

Investigation of in vitro photodynamic therapy potential of tumor targeted zinc phthalocyanine loaded silica nanoparticles for pancreatic cells

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Supporting Information

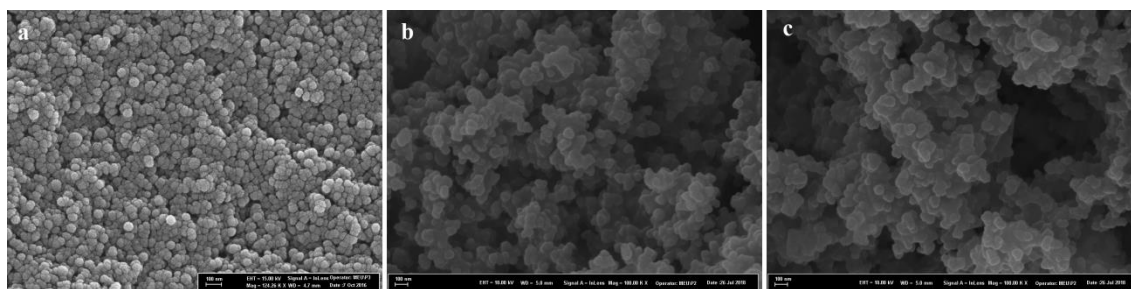


Figure S1. SEM images of MSNP3 (a), MSNP4 (b) and MSNP5 (c).

Supporting Information

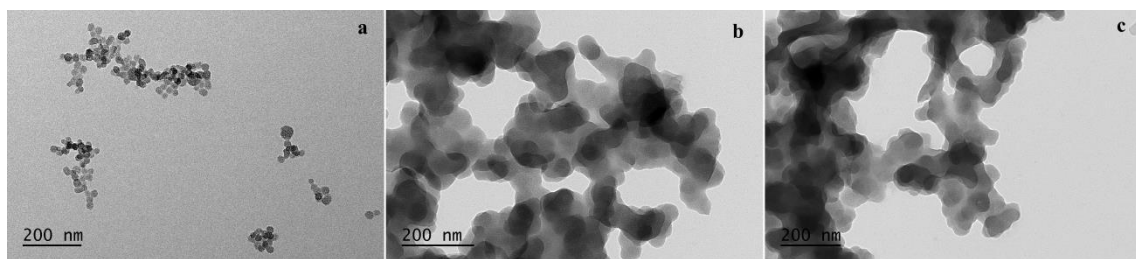


Figure S2. TEM images of MSNP3 (a), MSNP4 (b) and MSNP5 (c).

Supporting Information

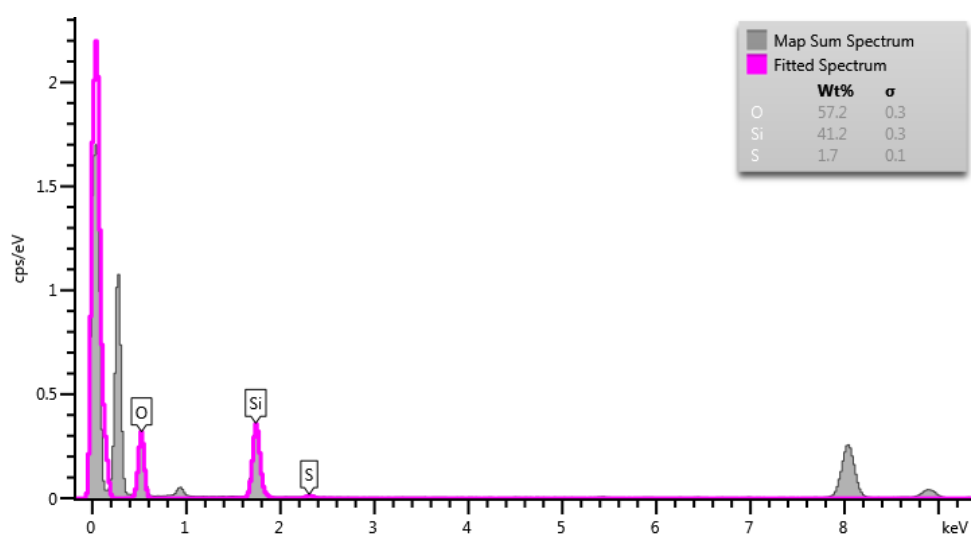


Figure S3. EDS analysis graph of MSNP3 nanoparticles.

Supporting Information

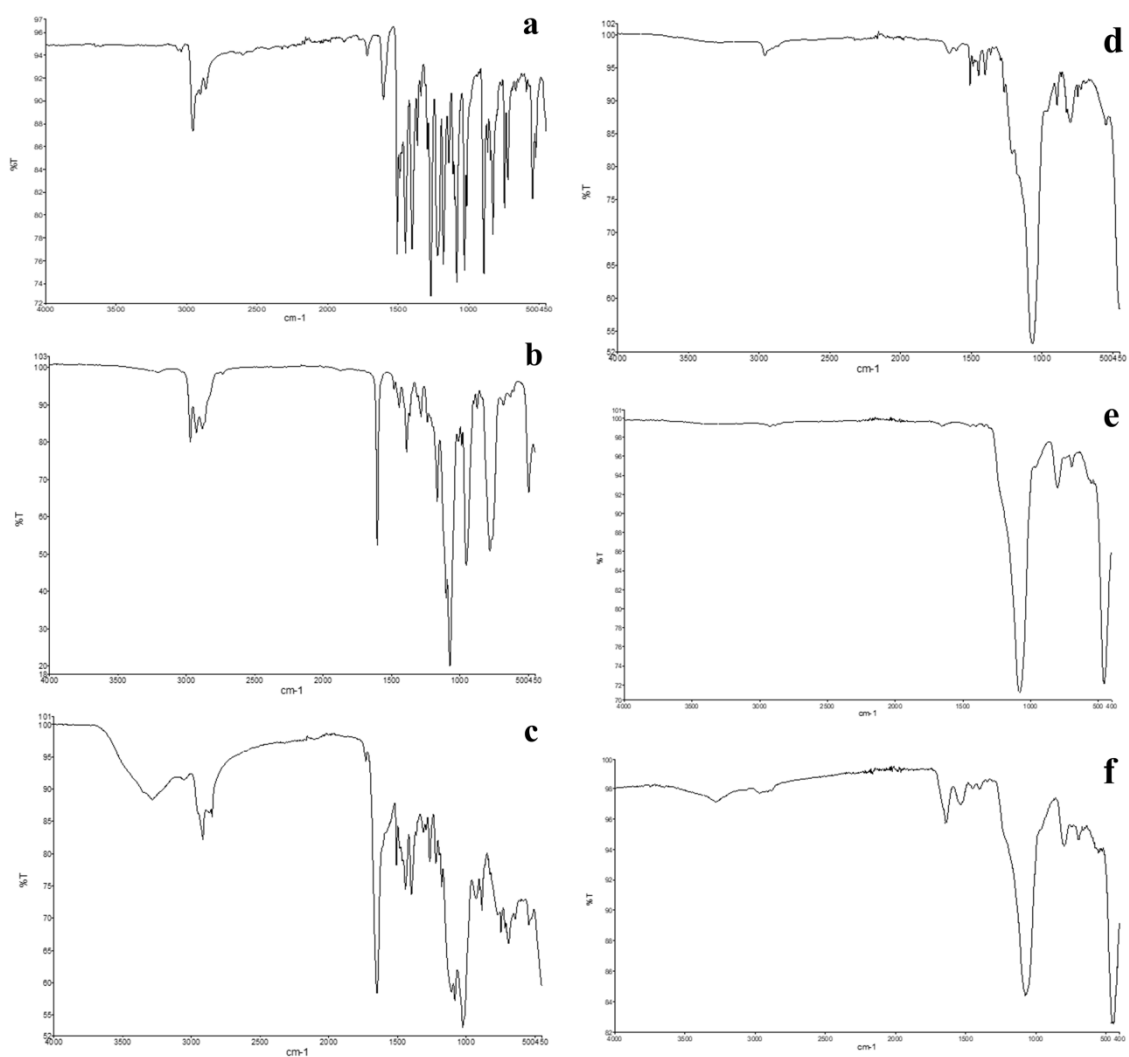


Figure S4. Infrared spectra of ZnPcOBP (a), ITES (b), ITES-ZnPc (c), MSNP3 (d), MSNP4 (e) and MSNP5 (f).

Supporting Information

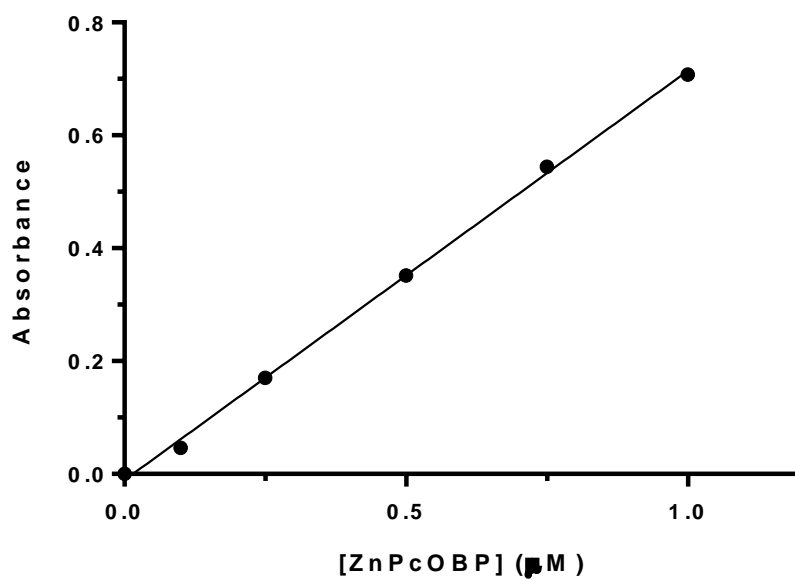
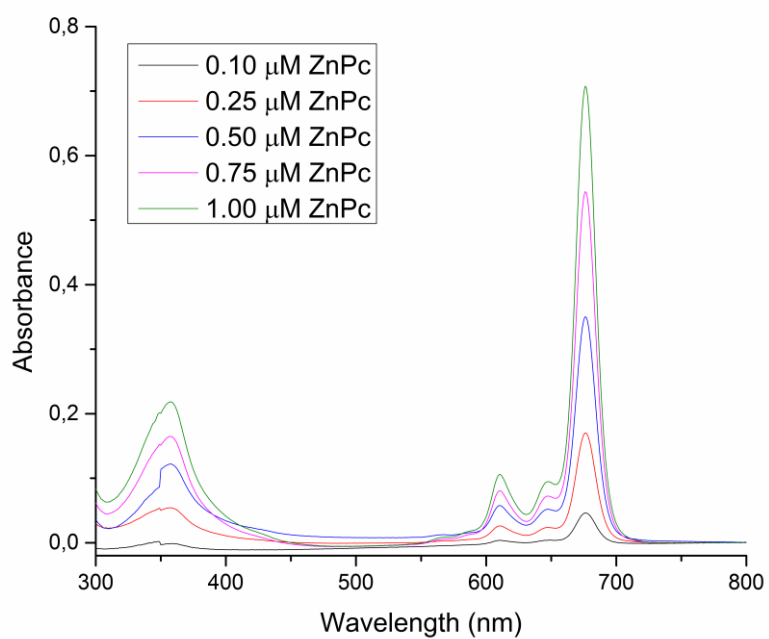


Figure S5. Top: UV-Vis absorption spectrum of 0.10-1.00 μM ZnPcOBP in tetrahydrofuran. Bottom: Calibration curve obtained from the absorbance data presented above at 680 nm.

Supporting Information

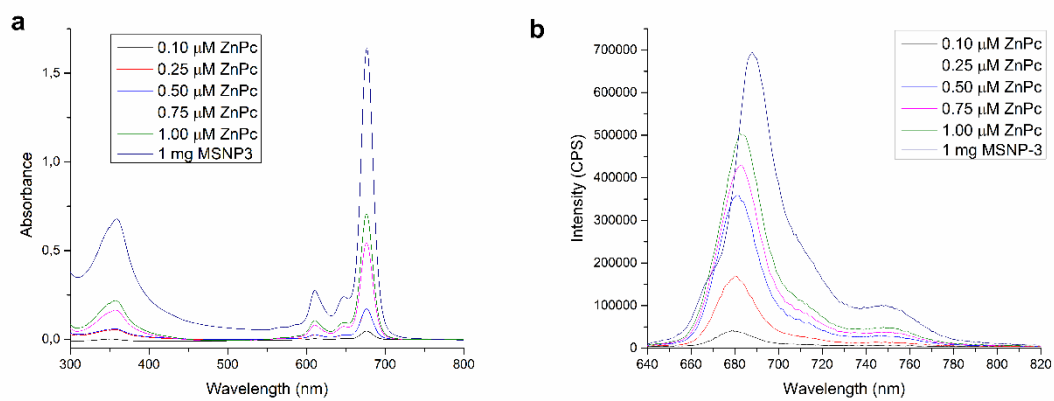


Figure S6. UV-Vis (a) and fluorescence (b; $\lambda_{\text{exc}} = 620 \text{ nm}$) spectrum of 0.1-1 μM ZnPcOBP and 1 mg of MSNP3 in tetrahydrofuran.

Supporting Information

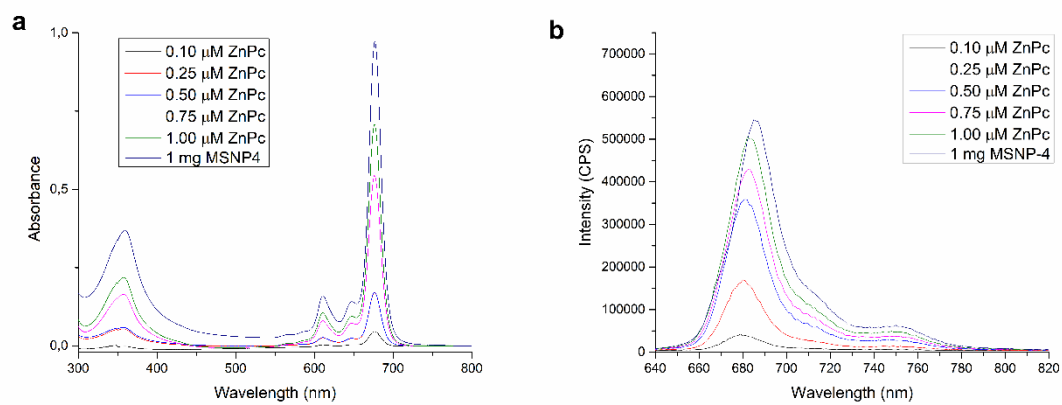


Figure S7. UV-Vis (a) and fluorescence (b; $\lambda_{\text{exc}} = 620 \text{ nm}$) spectrum of 0.1-1 μM ZnPcOBP and 1 mg of MSNP4 in tetrahydrofuran.

Supporting Information

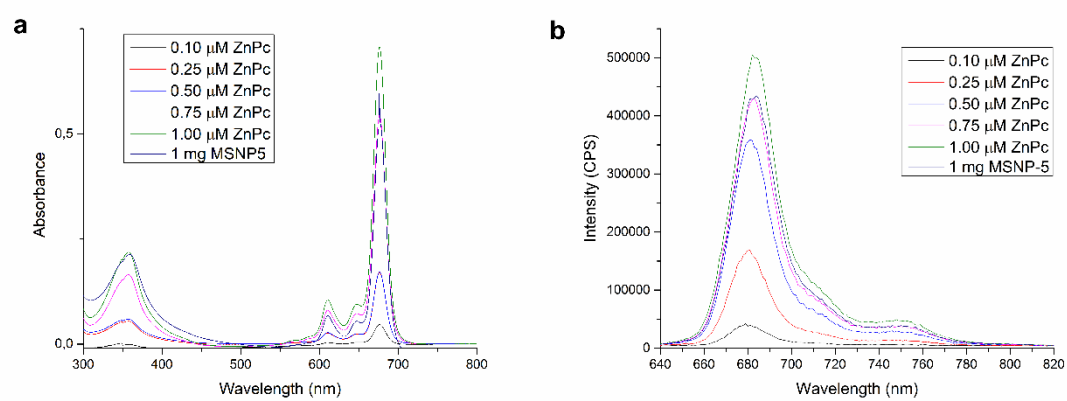


Figure S8. UV-Vis (a) and fluorescence (b; $\lambda_{\text{exc}} = 620$ nm) spectrum of 0.1-1 μM ZnPcOBP and 1 mg of MSNP5 in tetrahydrofuran.

Supporting Information

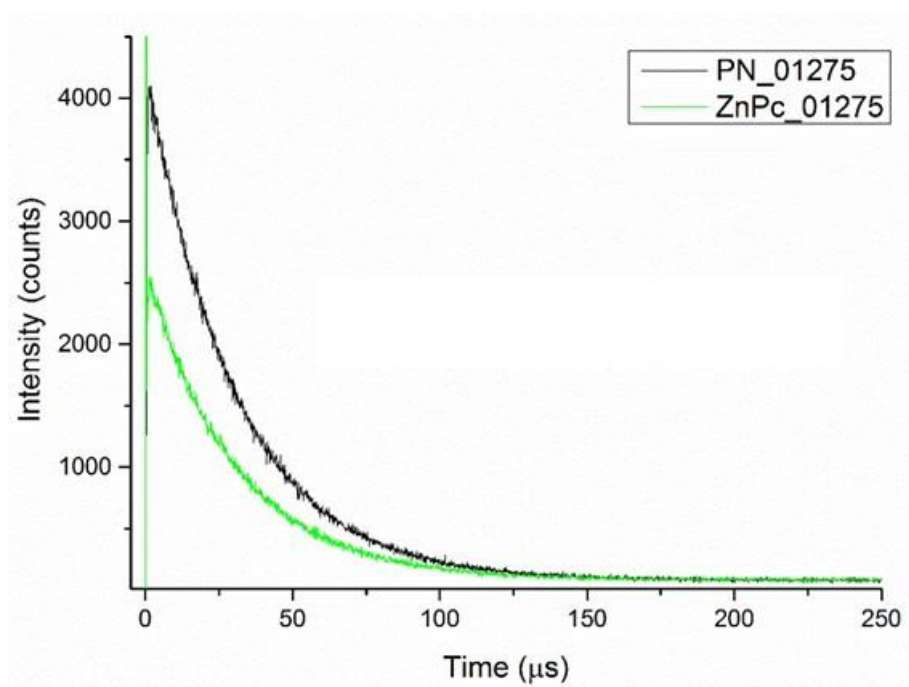


Figure S9. Singlet oxygen phosphorescence kinetic traces in toluene for optically-matched solutions of ZnPcOBP (green line) and phenalenone (PN; black line). $\lambda_{\text{obs}} = 1275$ nm.

Supporting Information

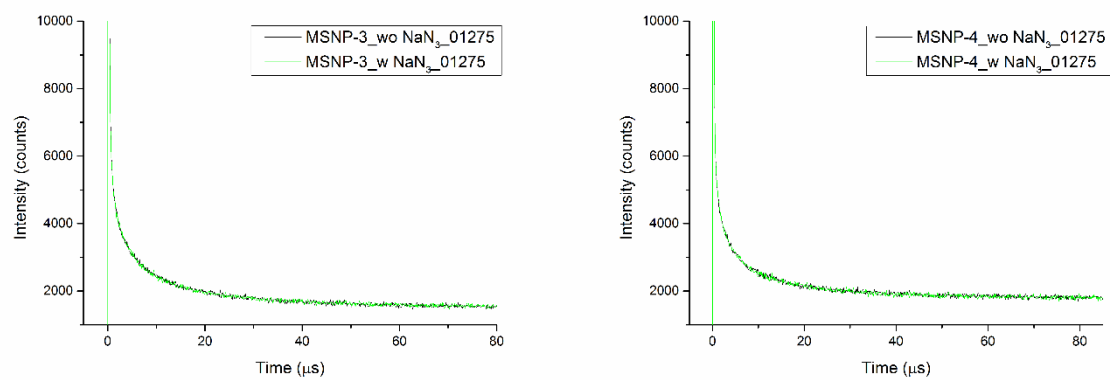


Figure S10. Singlet oxygen phosphorescence kinetic traces for MSNP3 (left) and MSNP4 (right) in the absence (black line) and presence (25 mM; green line) of NaN₃ in methanol. $\lambda_{\text{obs}} = 1275$ nm.

Supporting Information

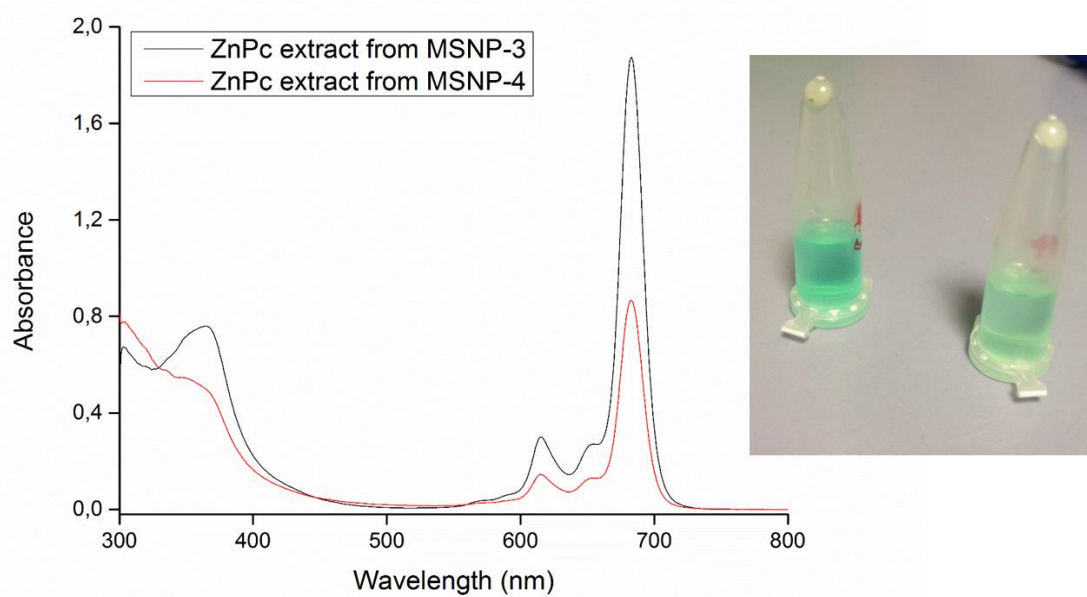


Figure S11. Right: One milliliter of MSNP-3 (left Eppendorf tube) and MSNP-4 (right Eppendorf tube) centrifuged for 10 min at 3000 rpm in pyridine. Left: UV-Vis spectra of the previous supernatants (black and red lines for MSNP-3 and MSNP-4 respectively).

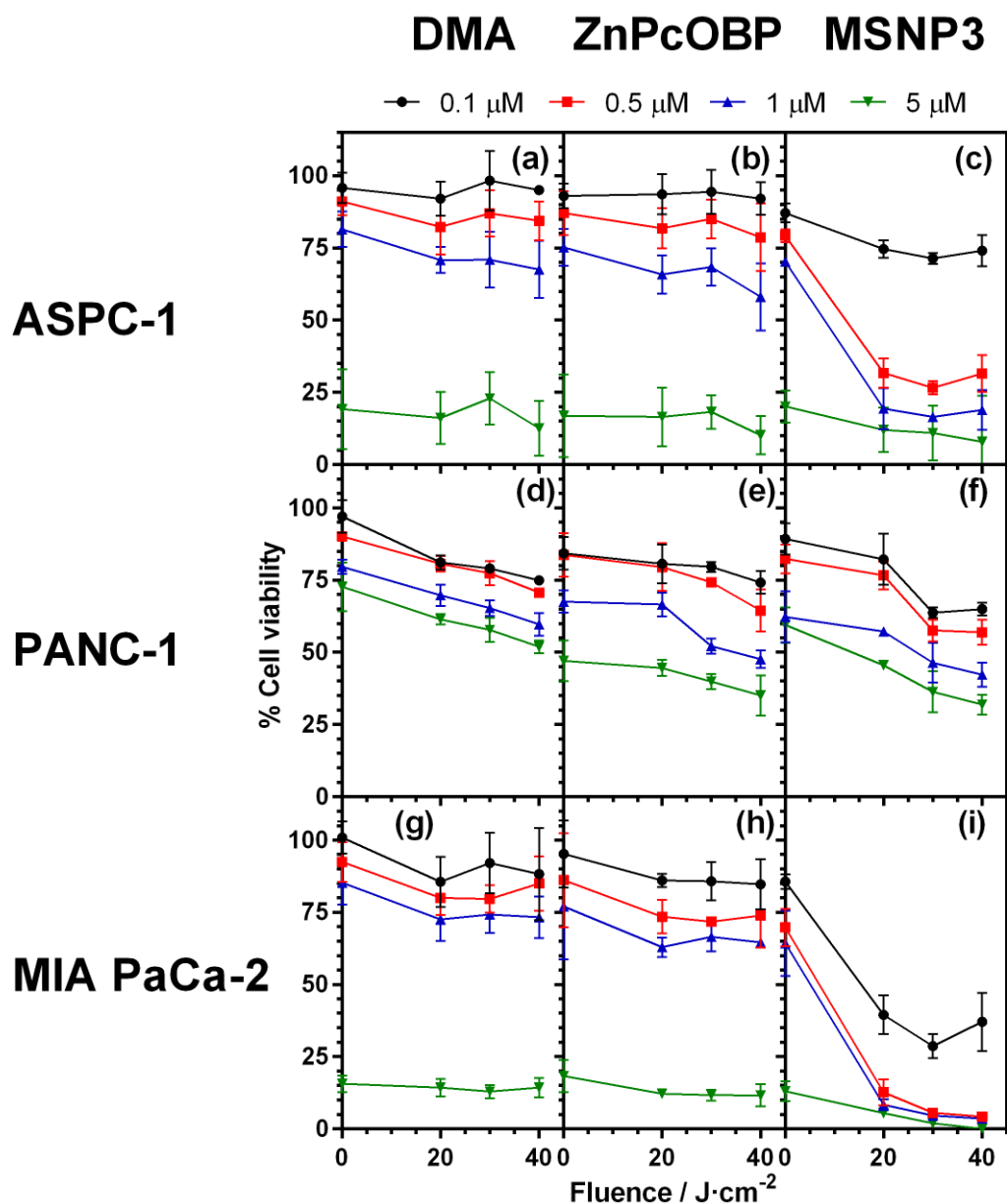


Figure S12. ASPC-1 (a-c), PANC-1 (d-f) and MIA PaCa-2 (g-i) cell viability (expressed in percentage) after incubation with: DMA (a,d,g) or ZnPcOBP (dissolved in DMA; b,e,h) and MSNP3 (suspended in DMA; c,f,i), at various ZnPcOBP concentrations and light fluences (20, 30 and 40 J/cm^2). In the panels (a,d,g), equivalent amounts of DMA, to those needed to reach the indicated concentrations of ZnPcOBP were added in the wells to assess the effect of medium dilution with DMA. ZnPcOBP concentrations are 0.1 μM (black), 0.5 μM (red), 1.0 μM (blue) and 5 μM (green). Cells incubated with complete growth medium, to which 100% viability was assigned, were used as controls to calculate the cell viability of the cells treated at the different conditions. Data are the mean \pm SD from three independent experiments.