

Electronic Supplementary Information

Hypoxia-Sensitive Bis(2-(2'-Benzothienyl)-Pyridinato-N, C^{3'}) Iridium [Poly(*n*-butyl Cyanoacrylate]/Chitosan Nanoparticles and Their Phosphorescence Tumor Imaging *In Vitro* and *In Vivo*

Yun Zeng,^{‡a} Shaojuan Zhang,^{‡b} Menghui Jia,^c Yang Liu,^d Jin Shang,^b Youmin Guo,^b
Jianhua Xu^c and Daocheng Wu^{*a}

^a Key Laboratory of Biomedical Information Engineering of Ministry of Education, School of Life
Science and Technology, Xi'an Jiaotong University, Xi'an 710049, P. R. China. Fax: +86
2982663941; Tel: +86 2982663941; E-mail: wudaocheng@mail.xjtu.edu.cn

^b Department of Radiology, First Affiliated Hospital, School of Medicine, Xi'an Jiaotong
University, Xi'an 710061, P. R. China.

^c State Key Laboratory of Precision Spectroscopy, East China Normal University, Shanghai
200062, P. R. China.

^d School of Life Sciences and Institutes of Biomedical Sciences, Fudan University, Shanghai
200032, P. R. China.

¹H NMR spectrum of (btpp)₂Ir(PBCA)

(btpp)₂Ir(PBCA): (yield 64%). ¹H NMR (400 MHz, DMSO-d₆): δ, ppm 8.87 (2H, location 1), 8.17 (2H, location 3), 7.85 (2H, location 4), 7.68 (2H, location 2), 7.59 (2H, location 8), 7.17 (2H, location 5), 6.71 (2H, location 7), 6.37 (2H, location 6), 4.19 (2H, location 10), 1.69(2H, location 11) 1.26 (2H, location 9), 1.21 (2H, location 12), 0.91 (3H, location 13). Hydrogen atom locations were shown in

Figure S2a.

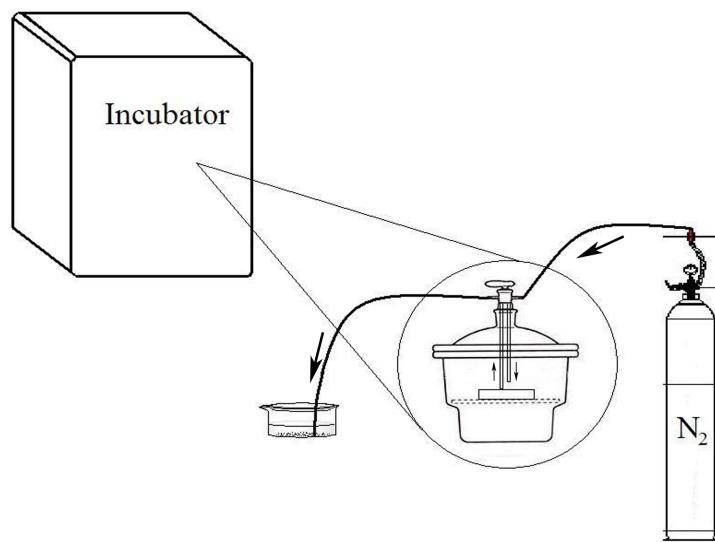


Fig. S1 The hypoxia device provided hypoxia environment for cell culture.

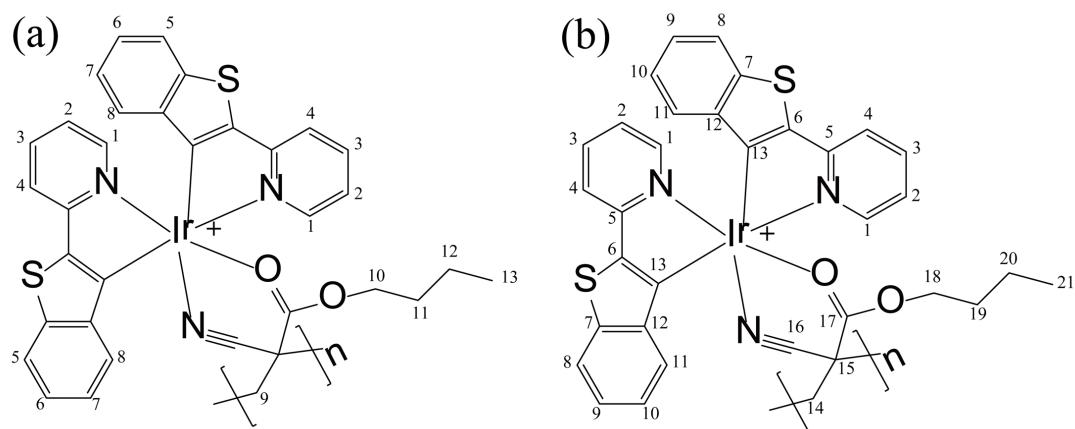


Fig. S2 (a) Hydrogen atom locations in the chemical structure of (btpp)₂Ir(PBCA); (b) Carbon atom locations in the chemical structure of (btpp)₂Ir(PBCA).

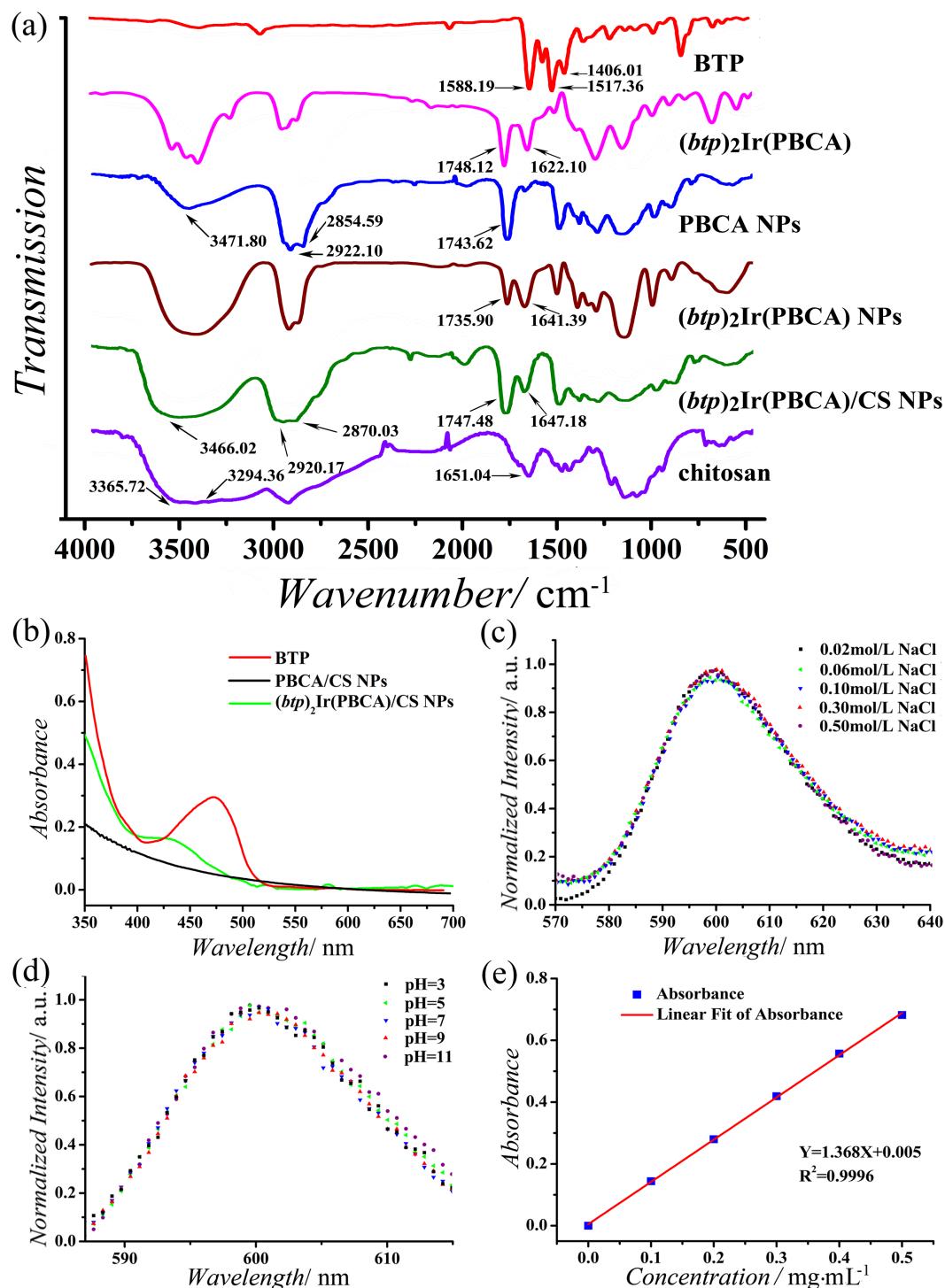


Fig. S3 (a) A full scale and magnified view of the FTIR spectra tagged with the wavenumbers of significant peaks; (b) The UV absorbance of BTP, PBCA/CS NPs and $(\text{btp})_2\text{Ir}(\text{PBCA})/\text{CS NPs}$; (c) The phosphorescent intensity of $(\text{btp})_2\text{Ir}(\text{PBCA})/\text{CS NPs}$ under different ionic strength; (d) The phosphorescent intensity of $(\text{btp})_2\text{Ir}(\text{PBCA})/\text{CS NPs}$ under different pH values; (e) The standard curve of concentration of $(\text{btp})_2\text{Ir}(\text{PBCA})$ dissolved in 1, 2-dichloroethane.

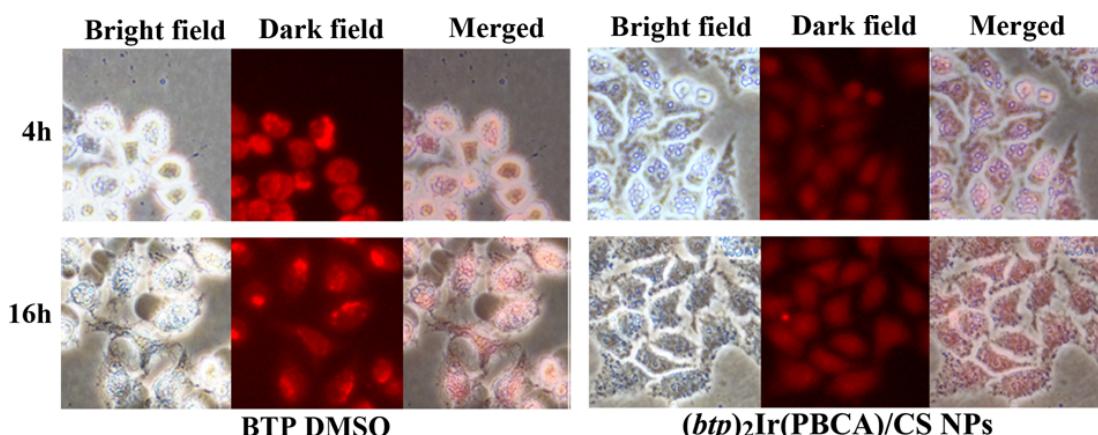


Fig. S4 HeLa cells uptake of BTP and $(btP)_2$ Ir(PBCA)/CS NPs at different time points (4h and 16h). Every group included a bright field, a dark field and a merged field. The images of first column stood for the bright field of cells under an inverted microscope. The images of second column showed the phosphorescence images of cells at the same position as the bright field graphs.

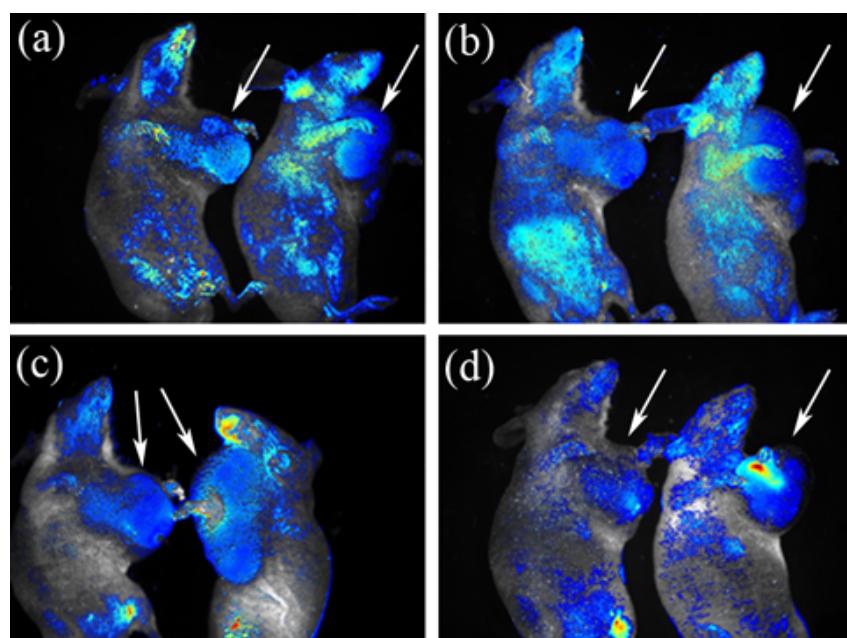


Fig. S5 (a-d) Other four paired groups of mice imaged by an *in vivo* fluorescence imaging system (Maestro 2, CRI, USA).