

## Sustainable Carbon Dots from *Borreria hispida*: Enhanced Colorimetric Sensing of Fe<sup>3+</sup> Ions and Biological Applications in Live Cell Imaging

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Table S1: IC<sub>50</sub> of BHCD

Concentration of Control Drug (µg/ml)	% of Cell Viability (Triplicate Values)						
	Trial 1	Trial 2	Trial 2	%Trial 1	%Trial 2	%Trial 3	Average
100	32.6219 5	31.9797	32.4489 8	67.3780 5	68.0203	67.5510 2	67.64979
50	38.6178 9	38.7817 3	39.1836 7	61.3821 1	61.2182 7	60.8163 3	61.1389033 3
25	52.0325 2	51.6751 3	52.2449	47.9674 8	48.3248 7	47.7551	48.0158166 7
12.5	67.2764 2	67.8172 6	67.2449	32.7235 8	32.1827 4	32.7551	32.5538066 7
6.25	75.4065	75.6345 2	75.6122 4	24.5935	24.3654 8	24.3877 6	24.4489133 3
Control	100	100	100	100	100	100	100

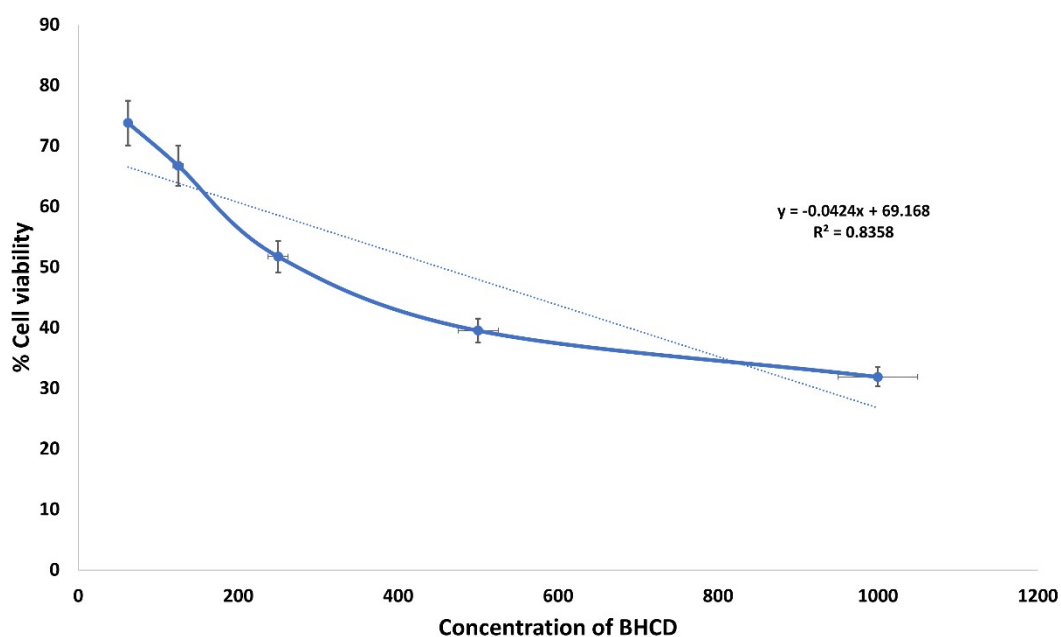


Fig. S1: Graph for Ic<sub>50</sub> of BHCD

Table S2: Cell viability of standard drug

Concentration of Doxorubicin (µg/ml)	% of Cell Viability (Triplicate Values)						
	Trial 1	Trial 2	Trial 2	% t 1	% t 2	% t 3	Average
500	20.79832	20.50473	20.25316	79.20168	79.49527	79.74684	79.48126333
250	44.64286	44.26919	45.25316	55.35714	55.73081	54.74684	55.27826333
125	56.51261	55.94111	55.90717	43.48739	44.05889	44.09283	43.87970333
62.5	68.06723	67.50789	68.77637	31.93277	32.49211	31.22363	31.88283667
31.25	75.73529	74.02734	78.16456	24.26471	25.97266	21.83544	24.02427
Control	100	100	100	100	100	100	100

Table S3: Cell viability of standard drug

Concentration of BHCD (µg/ml)	% of Cell Viability (Triplicate Values)						
	Trial 1	Trial 2	Trial 2	% t 1	% t 2	% t 3	Average
1000	31.87817	32.14286	31.67006	68.12183	67.85714	68.32994	68.10297
500	39.08629	39.89796	39.61303	60.91371	60.10204	60.38697	60.46757333
250	50.86294	52.34694	52.03666	49.13706	47.65306	47.96334	48.25115333
125	66.80203	66.53061	66.90428	33.19797	33.46939	33.09572	33.25436
62.25	73.60406	74.28571	73.52342	26.39594	25.71429	26.47658	26.19560333
Control	100	100	100	100	100	100	100

**Table. S4 . Comparison of this study with previously published articles**

Name of the plant	Method of synthesis	size of carbon dot	Metal sensed	Limit of Detection	Reference
<i>Borreria Hispida</i>	Hydrothermal	3.33nm	Fe <sup>3+</sup>	1.2 x10 <sup>-6</sup>	present work
<i>canon ball fruit</i>	Hydrothermal	11.2 nm	Fe <sup>3+</sup>	0.071 µM	1
<i>Tinospora cordifolia</i>	Hydrothermal	5.47 nm	Fe <sup>3+</sup>	0.414 µM	2
<i>Sophora japonica</i>	Hydrothermal	3.0 nm	Fe <sup>3+</sup>	8.75 ppb (3σ/S)	3
<i>flowers of wintersweet</i>	Hydrothermal	1.5 nm	Cr (VI)& Fe <sup>3+</sup>	0.07 µMand 0.15 µM,	4
<i>Syringa obtata Lindl</i>	Hydrothermal	2.76 nm	Fe <sup>3+</sup>	0.11 µM	5
<i>rose-heart radish</i>	Hydrothermal	3.6 nm	Fe <sup>3+</sup>	0.13µM (S/N = 3)	6
<i>coriander leaves</i>	Hydrothermal	2.387 nm	Fe <sup>3+</sup>	0.4 µM	7
<i>Polianthes tuberosa L. Petals</i>	Carbanization	4 to 6 nm	Fe <sup>2+</sup> & Cu <sup>2+</sup>	200 nM	8

<i>Lycii Fructus</i>	Refluxation	4 to 7 nm	Fe <sup>3+</sup>	21 nM	9
<i>cornstalk</i>	Hydrothermal	5.2 nm	Fe <sup>2+</sup>	0.18 and 0.21 μM	43
<i>onion waste</i>	Hydrothermal	15nm	Fe <sup>2+</sup>	0.31nm	44

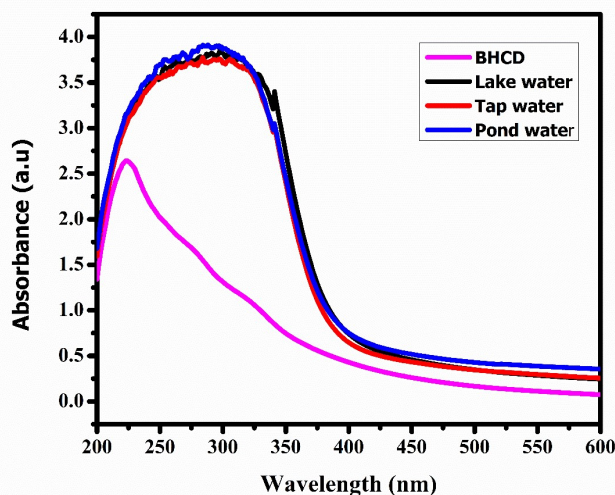


Fig. S2. UV-Vis spectrum of different water source with Fe<sup>3+</sup>.

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