Supporting Information

Aggregation-Induced Emission Dye-Powered Afterglow Luminogens for Tumor Imaging

Yan Xu, Weitao Yang, Defan Yao, Kexin Bian, Weiwei Zeng, Kai Liu, Dengbin Wang and Bingbo Zhang*

Dr. Y. Xu, Dr. W. Yang, Dr. K. Bian, W. Zeng, K. Liu, Prof. B. Zhang
Department of Medical Ultrasound, Shanghai Tenth People's Hospital
Tongji University Cancer Center
Tongji University School of Medicine
Shanghai 200072, China
Email: bingbozhang@tongji.edu.cn

Dr. D. Yao, Prof. D. Wang
Department of Radiology
Xinhua Hospital
Shanghai Jiao Tong University School of Medicine
Shanghai 200092, China
Figure S1. $^1$H NMR of TTMN.
Figure S2. LC-MS of TTMN
**Figure S3.** a) Afterglow luminescence images of PNPs in H$_2$O (200 μL) with different PFPV concentration pre-irradiated by a white LED lamp (2000 lm). b) Digital pictures of PNPs solution (PFPV concentration, 100 μg/mL and 150 μg/mL). c) DLS result of PNPs at 150 μg/mL (PFPV concentration). d) TEM image of PNPs. e) TEM image of TNPs.

**Figure S4.** a) Afterglow luminescence images of H$_2$O, TNPs, PNPs and P-TNPs (200 μL, PFPV concentration 100 μg/mL, TTMN 10% w/w) pre-irradiated by a white LED lamp (2000 lm) and collected with a 630 nm filter. b) Luminescence images of PNPs in the presence of $^{1}$O$_2$, ClO and H$_2$O$_2$ agents. The final concentration of the three agents were all 10 mM which are prepared according to previous reports (J. Am. Chem. Soc., 2016, 138, 10778-10781; Anal. Chem., 2018, 90, 13714-13722).
Figure S5. The absorption spectra of ABDA (20 μM) in a) H₂O, b) PNP s, c) TNP s and d) P-TNP s upon white LED lamp (2000 lm) irradiation for every 2 min.
Figure S6. The fluorescence spectra of SOSG (2.4 μM) in a) H\textsubscript{2}O, b) PNPs, c) TNPs and d) P-TNPs upon white LED lamp (2000 lm) irradiation for every 2 min.

Figure S7. The fluorescence spectra of SOSG in a) H\textsubscript{2}O, b) PNPs and c) TNPs solutions and SOSG added after those irradiated for 2 min (2000 lm).
Figure S8. a) Intracellular ROS generation of PNPs and TNPs against 4T1 cells upon white light irradiation (2000 lm) for 3 min. Emission: BF (bright field), green from DCF, red from AIE dye (TTMN). Scale bar: 20 μm. b) Flow cytometry analysis of DCF fluorescence intensity in the corresponding groups.