

Supplementary data for

## **Annealing-modulated nanoscintillators for nonconventional X-ray activation of comprehensive photodynamic effects in deep cancer theranostics**

Yao-Chen Chuang,<sup>§ a</sup> Chia-Hui Chu,<sup>§ a</sup> Shih-Hsun Cheng,<sup>a, b</sup> Lun-De Liao,<sup>a</sup>  
Tsung-Sheng Chu,<sup>a</sup> Nai-Tzu Chen,<sup>c</sup> Arthur Paldino,<sup>d</sup> Yu Hsia,<sup>a</sup> Chin-Tu Chen,<sup>b</sup> and  
Leu-Wei Lo<sup>\*, a</sup>

<sup>a</sup> *Institute of Biomedical Engineering and Nanomedicine Research, National Health Research Institutes, 35 Keyan Road, Zhunan 350, Taiwan.*

<sup>b</sup> *Department of Radiology, The University of Chicago, Chicago, IL 60637, USA.*

<sup>c</sup> *Department of Cosmeceutics, China Medical University, 91 Hsueh-Shih Road, Taichung, Taiwan 40402*

<sup>d</sup> *Faculté de médecine Lyon-Est, Université Claude Bernard, 8 Avenue Rockefeller, Lyon 69008, France*

<sup>§</sup> These authors contributed equally

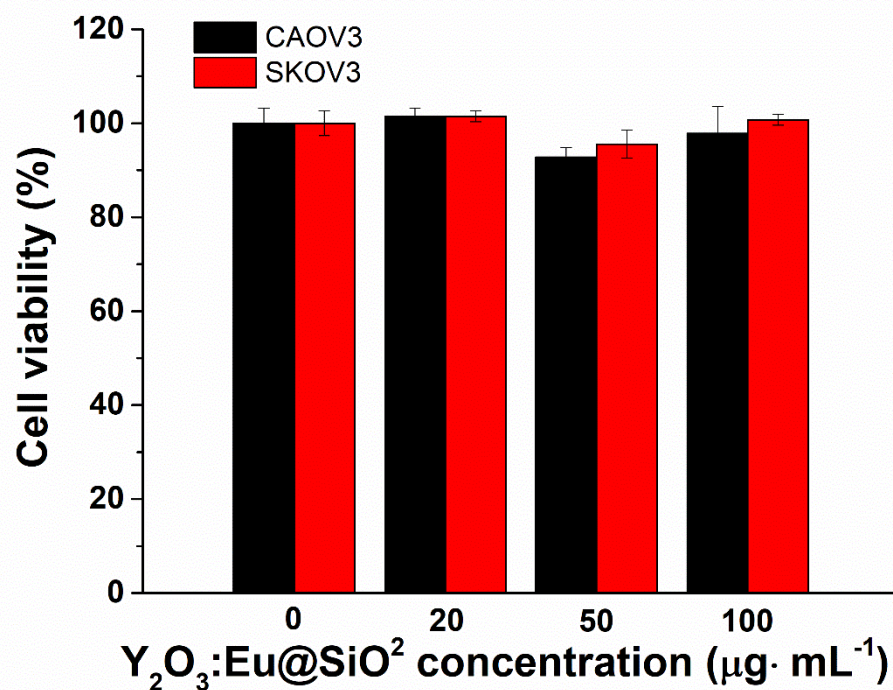
\* Author for correspondence:

Leu-Wei Lo, Ph.D.

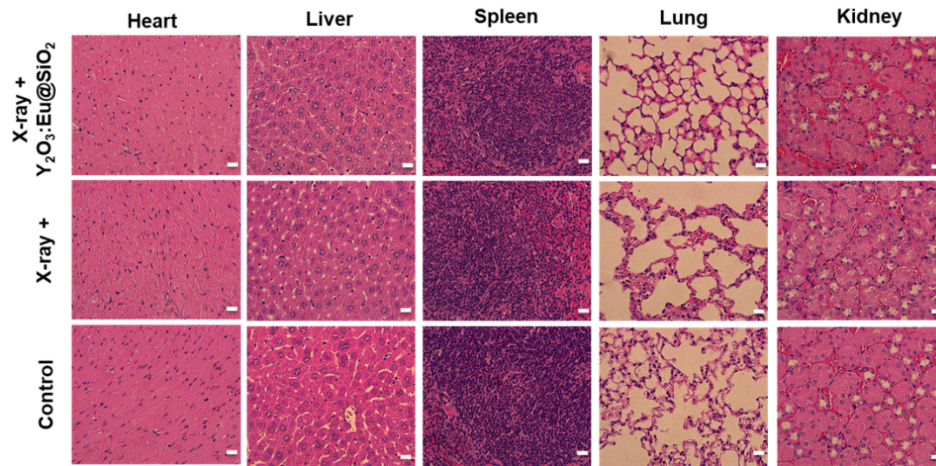
Institute of Biomedical Engineering and Nanomedicine, National Health Research Institutes, Zhunan, Miaoli 35053, Taiwan.

Tel: 886-37-246166 # 37115 Fax: 886-37-586440

E-mail: [lwlo@nhri.edu.tw](mailto:lwlo@nhri.edu.tw)



**Figure S1.** The survival rates of cells were determined by the MTT method after treated by 0, 20, 50, or 100 µg·mL<sup>-1</sup> of Y<sub>2</sub>O<sub>3</sub>:Eu@SiO<sub>2</sub> nanoparticles for 24 h in vitro. No obvious toxicity of Y<sub>2</sub>O<sub>3</sub>:Eu@SiO<sub>2</sub> nanoparticles is observed in both CAOV3 and SKOV3 cells.



**Figure S2.** Histopathologic examination of the major organs collected of nu mice in the X-ray PDT group, fractionated radiation therapy group and the control group at the experimental endpoint (scale bar: 20 mm).