

Untrasmall Bi₂S₃ nanodots for in vivo X-ray CT imaging-guided photothermal therapy of cancer

Zelun Li ^{#a}, Kelong Ai ^{#a}, Zhe Yang^b, Tianqi Zhang^b, Jianhua Liu^{b*}, Xiaoqiang Cui^{a*}

a State Key Lab Automot Simulat & Control, Dept Mat Sci, Jilin Univ, Changchun 130012, Peoples R China

b Department of Radiology, The Second Hospital of Jilin University, Changchun, 130041 (P. R. China).

* Corresponding author:

Xiaoqiang Cui

E-mail addresses: xqcui@jlu.edu.cn.

Jianhua Liu

E-mail addresses: drliujh@yahoo.com

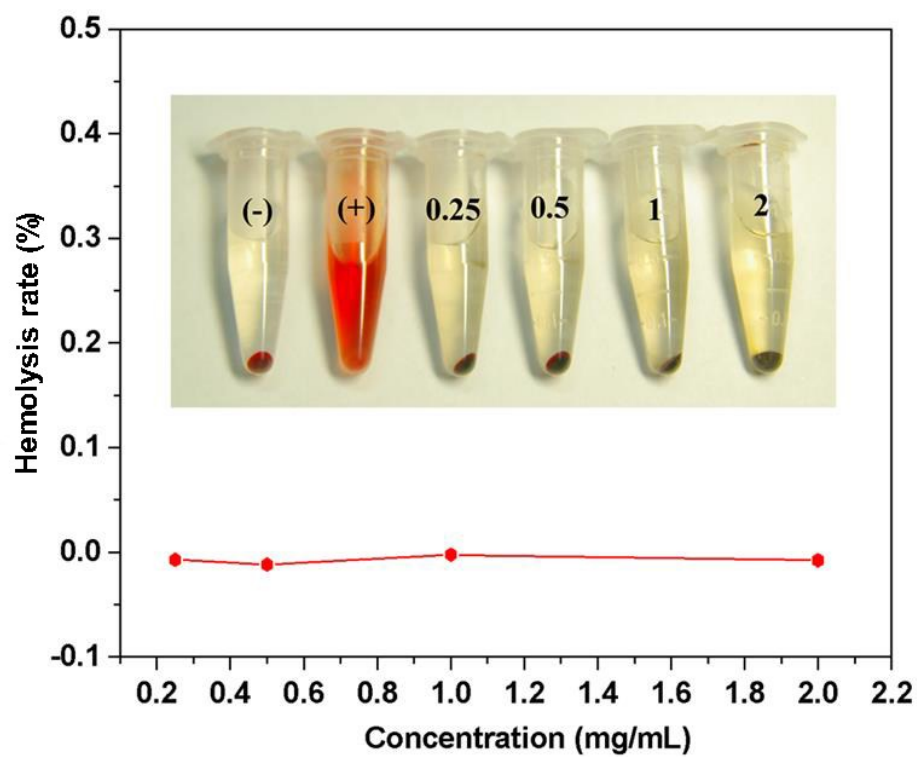


Fig. S1 Blood hemolysis analysis of PEG-coated Bi_2S_3 nanodots. From left to right: water, PBS, 0.25, 0.5, 1, 2 mg/mL PEG-coated Bi_2S_3 nanodots dispersed in PBS.

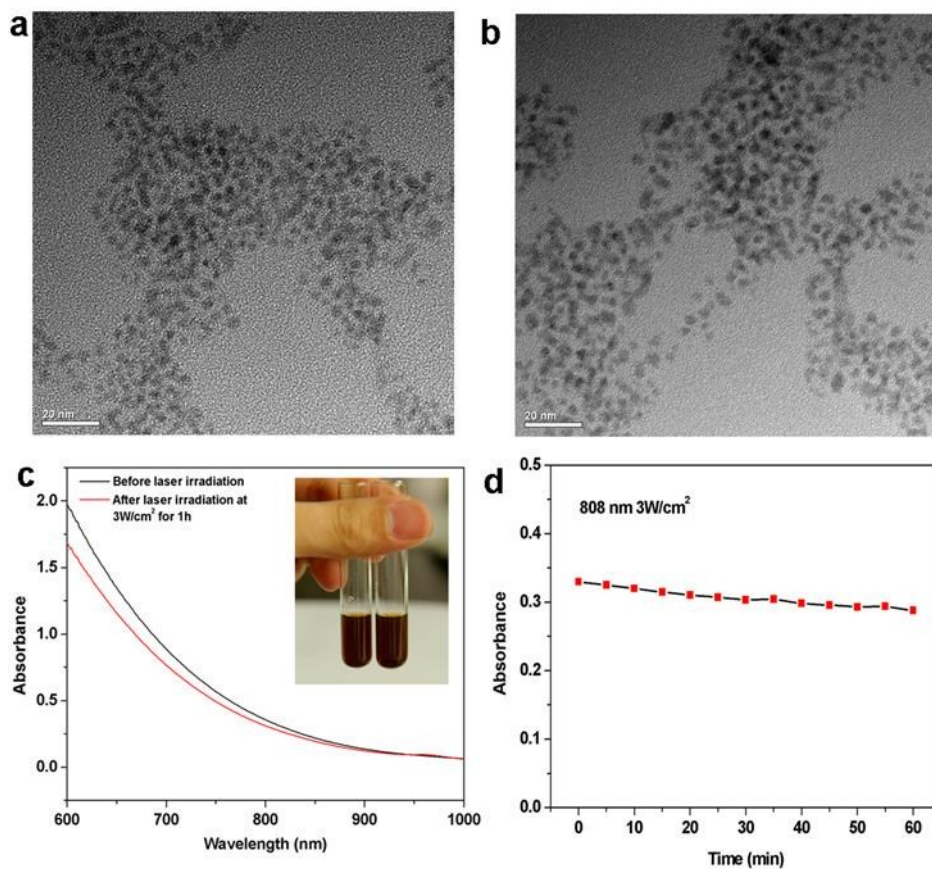


Fig. S2 TEM images of PEG-coated Bi_2S_3 nanodots before (a) and after (b) laser irradiation. (c) UV-vis absorbance of PEG-coated Bi_2S_3 nanodots before and after continuous laser irradiation for 1 h. The insert is the corresponding digital picture of PEG-coated Bi_2S_3 nanodots (left) before and (right) after laser irradiation. (d) The absorbance of PEG-coated Bi_2S_3 nanodots at 808 nm during the laser irradiation. The power density is 3W/cm^2 .

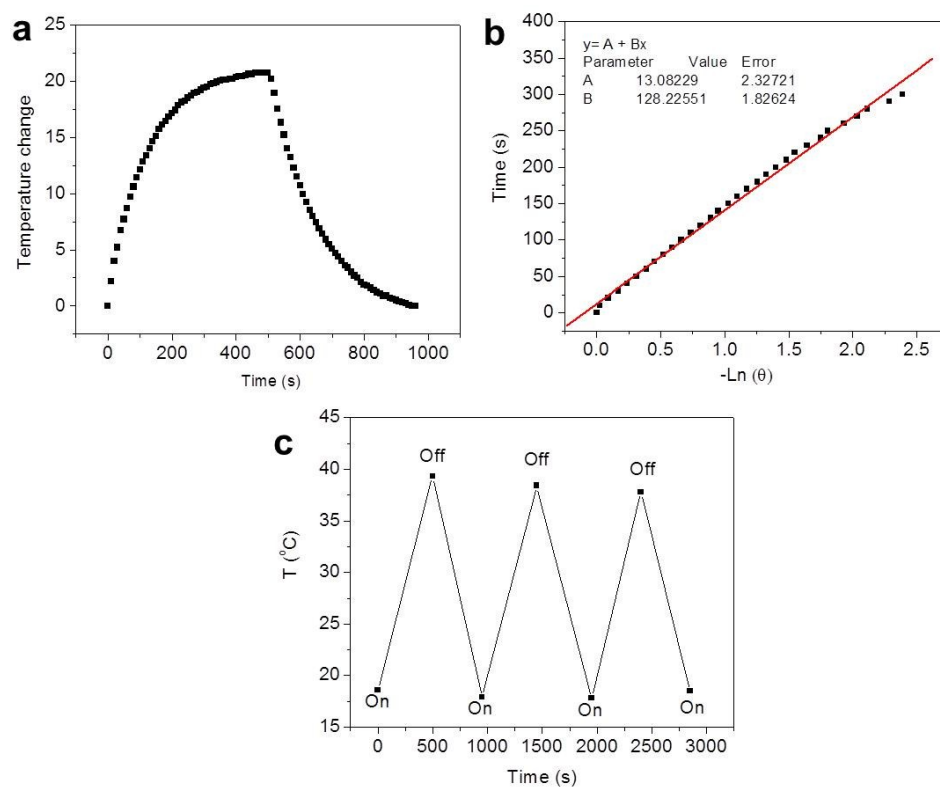


Fig. S3 (a) The photothermal response of the PEG-Bi₂S₃ nanodot aqueous solution (148 mg/mL) for 500 s with an NIR laser (808 nm, 3 W/cm²) and then the laser was turn off. (b) Linear time data vs. $-\ln \theta$ derived from the cooling period of a. (c) Photothermal conversion effect of PEG-Bi₂S₃ nanodots after three laser irradiation and cooling circles.

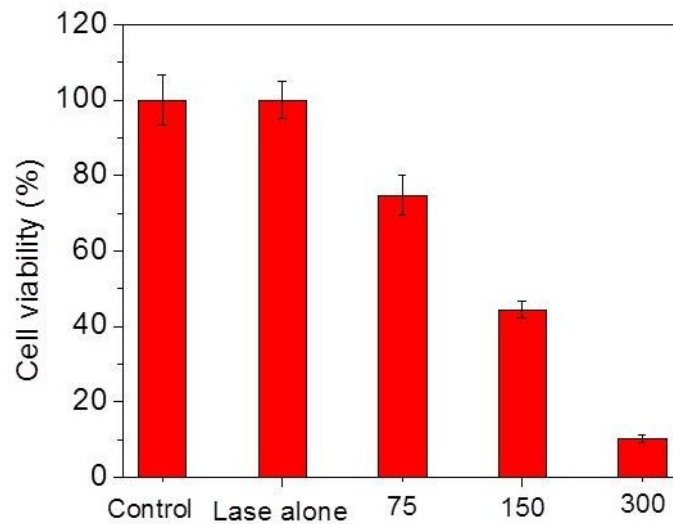


Fig. S4 Quantitative cell viability analysis 4T1 cells after treatment with PEG-Bi₂S₃ nanodots with laser irradiation.

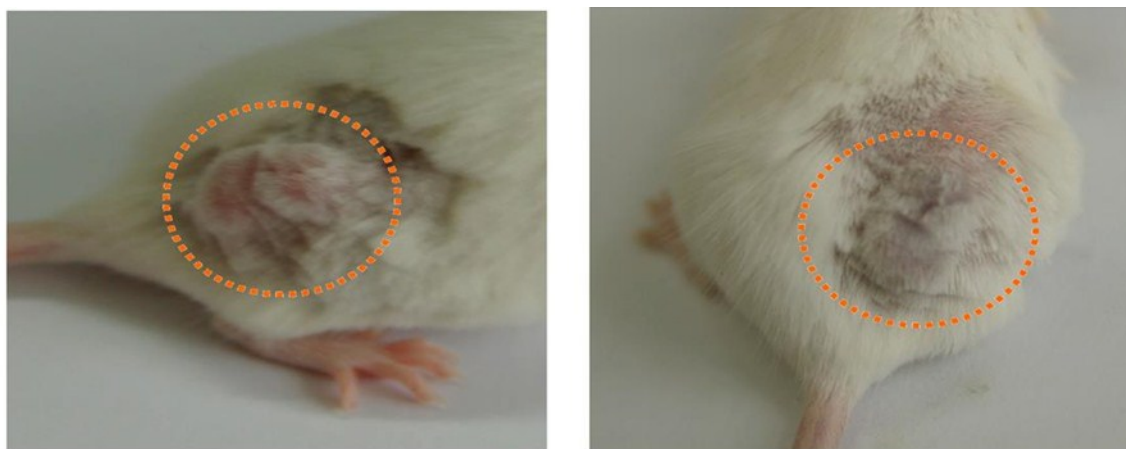


Fig. S5 Digital pictures (b) of 4T1 tumor-bearing mouse before injection (left) and at 24 h postinjection (right) of PEG-coated Bi₂S₃ nanodots.

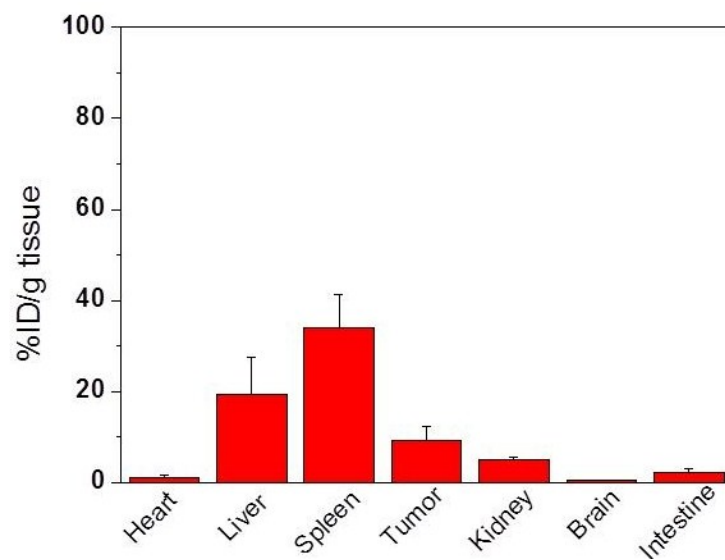


Fig. S6 Tissue distribution of PEG-coated Bi_2S_3 nanodots at 24 h postinjection through the tail vein based on the ICP analysis.

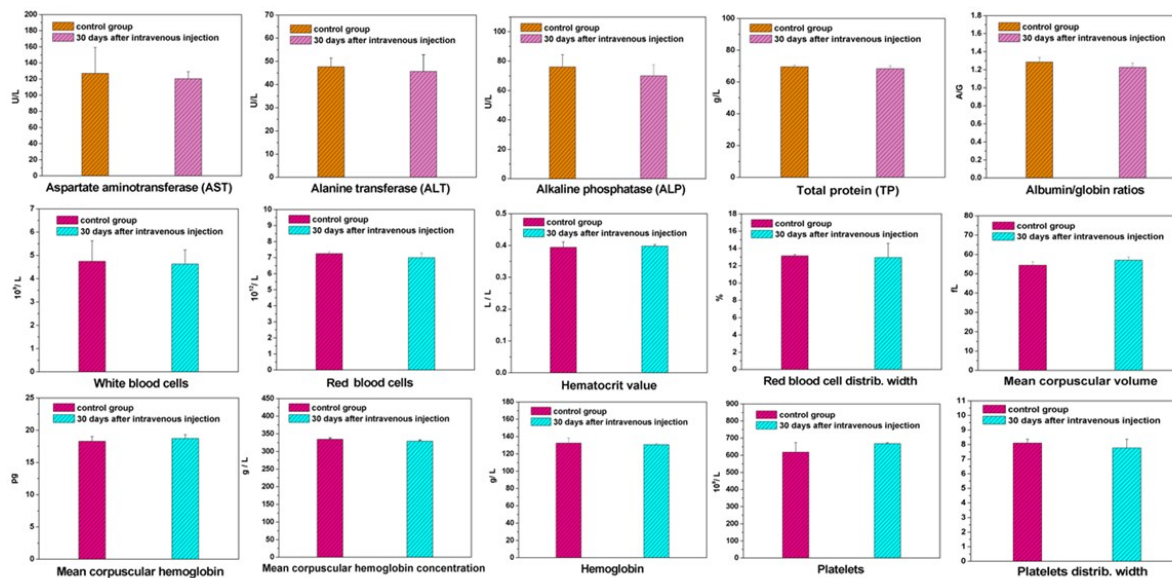


Fig. S7 Blood analysis of control mice and mice treated with PEG-coated Bi_2S_3 nanodots.

Table S1. CT values (HU) of the mouse before vs. at different time points after injection of PEG-coated Bi_2S_3 nanodots.

Organ	Pre-injection	5 min	30 min	1h	2h
Heart	45.6	137.8	83.3	56.4	55.5
Liver	42.8	85.4	132.9	151.7	170.9
Spleen	38.7	79.3	202.7	220.1	231.1
Sladder	29.4	47.7	93.6	65.9	35.2