Electronic Supporting Information for

Nucleobase-modified polyamidoamine-mediated miR-23b delivery to inhibit the proliferation and migration of lung cancer

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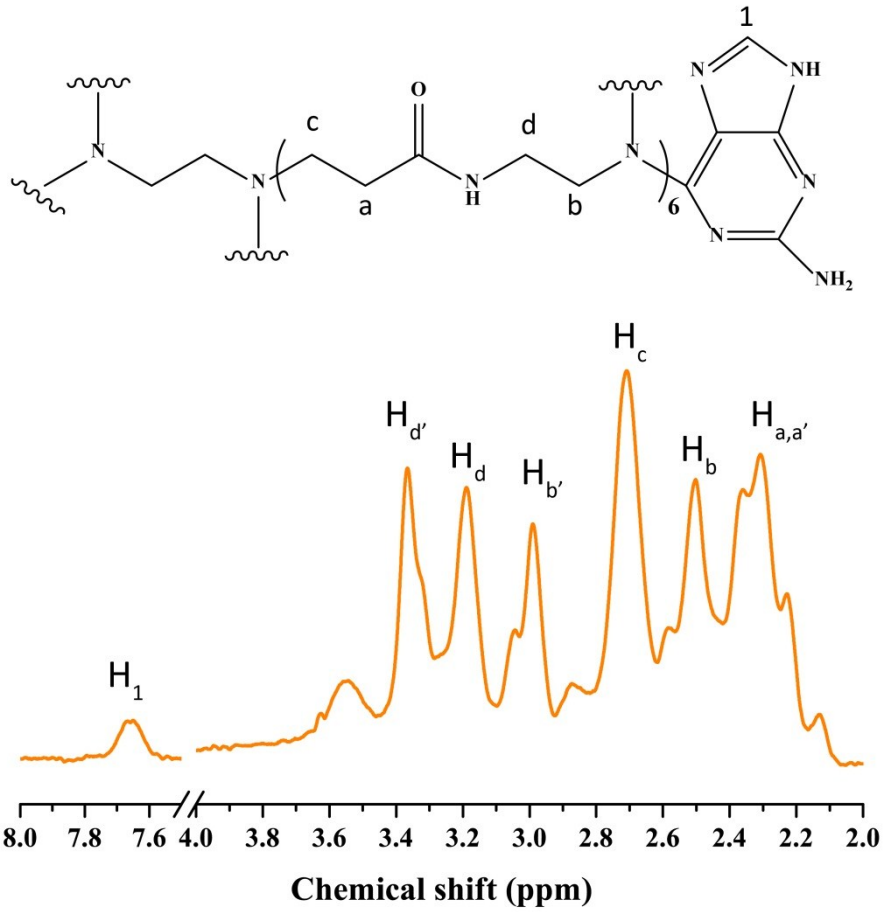

Figure S1. ^{1}H NMR characterization of AP-PAMAM in D_2O.

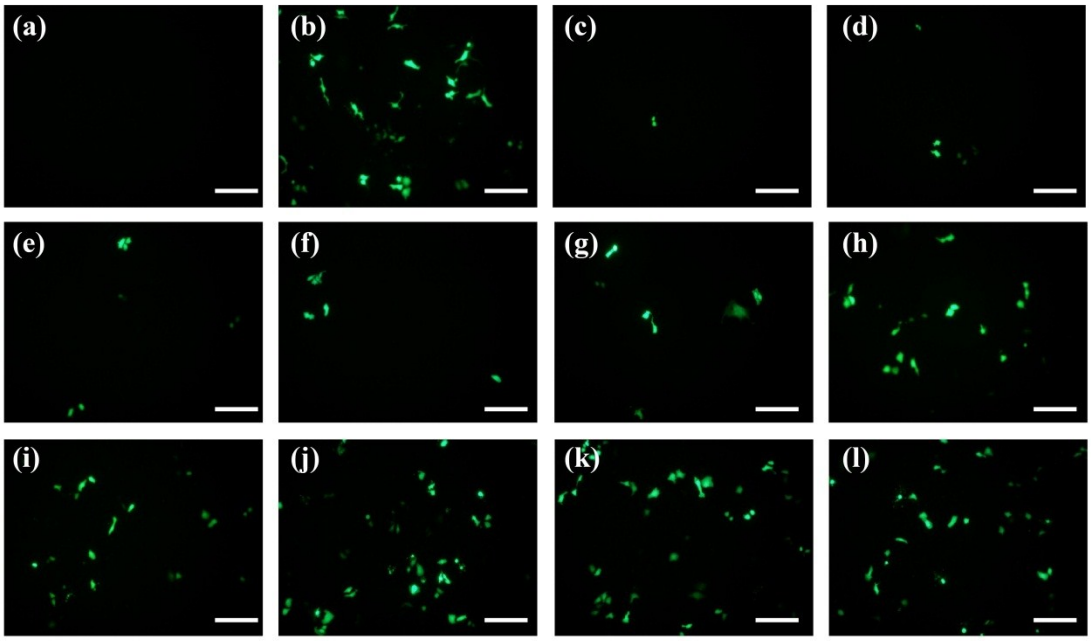

Figure S2. *In vitro* transfection assay of PAMAM and AP-PAMAM at different N/P ratios using pEGFP-N3 as a model: (a) naked plasmid pEGFP-N3; (b) lipofectamine^{2000}/pEGFP-N3; (c-g) PAMAM/ pEGFP-N3 at N/P ratios of 10, 20, 30, 40 and 50; (h-l) AP-PAMAM/pEGFP-N3 at N/P ratios of 10, 20, 30, 40 and 50, respectively. The scale bar is 200 μm.

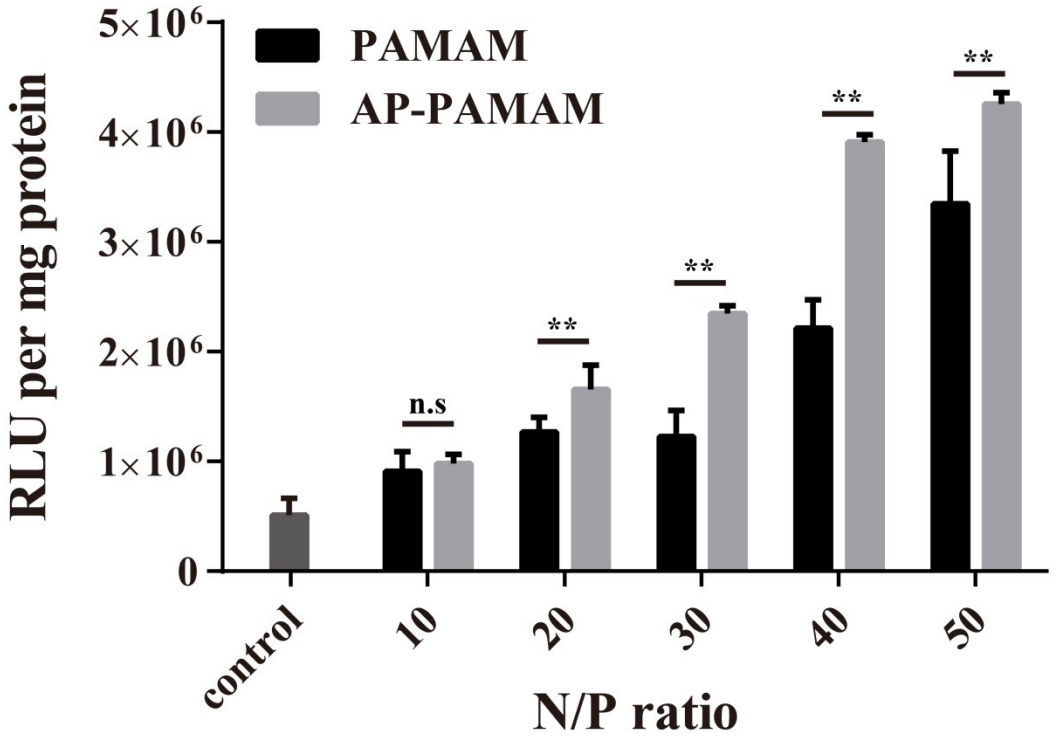

Figure S3. *In vitro* transfection efficiency analysis of PAMAM and AP-PAMAM at different N/P ratios using pGL-3 as a model. The data are expressed as mean value ± SD of three experiments (*$p < 0.05$, **$p < 0.01$).

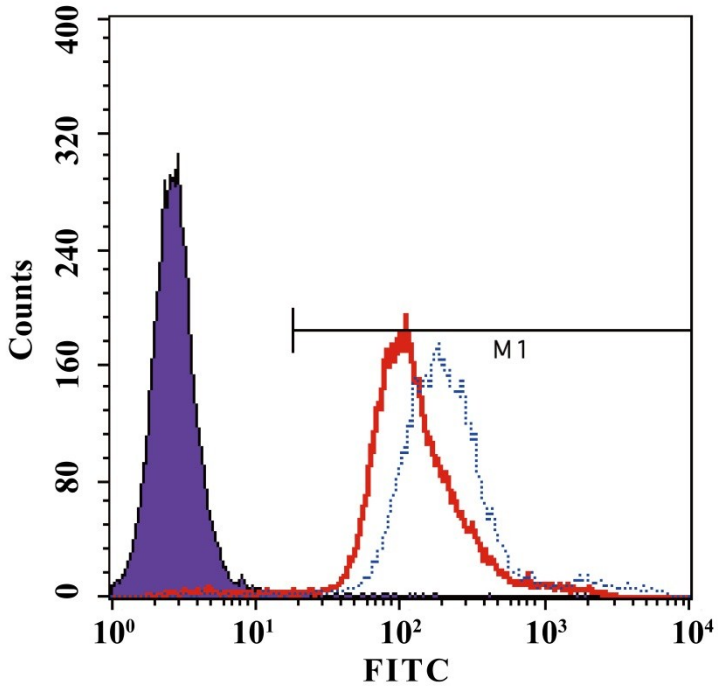

Figure S4. Cellular uptake ability assay of the carriers AP-PAMAM (red line) and PAMAM (blue line) through flow cytometric assay. The carriers were labelled with the dye fluorescein isothiocyanate.

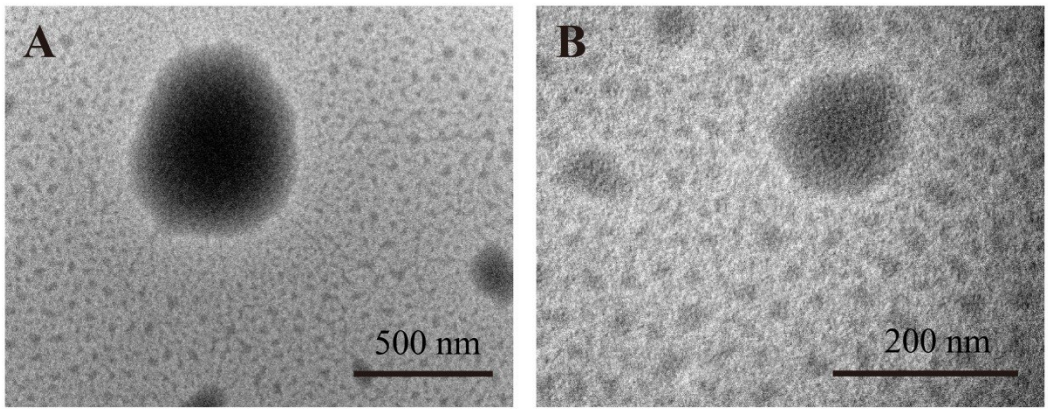

Figure S5. TEM images of AP-PAMAM (A) and AP-PAMAM/miR-23b nanoparticle (B) at an N/P ratio of 50.

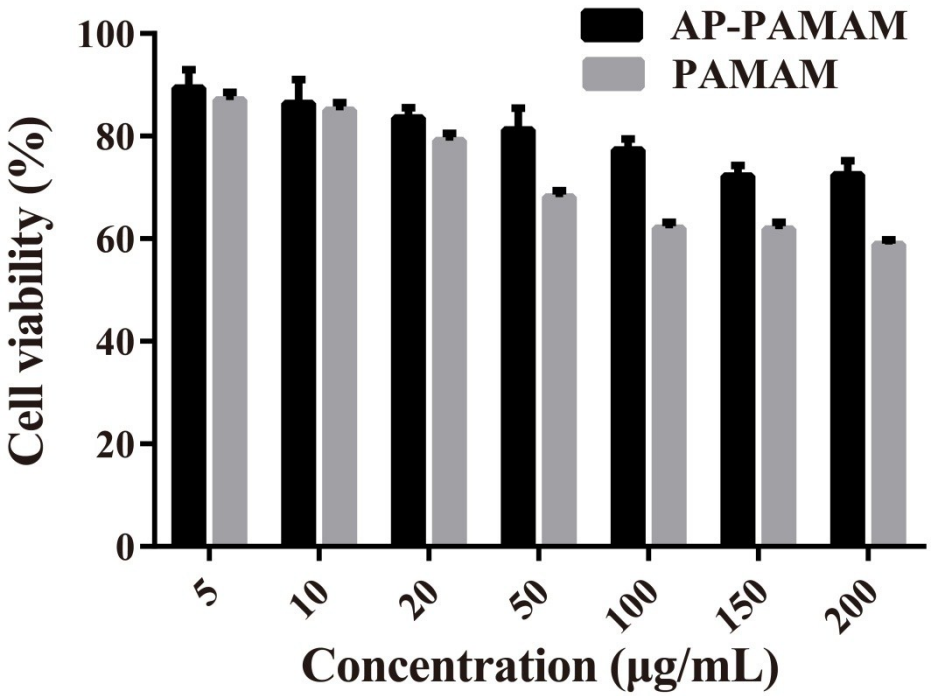

Figure S6. *In vitro* cytotoxicity analysis of PAMAM and AP-PAMAM in A549 cells. The data are expressed as mean value ± SD of three experiments.

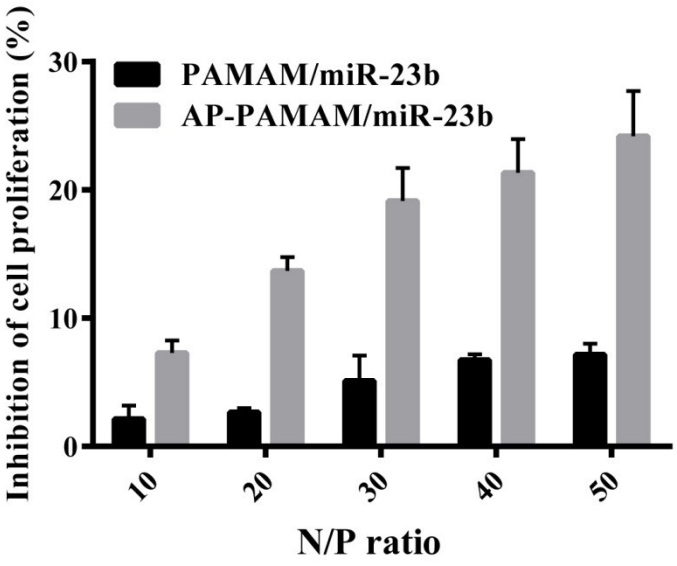

Figure S7. Inhibition of cell proliferation of A549 cells after the miR-23b transfection using different carriers at various N/P ratios**.**

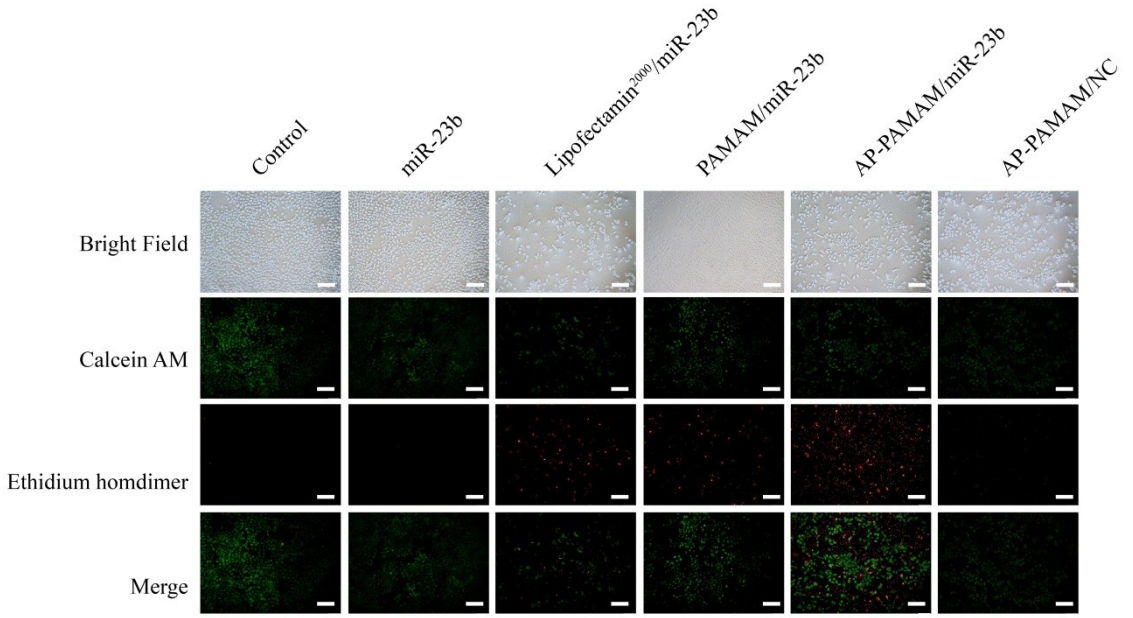

Figure S8. Live/Dead assay of A549 cells treated with different nanoparticles, in which living and dead cells exhibited green and red fluorescence, respectively. The scale bar is 200 μm.

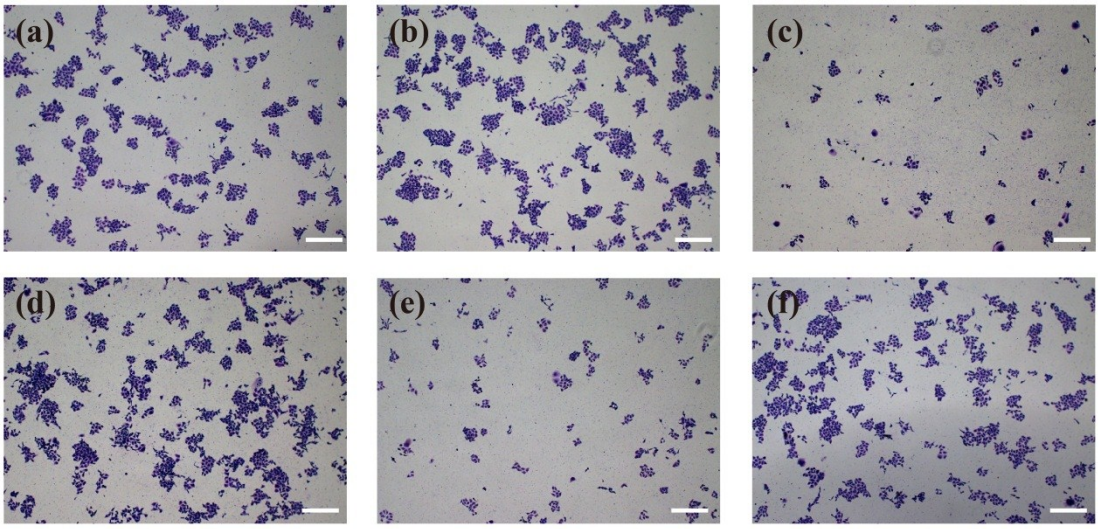

Figure S9. Inhibition of cell colony formation by miR-23b transfection: (a) control; (b) free miR-23b; (c) lipofectamine^{2000}/miR-23b; (d) PAMAM/miR-23b; (e) AP-PAMAM/miR-23b; and (f) AP-PAMAM/NC. The scale bar is 200 μm.

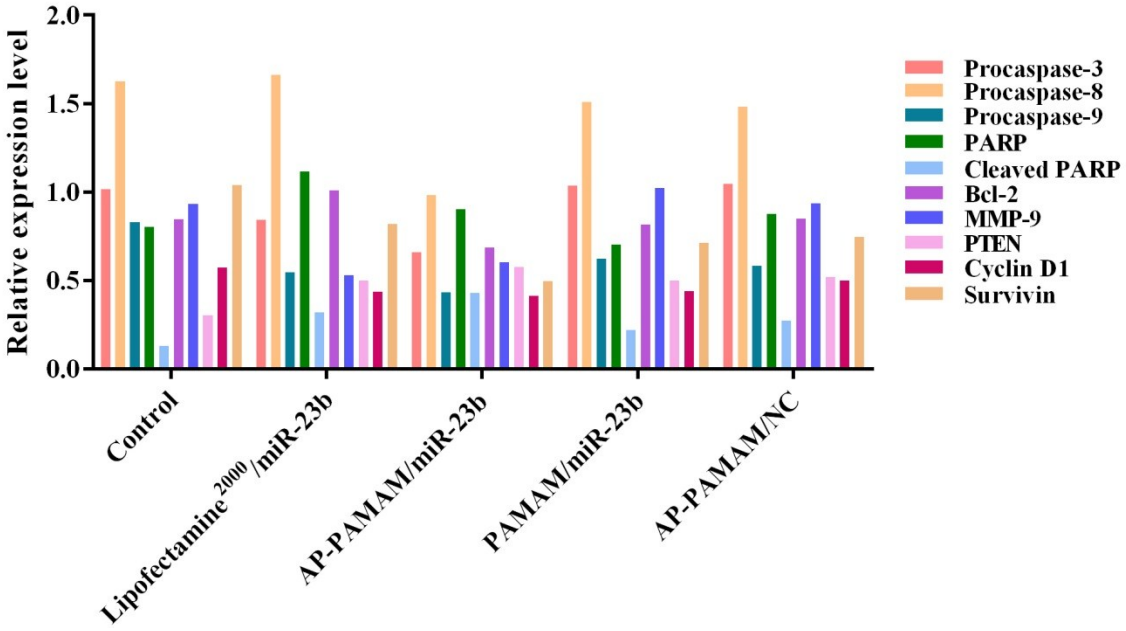

Figure S10. Quantitative analysis for the expression level of specific proteins in A549 cells after miR-23b transfection by different carriers. The assay was conducted using the software Image J.

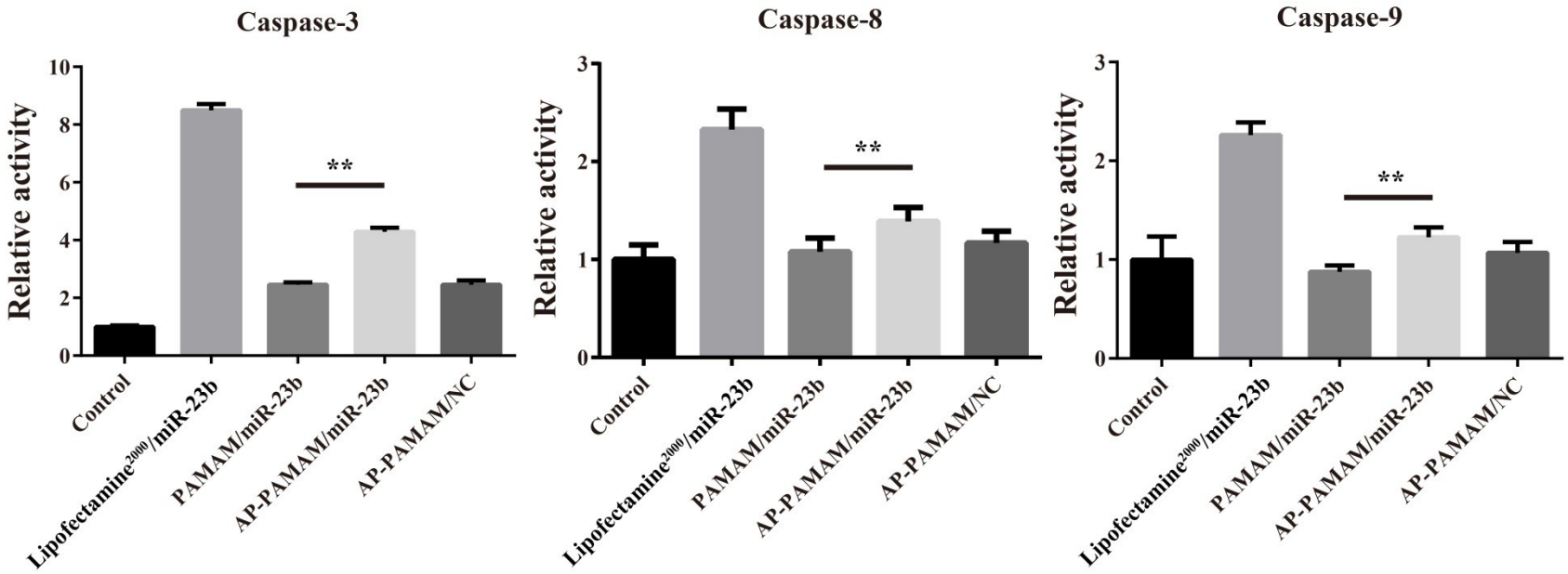

Figure S11. Relative activity of caspase-3, -8 and -9 in A549 cells after miR-23b transfection by different carriers. The data are expressed as the mean value ± SD of triplicate experiments (*$p < 0.05$, **$p < 0.01$).

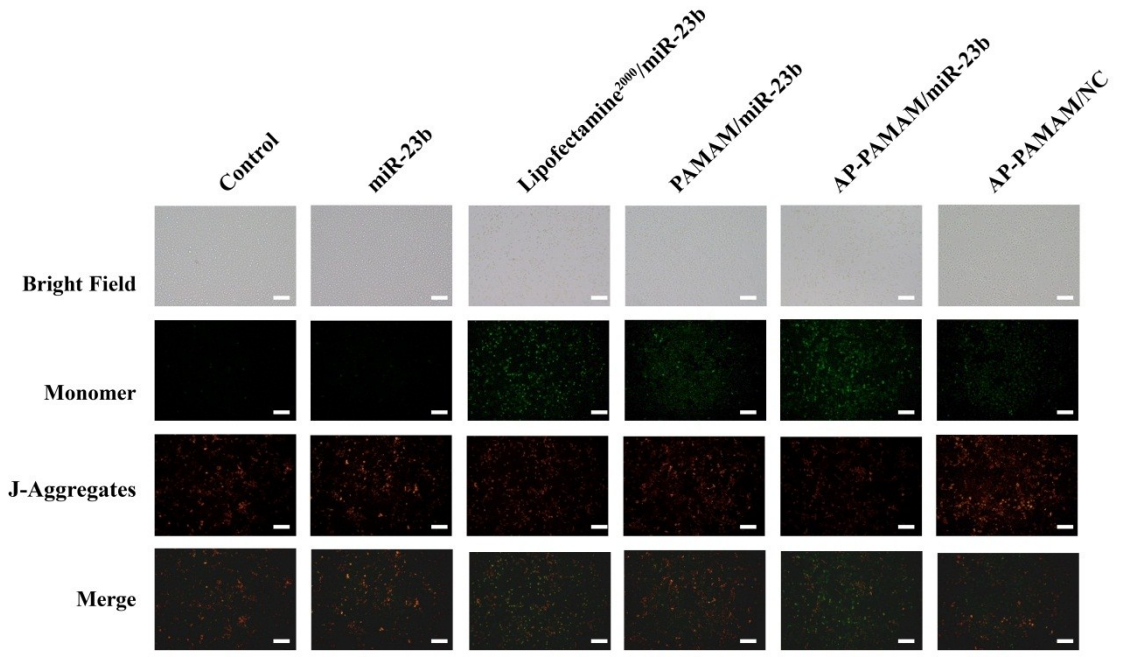

Figure S12. Mitochondrial membrane potential analysis of A549 cells after miR-23b transfection by different carriers. The scale bar is 200 μm.