Electronic Supplementary Material (ESI) for RSC Advances.

Influence of carbonization conditions on luminescence and gene delivery properties of nitrogen-doped carbon dots

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Supplementary information

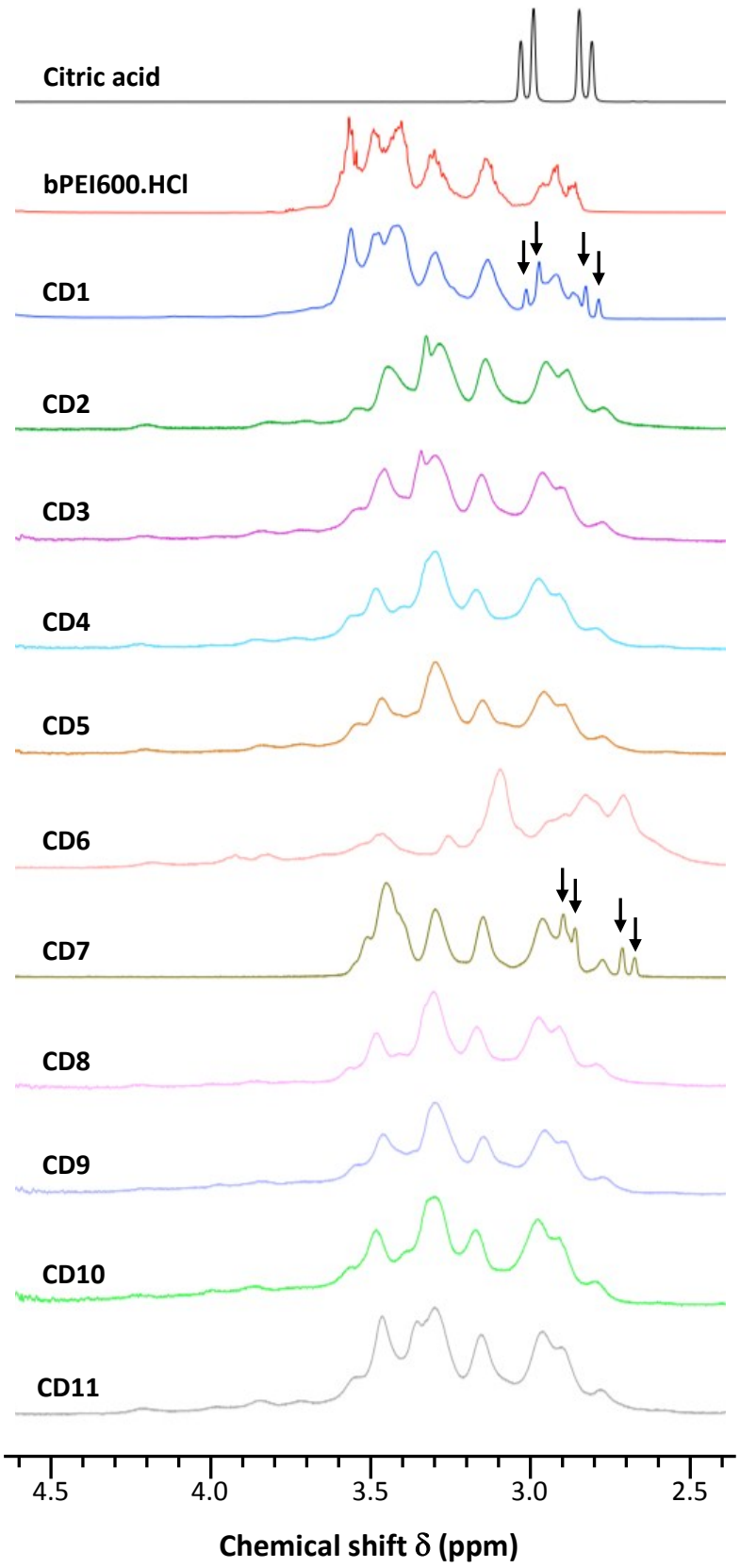

Fig. S1 ^{1}H-NMR spectra (400 MHz) recorded for **CD1**-**CD11**, citric acid and bPEI600 (previously freeze-dried in HCl 1 N) in D_2O. The presence of a characteristic AB system at 2.8-2.9 ppm (indicated by arrows) suggested the existence of citrate moieties or associated methylene groups at the surface of **CD1** and **CD7**.

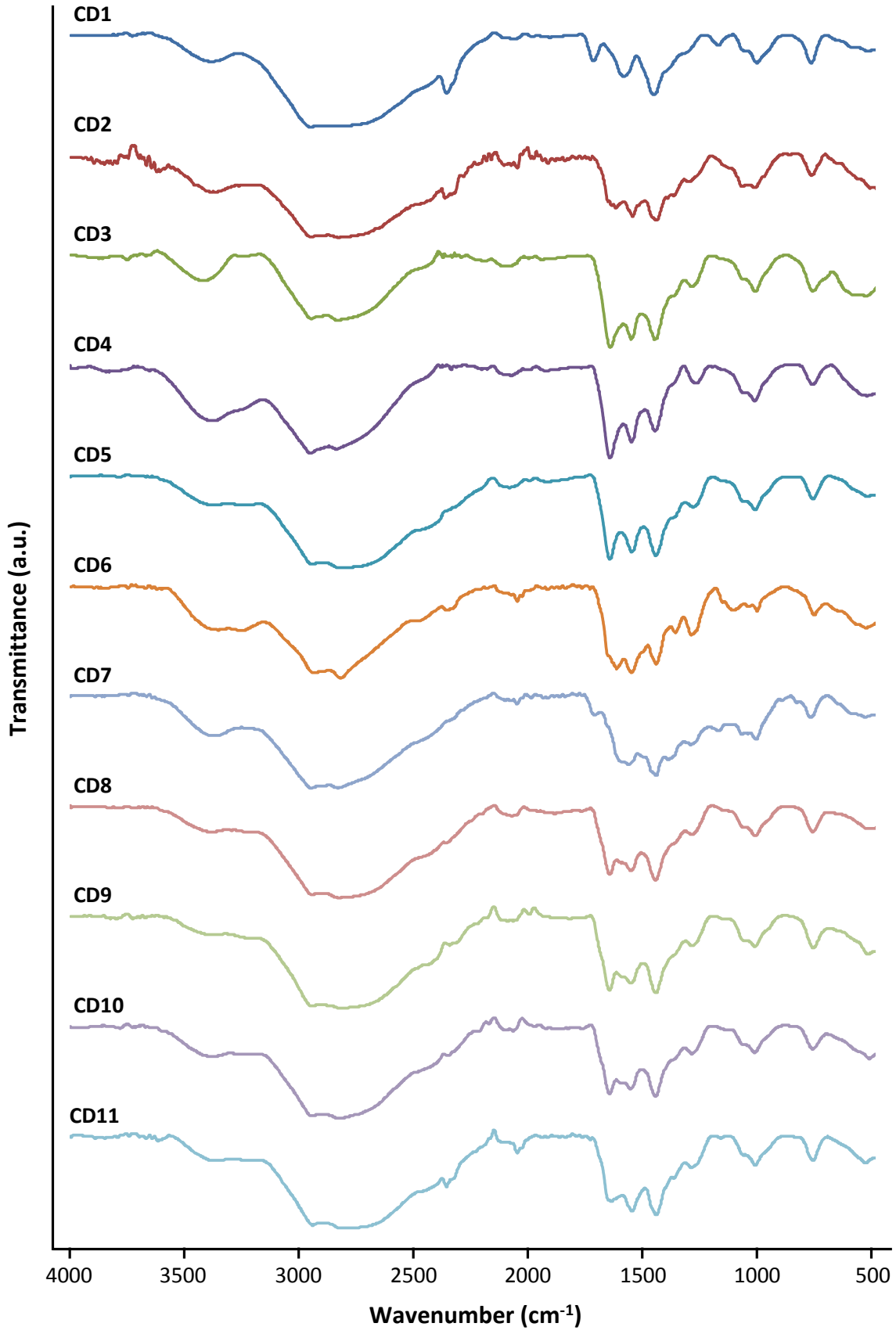

Fig. S2 FT-IR spectra of **CD1-CD11**.

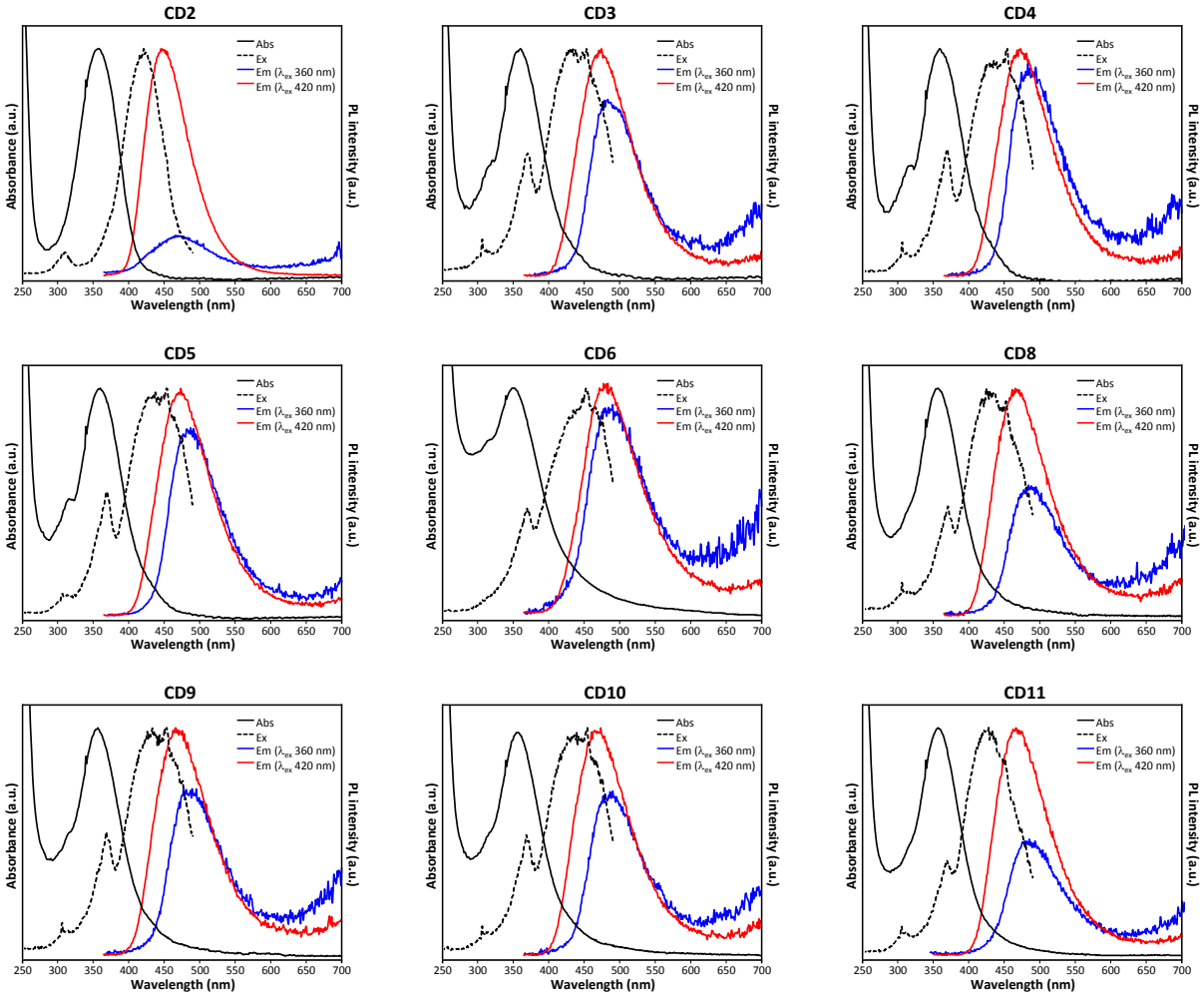

Fig S3. Absorption and PL spectra of the as-produced CDs.

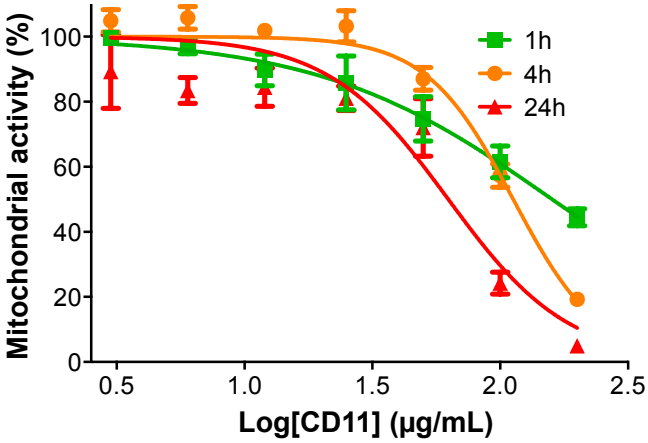

Fig S4. Effects of **CD11** on the viability of A549 cells. Cells were treated with increasing concentrations (3-200 µg/mL) of the CDs for 1, 4, and 24 h and viability was assessed with the MTT assay. Results are reported as % mitochondrial activity based on the control untreated cells normalized to 100 %. Data shown are representative of triplicate determinations (mean ± SD).

Table S1 Elemental analysis (C, H, N) of the as-produced CDs.

Sample	C (%)	H (%)	N (%)
CD1	29.76	8.07	16.94
CD2	–	–	–
CD3	33.07	8.09	17.31
CD4	32.84	8.06	16.52
CD5	33.95	7.88	16.82
CD6	37.20	8.00	17.01
CD7	31.65	8.08	16.72
CD8	34.23	8.02	18.44
CD9	33.77	8.30	17.20
CD10	36.52	8.53	18,60
CD11	37.28	8.76	18.36