Electronic Supplementary Material (ESI) for Journal of Materials Chemistry B

Supporting Information

Aggregation Induced Photodynamic Therapy Enhancement Based on Linear and Nonlinear Excited FRET of Fluorescent Organic Nanoparticles

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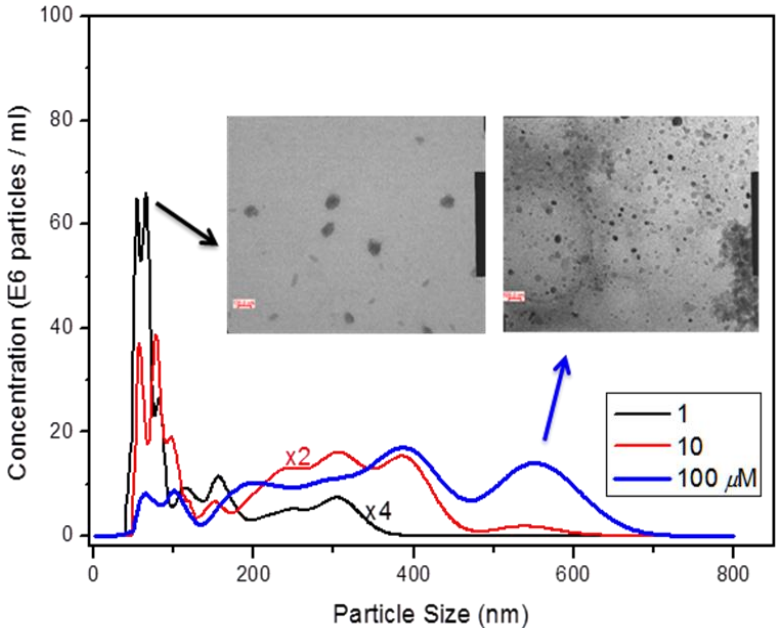


Figure S1. Particle size distribution profiles for the1μM, 10μM and 100μM of Zn-2BPs in the mixing solution. (H_2O/THF, 50/50 v/v) Inset photos show the corresponding TEM images. (scale bar: 50 nm (left) and 500 nm (right))

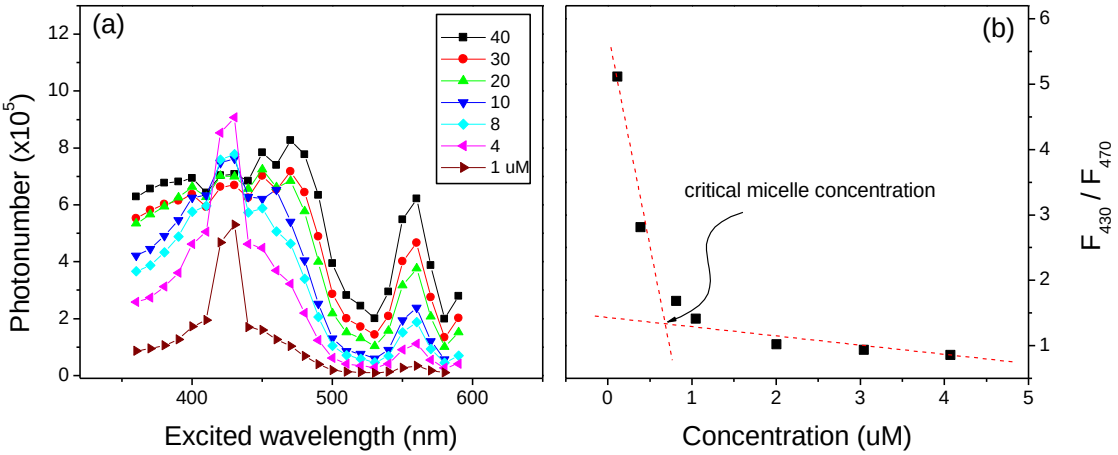


Figure S2. (a) Excitation wavelength dependent (from 360 to 590 nm) fluorescence emission intensities at 613 nm for variable concentrations of Zn- 2BPs. (b) The CMC values were fitted by plotting the enhancement ratios (when excited at 430 nm (Ps) and 470 nm (BMVC)) versus concentration. Thus, the critical micelle concentration (CMC) values of Zn-2BPs were observed in DMSO (8.6 μM), H_2O (18.2 μM) and THF/H_2O (6.7 μM) mixing solvent, which indicated that this compound is very likely to aggregate whether in an organic or an aqueous solvent.

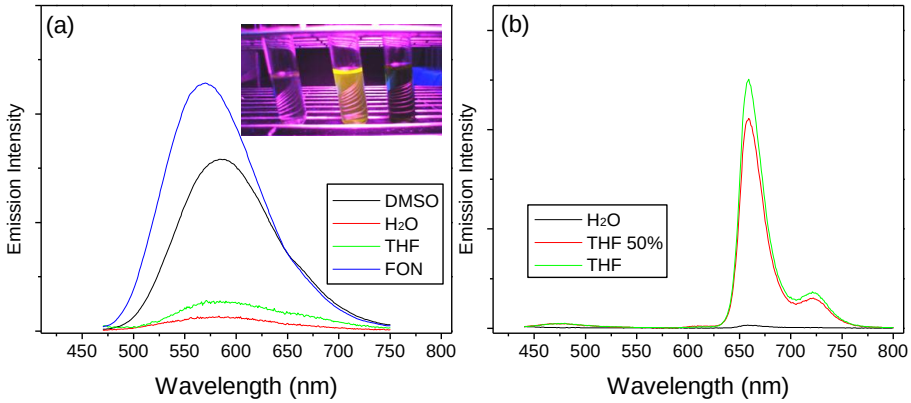


Figure S3. (a) FONs illustrations for 10 μM of the compounds BMVC. Emission spectra variations with aqueous solutions, 50, 100 percentages of THF and DMSO (Ex= 450 nm). The relative visible emission photographs under UV light (365 nm). (b) Similar experimental test of tetraphenyl-porphyrins.

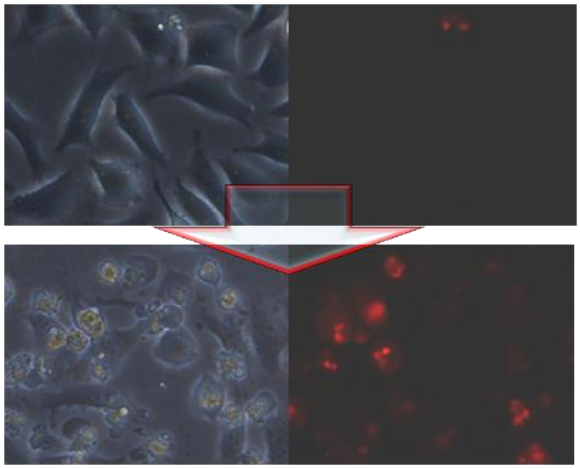
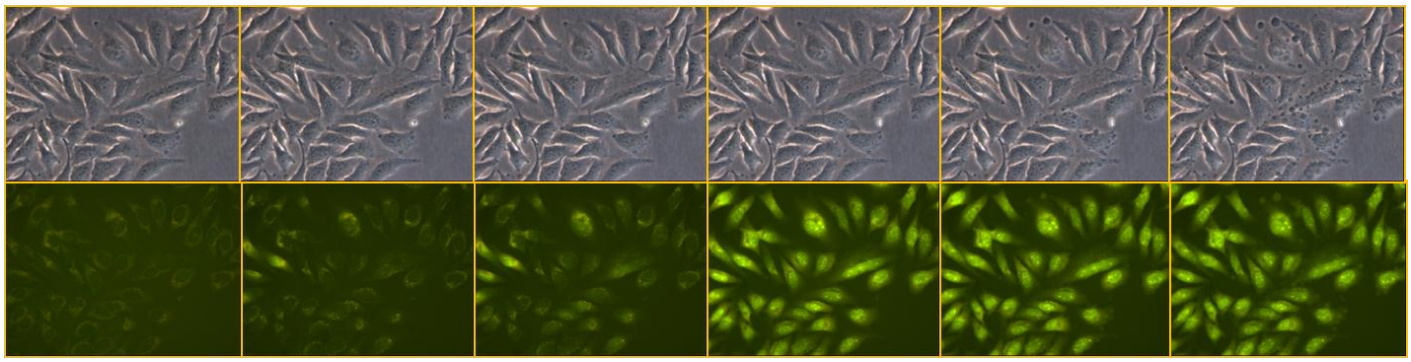


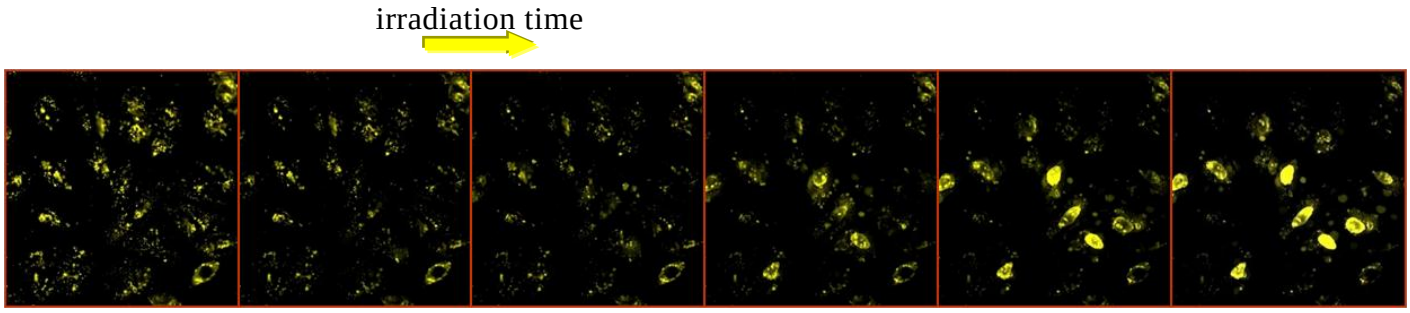
Figure S4. Phototoxicity of HeLa cancer cells that were treated with Zn-2BPs before (top) and after irradiation (bottom) with a 20 W Xeon lamp at 470 nm bp, 100 μW/cm^2 for 2 min; cell death was tested overnight with PI staining. The cells were incubated with the respective dyes at a concentration of 10 μM for 12 h before the irradiation.



Video S1, S2 The real-time video of HeLa cancer cells incubated with 10 μM Zn-2BPs for 12 h after 480/10 nm irradiation from a mercury lamp for ~1.5 min.

The video URL:
https://skydrive.live.com/redir?resid=DA63767CEED1FE0D!181&authkey=!AKGUnq32putAw1E

https://skydrive.live.com/redir?resid=DA63767CEED1FE0D!182&authkey=!AGZ4RNmeFigwhaM



Video S3 Experiment similar to that presented in Figure S4 but with the use of a Ti-sapphire laser at a wavelength of 900 nm as the PDT light source.

The vedio URL:
https://skydrive.live.com/redir?resid=DA63767CEED1FE0D!183&authkey=!AL8kC8S-2q4EmPQ