

Electronic Supplementary Information (ESI)

Branched polyethylenimine-functionalized carbon dots as sensitive and selective fluorescent probes for N-acetylcysteine via off-on mechanism

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Additional figures

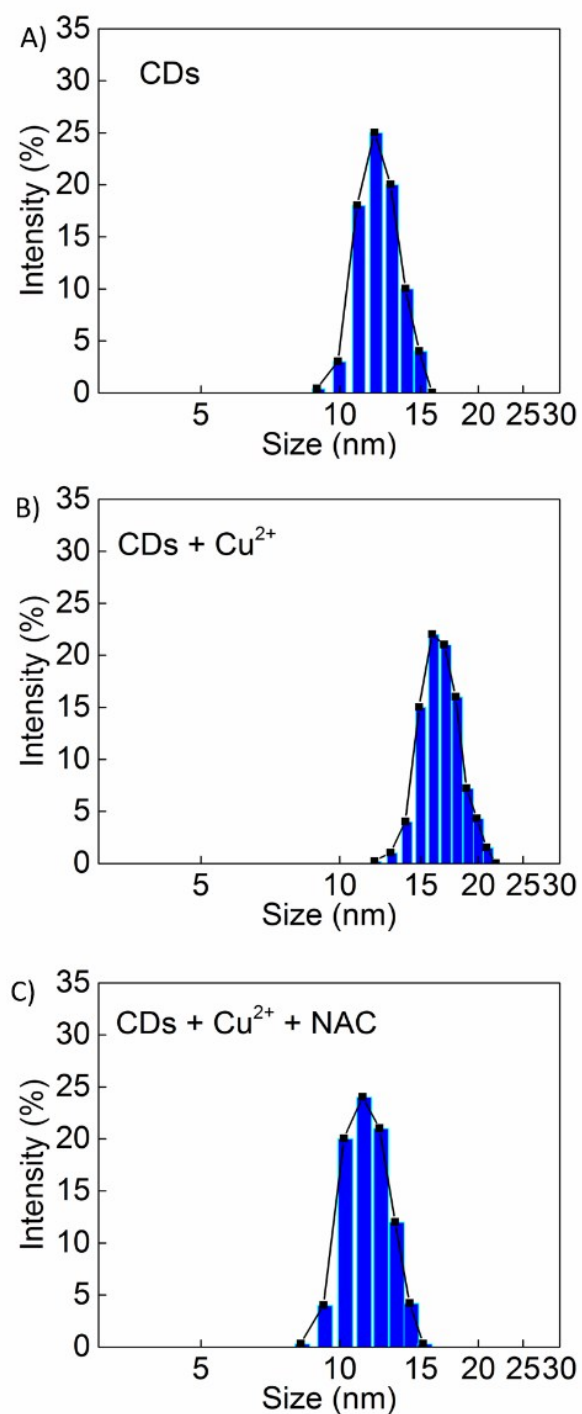


Fig. S1 Hydrodynamic size. A) Hydrodynamic size of PEI-CDs. B) Hydrodynamic size of PEI-CDs/Cu²⁺ complexes when the Cu²⁺ were added into PEI-CDs solution. C) Hydrodynamic size of PEI-CDs when the NAC was added into PEI-CDs/Cu²⁺ solution.

Table S1 The fluorescence lifetime of PEI-CDs before and after adding Cu²⁺ and NAC.

Sample	τ_1 /ns (%)	τ_2 /ns (%)	τ_3 /ns (%)	τ /ns
PEI-CDs	6.19 (30.18)	13.8 (65.49)	1.29 (4.32)	10.99
PEI-CDs+Cu ²⁺	4.55 (32.81)	12.9 (58.94)	0.86 (8.25)	9.17
PEI-CDs+Cu ²⁺ +NAC	5.30 (33.39)	13.3 (57.08)	1.08 (9.53)	9.46

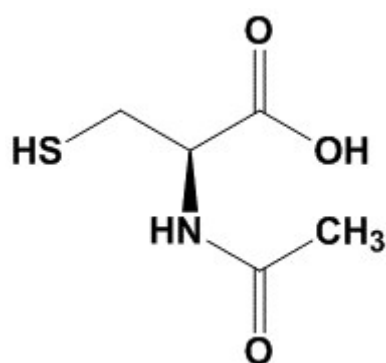


Fig. S2 Schematic diagram of NAC structure.

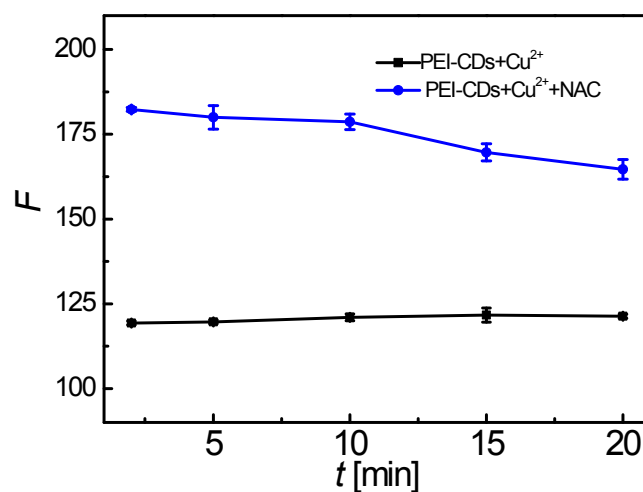


Fig. S3 Time effect optimization of experimental conditions. The fluorescence intensity change with time of PEI-CDs/Cu²⁺ solution and fluorescence recovery intensity change by addition of NAC.