## **Supporting Information**

## BSA-Exfoliated WSe<sub>2</sub> Nanosheets as a Photoregulated Carrier for Synergistic Photodynamic/Photothermal Therapy

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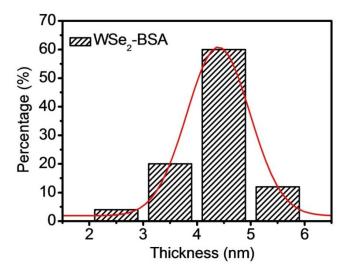


Fig. S1 AFM measured thickness distributions of WSe<sub>2</sub>-BSA nanosheets.

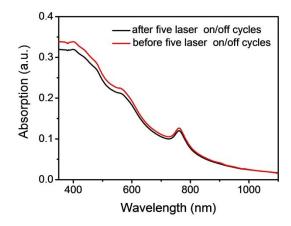


Fig. S2 UV-vis absorption spectrum of WSe<sub>2</sub>-BSA nanosheets before (red) and after (black) five laser on/off cycles

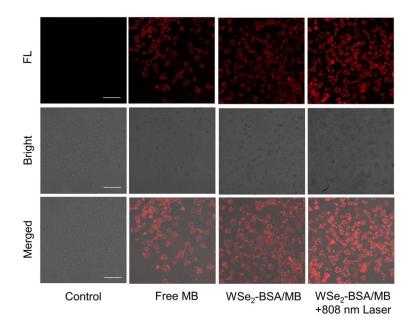


Fig. S3 The confocal images of HeLa cells treated with DMEM, free MB, WSe<sub>2</sub>-BSA/MB, WSe<sub>2</sub>-BSA/MB +808 nm laser (1.65 W/cm<sup>2</sup>, 5min) for 3h, respectively. The concentration of WSe<sub>2</sub>-BSA and MB was fixed at 0.2 mg/mL and 20  $\mu$ M, respectively.

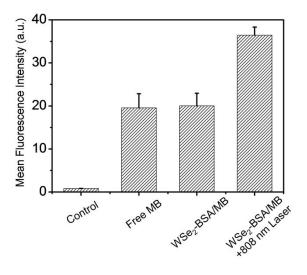


Fig. S4 The mean fluorescence intensity of MB of the HeLa cells treated with DMEM, free MB, WSe<sub>2</sub>-BSA/MB, WSe<sub>2</sub>-BSA/MB +808 nm laser (1.65 W/cm<sup>2</sup>, 5min) for 3h, respectively. The concentration of WSe<sub>2</sub>-BSA and MB was fixed at 0.2 mg/mL and 20  $\mu$ M, respectively.

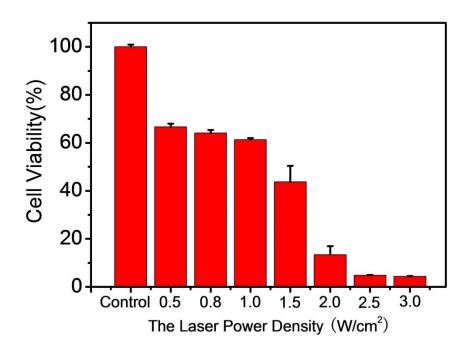


Fig. S5 In vitro cell viabilities after incubation with 0.2~mg/mL of  $WSe_2$ -BSA, and irradiated by 808~nm NIR light with various power densities.