## **Supporting Information**

## NIR-II triggered doxorubicin release for orthotopic bladder cancer chemo-photothermal therapy

Zhiduo Sun,<sup>a</sup> Weiyun Zhang,<sup>c</sup> Zhichao Ye,<sup>b</sup> Li Yuan,<sup>e</sup> Manli Fu,<sup>e</sup> Xiaoming Liu,<sup>f</sup> Huageng Liang <sup>\*b</sup> and Heyou Han <sup>\*a,d</sup>

<sup>a.</sup> State Key Laboratory of Agricultural Microbiology, College of Life Science and Technology, Huazhong Agricultural University, Wuhan 430070, P. R. China. E-mail: <u>hyhan@mail.hzau.edu.cn</u> <sup>b.</sup> Department of Urology, Union Hospital, Tongji Medical College, School of Materials Science and Engineering, Huazhong University of Science and Technology, Wuhan 430070, P. R. China <sup>c.</sup> Marshall Laboratory of Biomedical Engineering, Research Center for Biosensor and Nanotheranostic, Guangdong Key Laboratory for Biomedical Measurements and Ultrasound Imaging, School of Biomedical Engineering, Health Science Center, Shenzhen University, Guangdong 518060, P. R. China

<sup>d</sup> State Key Laboratory of Agricultural Microbiology, College of Science, Huazhong Agricultural University, Wuhan 430070, P. R. China

<sup>e.</sup> Department of Ultrasonography, Wuhan Children's Hospital (Wuhan Maternal and Child Healthcare Hospital), Tongji Medical College, Huazhong University of Science and Technology, Wuhan 430070, P. R. China

<sup>f.</sup> Department of Radiology, Union Hospital, Tongji Medical College, Huazhong University of Science and Technology, Wuhan 430070, P. R. China



Fig. S1 The TEM images of (A) TeNRs and (B) AuHNRs.



Fig. S2 Schematic for the synthetic method of HTCC.



**Fig. S3** The Dox loading efficiencies of Dox/NH<sub>4</sub>HCO<sub>3</sub>@AuHNRs-HTCC (DNAH), Dox@AuHNRs-HTCC (DAH) and AuHNRs.



Fig. S4 EDX spectrum of DNAH.





Fig. S5 Position spectrum of Au and O.



Fig. S6 DLS of AuHNRs and DNAH NPs.



Fig. S7 Polydispersity index (PDI) of DNAH in ultrapure water, PBS and mouse urine.



Fig. S8 The decomposition of NH<sub>4</sub>HCO<sub>3</sub>. (a) At 45 °C. (b) At room temperature.



Fig. S9 The cumulative Dox release of DNAH in urine with NIR.