Supporting Information

ROS-responsive thermosensitive polypeptide hydrogels for localized drug delivery and improved tumor chemoimmunotherapy

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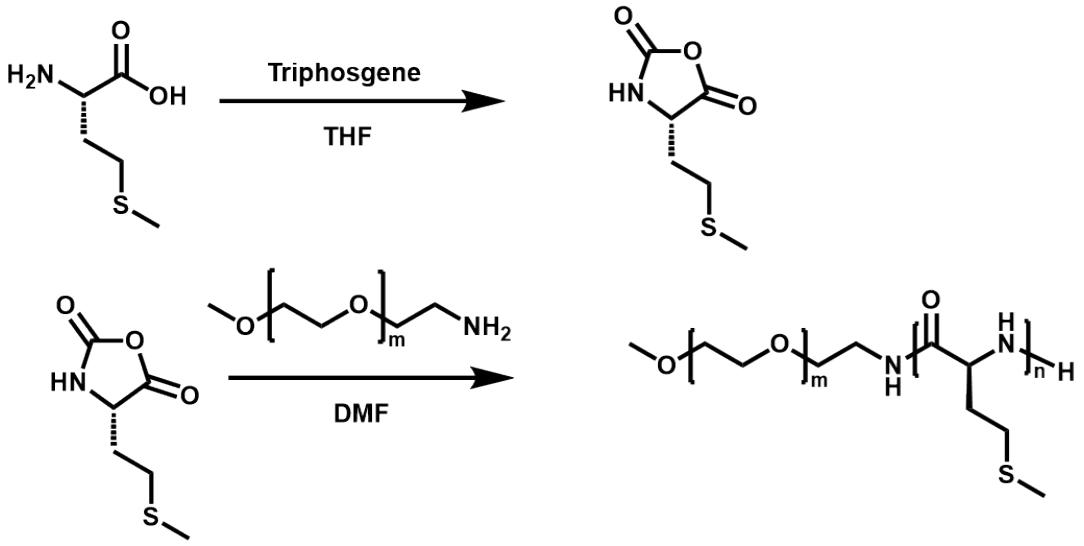
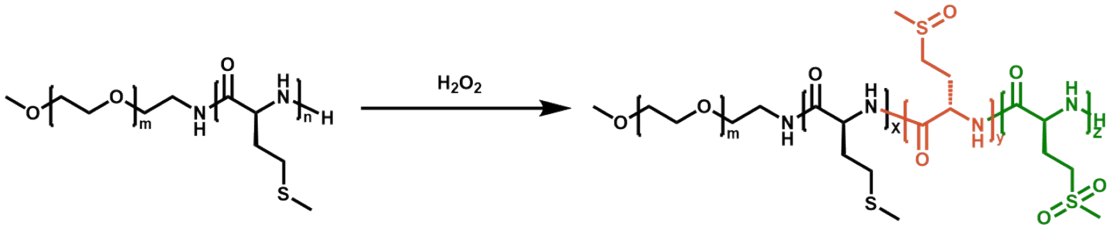


Scheme S1. Synthesis route of the mPEG-*b*-PMet.



Scheme S2. Oxidation route of the mPEG-*b*-PMet.

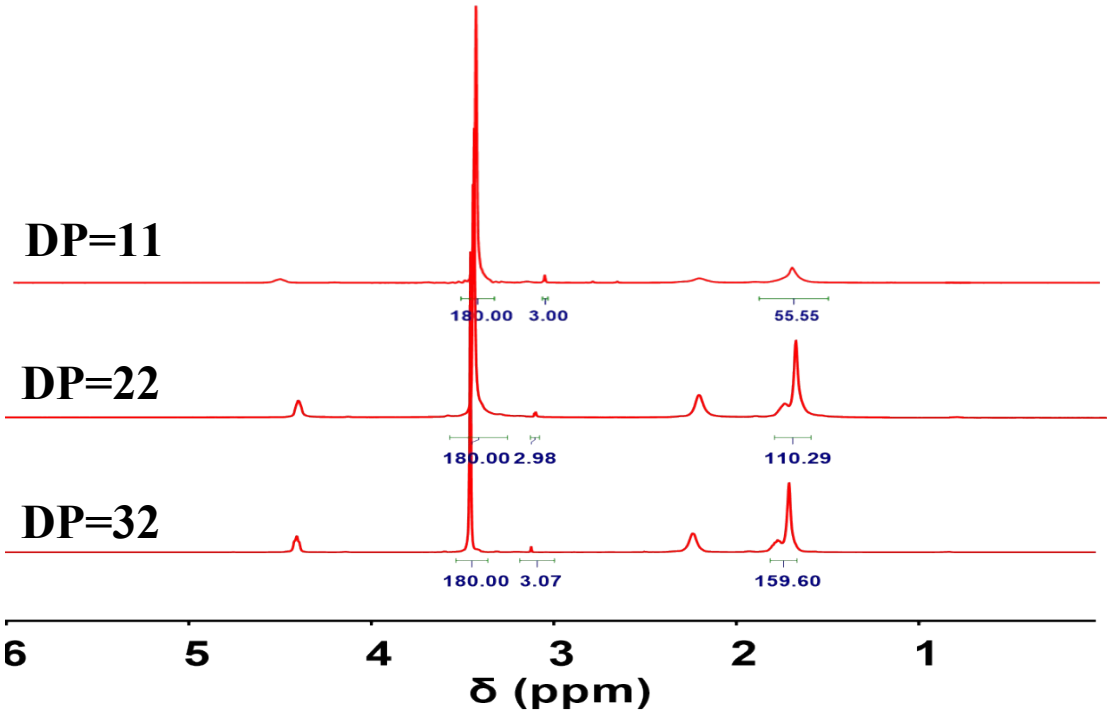


Figure S1. ^{1}H NMR spectra of different degrees of polymerization of three polymers.

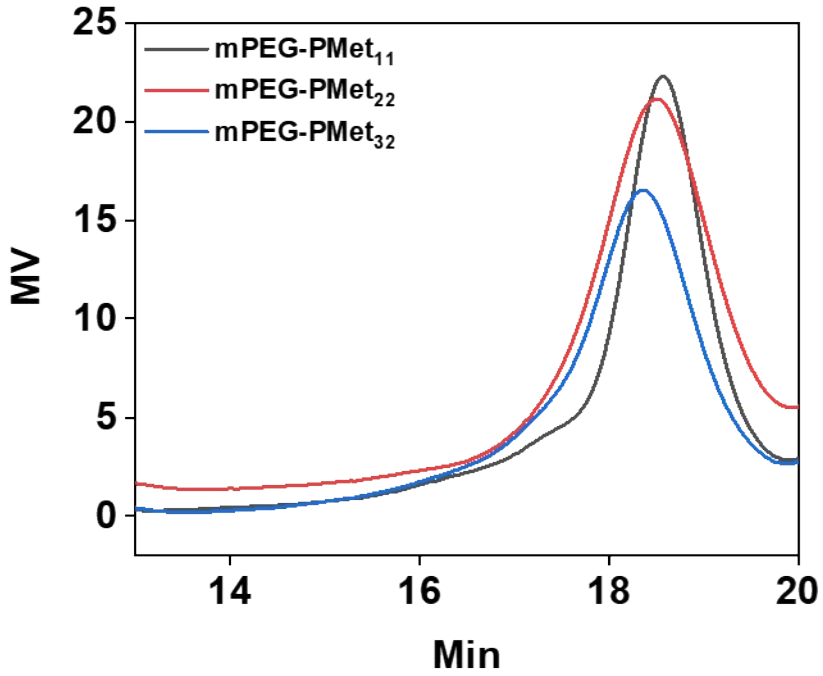


Figure S2. Gel permeation chromatography (GPC) of different polymerization degree of polymers.

Table S1. The M_n and PDI of Gel permeation chromatography (GPC) of different polymerization degree of polymers.

Polymers	mPEG-PMet$_{11}$	mPEG-PMet$_{22}$	mPEG-PMet$_{32}$
M_n (Da)	5511	5650	6320
PDI	1.12	1.11	1.16

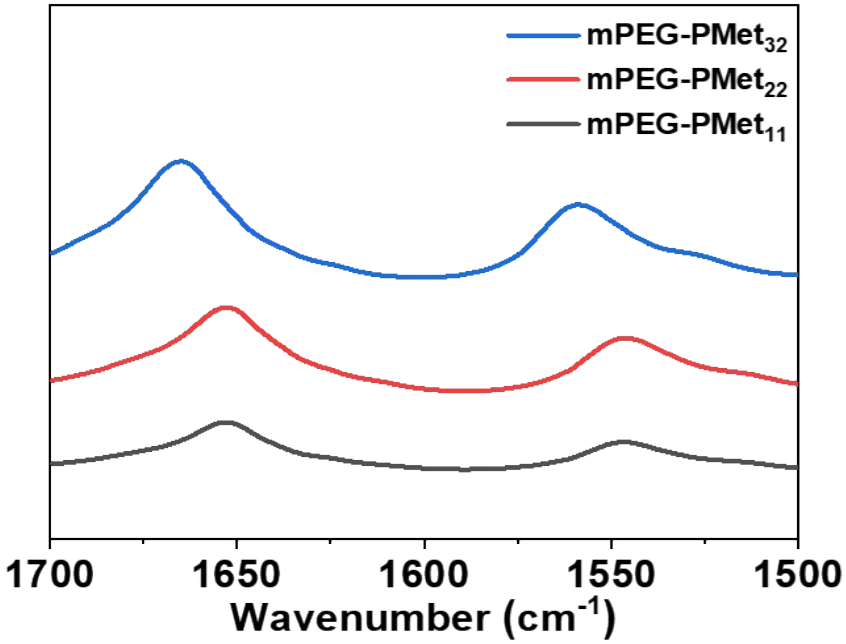


Figure S3. The FTIR spectra of different degrees of polymerization of the copolymers.

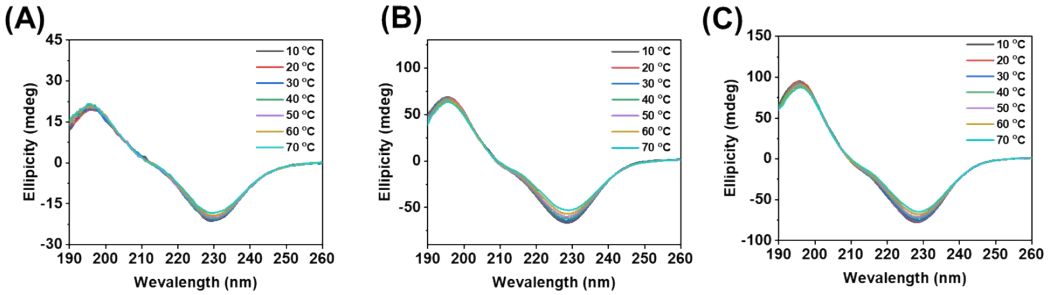


Figure S4. The CD spectra of mPEG-*b*-PMet$_{11}$ A), mPEG-*b*-PMet$_{22}$ B), mPEG-*b*-PMet$_{32}$ C) at different temperature.

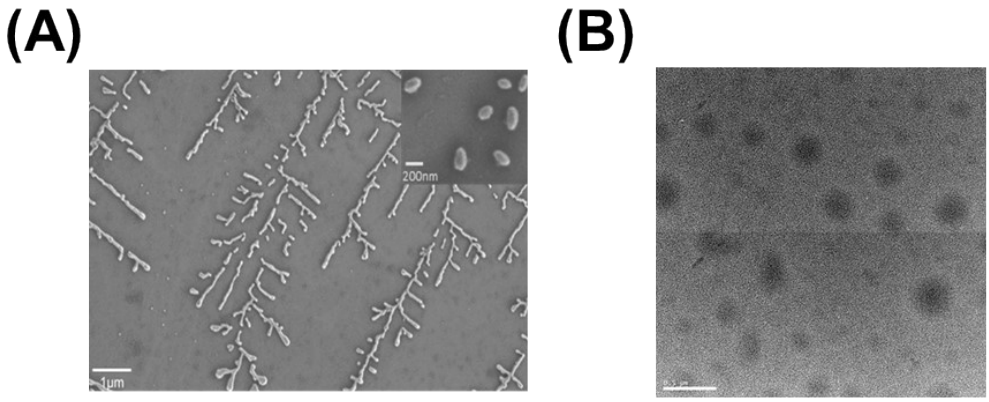


Figure S5. (A) SEM image of self-assembled nanoparticles of 1 mg/mL mPEG-*b*-PMet$_{22}$. (B) TEM image of self-assembled nanoparticles of 0.1 mg/mL mPEG-*b*-PMet$_{22}$. The scale bar in the TEM image represents 500 nm.

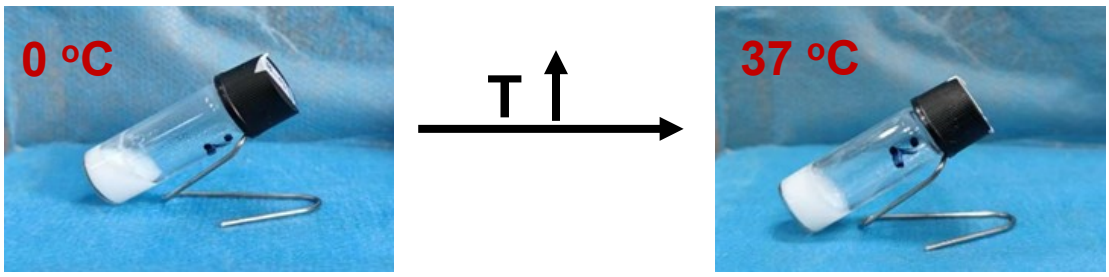


Figure S6. The representative pictures of sol-gel phase transitions of the 8.0 wt% mPEG-*b*-PMet$_{22}$ hydrogels *in vitro*

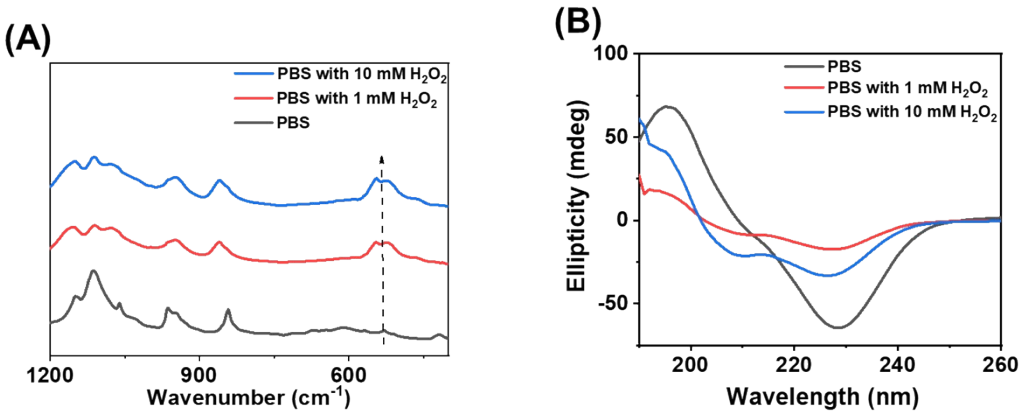


Figure S7. The FTIR spectra A) and the CD spectra B) of the post-oxidation copolymers.

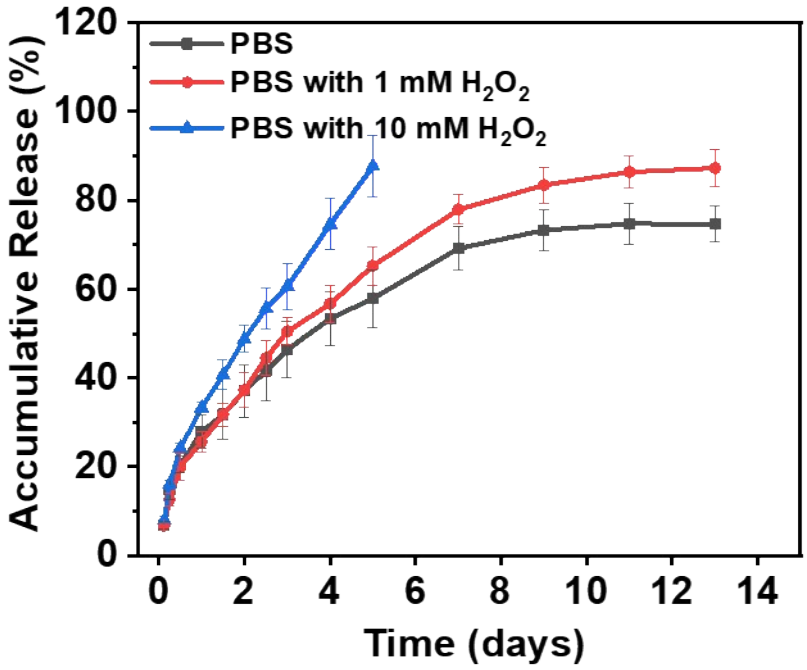


Figure S8. The release behaviors of Cy3-IgG from the hydrogel formed by 8.0 wt% mPEG-*b*-$PMet_{22}$ evaluated hydrogen peroxide *in vitro* (n = 3).

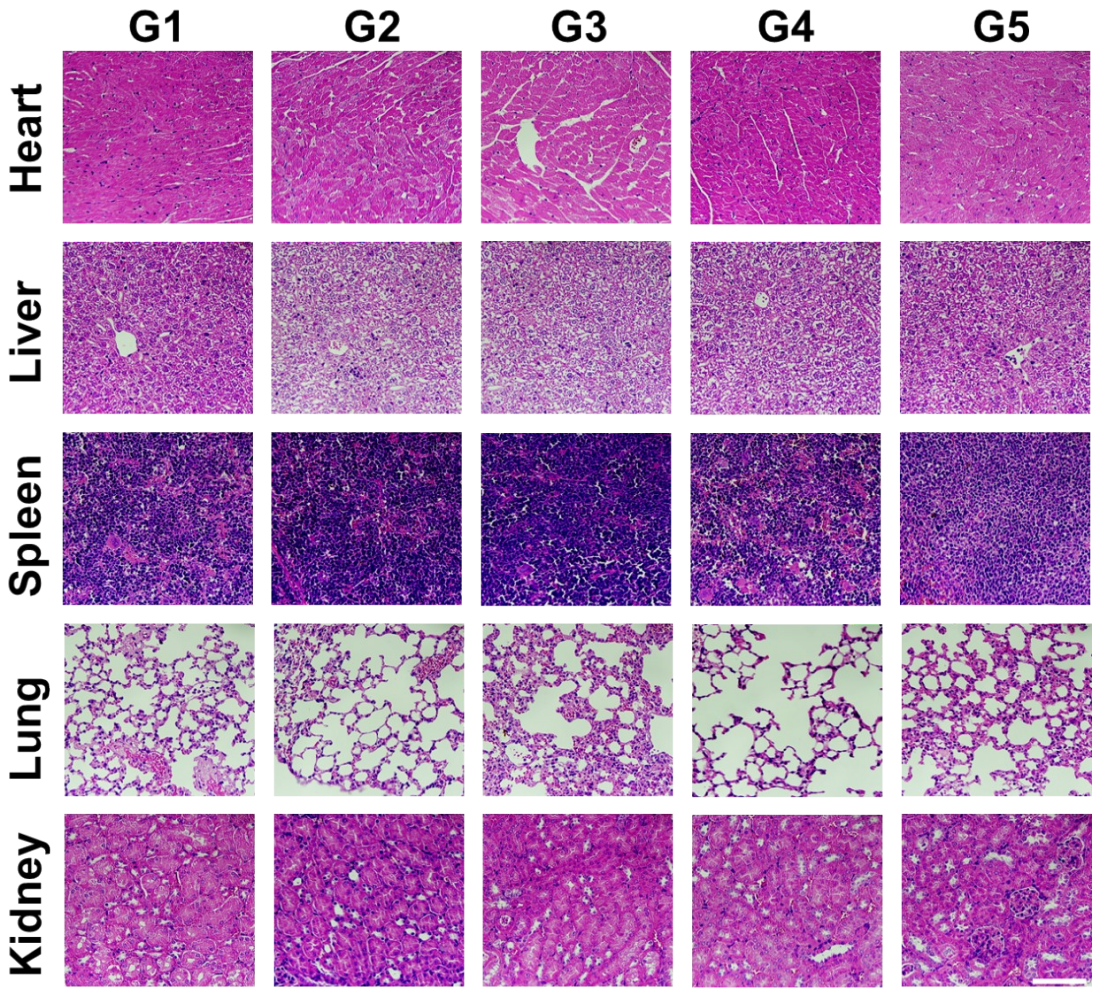


Figure S9. Histological analysis of major organs of B16F10-bearing mice with different treatments at day 10. Scale bar = 100 μm, G1: PBS, G2: Free Dox/R848/aPD-1, G3: Dox@Gel, G4: Dox/R848@Gel, G5: Dox/R848/aPD-1@Gel.

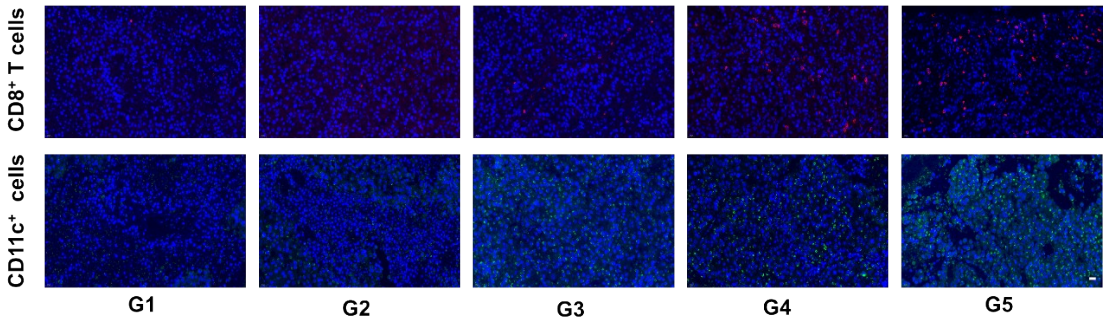


Figure S10. Immunohistochemistry images of $CD11c^+$ cells and $CD8^+$ T cells in tumor tissues via CSLM, (scale bar=2 μm), G1: PBS, G2: Free Dox/R848/aPD-1, G3: Dox@Gel, G4: Dox/R848@Gel, G5: Dox/R848/aPD-1@Gel.