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Efficient and Eco-friendly Detection of Gabapentin Using Nitrogen-doped Carbon Quantum Dots: An Analytical and Green Chemistry Approach

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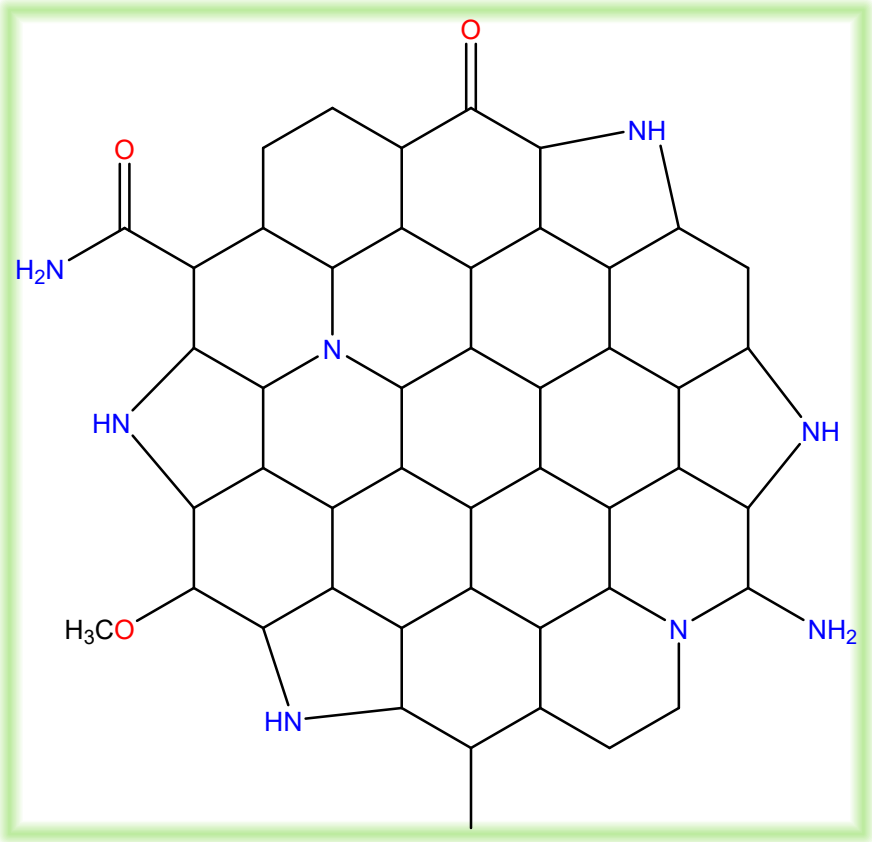

Fig. S1: Chemical structure of the green synthesized N-CQDs.

Table S1: Accuracy and precision of the proposed N-CQDs fluorescent probe for gabapentin detection.

	Accuracy		*Repeatability (Intra-day precision)*		*Intermediate precision (Interday precision)*	
Amount added (µg/mL)	Amount found (µg/mL)	% Recovery	Amount found (µg/mL)	% RSD	Amount found (µg/mL)	% RSD
2	1.998 ± 1.464	99.92	1.987 ± 1.219	1.227	1.973 ± 1.800	1.825
4	4.003 ± 0.732	100.07	3.981 ± 1.074	1.074	3.996 ± 1.658	1.660
6	5.984 ± 0.825	99.74	5.947 ± 0.520	0.524	5.954 ± 1.567	1.579

Table S2: Experimental data for robustness testing of the proposed N-CQDs fluorescent probe for gabapentin detection.

Parameter	*Modification*	*% Recovery*
	7.75	100.25
Buffer (pH)	8 (optimum)	99.96
	8.25	98.63
	1.4	98.69
Buffer volume (mL)	1.5 (optimum)	100.25
	1.6	101.23
	4	99.25
Incubation time (min	5 (optimum)	100.68
	6	101.36

Table S3: Accuracy and precision of plasma samples for matrix effect using the proposed N-CQDs fluorescent probe for gabapentin detection.

	Plasma 1			Plasma 2			Plasma 3		
Amount added (µg/mL)	Amount found (µg/mL)	Precision (CV%)	Accuracy (%Bias)	Amount found (µg/mL)	Precision (CV%)	Accuracy (%Bias)	Amount found (µg/mL)	Precision (CV%)	Accuracy (%Bias)
1	1.10 ± 0.091	8.25	10.15	1.06 ± 0.111	10.54	5.60	1.12 ± 0.127	11.32	12.02
6	6.10 ± 0.399	6.55	9.80	6.09 ± 0.495	8.12	9.42	6.13 ± 0.484	7.89	13.12