Electronic Supplementary Material (ESI) for RSC Advances.

Supporting information

Naproxen Release Study upon Carbon dots coated Magnetite Nanohybrid as Versatile Theranostic of HeLa Cancer Cells

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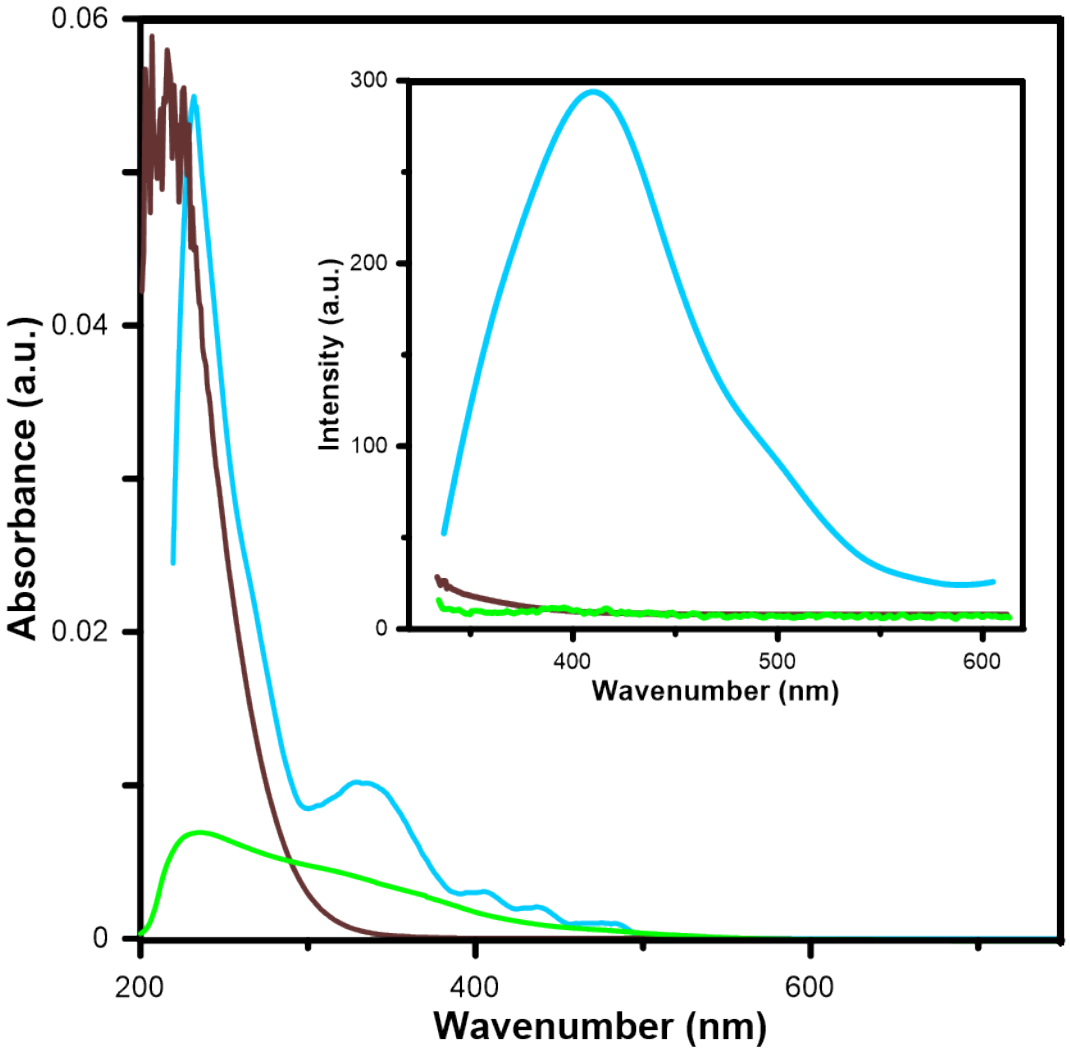

Fig. S1. UV spectra of Fe_3O_4 (brown line), Fe_3O_4@CA (green line), and Fe_3O_4@CDs (blue line).

Insert: PL spectra of both sample under 320 nm excitation wavelength.

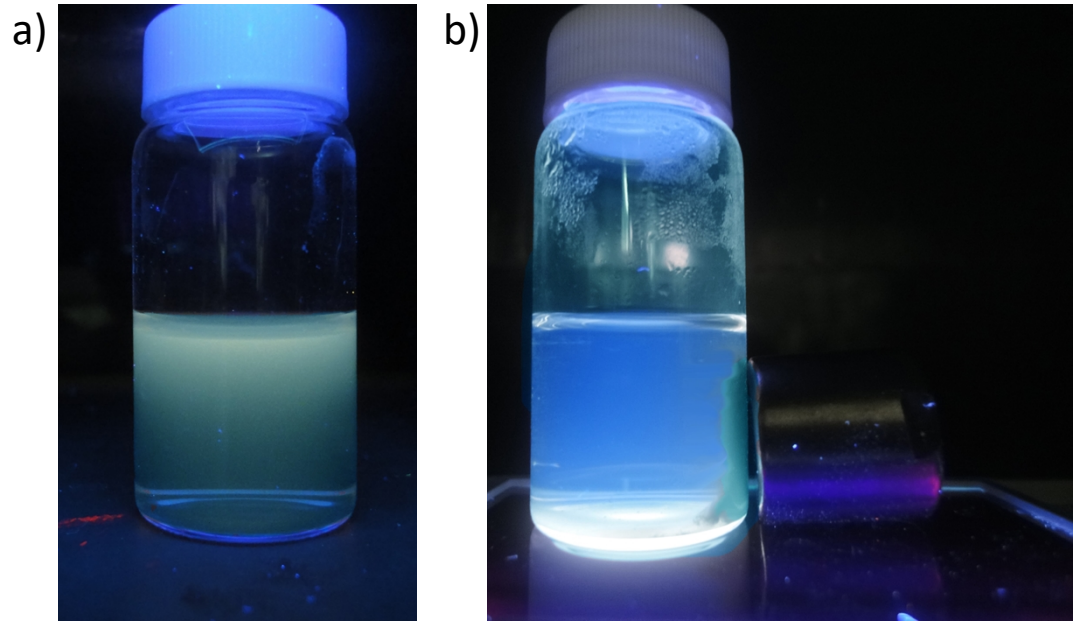

Fig. S2. Photograph images of Fe_3O_4@CDs under UV lamp (a) and combination UV and magnetic field (on right side).

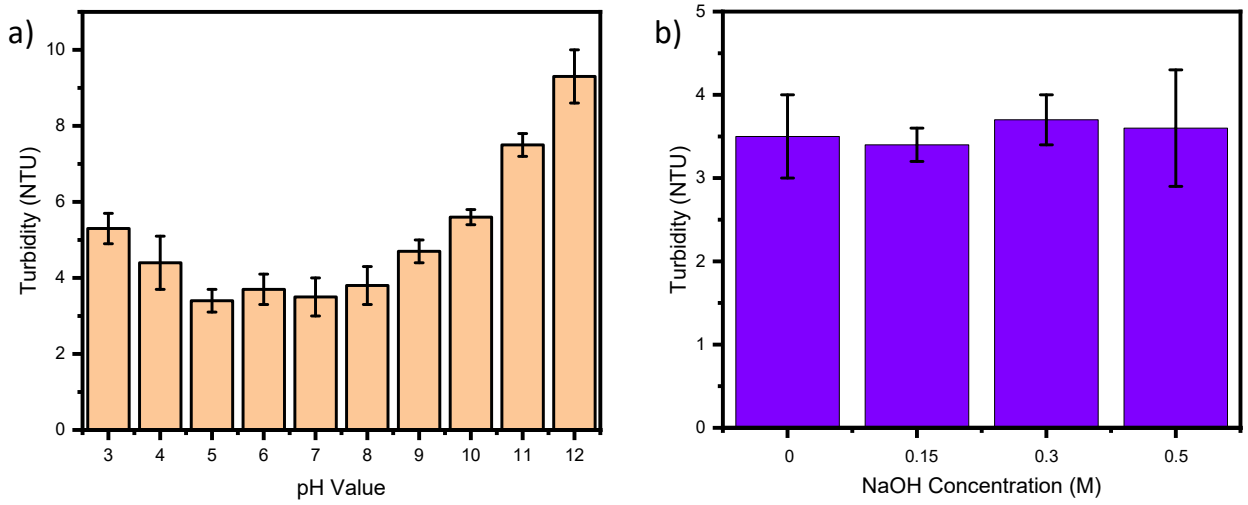

Fig. S3. Turbidity data of Fe_3O_4@CDs nanohybrid at (a) varied pH value dan NaOH concentration (with n = 3).

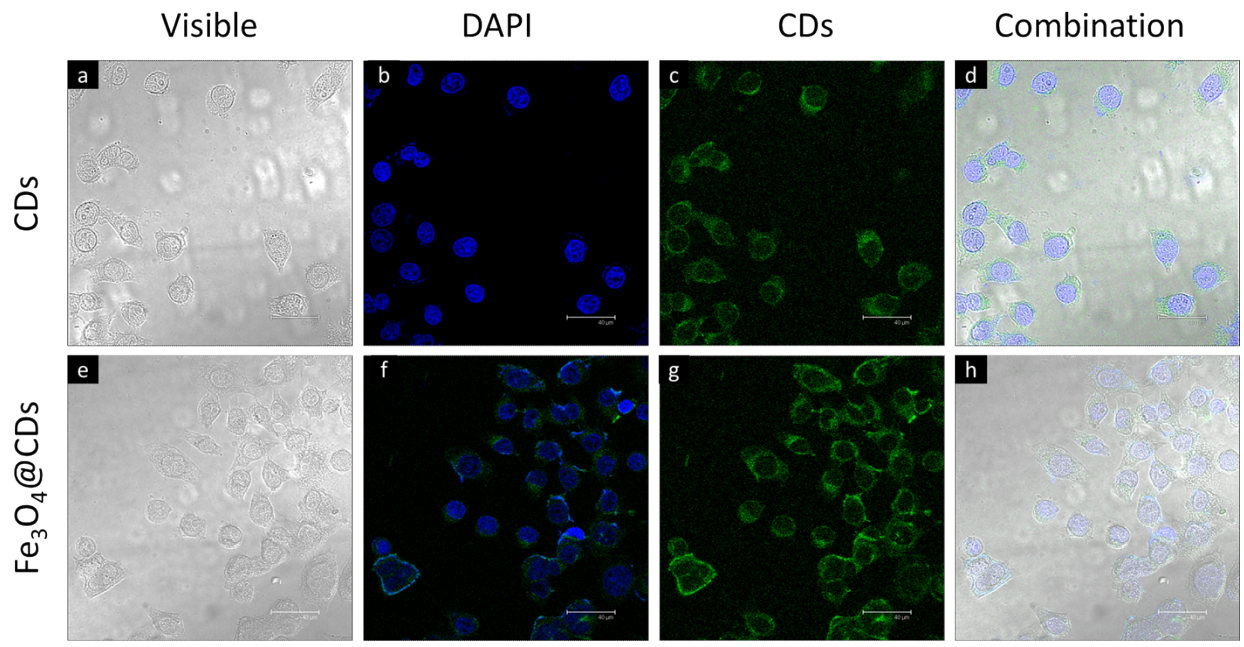

Fig. S4. CLSM figures of HeLa cancer cell post 1h incubated with CDs (a-d) and Fe_3O_4@CDs (e-h) nanohybrid at 37 °C. Scale bars represent 40 μm.

Table S1. CC_{50} data of carbon dots-based studies.

CDs type	Cell model	Assays	Incubation time [h]	CC_{50}	Reference
CDP	NIH 3T3	MTT	24	580 µg/mL	[1]
	A549			408 µg/mL	
	HCT-15			413 µg/mL	
Gd-CDs	NCI-H446	MTT	24	6.28 mg/mL	[2]
Gd-CDs	U87MG	MTT	24	33.10 µg/mL	[3]
GQDs	HepG2	MTT	24	12 µg/mL	[4]
GQD-VO(p-dmada)	MDCK	MTS	48	62.20 µM	[5]
	HepG2			231.7 µM	
β-CD-CDs	293T	MTT	24	4.8 µg/mL	[6]
DPP CDs	HepG2	MTT	12	820 µg/mL	[7]
CTS CDs				1318 µg/mL	
B-CDs1	HeLa	CCK-8	1	5289.15 µg/mL	[8]
N-CDs1	HeLa	CCK-8	1	9217.56 µg/mL	
CDs@Fe_3O_4	HeLa	CCK-8	1	17671.5 µg/mL	Present Study

Table S2. Kinetic release of naproxen from Fe_3O_4@CDs-NAP nanohybrid with pH variation.

Formula	Parameter	0-orde	1st-orde	Higuchi	Korsmeyer-Peppas
CDs@Fe_3O_4-NAP pH 4	k	0.0000148	0.0000150	0.0525171	0.2700309
	R^2	0.4682011	0.4707591	0.7271976	0.8675091
	n				0.2464037
CDs@Fe_3O_4-NAP pH 7	k	0.0000175	0.0000178	0.0601363	0.1865522
	R^2	0.5556235	0.5589016	0.8052854	0.8872678
	n				0.3252665
CDs@Fe_3O_4-NAP pH 9	k	0.0000160	0.0000162	0.0561001	0.2242723
	R^2	0.4582281	0.4609895	0.7168616	0.8360034
	n				0.2858769

References

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