SUPPLEMENTARY MATERIALS

Intracellular Protein Delivery and Gene Transfection by Electroporation Using a Microneedle Electrode Array

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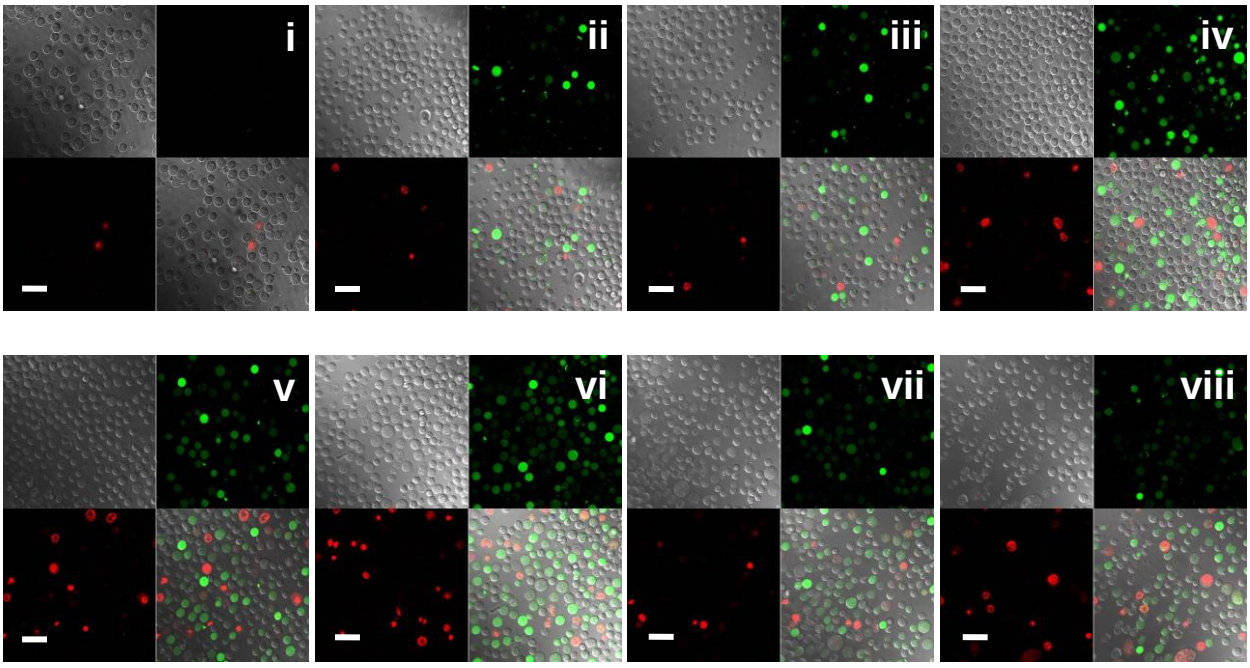
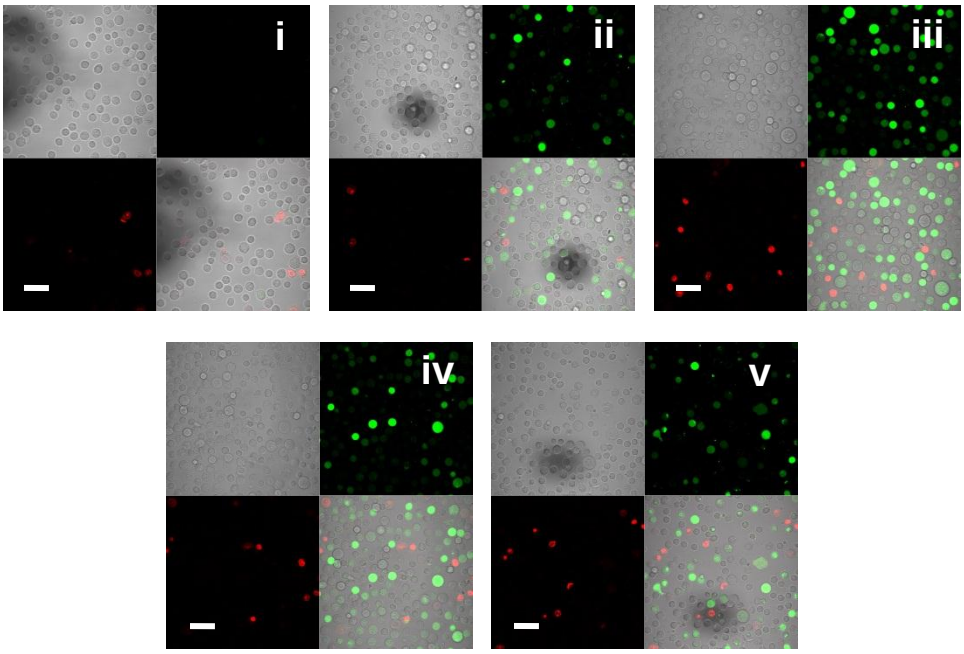
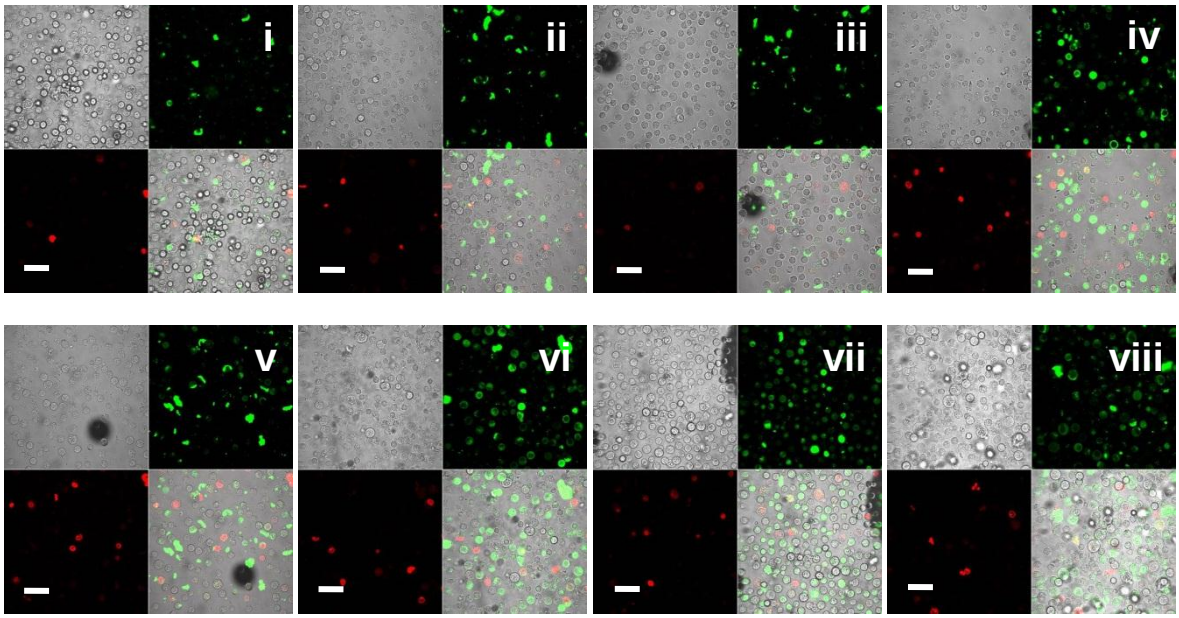


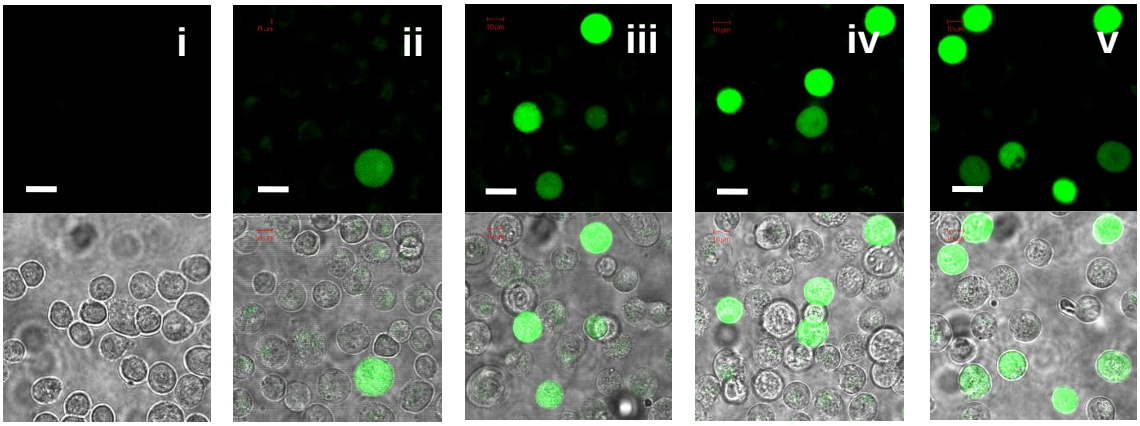
Supplemental Figure S1. Representative confocal microscopic images of human prostate cancer cells after the delivery of calcein by electroporation using a 2.5 ms exponential decay pulse. (i) un-pulsed control, (ii) 12 V, (iii) 25 V, (iv) 38 V, (v) 49 V, (vi) 69 V, (vii) 82 V, and (viii) 91 V applied for the experiment. Each picture contains 4 sections, and each section represents an image taken by a different channel (top left: brightfield, top right: green fluorescence, bottom left: red fluorescence, bottom right: combination of all channels). (scale bar = 50 μm)



Supplemental Figure S2. Representative confocal microscopic images of human prostate cancer cells after the delivery of calcein by electroporation using a 2 ms square wave pulse. (i) unpulsed control, (ii) 19 V, (iii) 38 V, (iv) 57 V, (v) 75 V applied for the experiment. Each picture contains 4 sections, and each section represents an image taken by a different channel (top left: brightfield, top right: green fluorescence, bottom left: red fluorescence, bottom right: combination of all channels). (scale bar = 50 μm)



Supplemental Figure S3. Representative confocal microscopic images of human prostate cancers cell after delivering BSA by electroporation using a 2.5 ms exponential decay pulse. (i) unpulsed control, (ii) 14 V, (iii) 28 V, (iv) 42 V, (v) 56 V, (vi) 75 V, (vii) 86 V, and (viii) 96 V, respectively. Each picture contains 4 sections, and each section represents an image taken by a different channel (top left: brightfield, top right: green fluorescence, bottom left: red fluorescence, bottom right: combination of all channels). (scale bar = 50 µm)



Supplemental Figure S4. Representative confocal microscopic images of human prostate cancer cells expressing GFP after delivering pDNA using a 2 ms square wave pulse. (i) unpulsed control, (ii) 17 V, (iii) 33 V, (iv) 50 V, (v) 67 V. The top row presents images from the green fluorescence channel showing cells with GFP expression, and the bottom row shows the combination of bright field and fluorescent images. (scale bar = 20 µm)