

## A dual-channel fluorescent ratio probe with hypoxia targeting and hypoxia activation capacity for tumour imaging

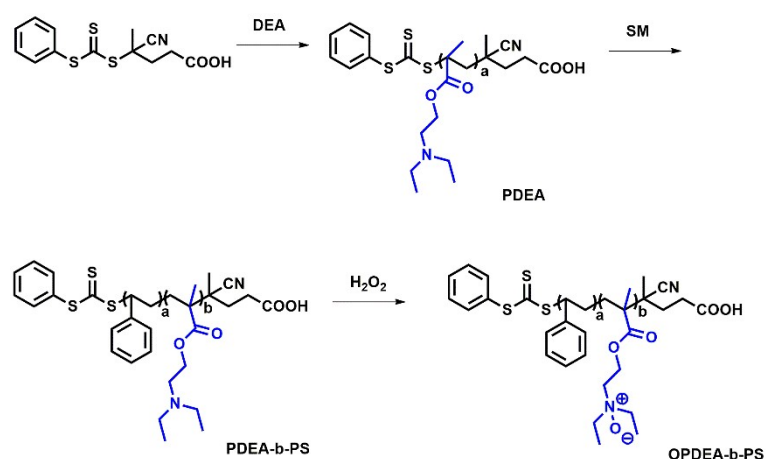
Pengcheng Yuan,<sup>a,‡</sup> Xiaodan Xu,<sup>a,‡</sup> Bing Xiao,<sup>a</sup> Xueying Shi,<sup>a</sup> Wei Zhang,<sup>a</sup>

Hongxia Xu,<sup>a</sup> Ying Piao,<sup>a</sup> Youqing Shen,<sup>a</sup> Nigel K. H. Slater,<sup>a</sup> and Jianbin Tang<sup>\*,a</sup>

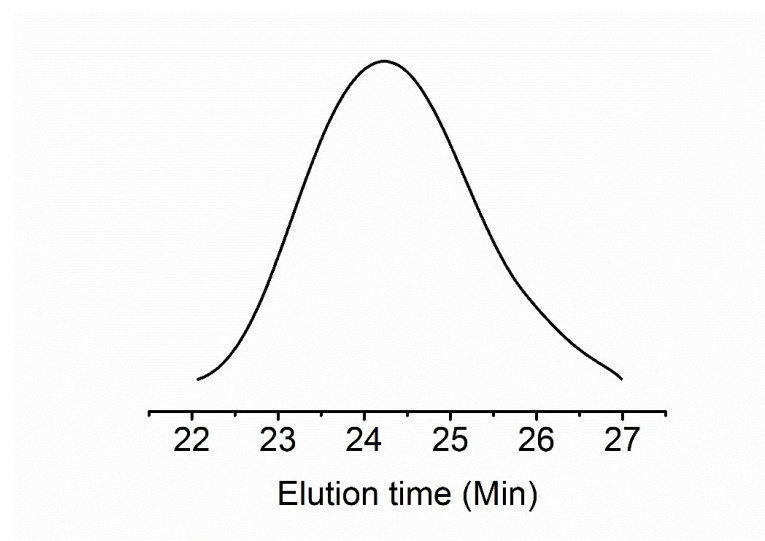
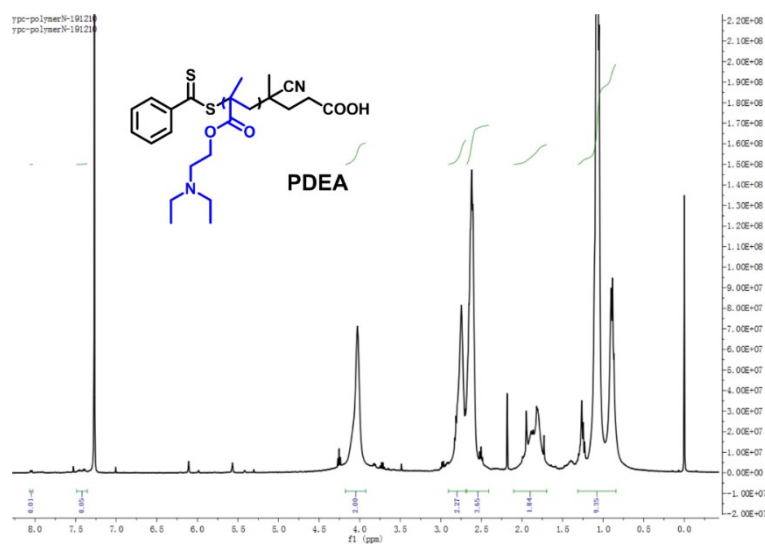
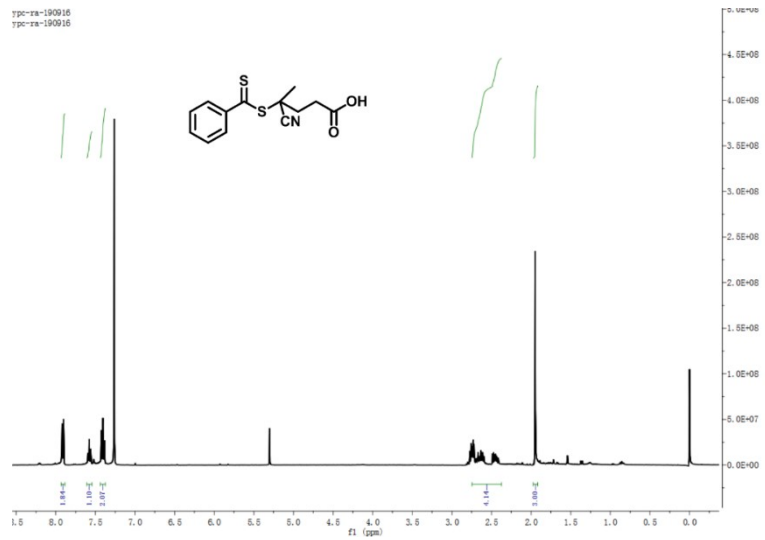
<sup>a</sup> Key Laboratory of Smart Biomaterials of Zhejiang Province, College of Chemical and Biological Engineering of Zhejiang University, Hangzhou, Zhejiang 310027, China. ZJU-Hangzhou Global Scientific and Technological Innovation Center, Hangzhou, Zhejiang 311215, China.

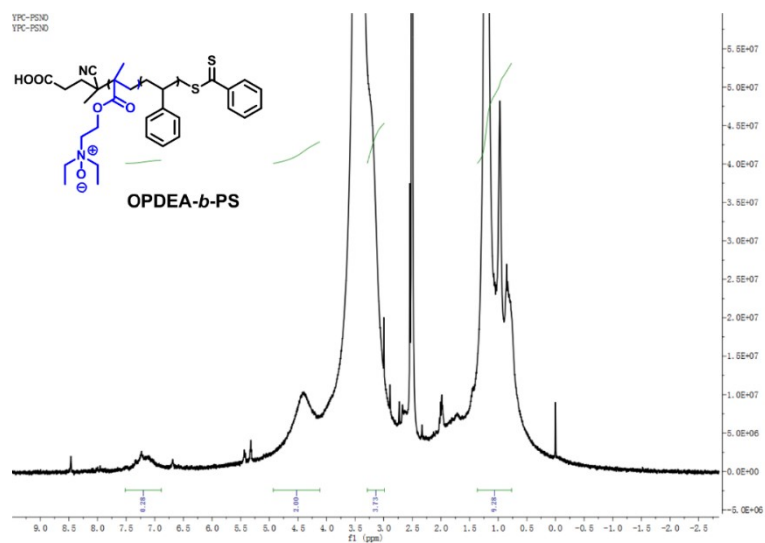
E-mail: [jianbin@zju.edu.cn](mailto:jianbin@zju.edu.cn)

<sup>‡</sup>The authors contributed equally to this work.

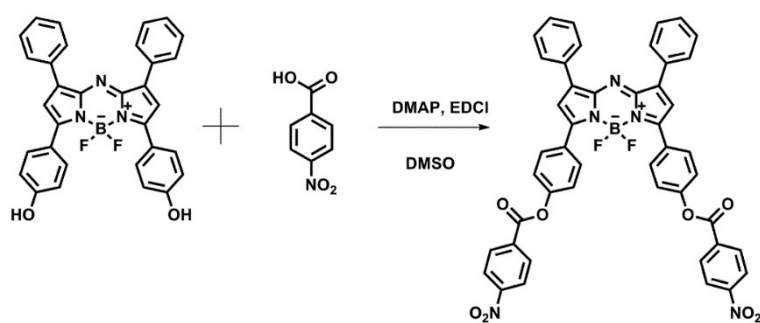


**Fig. S1.** Synthetic route of **OPDEA-b-PS**.

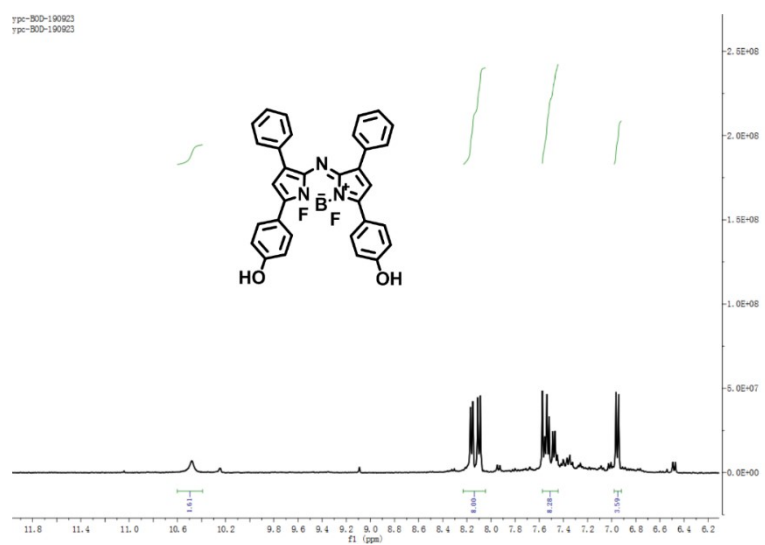




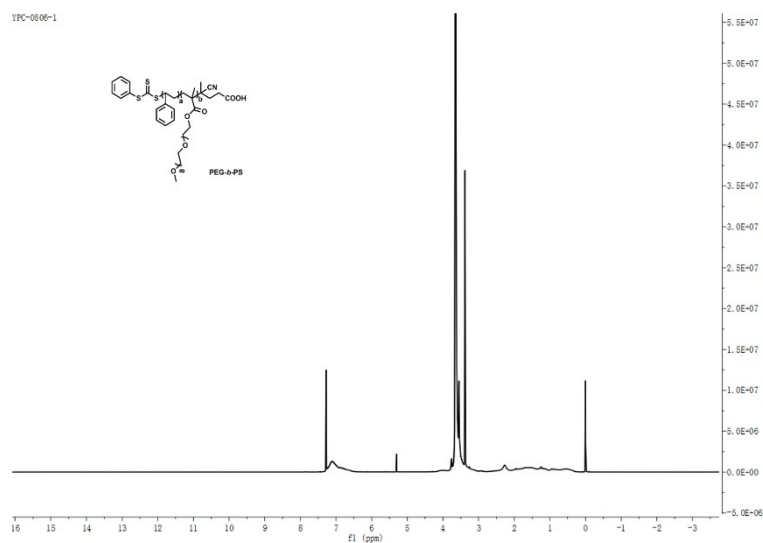
**Fig. S5.**  $^1\text{H}$  NMR of **OPDEA-*b*-PS** (400 Hz,  $\text{CD}_3\text{OD}$ ).



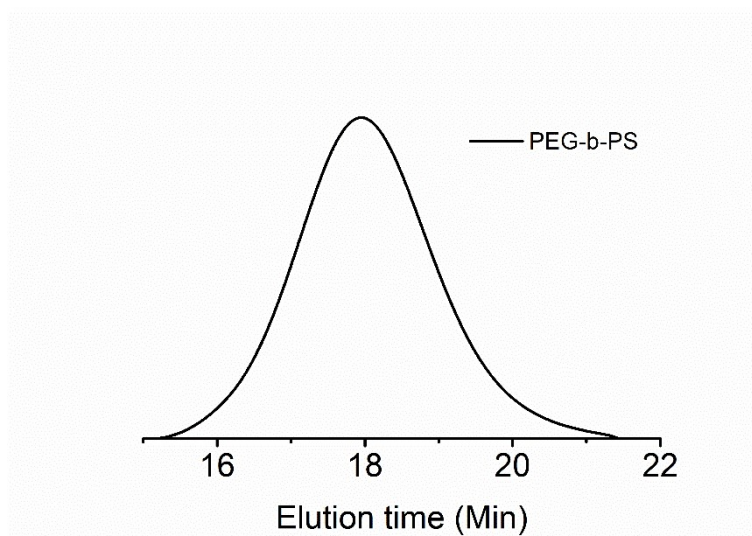
**Fig. S6.** Synthetic route of **BOD-NO<sub>2</sub>**.



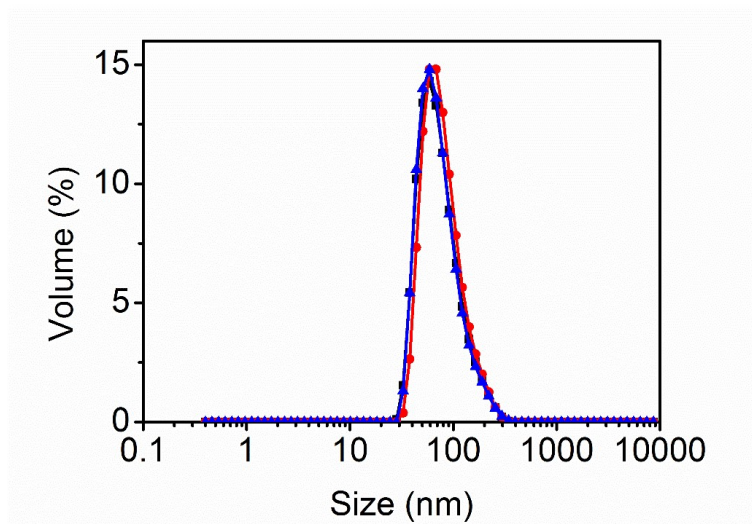
**Fig. S7.**  $^1\text{H}$  NMR of **BOD** (400 Hz, DMSO- $d_6$ ).



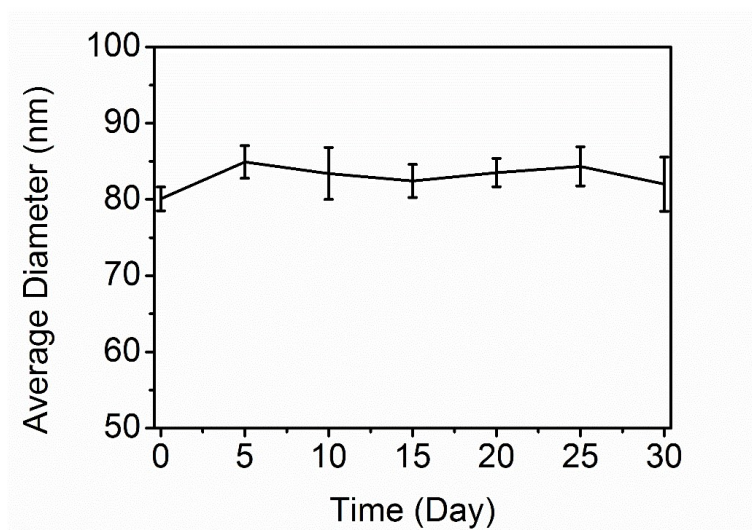
**Fig. S8.**  $^1\text{H}$  NMR of PEG-*b*-PS (400 Hz,  $\text{CD}_3\text{Cl}$ ).



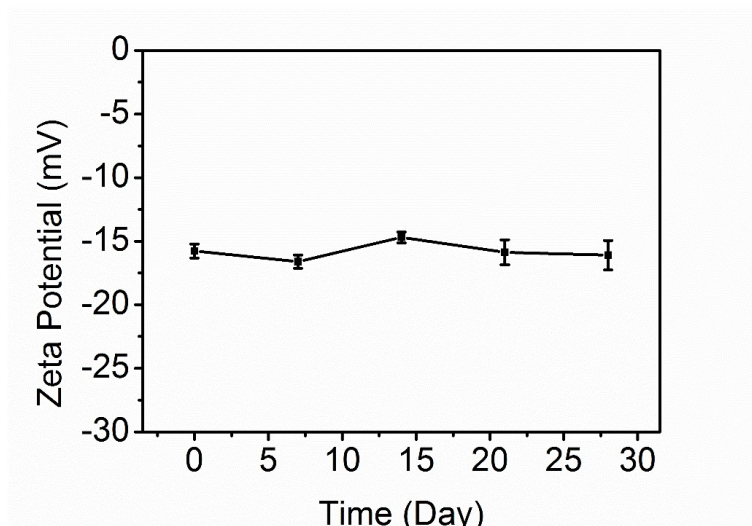
**Fig. S9.** GPC cruve of PEG-*b*-PS.



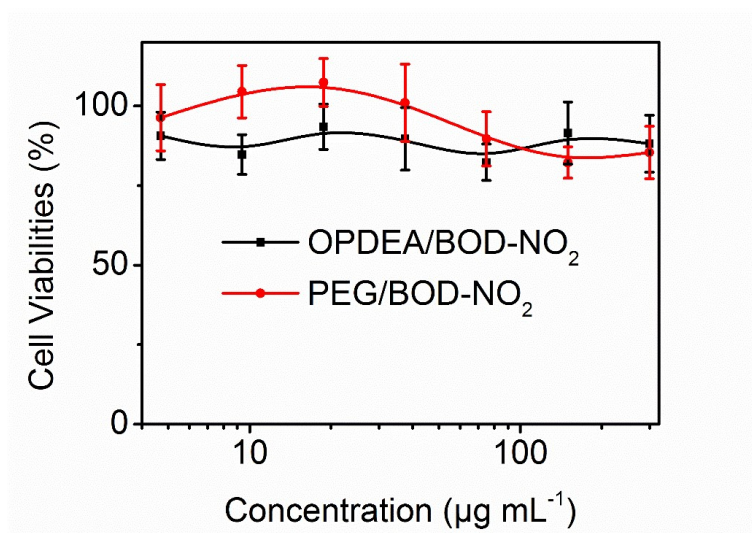
**Fig. S10.** Size distribution of *OPDEA/BOD-NO<sub>2</sub>* in fetal bovine serum (FBS) measured by three separate measurements using dynamic light scattering (DLS).



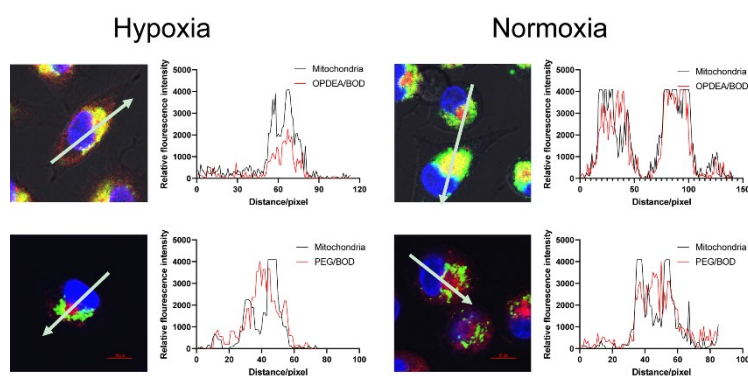
**Fig. S11.** Size changes of *OPDEA/BOD-NO<sub>2</sub>* in phosphate buffered saline (PBS, pH = 7.4) measured by three separate measurements using dynamic light scattering (DLS).



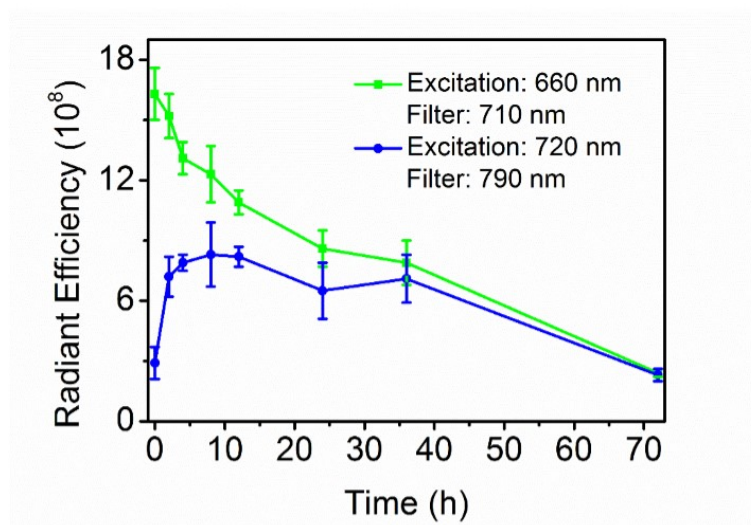
**Fig. S12** Zeta potential of *OPDEA/BOD-NO<sub>2</sub>* in H<sub>2</sub>O for one month.



**Fig. S13.** *In vitro* cytotoxicity of *OPDEA/BOD-NO<sub>2</sub>* and PEG/BOD-NO<sub>2</sub> against A549 cells with different concentrations.



**Fig. S14.** The quantitative data of Figure 3d.



**Fig. S15.** The two channel fluorescence intensity of blood at different time after injection of *OPDEA/BOD-NO<sub>2</sub>*.



**Fig. S16.** The representative of the tissue sections examined by H&E staining by preinjection of *OPDEA/BOD-NO<sub>2</sub>* (20  $\mu$ M, 100  $\mu$ L), scale bar is 50  $\mu$ m. Experiments were repeated independently for three times.