A Continuous Stimuli-Responsive System for NIR-II Fluorescence/Photoacoustic Imaging Guided Photothermal/Gas Synergistic Therapy

Ziliang Zheng^{a, b#}, Qi Chen^{a, b#}, Rong Dai^{c#}, Zhuo Jia^c, Chenhua Yang^a, Xiaoyang Peng^a, and

Ruiping Zhang^b*

^a Department of biochemistry and molecular biology, Shanxi Medical University, Taiyuan 030001,

China

^b The Affiliated Da Yi Hospital of Shanxi Medical University, Taiyuan 030032, China

^c College of Chemistry and Chemical Engineering, Taiyuan University of Technology, Taiyuan
030024, China

^{*} Corresponding authors. Email: zrp_7142@sxmu.edu.cn (R. Zhang).

[#] These authors contributed equally to this work.



Figure S1. The survey, C 1s XPS and N 1s XPS spectra of AB-DS@BSA-N₃ NYs.



Figure S2. XRD pattern of AB@BSA and AB-DS@BSA-N₃ NYs.



Figure S3. FT-IR spectra of AB@BSA, AB-DS@BSA and AB-DS@BSA-N₃ NYs.



Figure S4. Thermogravimetric analysis of AB@BSA, AB-DS@BSA and AB-DS@BSA-N₃ NYs.



Figure S5. DLS and zeta potentials of AB-DS@BSA-N₃ NYs in water, PBS and saline.



Figure S6. Hydrodynamic size of AB-DS@BSA-N₃ NYs with or without GSH (2 mM).



Figure S7. Calculation of time constant for heat transfer from the system using linear regression of



the cooling profile. (808 nm, 1W cm⁻²).

Figure S8. The PA spectra of the AB-DS@BSA-N₃ NYs (300 µg mL⁻¹) and the mouse blood.



Figure S9. The tumor weight of mice with different groups in 20 days' treatment.



Figure S10. The digital photographs of excised tumors from the different groups at the end of

treatments (day 20).



Figure S11. H&E staining of major organ tissues collected from mice at the end of treatment. Scale

bar is 50 μ m.