

Title: Photodynamic treatment of human breast and prostate cancer cells using Rose Bengal-encapsulated nanoparticles

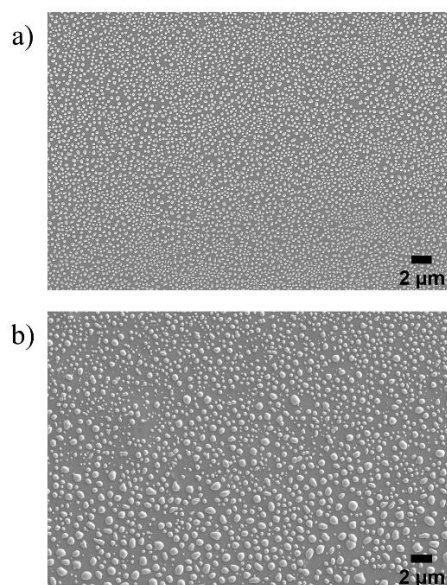


Figure S1. SEM images of the (a) chitosan nanoparticles and (b) crosslinked RB-nanoparticles (RB = 50 μg/mL). Nanoparticles were prepared with a 5:1 chitosan to TPP mass ratio and chitosan solutions of pH 5.5. Experiments were performed in triplicate.

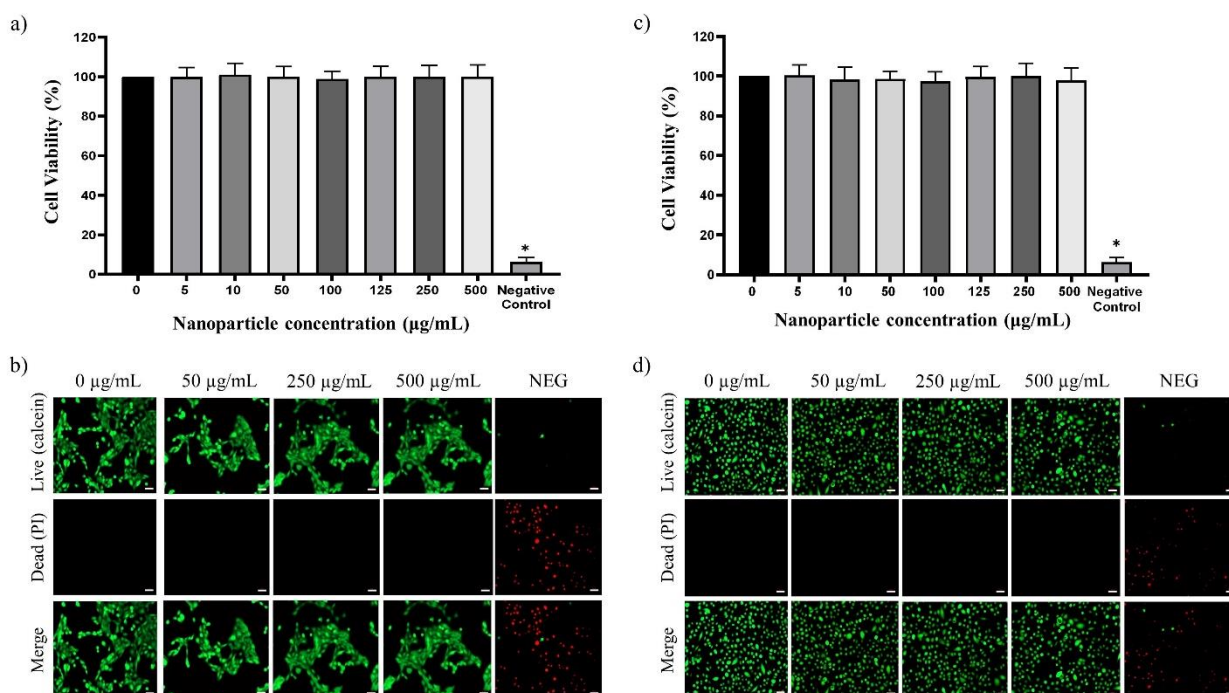


Figure S2. Cytotoxicity studies of blank chitosan nanoparticles (without rose bengal) with non-cancerous human breast and prostate cells were performed by calculating the percentage of viable cells based on the amount of MTT compound that metabolically active cells reduced. Percentage viability of (a) human breast cells and (c) human prostate cells at nanoparticle concentrations of 5, 10, 25, 50, 100, 125, 250, and 500 μg/mL. Calcein-PI assay confirms the non-toxicity of blank chitosan nanoparticles for (b) human normal breast epithelial cells and (d) human normal prostate epithelial cells. This is evident in a high number of green (live) cells and a decrease in the number of dead (red) cells in all groups, apart from the negative controls. Data is presented as mean ± SEM, and they reflect the mean of three different experiments that were conducted in triplicates. One-way ANOVA test was used at a significance level of $p = 0.05$.

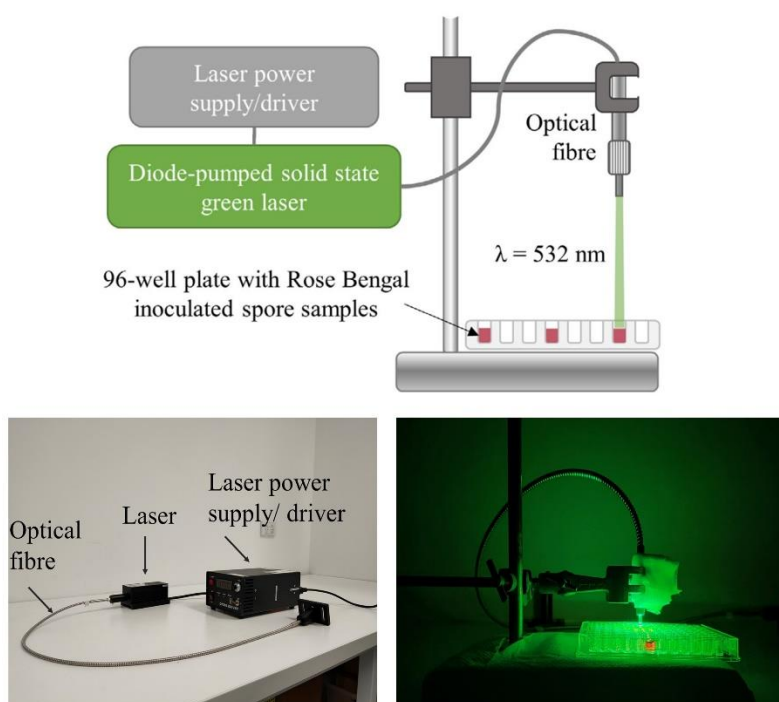


Figure S3. Irradiation assembly for the photodynamic treatment of breast and prostate cancer cells. Cells were seeded into three individual wells ($3 \times 200 \mu\text{L}$) in a 96-well plate (**top image**). The laser ($\lambda = 532 \text{ nm}$) had a spot size area similar to the bottom of the well ($\sim 0.24 \text{ cm}^2$) to effectively irradiate the cells. Only three wells were used per plate to avoid or minimize over-exposure of coherent light from adjacent wells.