

## Supplementary Materials

# Development of Folic Acid-Conjugated and Methylene Blue-Adsorbed Au@TNA Nanoparticles for Enhanced Photodynamic Therapy of Bladder Cancer Cells

Che-Wei Hsu <sup>1,†</sup>, Nai-Chi Cheng <sup>2,†</sup>, Mei-Yi Liao <sup>3,†</sup>, Ting-Yu Cheng <sup>3</sup> and Yi-Chun Chiu <sup>4,5,6,\*</sup>

<sup>1</sup> Division of Urology, Department of Surgery, Taipei City Hospital Zhongxiao Branch, Taipei 115, Taiwan; DAX82@tpech.gov.tw

<sup>2</sup> Department of Applied Chemistry, National University of Kaohsiung, Kaohsiung 811, Taiwan; ferrero565@gmail.com

<sup>3</sup> Department of Applied Chemistry, National Pingtung University, Pingtung 900, Taiwan; myliao@mail.nptu.edu.tw (M.-Y.L.); t0922460558@gmail.com (T.-Y.C.)

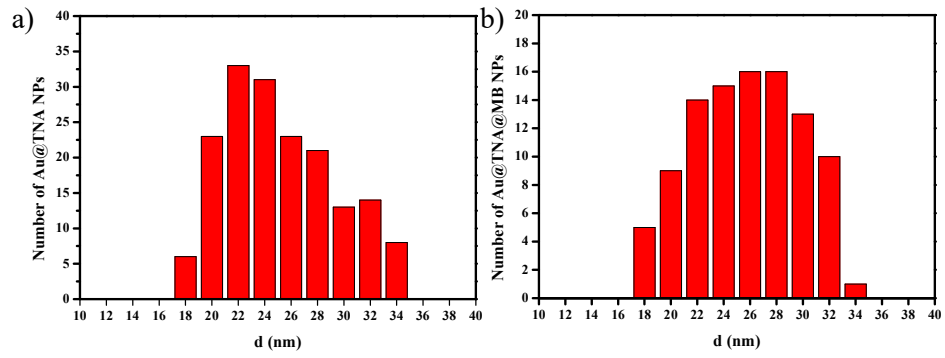
<sup>4</sup> Division of Urology, Department of Surgery, Taipei City Hospital Heping Fuyou Branch, Taipei 100, Taiwan

<sup>5</sup> Department of Exercise and Health Sciences, University of Taipei, Taipei 100, Taiwan

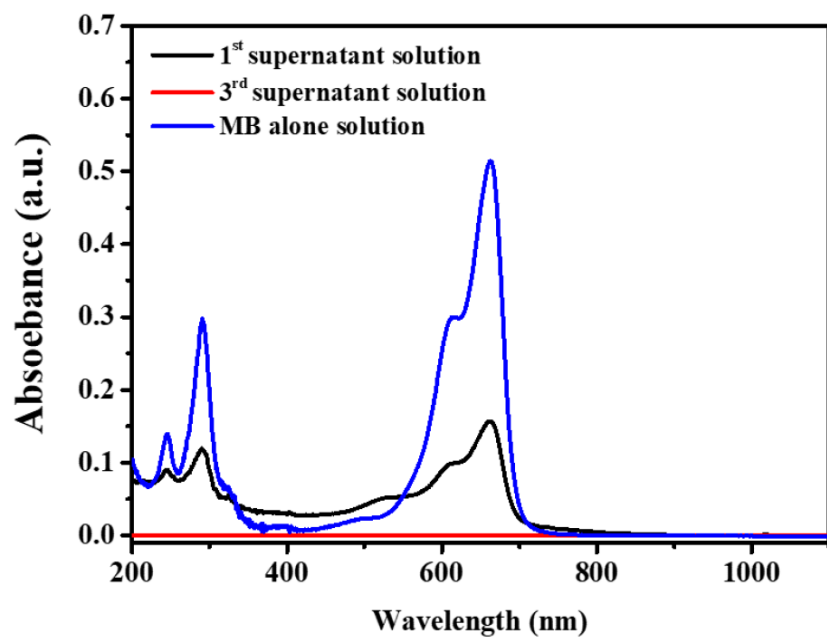
<sup>6</sup> Department of Urology, School of Medicine, National Yang-Ming University, Taipei 112, Taiwan

\* Correspondence: DAM15@tpech.gov.tw; Tel.: +886-2-23889595 (ext. #7999)

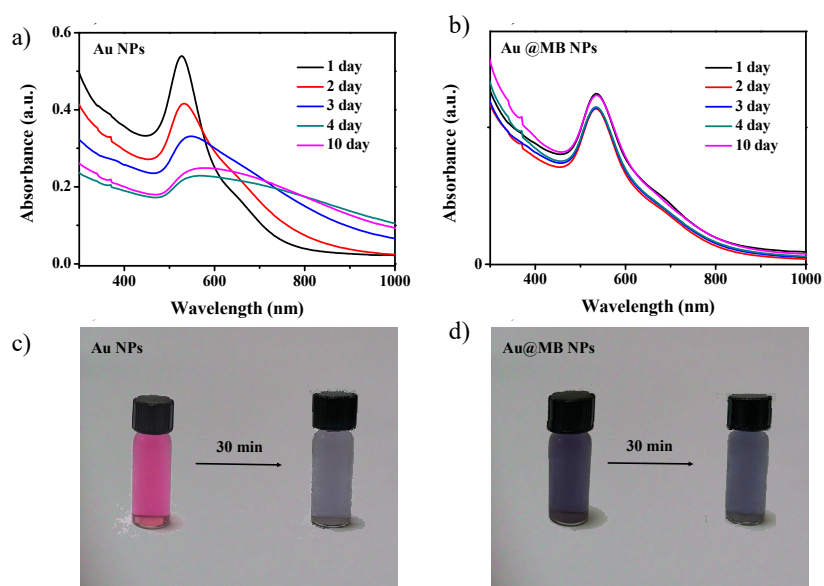
† These authors contributed equally to this work.



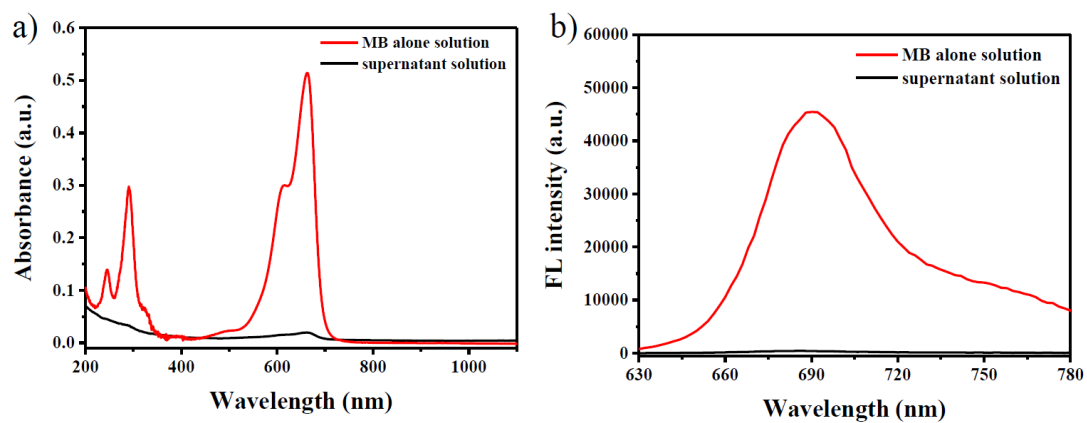
**Figure S1** Size distribution measurements of a) Au@TNA NPs and b) Au@TNA@MB NPs on the basis of TEM image measurements.



**Figure S2.** UV-visible spectra of the MB alone and the 1<sup>st</sup>/3<sup>rd</sup> supernatant solution collected from the mixture solution of Au@TNA nanoparticle and MB molecule through a centrifugation process.



**Figure S3.** UV-visible measurements of a) Au@TNA NPs and b) Au@TNA@MB NPs aged in PBS solution. Optical images of c) Au@TNA NPs and d) Au@TNA@MB NPs dispersed in PBS solution for 30 min.



**Figure S4.** a) UV-visible and b) fluorescence measurements of the MB alone solution, referred as 100 % of concentration, and the supernatant of the Au@TNA@MB nanoparticles after 1 day of aging.