

Solvent-controlled synthesis of multicolor photoluminescent carbon dots for bioimaging

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Table S1. Summary of PL lifetimes of the four as-prepared CDs.

Sample	$\lambda_{\text{ex}}/\text{nm}$	$\lambda_{\text{em}}/\text{nm}$	τ_1/ns	B [%]	τ_2/ns	B [%]	$\tau(\text{avg})$	χ^2
B-CDs	371	445	2.47	19.56	6.82	80.44	5.97	1.24
G-CDs	420	513	5.04	21.20	12.58	78.80	10.98	1.24
Y-CDs	420	557	2.65	32.58	5.02	67.42	4.25	1.63
R-CDs	2	620	1.56	73.40	6.00	26.60	2.74	1.61

Table S2. PL QY data of the four as-prepared CDs under their optimal excitation wavelengths.

Sample	Excitation(nm)	Emission(nm)	FWHM(nm)	Quantum Yield (%)
B-CDs	371	445	86	27.3
G-CDs	420	513	93	31.1
Y-CDs	420	557	86	22.9
R-CDs	522	620	83	8.8

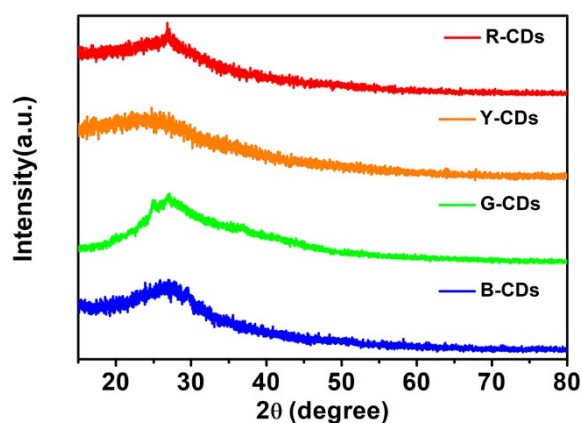
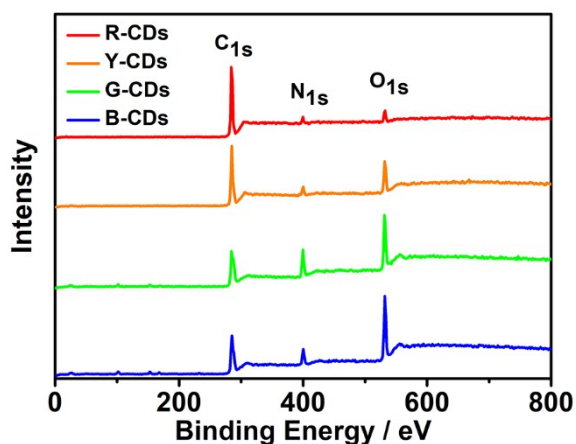
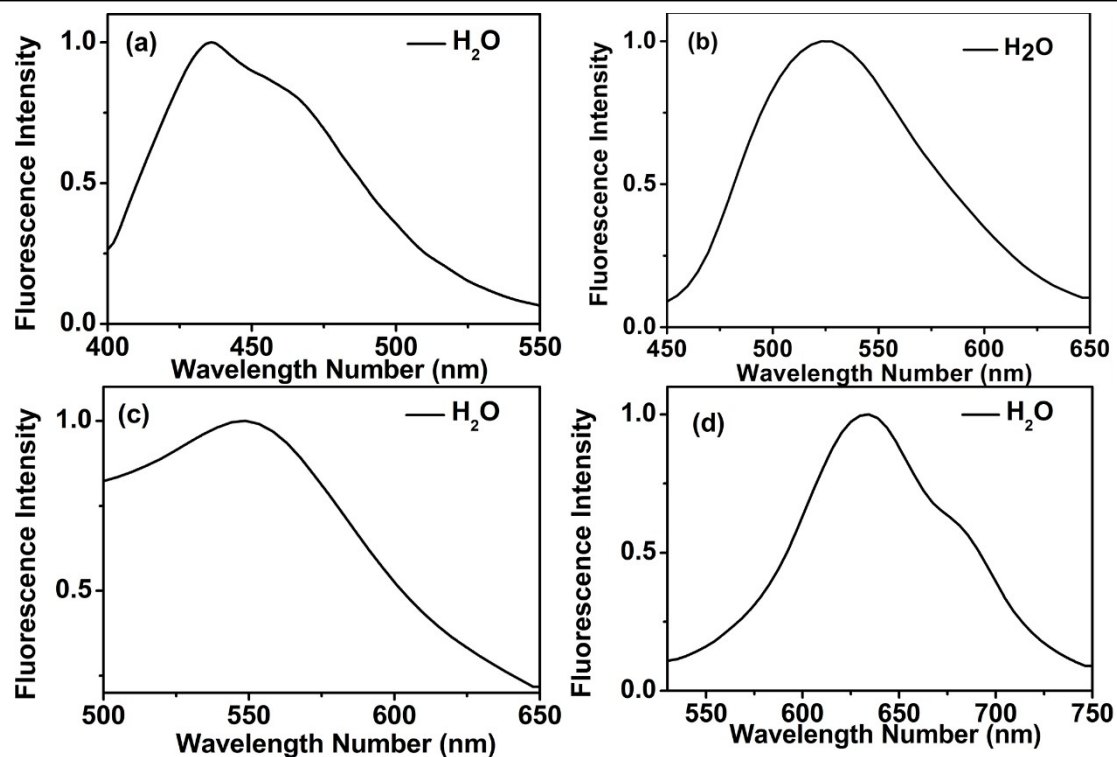
**Figure S1.** The X-ray diffraction (XRD) patterns of the four as-prepared CDs.**Figure S2.** The XPS full survey spectrum of four as-prepared CDs.

Table S3. Elemental analysis results of the four as-prepared CDs.

Sample	C (%)	N (%)	O (%)
B-CDs	55.4	13.0	31.6
G-CDs	56.7	16.5	26.7
Y-CDs	76.2	7.2	16.6
R-CDs	88.9	5.1	6.0

Table S4. XPS data analysis of the four as-prepared CDs.

Sample	C (%)			N (%)		O (%)	
	C-C/C=C	C=N/C=O	C-O	Pyridinic	Pyrrolic	C=O	C-O
B-CDs	54.86	29.38	15.76	63.01	36.99	61.43	38.57
G-CDs	47.28	43.51	9.21	65.71	34.29	79.12	20.88
Y-CDs	70.89	16.84	12.27	68.69	31.31	85.65	14.35
R-CDs	69.81	5.42	24.77	90.34	9.66	56.12	43.88

**Figure S3.** The PL emission of the four as-prepared CDs dispersed in water. (a) B-CDs, (b) G-CDs, (c) Y-CDs, and (d) R-CDs.

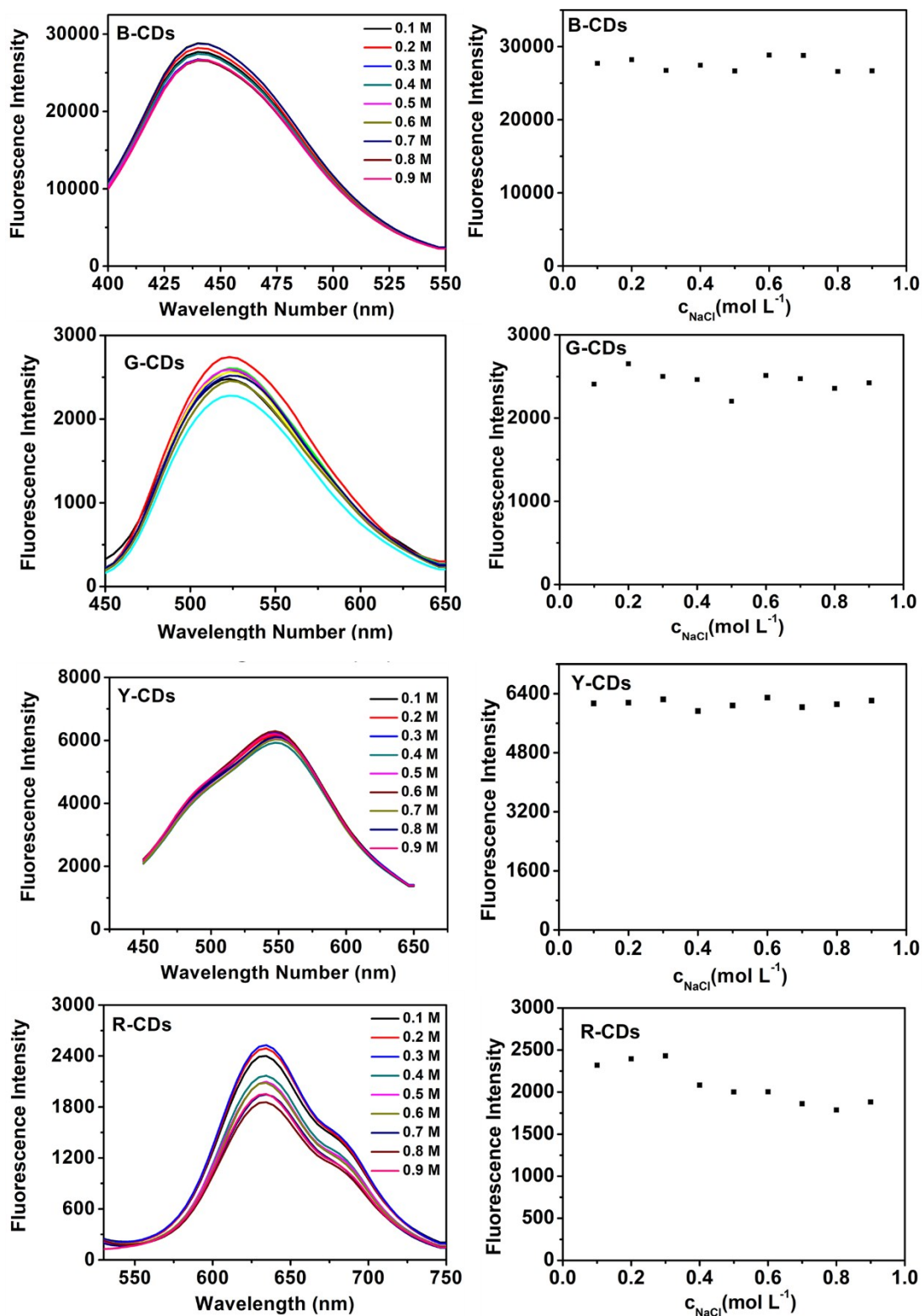


Figure S4. The impact of ion strength to the PL emission of the four as-prepared CDs.

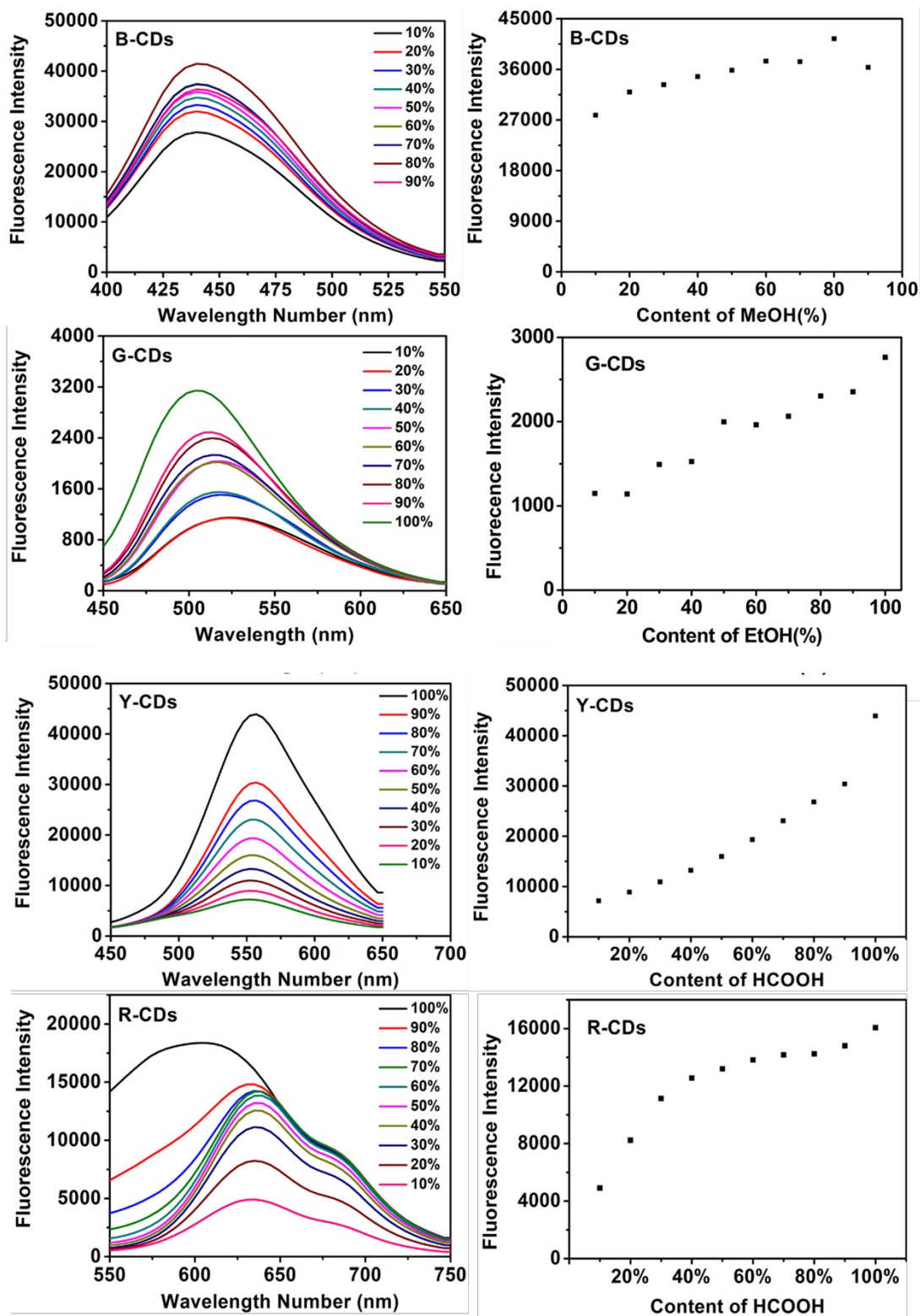


Figure S5. The impact of solvent content to the PL emission of the four as-prepared CDs.

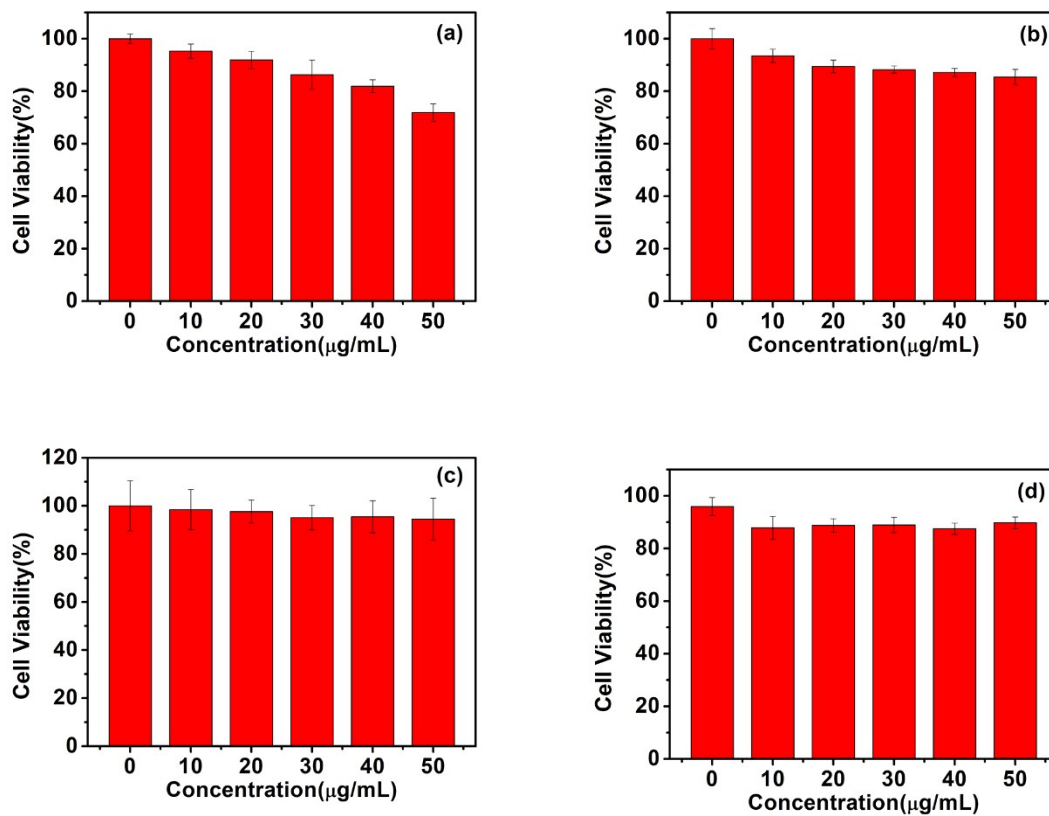


Figure S6. Viability of MDA-MB-231 cells after 24 h incubation with different concentration of all the four as-prepared CDs (a) B-CDs, (b) G-CDs, (c) Y-CDs, and (d) R-CDs.