

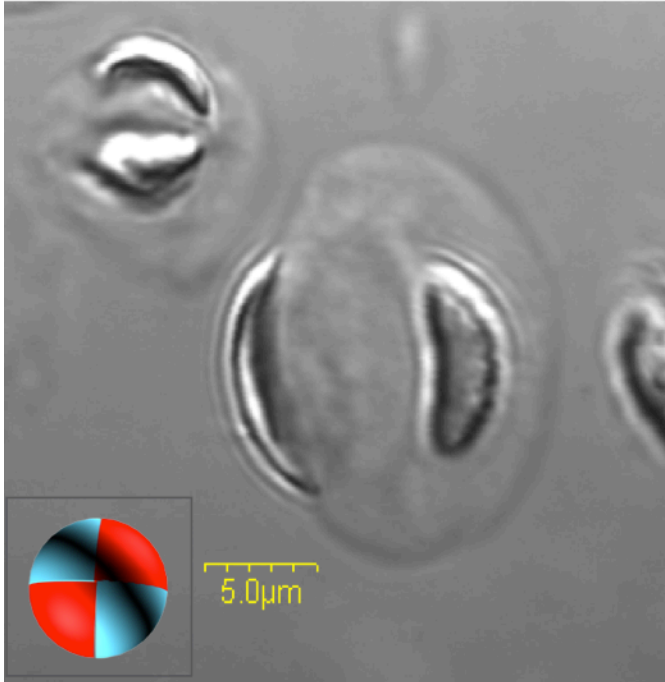
# ADVANCED MATERIALS

## Supporting Information

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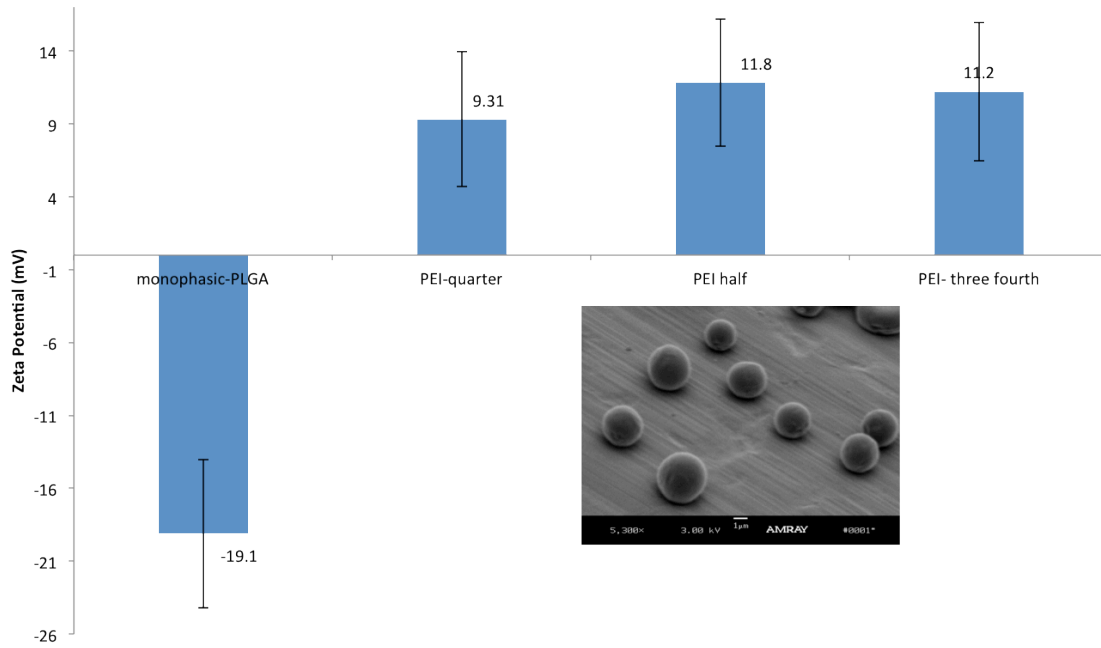
Multicompartmental Particles for Combined Imaging and siRNA Delivery

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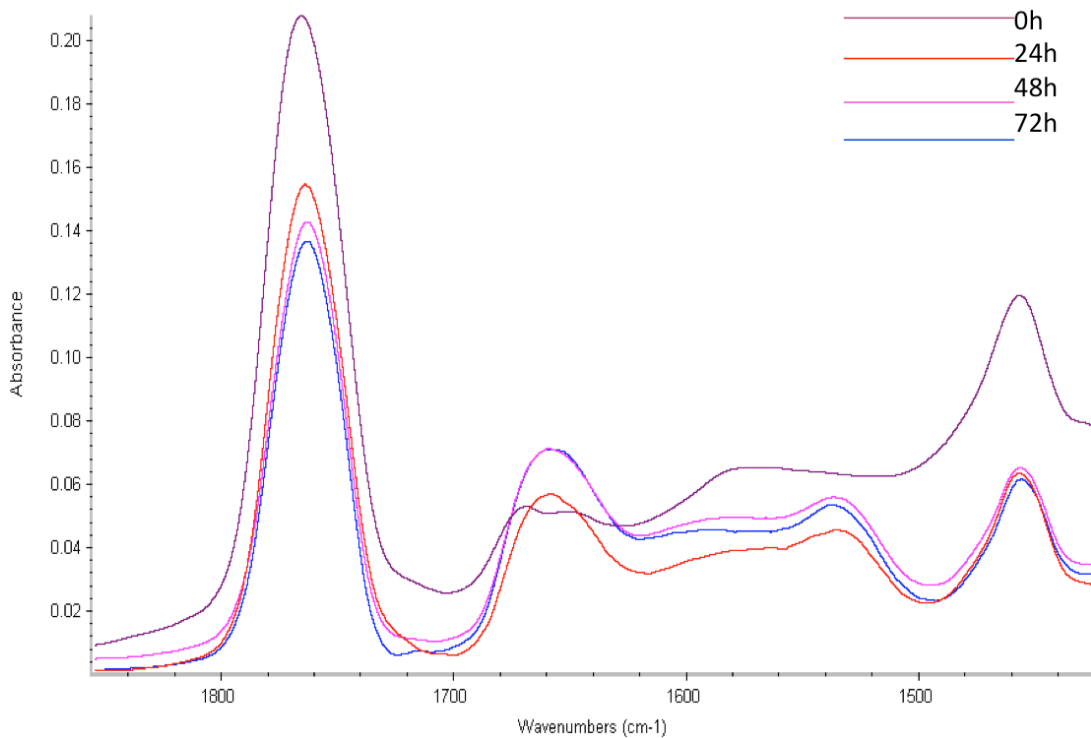


**Figure S1.** Demonstration of tetracompartmental particles with two PLGA compartments and two PLGA/PEI composite compartments.

## Variation of Zeta Potential



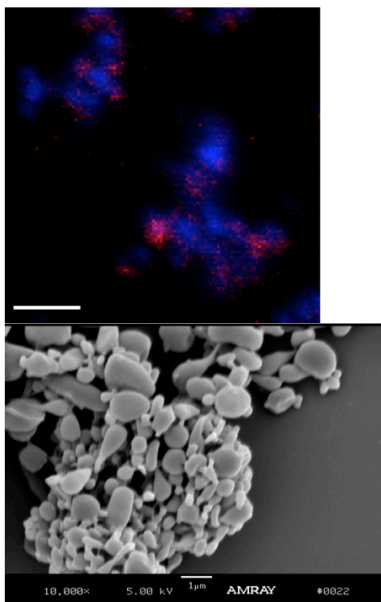
**Figure S2.** Zeta potential measurement of various multicompartmental particles, incorporating PEI in either none, one, two, or three of four compartments. A representative SEM image of the PLGA/PEI particles is also shown.



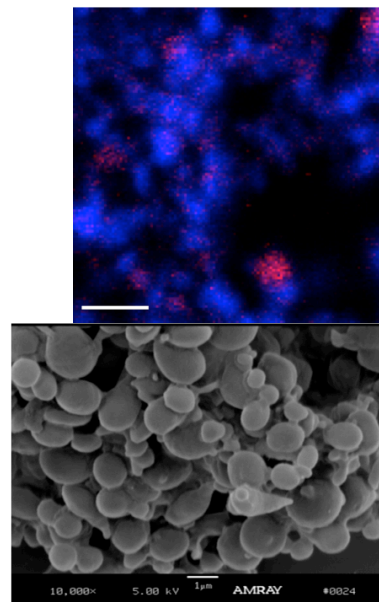
**Figure S3.** FTIR measurements of bicompartmental particles with PEI and DSP (crosslinker) incorporated on one side. Particles were jetted onto gold coated silicon wafers and kept at ambient room conditions for 0, 24, 48, and 72 hours after jetting. At each time point, a wafer was used to perform FTIR in reflectance mode.

# Stability Test (incubation in PBS)

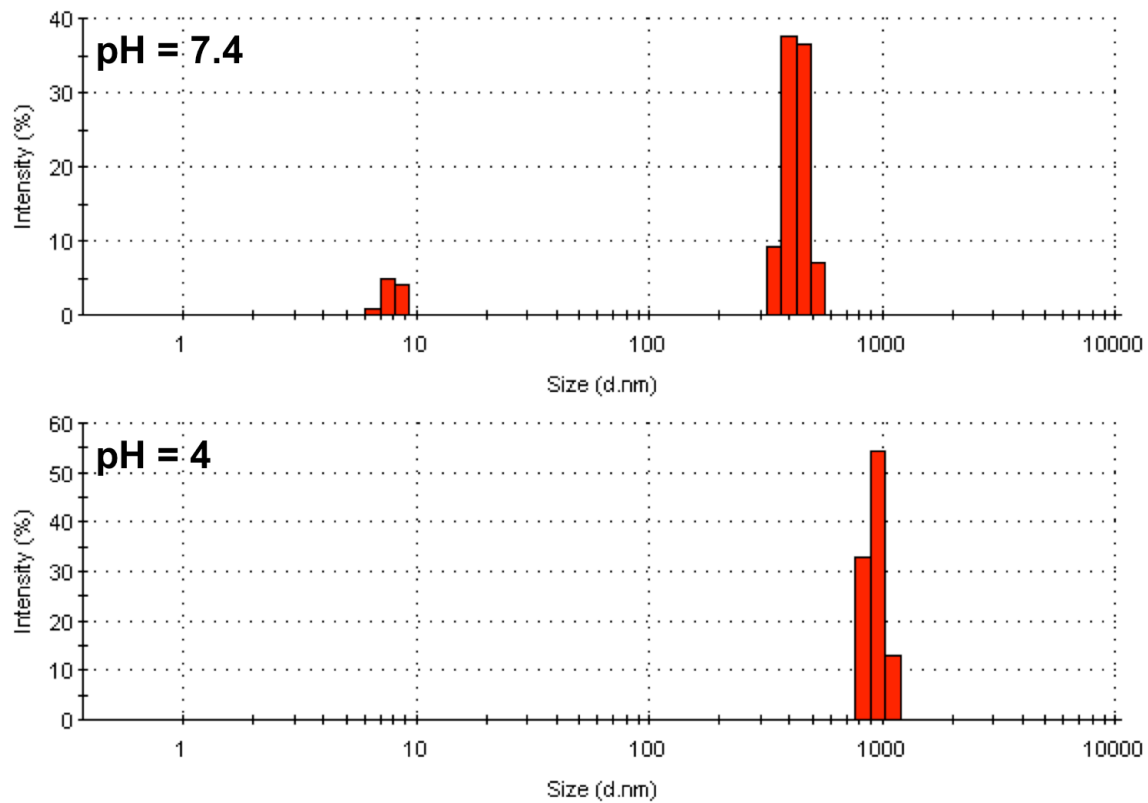
t ~ 0+ hrs



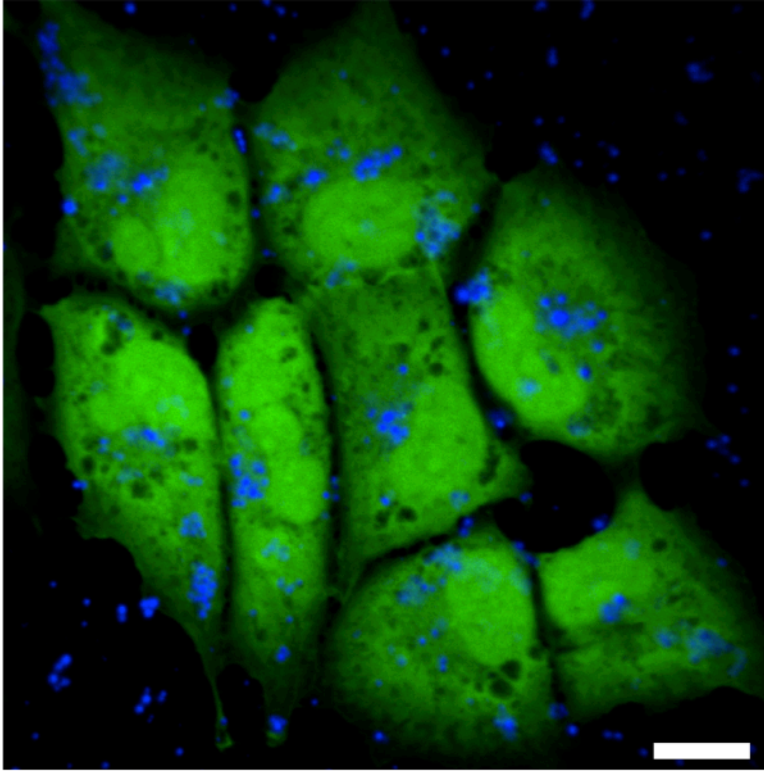
t ~ 24 hrs



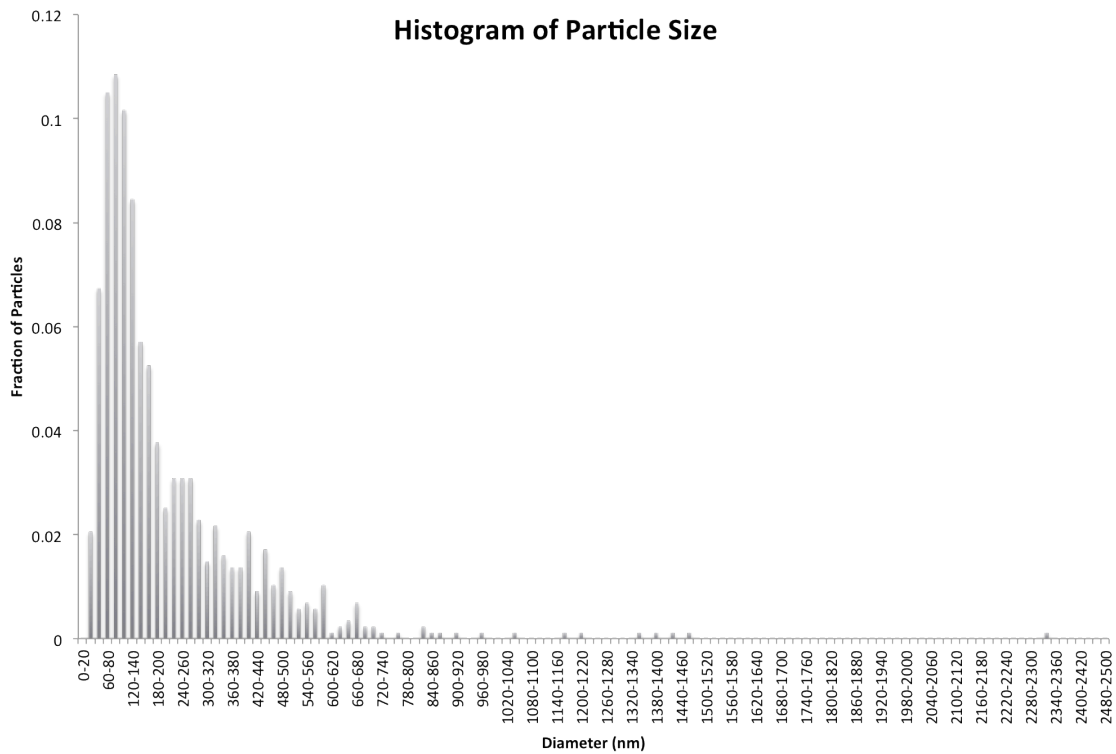
**Figure S4.** Stability of the PLGA/PEI nanoparticles were assessed by incubation in PBS at 37 °C. Scanning electron micrographs and fluorescent confocal images of the particles are shown here.



**Figure S5.** DLS data for PLGA/PEI nanoparticles showing a significant difference in hydrodynamic diameter when particles are incubated in pH = 7.4 vs. pH = 4.

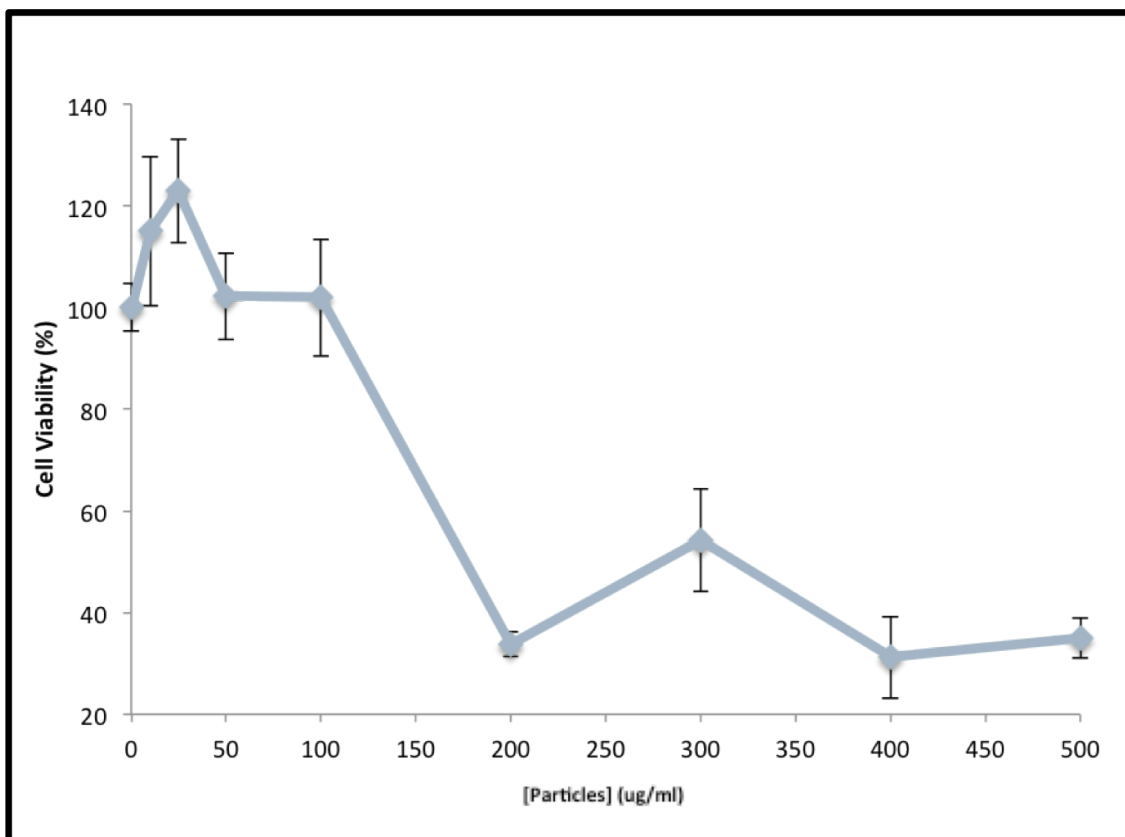


**Figure S6.** Demonstration of MDA-MB-231/GFP cell uptake of bicompartamental particles with a PLGA/PEI composite compartment, and a blue fluorescent PLGA imaging compartment. Particles were incubated with cells for about 12 hours (overnight).



**Figure S7.** Size distribution of particles used for *in vitro* experiments. Size was calculated from SEM images using Image J.





**Figure S8.** XTT assay performed on MDA-MB-231/GFP cells, incubating with various concentrations of PLGA/PEI bicompartmental particles (same particles as in Figure S4). Cells were incubated with for approximately 12 hours, media changed, and XTT assay performed after another 12 hours (24 hours after start of incubation).