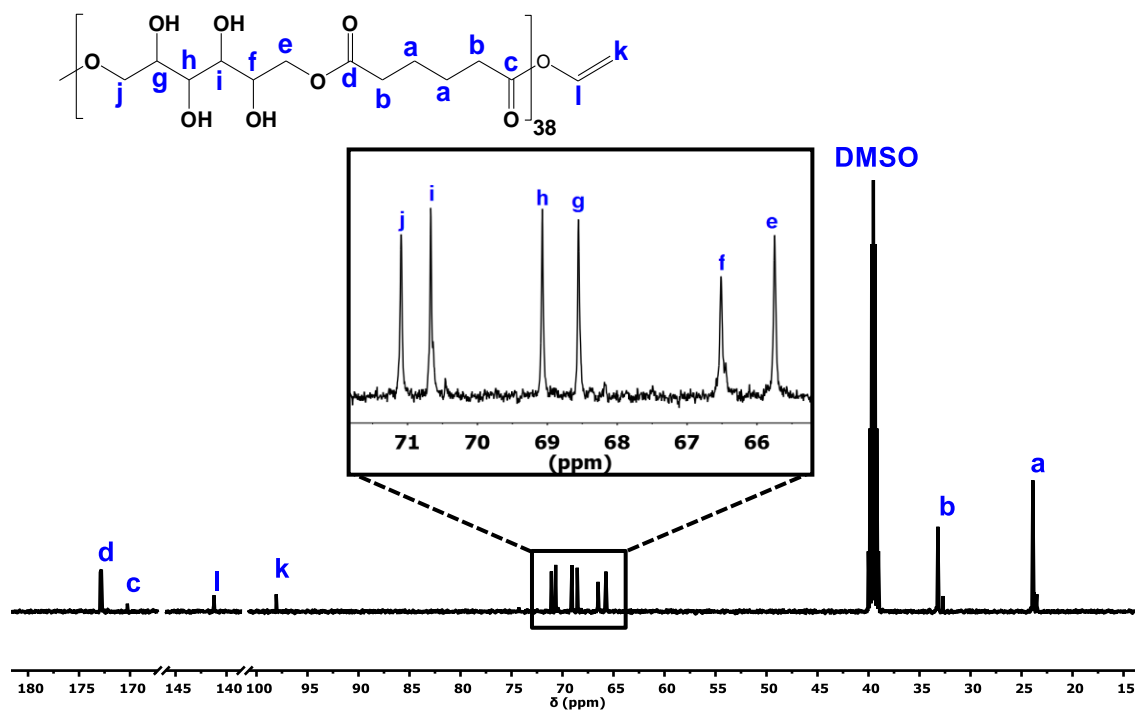


Figure S2.  $^{13}\text{C}$  NMR spectrum of poly(sorbitol adipate) measured at 27 °C using DMSO- $\text{d}_6$  as solvent.

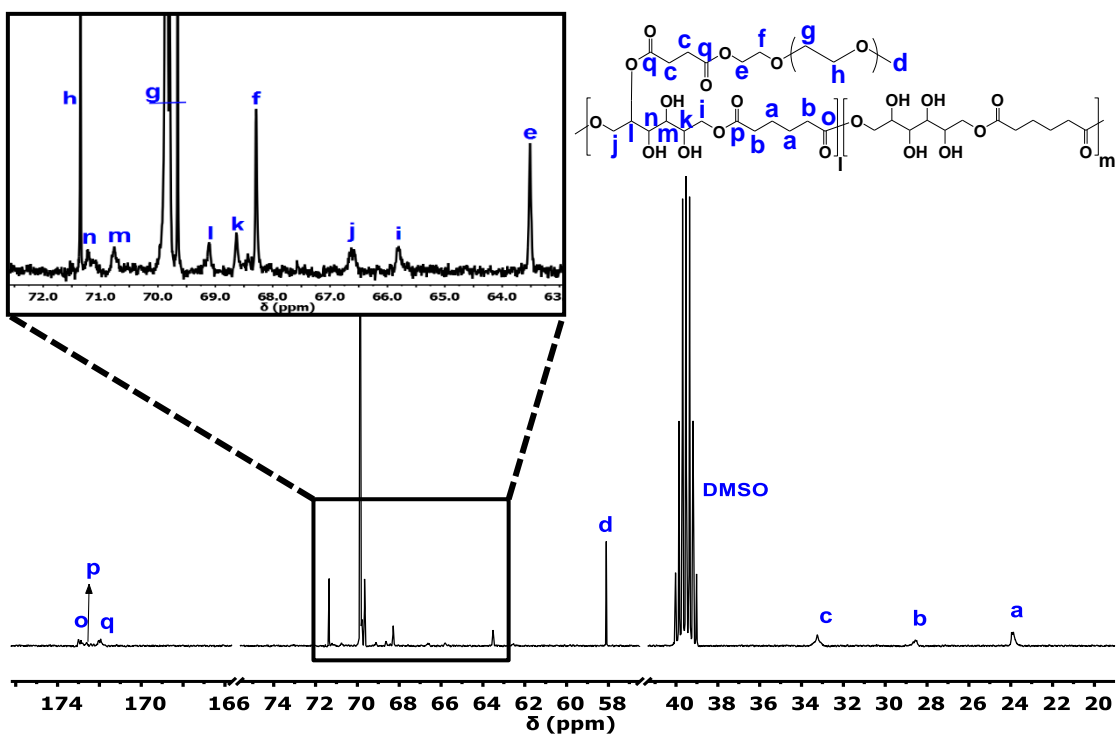
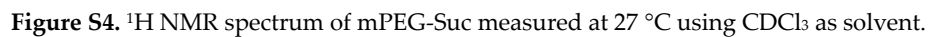
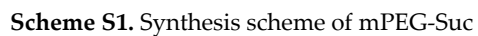
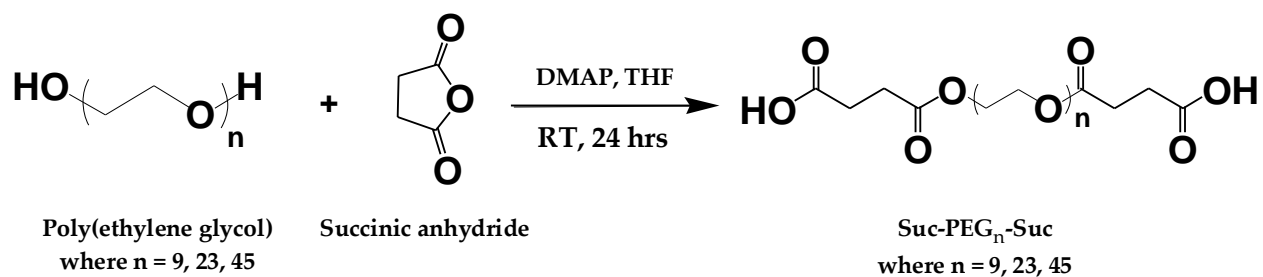


Figure S3.  $^{13}\text{C}$  NMR spectrum of PSA-g-mPEG measured at 27 °C using DMSO- $\text{d}_6$  as solvent.





Scheme S2. Synthesis scheme of Suc-PEG<sub>n</sub>-Suc.

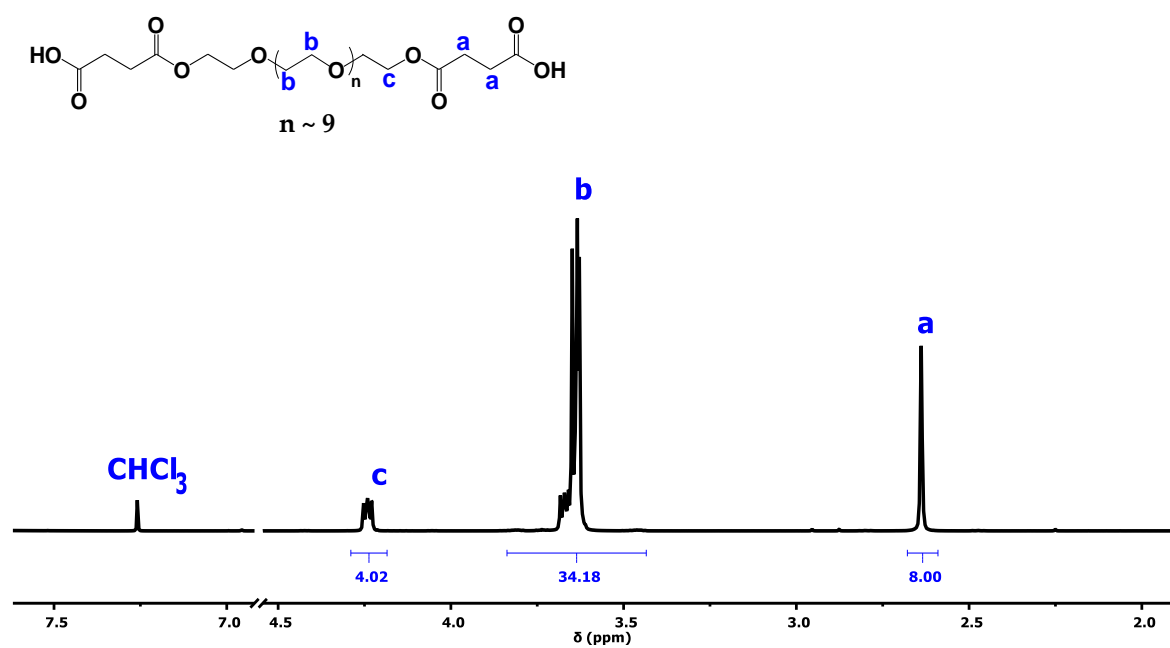
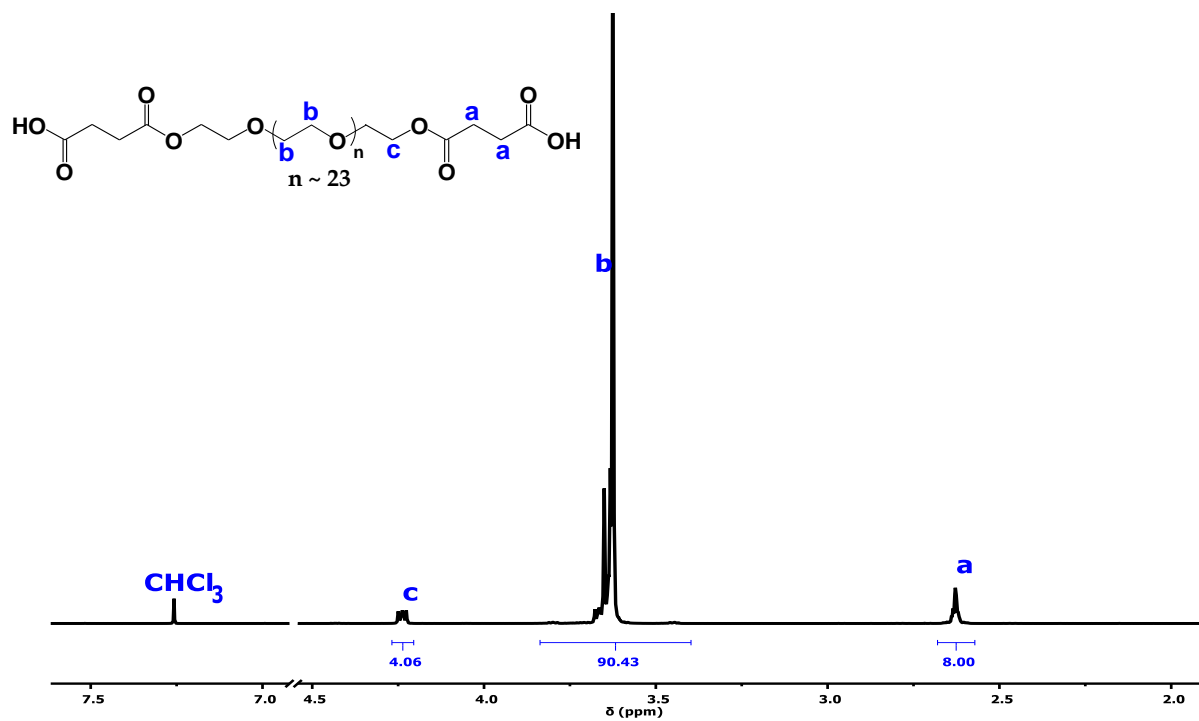
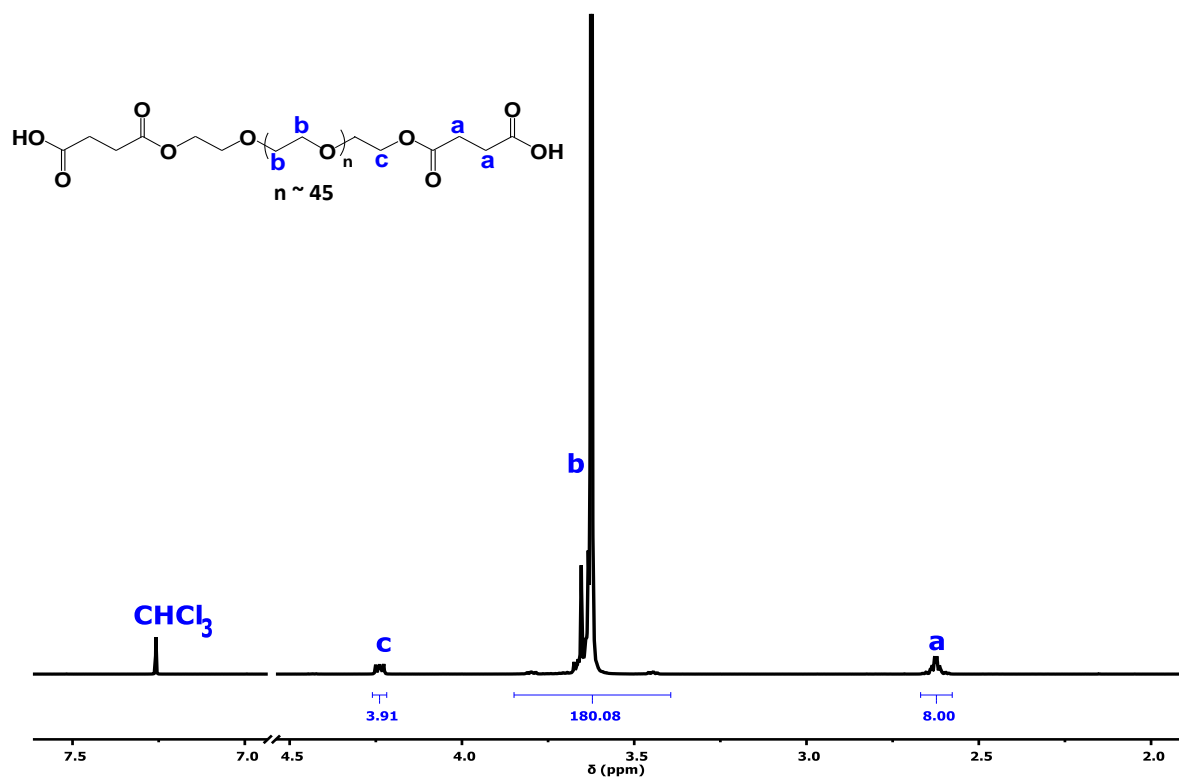


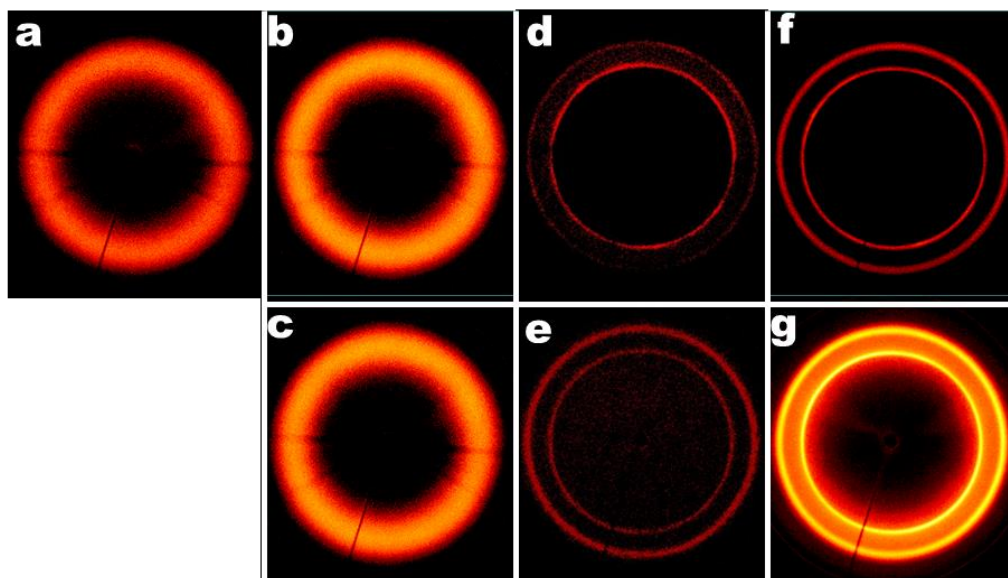
Figure S5.  $^1\text{H}$  NMR spectrum of disuccinyl PEG-400 (Suc-PEG<sub>9</sub>-Suc) measured at 27 °C using  $\text{CDCl}_3$  as solvent.



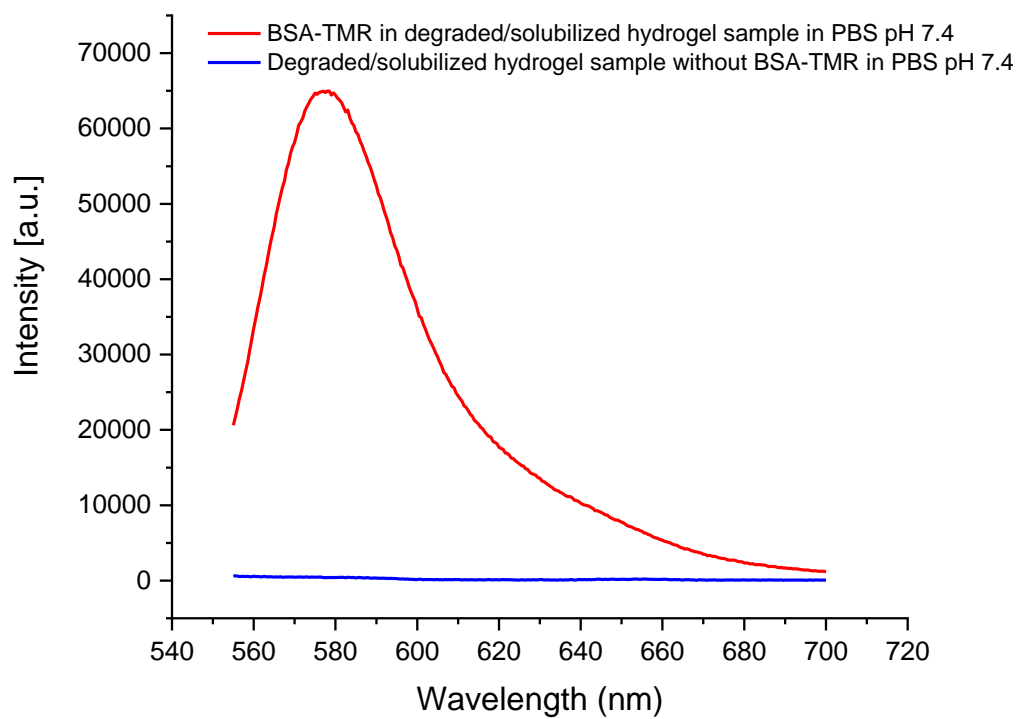
**Figure S6.**  $^1\text{H}$  NMR spectrum of disuccinyl PEG-1000 (Suc-PEG<sub>23</sub>-Suc) measured at 27 °C using  $\text{CDCl}_3$  as solvent.



**Figure S7.**  $^1\text{H}$  NMR spectrum of disuccinyl PEG-2000 (Suc-PEG<sub>45</sub>-Suc) measured at 27 °C using  $\text{CDCl}_3$  as solvent.



**Figure S8:** X-ray diffraction scattering patterns of (a) PSA-g-mPEG (b) Disuccinyl PEG-400 (c) PSA-g-mPEG hydrogels crosslinked with PEG-400 (d) Disuccinyl PEG-1000 (e) PSA-g-mPEG hydrogels crosslinked with PEG-1000 (f) Disuccinyl PEG-2000 (g) PSA-g-mPEG hydrogels crosslinked with PEG-2000.



**Figure S9:** Fluorescence spectra of BSA-TMR along with hydrogel's degraded sample and degraded hydrogel without BSA-TMR measured via fluorescence spectrometer within wavelength range of excitation: 535 nm and emission: 576 nm, to evaluate interaction between both or any background signal.