

## Mitochondria-Targeting Nanoparticles for Enhanced Microwave Ablation of Cancer

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To determine the concentration of MZCNs in the follow-up experiment. The experiment was divided into six groups, the HepG2 cells were added into 96-well plates to incubate for 8h, and than treated with different concentrations of MZCNs (10, 50,100,200,400 and 600ug/ml) with HepG<sub>2</sub> hepatoma cells for 24 hours, and the inhibition of cell proliferation by MZCNs at different concentrations was measured by CCK-8 test. The results are shown in Figure S1.

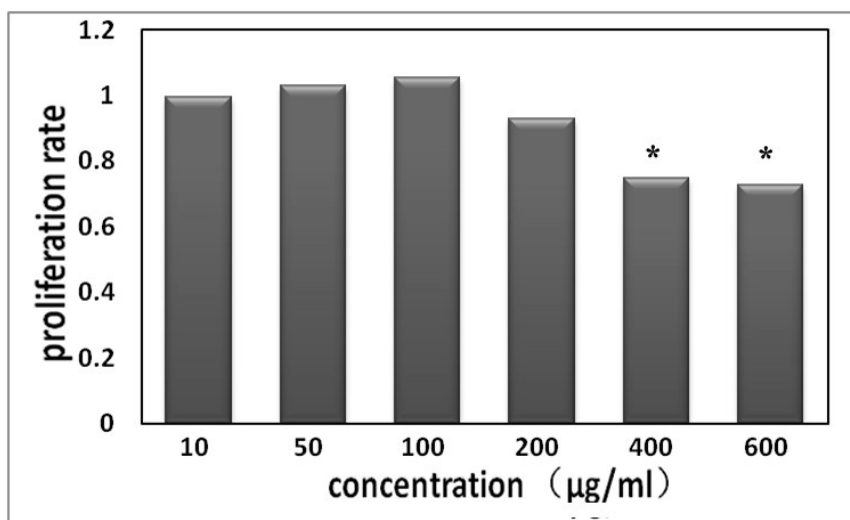


Figure S1: Figure 7: Inhibition of proliferation of HepG2 cells by MZCNs at different concentration , \*: The difference was statistically significant compared with the control group.

The proliferation of HepG2 cells in the range of MZCNs concentration 10ug/ml to 100ug/ml was not inhibited compared with the control group, and the proliferation rate at 200ug/ml concentration was 92.8%,  $p>0.05$ , and the difference was not statistically significant. When MZCNs concentration was 400ug/ml, the cell proliferation was inhibited. The proliferation rate was 74.8%, and the proliferation rate of  $p<0.05$  and MZCNs 600ug/ml was 72.7%,  $p<0.05$ . In order to avoid MZCNs's inhibition of cell proliferation in cell warming, 100ug/ml and 200ug/ml were selected. In flow cytometry, the concentration of 100ug/ml was selected to avoid the effect of nanomaterial itself on the cell, rather than from the microwave heat treatment.

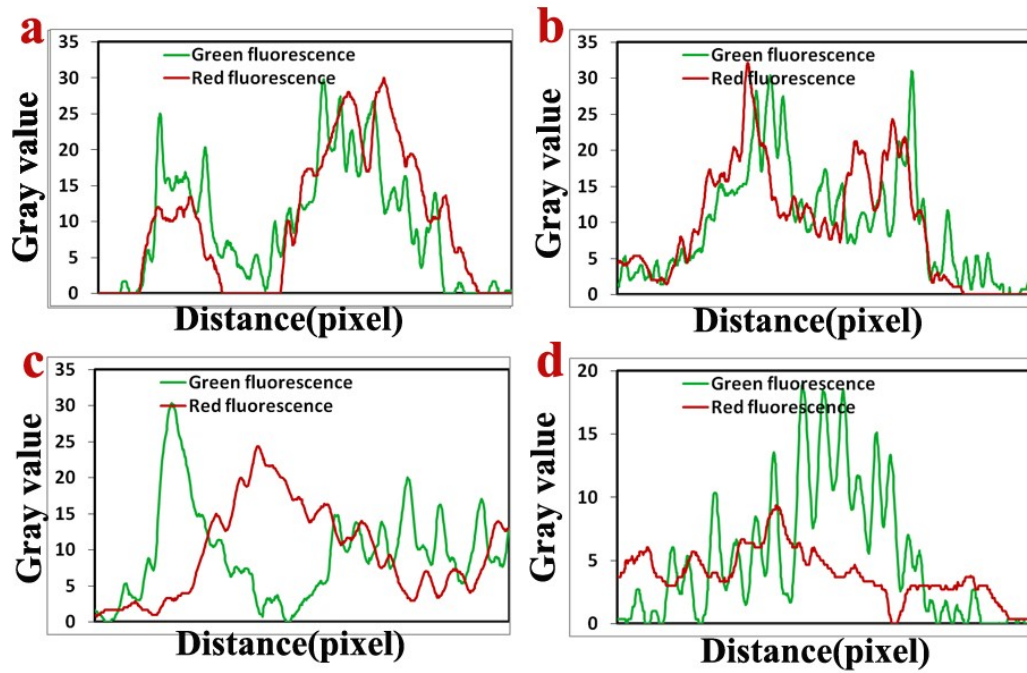


Figure S2: Figure 3: Correlation analysis of Mito-Tracker green (green fluorescence) and DOX (red fluorescence). Picture a: TPP+iRGD  $r=0.78$   $P<0.05$ .; b: TPP  $r=0.721$   $P<0.05$ .; c: iRGD,  $r=-0.369$

$P<0.01$ .; d: non-target,  $r=0.236$ ,  $P<0.01$ . Pearson's  $r$  was analyzed by SPSS Statistics 22.

Through colocalization analysis of the red and green fluorescence, we can find that MZCNs can gather in the mitochondria selectively.