Supplementary information

Cascade Enzymatic Semiconducting Polymer Nanocomposites for NIR-II Light-Mediated Photothermal-Chemodynamic Combinatorial Therapy

Yue Wang,[‡a] Sihui Liu,[‡b] Shengze Lu,[‡c] Danling Cheng,[d] Yongliang Fan,[*e] Jingchao Li,[*d] Xia Lu[*f] and Jindong Xia[*a]

[a] Department of Radiology, Songjiang Hospital Affiliated to Shanghai Jiao Tong University School of Medicine, Shanghai 201600, China Email: xiajd_21@163.com

[b] Department of Radiology, Fujian Medical University Union Hospital, Fuzhou 350001, China

[c] Department of Clinical Pharmacology, School of Pharmacy, China Medical University, Shenyang 110122, China

[d] State Key Laboratory of Advanced Fiber Materials, College of Biological Science and Medical Engineering, Donghua University, Shanghai 201620, China Email: jcli@dhu.edu.cn

[e] Department of Cardiovascular Surgery, Shanghai General Hospital, Shanghai Jiao Tong University School of Medicine, Shanghai 201600, China Email: fanyl1998@163.com

[f] Department of Nuclear Medicine, Northern Jiangsu People's Hospital, Clinical Medical College, Yangzhou University, Yangzhou 225001, China Email: lxgf2222@163.com

‡ Yue Wang, Sihui Liu and Shengze Lu contributed equally to this work.

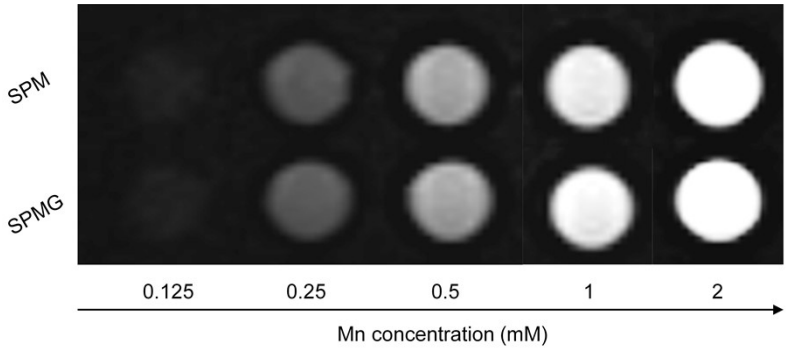

Figure S1. The MRI images of SPM and SPMG at various concentrations (0.125, 0.25, 0.5, 1 and 2 μg/mL).

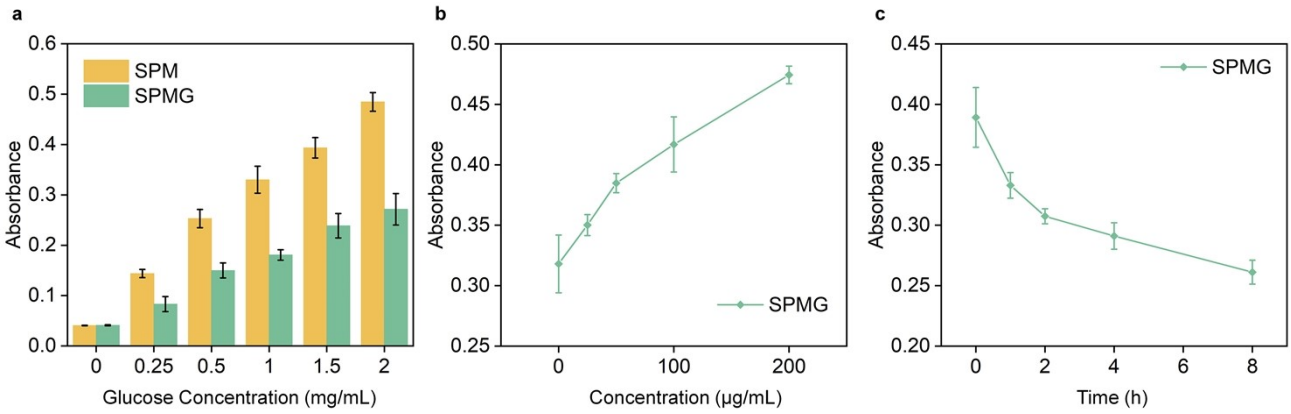

Figure S2. (a) Absorbance elevation of SPM and SPMG with glucose concentration in vitro (n = 3). (b) Concentration-dependent response of SPMG in vitro (n = 3). (c) Time-dependent activity decay of SPMG over 8 hours in vitro (n = 3).

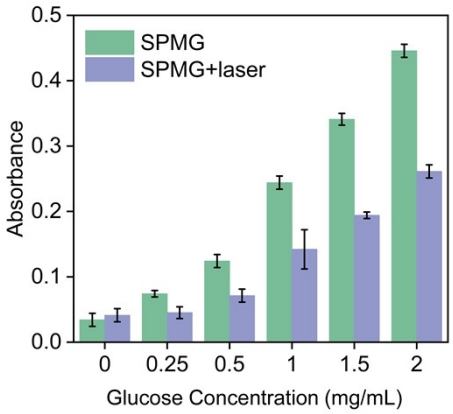

Figure S3. Comparative absorbance of SPMG combined with or without 1064 nm laser irradiation (1 W/cm2) across glucose concentrations (n = 3).

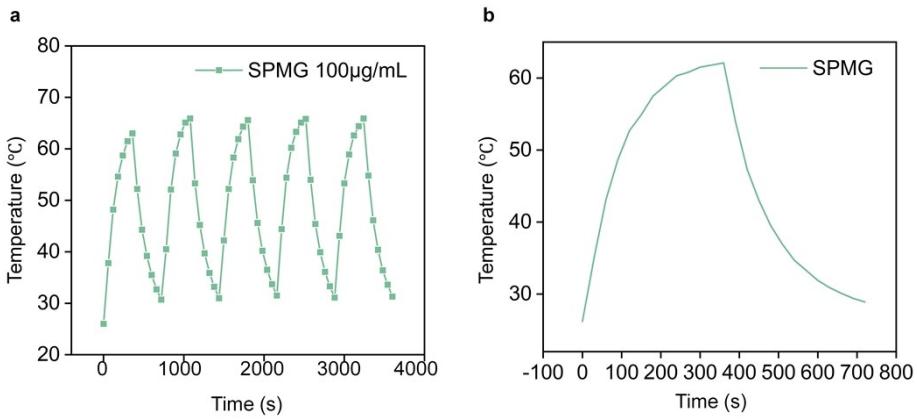

Figure S4. (a) Temperature evolution of the SPMG (100 μg/mL) under 1064 nm laser irradiation for five laser on/off cycles (1 W/cm^2). (b) Photothermal heating and cooling of SPMG under 1064 nm laser irradiation (1 W/cm^2).

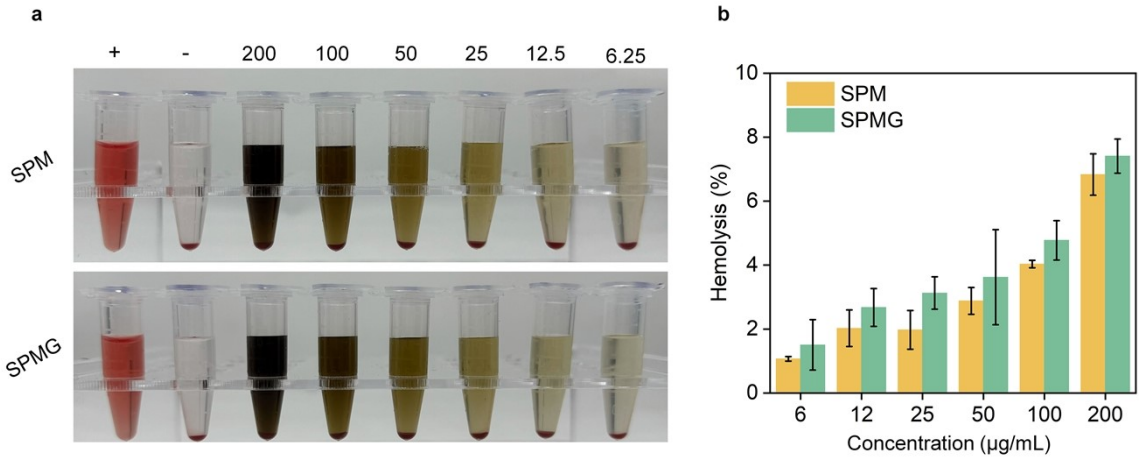

Figure S5. (a) Visual hemolysis comparison of SPMG (6.25-200 μg/mL) (b) Quantitative hemolysis rates of SPMG (n = 3).

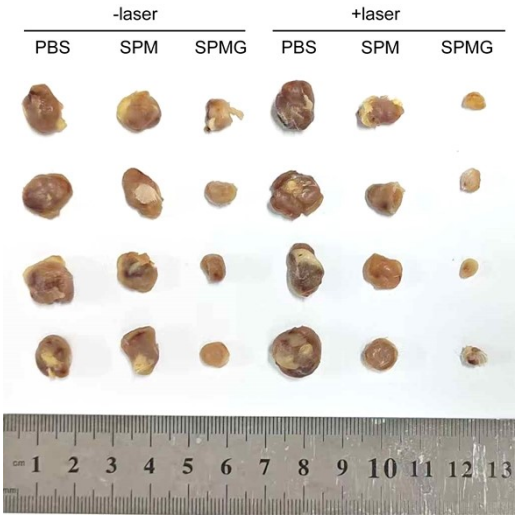

Figure S6. Photographs of 4T1 tumors extracted from mice in six treatment groups (n = 4).

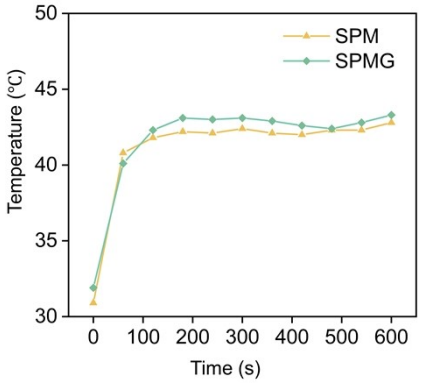

Figure S7. Temperature changes at the tumor site during the 1064 nm laser irradiation for the SPM and SPMG (1.0 W/cm^2).

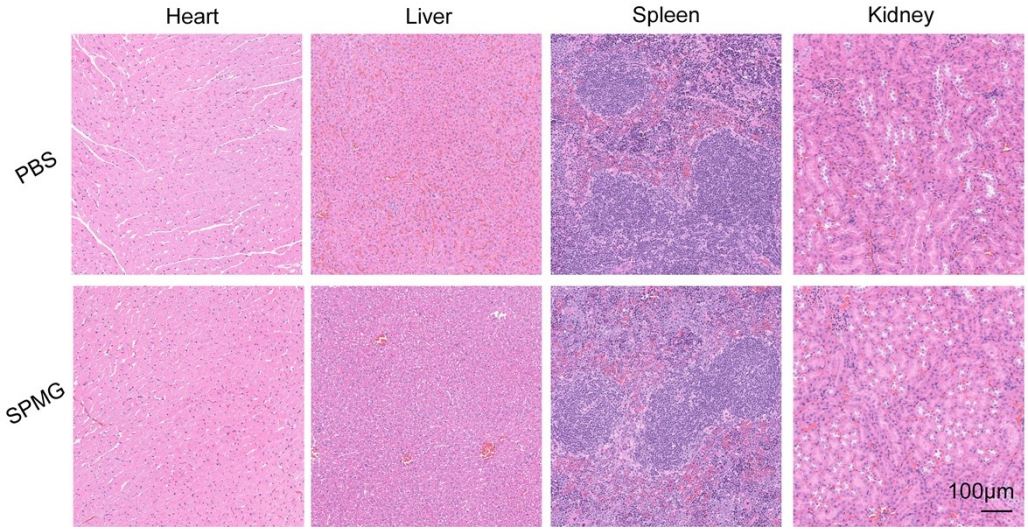

Figure S8. H&E-stained major organs (heart, liver, spleen and kidney) of 4T1 tumor-bearing mice during the PBS group and SPMG combined with 1064 nm laser irradiation group (1.0 W/cm^2).