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One-Step Fabrication of Functional Carbon Dots with Long Wavelength Emission for Gene Delivery and Bio-imaging

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Table S1. Reactants feeds for the synthesis of the CDs.

	PEI 1800Da (mg)	Rh B (mg)	Rh 6G (mg)
PR-CD I	460	43	-
PR-CD II	460	86	-
PR-CD III	460	129	-
PR-CD IV	460	172	-
PRG-CD I	460	-	43
PRG-CD II	460	-	86
PRG-CD III	460	-	129
PRG-CD IV	460	-	172

Table S2. The C, N and H content of the CDs.

	Nitrogen (%)	Carbon (%)	Hydrogen (%)
PR-CD	22.85	61.06	10.06
PRG-CD	23.99	57.71	10.26

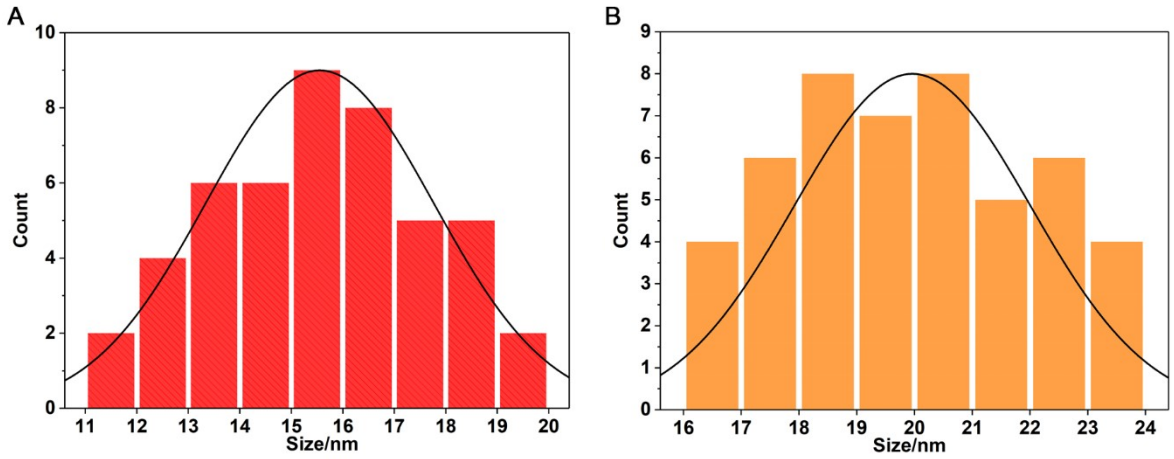

Fig. S1. Size distribution histogram and curve of **PR-CD** (A) and **PRG-CD** (B) from TEM.

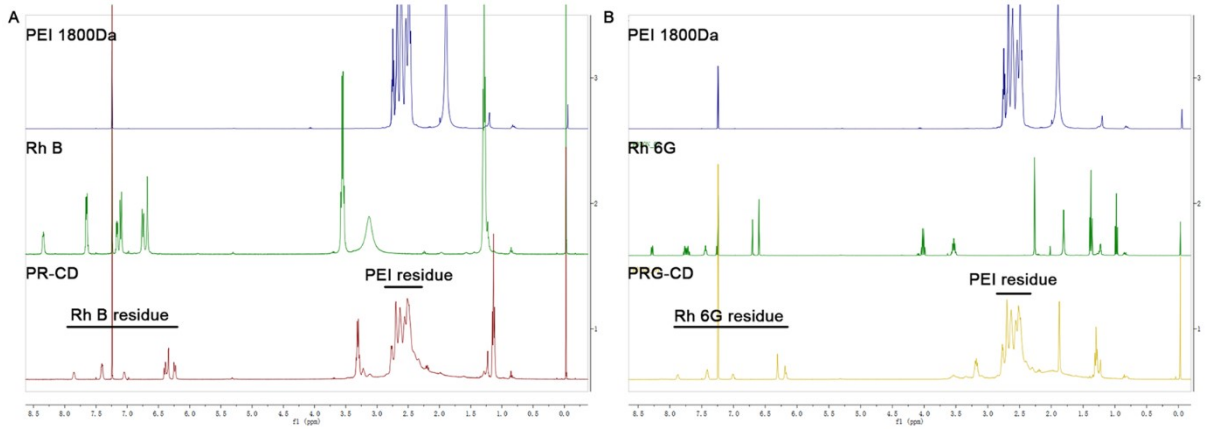

Fig. S2. Comparative ^{1}H-NMR spectra of **PR-CD** (left) and **PRG-CD** (right) and their relevant precursors.

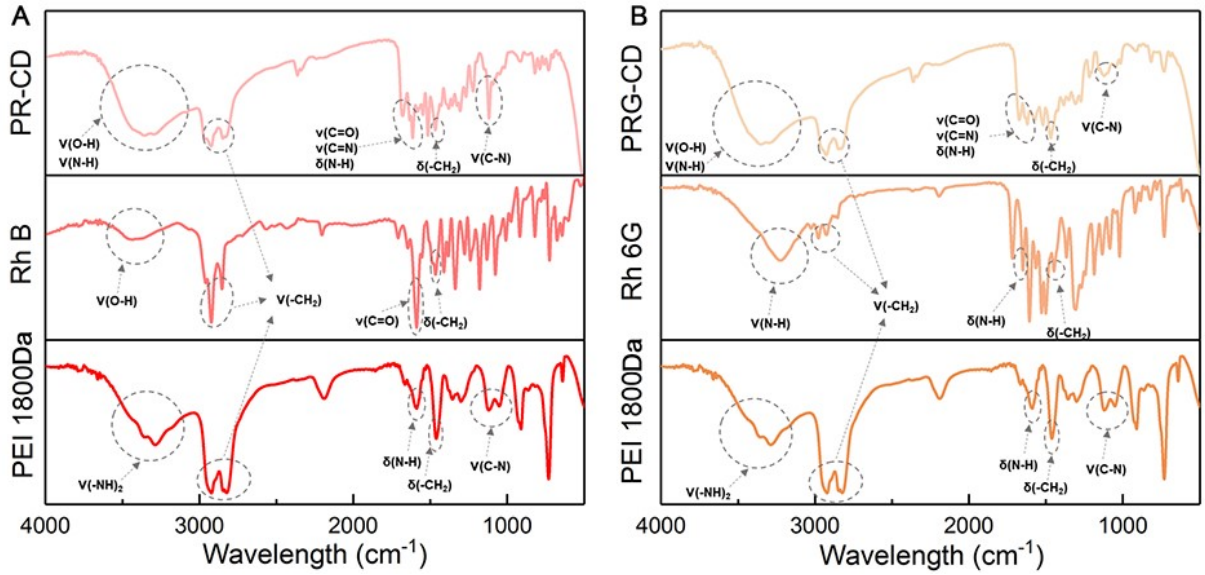

Fig. S3. Comparative FTIR spectra of **PR-CD** (left) and **PRG-CD** (right) and their relevant precursors.

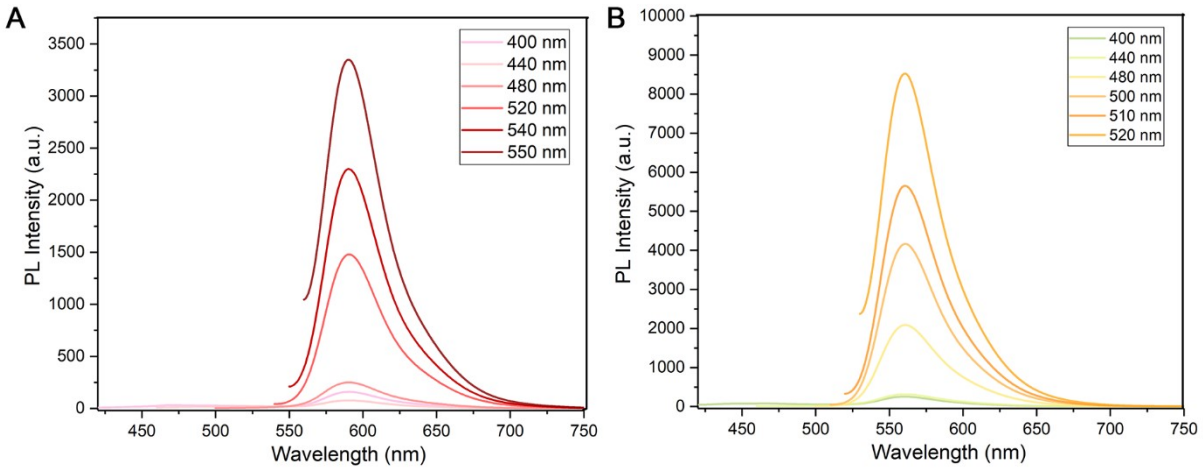

Fig. S4. The fluorescence spectra of **PR-CD** (A) and **PRG-CD** (B) under different excitation wavelength.

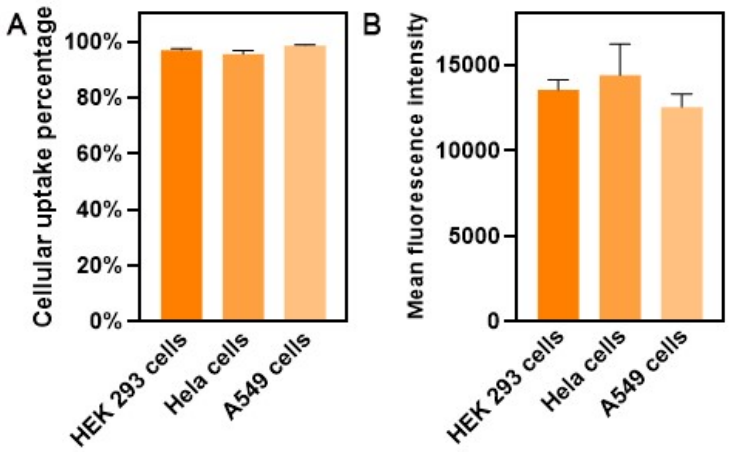

Fig. S5. Cellular uptake and mean fluorescence intensity of **PRG-CD** in different types of cells. Data represent mean ± SD (n = 3).

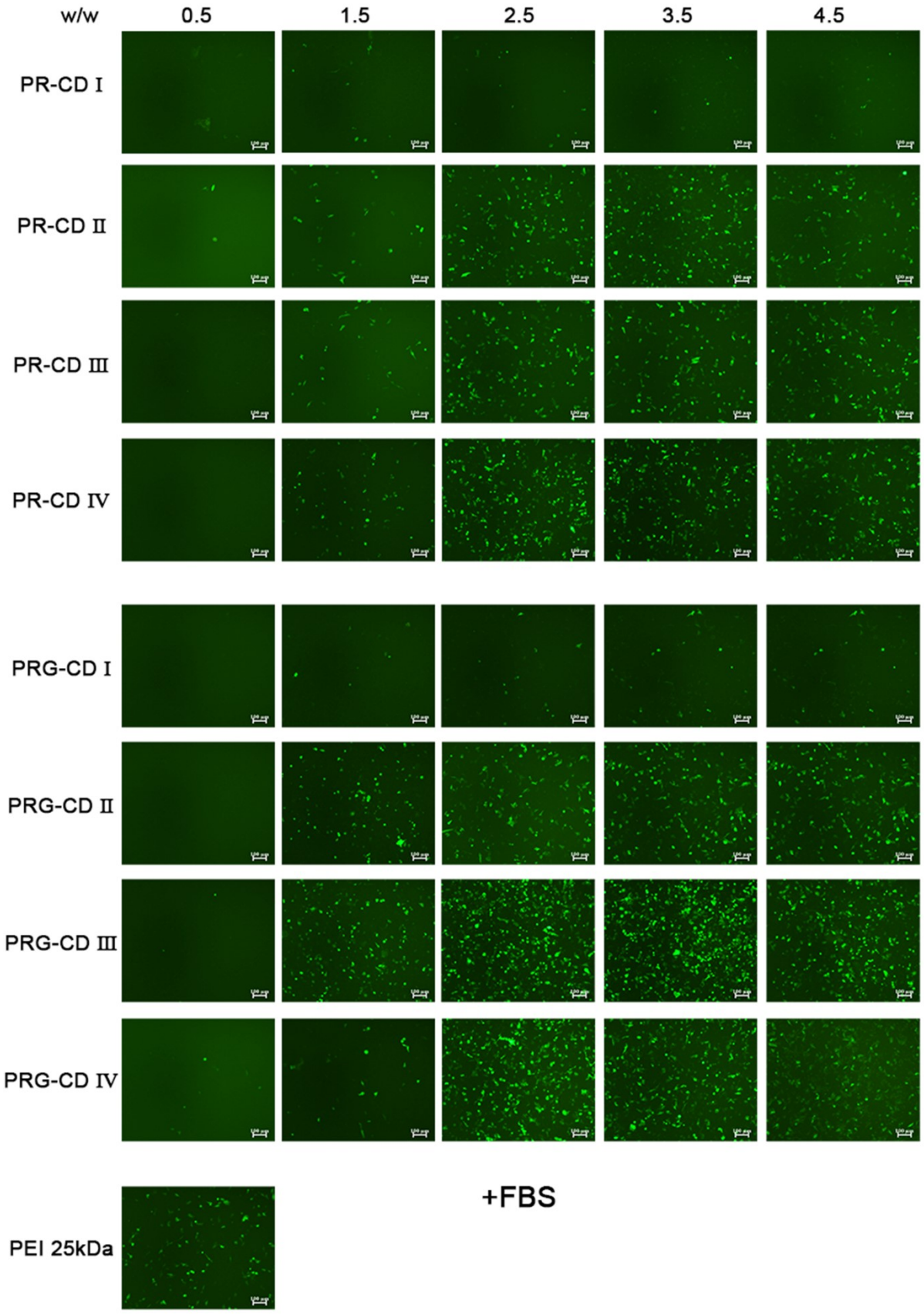

Fig. S6. Fluorescence microscopy images of pEGFP transfected by **PR-CD I-IV** and **PRG-CD I-IV** in 7702 cells at various mass ratios. Scale bar = 100 μm.

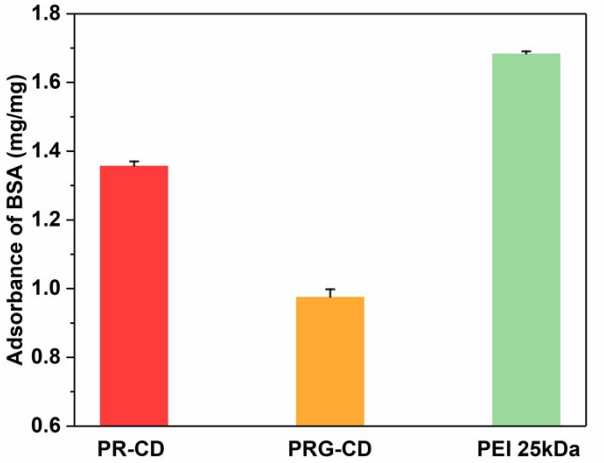

Fig. S7. BSA adsorption of the CDs and PEI 25kDa. Data represent mean ± SD (n = 3).

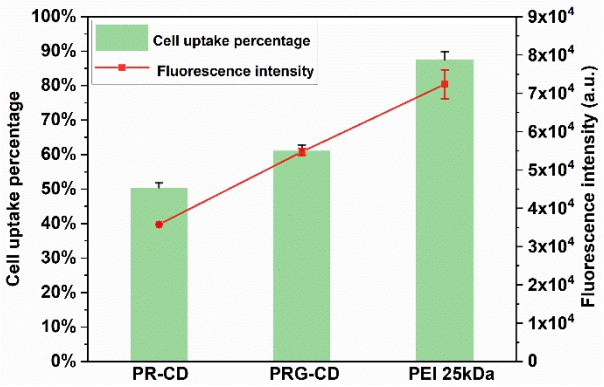

Fig. S8. Cellular uptake (columns) and fluorescence intensity (dots) of the vector/Cy5-labeled DNA complexes in B16 cells. Data represent mean ± SD (n = 3).

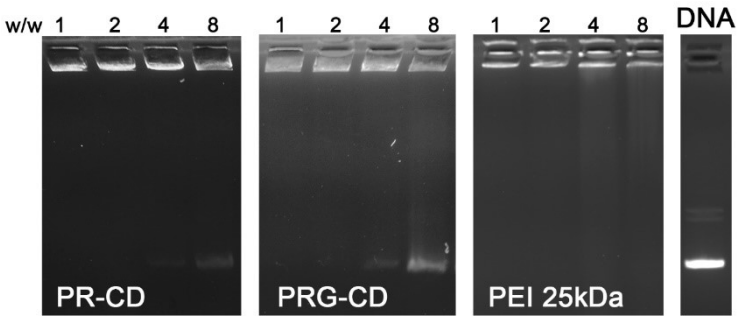

Fig. S9. DNA release assay by the addition of heparin at various heparin/DNA mass ratios.

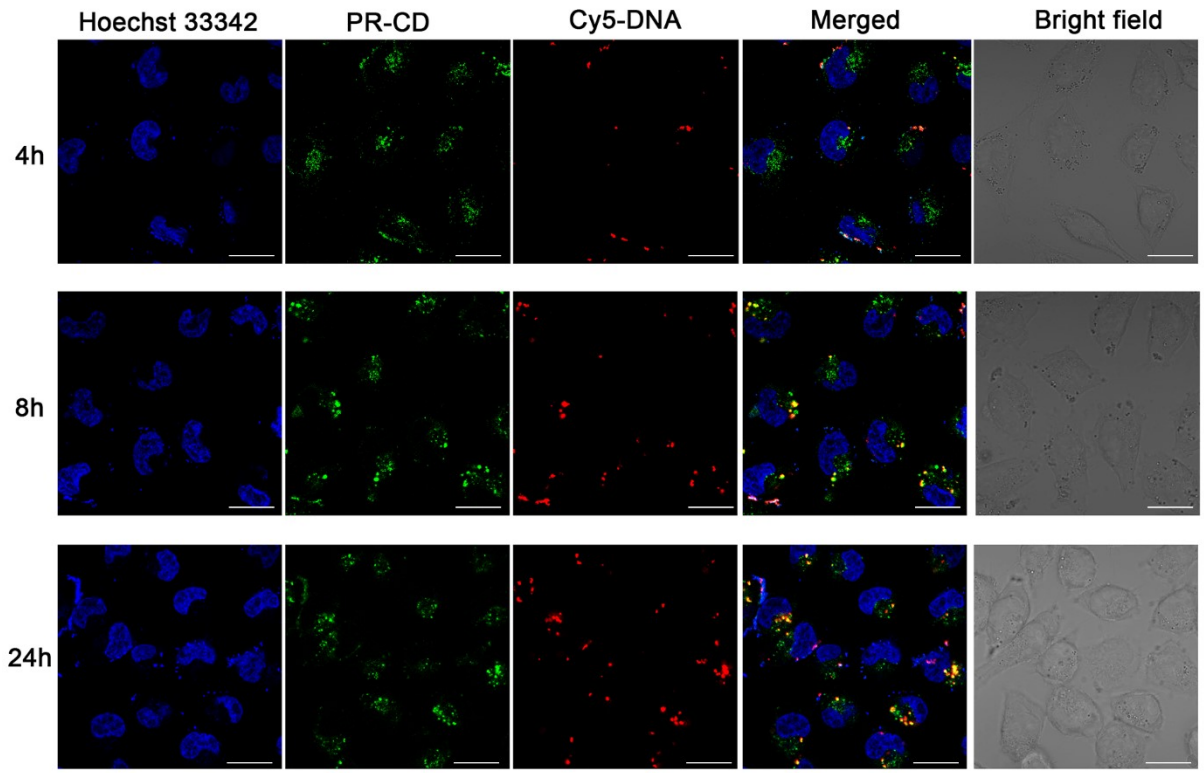

Fig. S10. CLSM images of 7702 cells transfected with the **PR-CD**/DNA complexes at a w/w of 3.5 in the presence of 10% serum (DNA was labeled by Cy5 (red), the green channel is **PR-CD** and the nuclei was stained with Hoechst 33342 (blue)). Scale bar = 20 μm.