

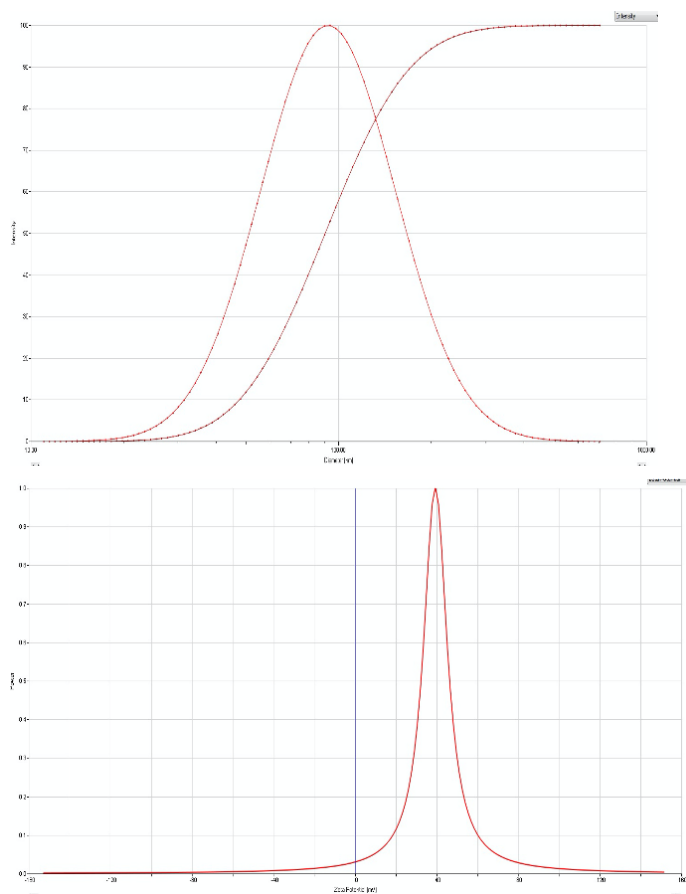
Nucleic acid delivery with α -tocopherol-Polyethyleneimine-Polyethylene glycol nanocarrier system

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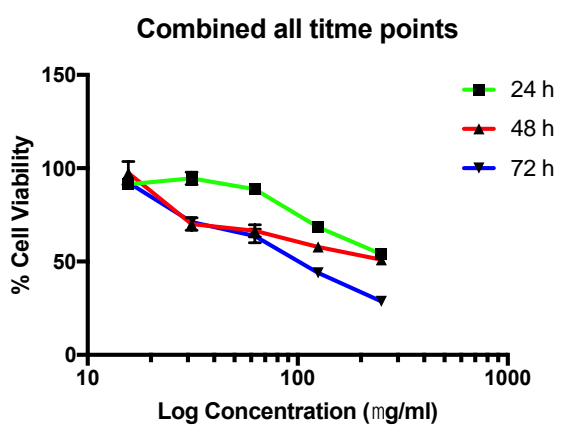
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Supplementary information

Supplementary Figure 1: Representative size and zeta potential measurement of TPP₁₁₁ in HEPES buffer using DLS.

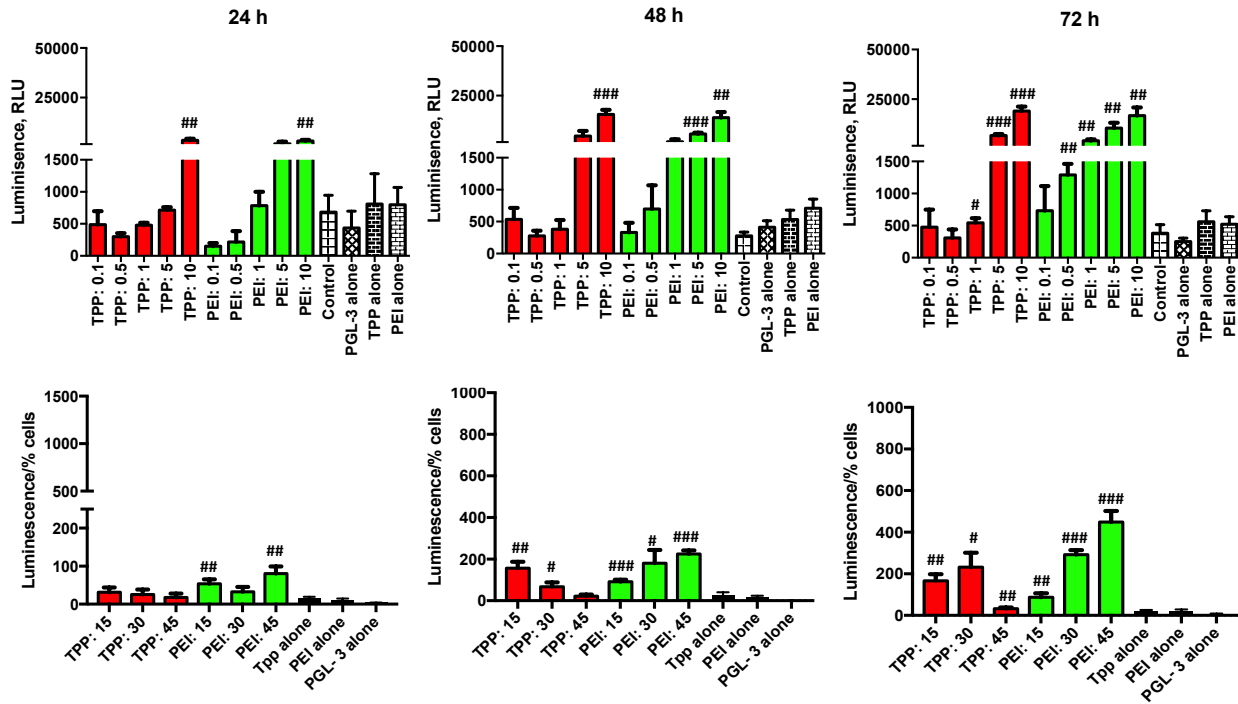


Supplementary Figure 2: Cell viability assay for PEI-1800 in A549 cells at 24, 48 and 72 h of incubation.

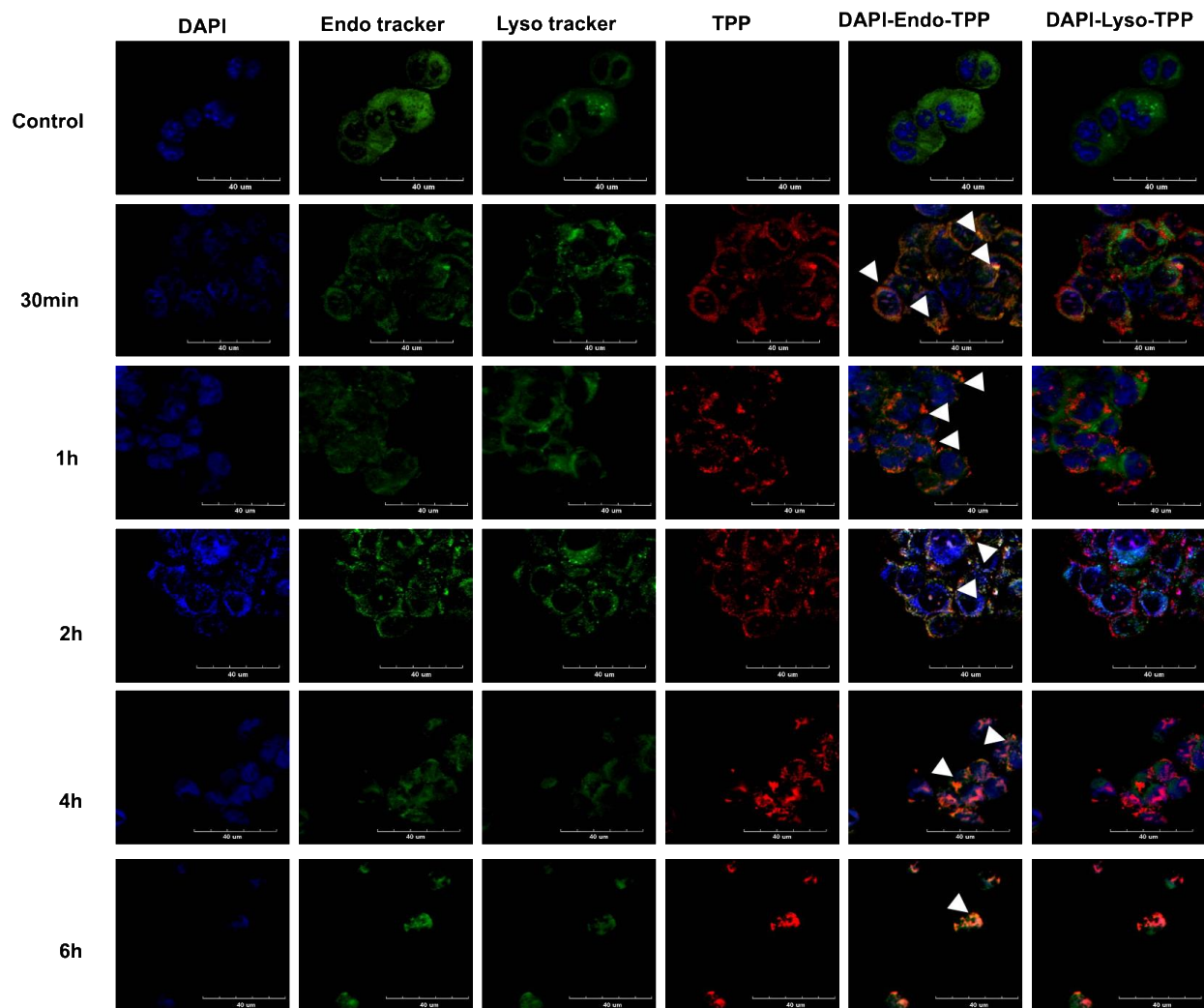


Time points	IC ₅₀
24 h	278.3 µg/ml
48 h	213.1 µg/ml
72 h	100.2 µg/ml

Supplementary Figure 3: The transfection of TPP₁₁₁ polymer complexed with pGL-3 luciferase-expressing plasmid was evaluated in H358 cells at 24, 48 and 72 h time points, using different N/P ratios; x-axis values indicate the P in the N/P ratio; #: p< 0.05; ##: p<0.01; ###:p<0.001. All statistical analyses are two-tailed t-tests compared to pGL-3 alone.



Supplementary Figure 4: Cellular uptake analysis of Cy-5.5-conjugated TPP₁₁₁ complexed with pGL-3 plasmid was detected in H358 cells using Confocal Laser Scanning Microscopy (CLSM), potentiated by endosomal uptake. Lysosomes and endosomes were stained with Red DND-99 (pseudo color green) and GFP (green), respectively. Nuclei (blue) were stained with DAPI. H358 cells were incubated with TPP₁₁₁-plasmid complexes for different incubation periods. The scale bar is at 40 μ m. Co-localization of TPP₁₁₁-plasmid complexes and endosomes/lysosomes is indicated with white arrows.



Supplementary Figure 5: *In vivo* organ biodistribution of Cy5.5 conjugated TPP₁₁₁ complexed with PGL3 plasmid, following i.v. administration, at different time points.

