

Supporting information

Evaluation of Antimicrobial, Antibiofilm Activity of *Citrus medica* Fruit juice-based Carbon Dots against *Pseudomonas aeruginosa*

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Photostability of CQDs:

Figure S1. Photostability test for 3 hrs at an interval 15 min

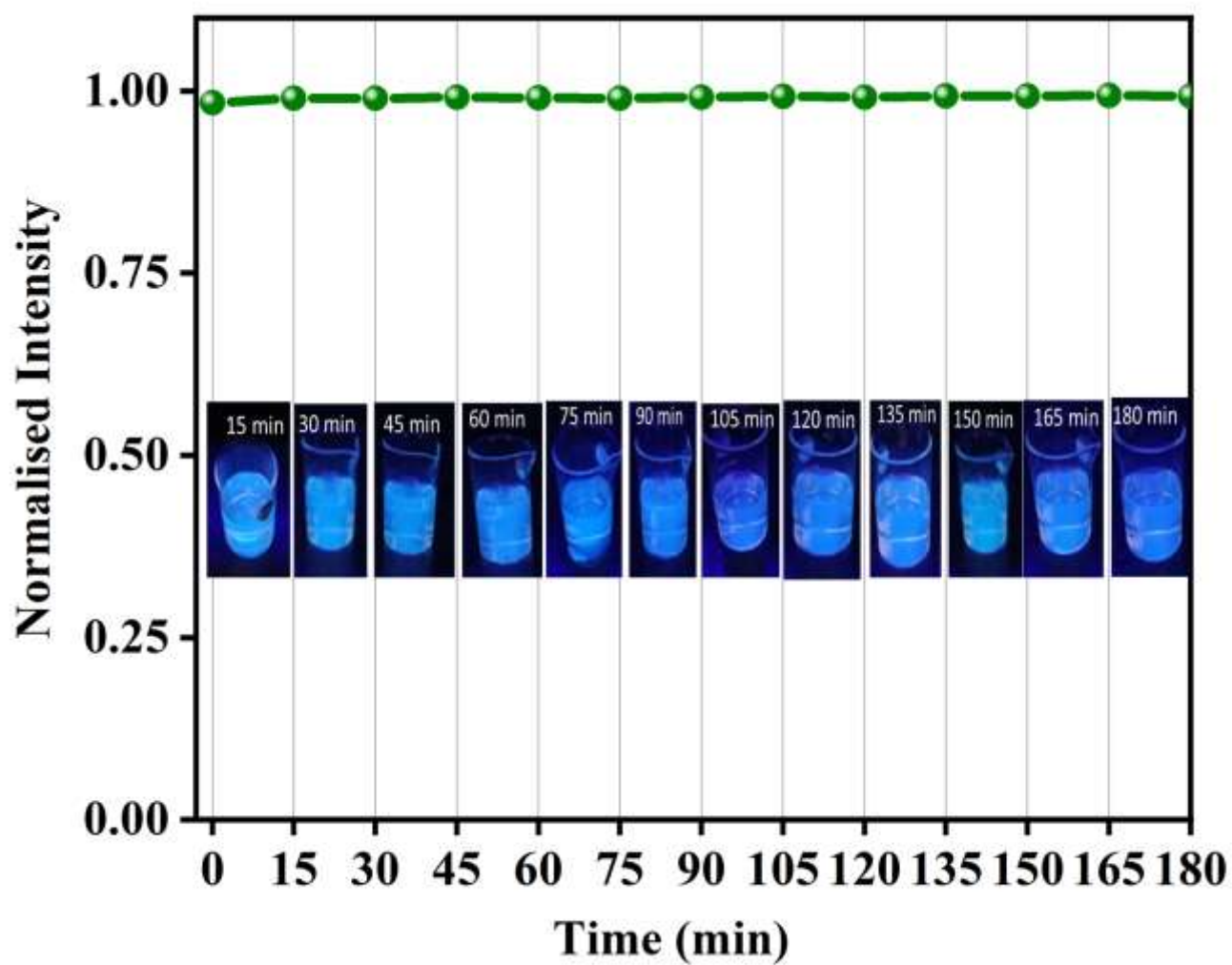
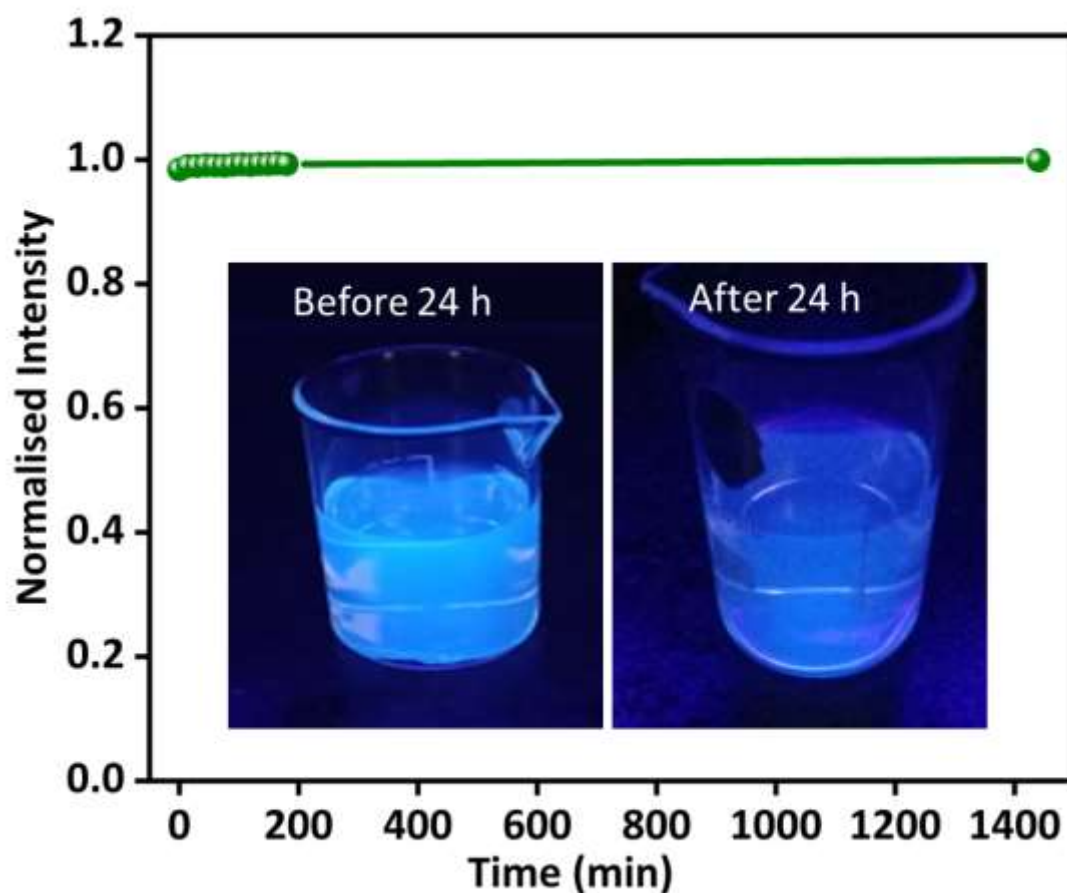


Figure S2. Photostability test for 24 hrs



Measurements of fluorescence quantum yield:

The Quantum Yield of carbon quantum dots (CQDs) was calculated using the following formula

$$QY = QY_R \frac{I_s A_R (n_s)^2}{I_R A_s (n_R)^2}$$

Quinine sulfate (QS) were used as the reference material in 0.1 M H₂SO₄ and the reference quantum yield is 0.54 at 350 nm where I_R and I_S denotes the integrated fluorescent emission intensity of the QS and CQD, where A_R and A_S is the absorbance, n_R and n_S and is the refractive index of the solvent of QS and CQDs, respectively.

Table ST1: Minimum inhibitory concentration (MIC) of naturally derived carbon dots against the clinical isolates of *P. aeruginosa* and control strain of *P. aeruginosa* PAO1

Concentration (CDs)	<i>P. aeruginosa</i> MIC (%v/v)	<i>P. aeruginosa</i> PAO1 MIC (%v/v)
10%	MIC	MIC
5%	MIC	MIC
2.5%	MIC	MIC
1.25%	MIC	MIC
0.625%	Growth	Growth
0.3125%	Growth	Growth
0.156%	Growth	Growth
0.078%	Growth	Growth
0.039%	Growth	Growth
0.019%	Growth	Growth

Table ST2: Antibigram pattern of *P. aeruginosa* based on Kirby-Bauer method (1996)

Antibiotics	Antibiotics Average \pm standard deviation value				
	SDC-01	SDC-02	SDC-03	SDC-04	SDC-05
Ciprofloxacin	36.0 \pm 0.1	37.02 \pm 0.1	36.02 \pm 0.2	37.0 \pm 5.1	37.0 \pm 5.1
Gatifloxacin	R	36.05 \pm 0.4	37.5 \pm 0.1	37.0 \pm 1.7	27.02 \pm 0.2
Tobramycin	27.0 \pm 0.2	27.02 \pm 0.2	26.3 \pm 1.1	26.0 \pm 1.7	27.0 \pm 0.2
Mezolocillin	R	22.0 \pm 1.7	17.6 \pm 2.5	R	R
Azlocillin	23.6 \pm 0.2	R	22.03 \pm 0.1	R	28.6 \pm 2.3
Ofloxacin	29.3 \pm 0.5	26.0 \pm 1.7	28.6 \pm 2.3	30.0 \pm 1.0	29.6 \pm 0.2
Pipercecillin/Tazobactam	R	27.0 \pm 1.7	29.0 \pm 1.0	R	R
Ceftriaxone	23.3 \pm 2.8	18.3 \pm 2.8	17.6 \pm 0.1	R	17.6 \pm 0.5
Amikacin	24.3 \pm 1.1	23.3 \pm 0.5	22.6 \pm 1.1	20 \pm 0	17.6 \pm 2.5
Netillin	19.3 \pm 0.2	17.6 \pm 0.5	20.3 \pm 0.5	17.6 \pm 0.5	20.3 \pm 0.5
Norfloxacin	R	34.6 \pm 0.5	R	34.6 \pm 0.5	36.05 \pm 0.4
Gentamicin	23.0 \pm 0.2	20 \pm 0	20 \pm 0.1	20 \pm 0	26.0 \pm 1.7
Garbenicillin	24.3 \pm 1.1	27.6 \pm 2.0	25.3 \pm 0.5	R	R
Peperacillin	R	24.0 \pm 1.7	R	R	28.6 \pm 2.3
Ticarcillin/Clavulanic Acid	21.0 \pm 0.7	19.3 \pm 0.5	R	R	17.6 \pm 2.5