# Supporting Information

## Hexaphenyl-1,3-butadiene derivative：A novel “turn-on” rapid fluorescent probe for intraoperative pathological diagnosis of hepatocellular carcinoma

Didi Chen, [a‡] Huiling Mao, [c‡] Yuning Hong, [d] Yong Tang, [b] Yong Zhang, [b] Min Li* [b] and Yuping Dong*[c]

**Supplementary figures**

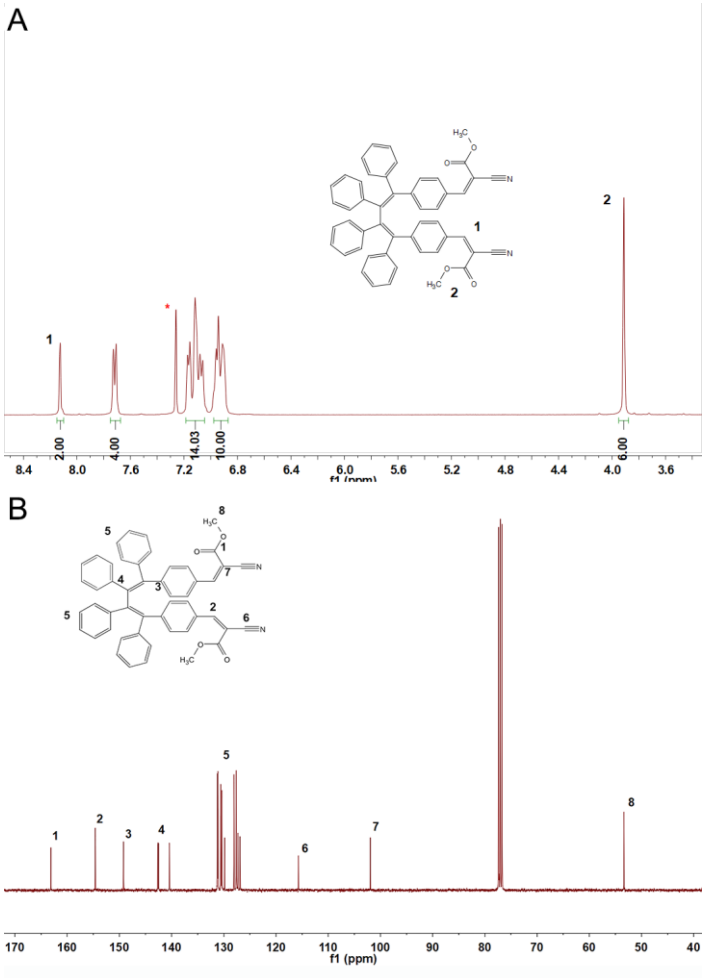


**Figure S1.** NMR spectra of ZZ-HPB-NC. A) $^{1}$H-NMR spectrum; B) $^{13}$C-NMR spectrum.

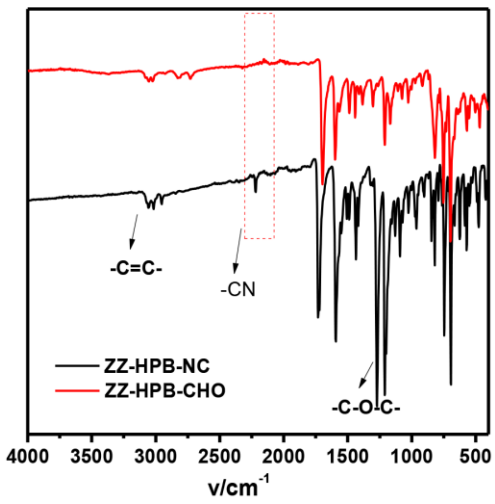


**Figure S2.** FTIR spectrum of ZZ-HPB-NC compared with ZZ-HPB-CHO.

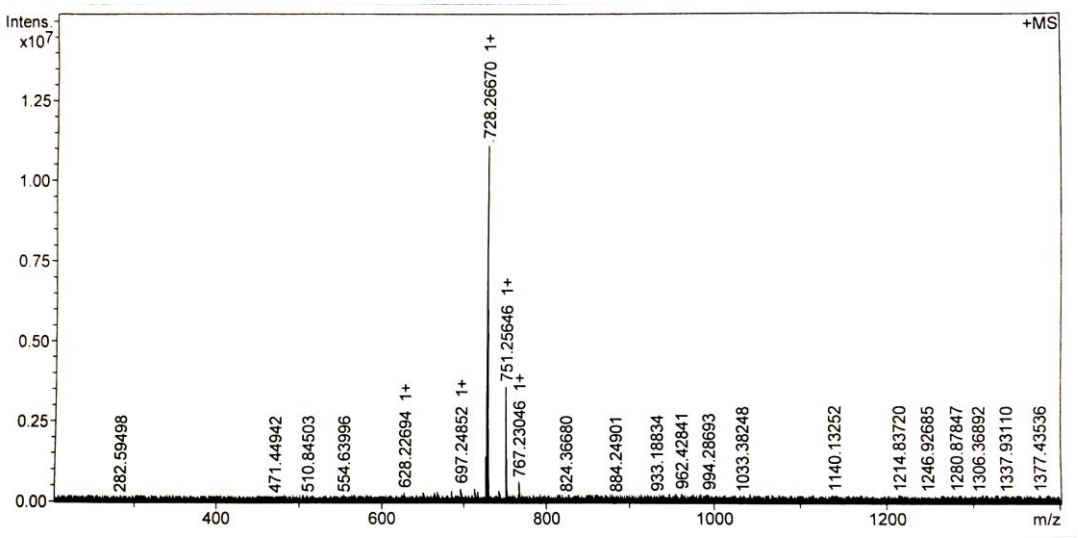


**Figure S3**. HRMS of ZZ-HPB-NC.

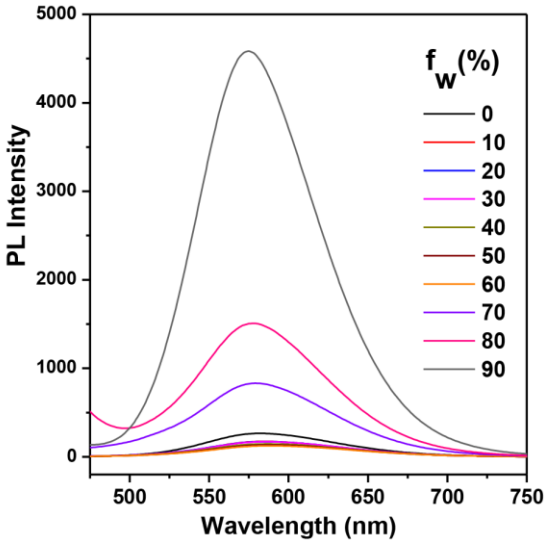


**Figure S4**. In THF/$H_2O$ mixture, fluorescence spectrum of ZZ-HPB-NC. $\lambda_{ex}$ = 400 nm, [ZZ-HPB-NC] = 10 μM.

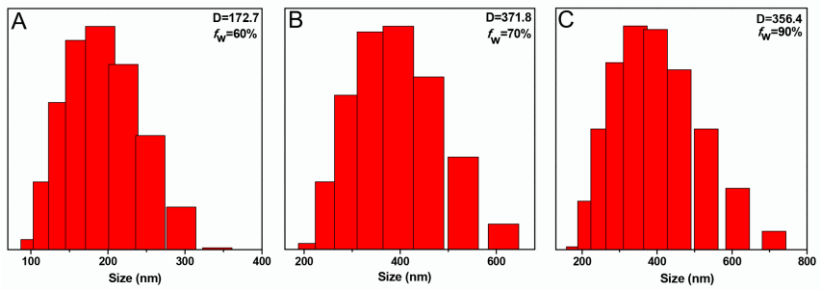


**Figure S5**. Particle size distribution of ZZ-HPB-NC with water fraction of A) 60%, B) 70% and C) 90%.

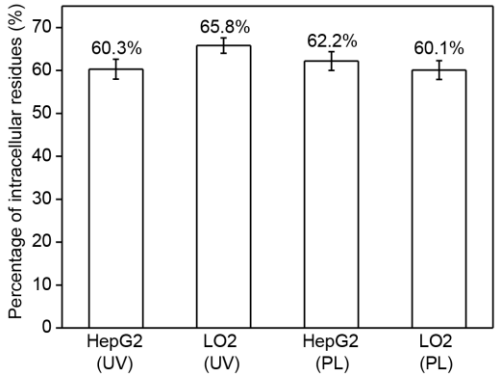


**Figure S6**. Intracellular residues of ZZ-HPB-NC in HepG2 cells and LO2 cells.

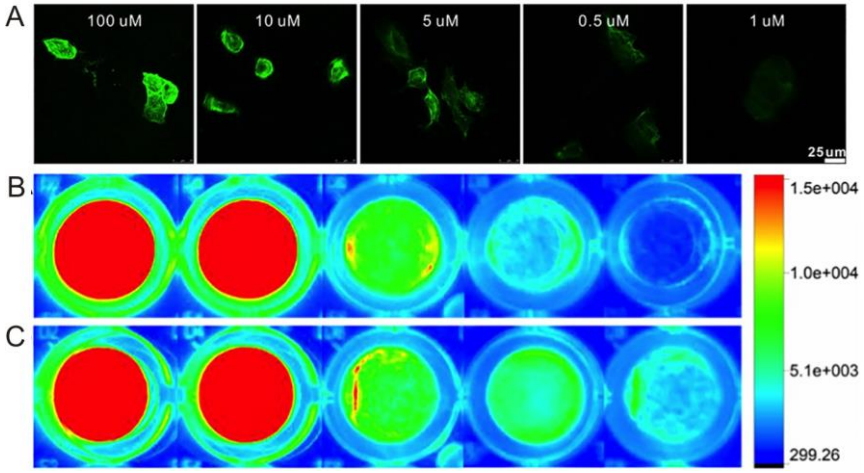


**Figure S7**. A) The concentration-depended fluorescence imaging in HepG2 cell, [ZZ-HPB-NC] = 100 μM, 10 μM, 5 μM, 1 μM, 0.5 μM. B) The fluorescence images of mixture of HepG2 cell lysates and ZZ-HPB-NC solution with different concentrations. [ZZ-HPB-NC] = 100 μM, 10 μM, 5 μM, 1 μM, 0.5 μM, [cell lysate] = 10 mg/mL. C) The fluorescence images of the different concentrations of HepG2 cell lysates with 10 μM ZZ-HPB-NC solution, [cell lysate] = 30 mg/mL, 10 mg/mL, 8 mg/mL, 6 mg/mL, 4 mg/mL.

**Table S1.** The main reagents of H&E staining for intraoperative frozen-section diagnosis and their usages in Wuhan Union Hospital.

| **Reagents** | **Usages** |
|---|---|
| Hematoxylin | Nuclear staining |
| Acid alcohol | Differentiation |
| Lithium carbonate | Bluing |
| Eosin | Counterstaining |
| Alcohol | Dehydration |