Supplementary Information

Evaluation of transfection efficacy, biodistribution, and toxicity of branched amphiphilic peptide capsules (BAPCs) associated with mRNA.

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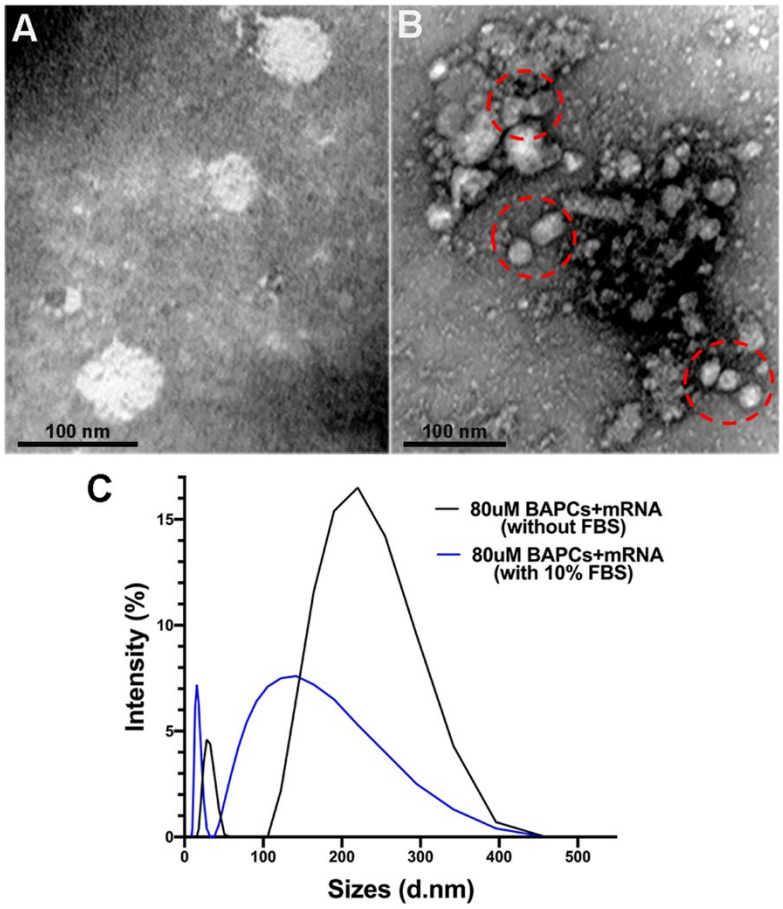
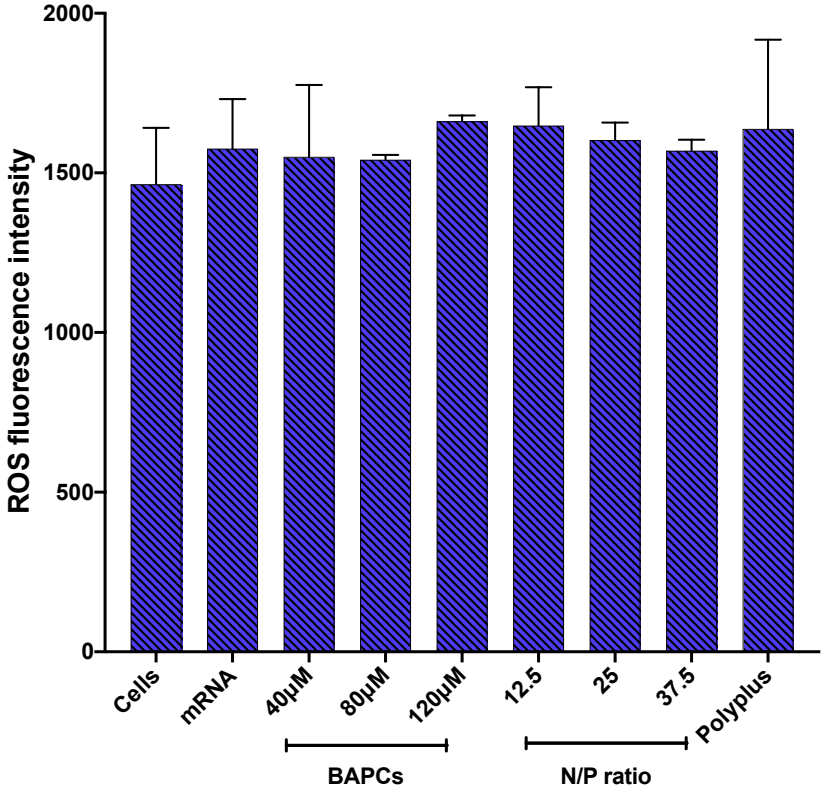
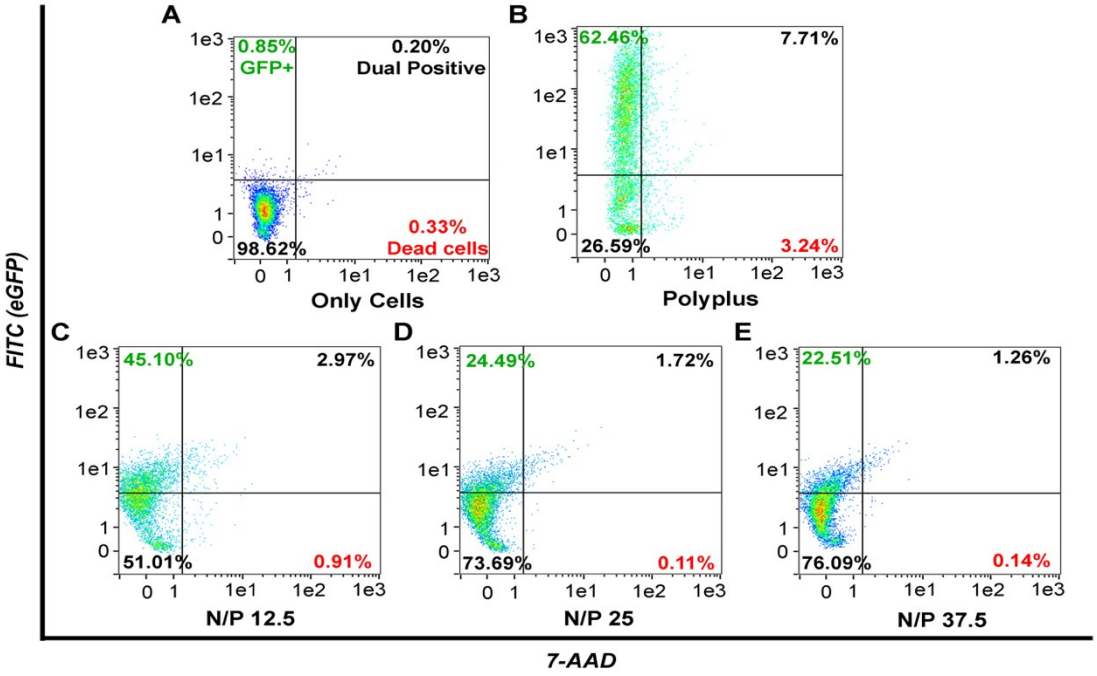


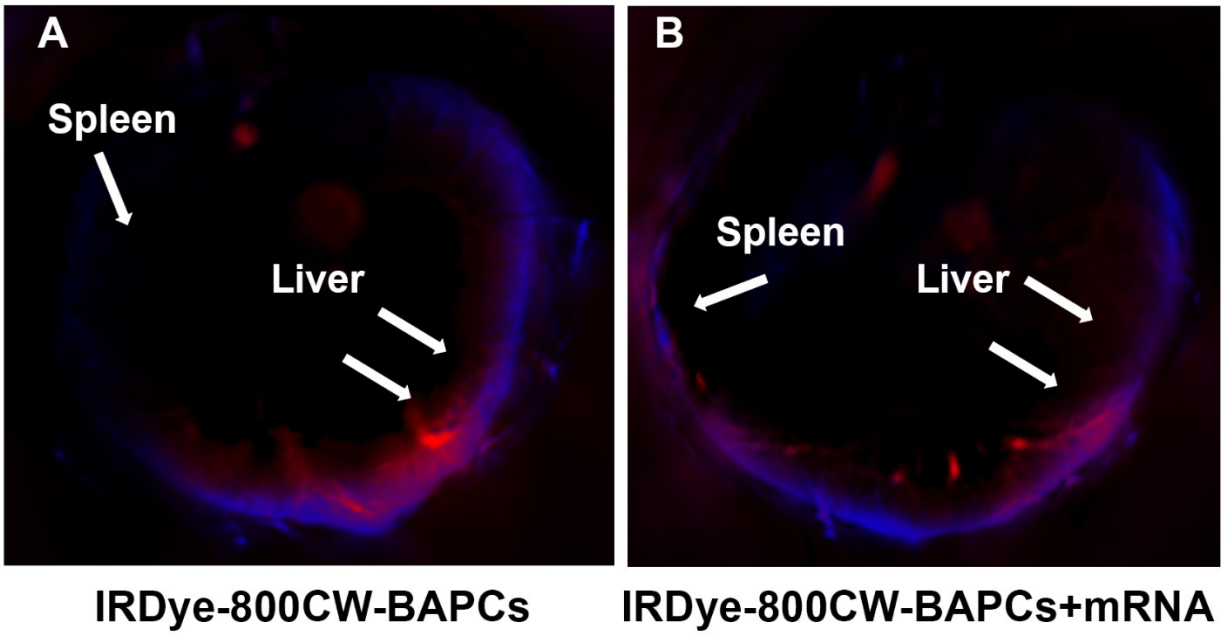
Supplementary Figure 1: Biophysical charact
in serum-containing media: Panel A & B re
BAPC-mRNA complexes in the presence of FBS.
TEM. Panel C indicates size distribution analy
presence and absence of FBS.



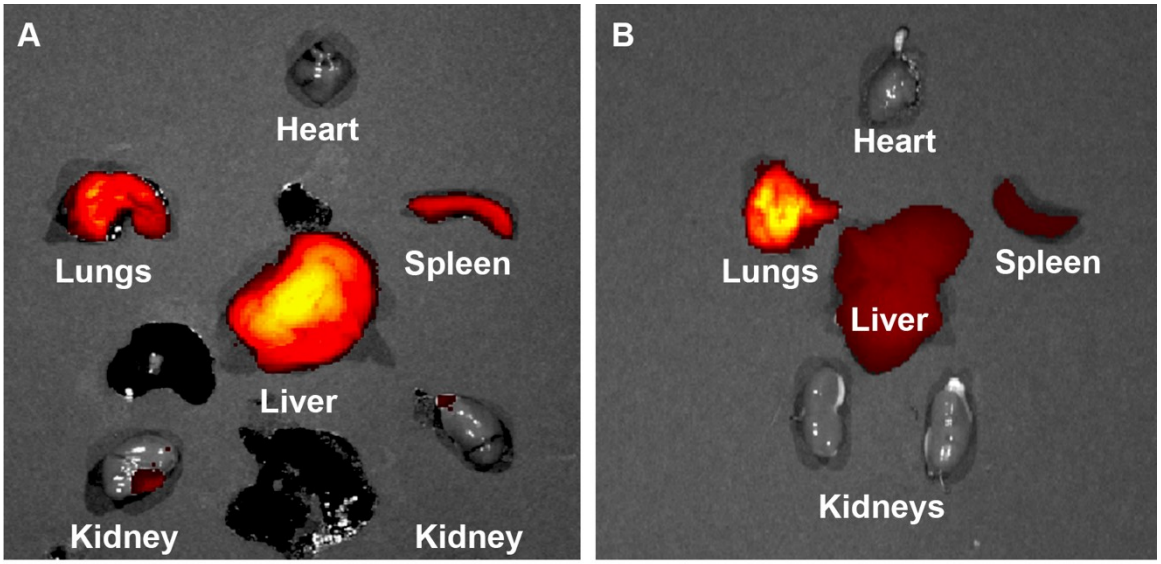
Supplementary Figure 2: *in vitro* oxidative stress analysis: Production of reactive oxygen species in cells treated with polyplus, BAPC-mRNA complexes and their BAPCs counterpart was assessed by CellROX Red fluorescent probe 4h post treatment.



Supplementary Figure 3: BAPCs-mediated *in vitro* mRNA delivery: Quantitation of BAPCs mediated eGFP mRNA transfection in HEK293T cells using flow cytometry. Panels represent eGFP expression and cell viability in (A) Untreated (B) Polyplus (C) N/P of 12.5 (D) N/P of 25 and (E) N/P of 37.5.



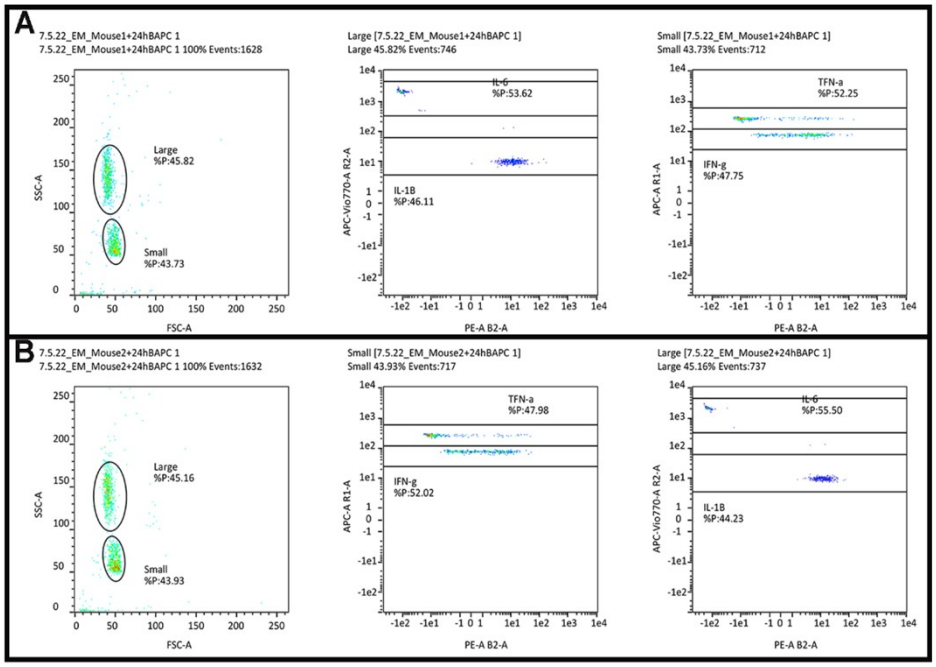
Supplementary Figure 4: Multispectral Optoacoustic Tomographic imaging of mice at 24 h timepoint: Panel represents mice injected with (A) IRdye-800CW-BAPCs and (B) IRdye-800CW-BAPCs mixed with mRNA.



IRdye-800CW-BAPCs 3h

IRdye-800CW-BAPCs+mRNA 3h

Supplementary Figure 5: fluorescence reflectance imaging of BAPCs and BAPCs conjugated with mRNA at 3 h post injection: Images of mouse organs injected with (A) IRdye-800CW tagged BAPCs (B) IRdye-800CW tagged BAPCs complexed with mRNA.



Supplemental Figure 6. Flow cytometry analysis of cytokine levels in mouse serum. Panels (A) and (B) show the flow cytometry gating strategy used to determine the mean fluorescence intensity (MFI) of each bead population. Briefly, the first panel represents two main populations of beads that were separated by size using side scatter light (SSC-A) vs forward scatter light (FSC-A). Each bead population was further separated into two sub-populations (Y-axis) depending on internal fluorescence of beads in the APC channel. Finally, MFI of the PE channel (x-axis) was used to calculate cytokine levels in pg/mL using a standard curve generated from samples provided in the kit.