

Supporting Information

Bi-Functional Nature of Nanoceria: Pro-Drug and Drug-carrier potentiality towards receptor mediated targeting of doxorubicin

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Table T1: IC₅₀ values for the DOX loaded CeO₂ nanoconjugates

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Figure S1: UV spectra of CeO₂ nanoconjugates

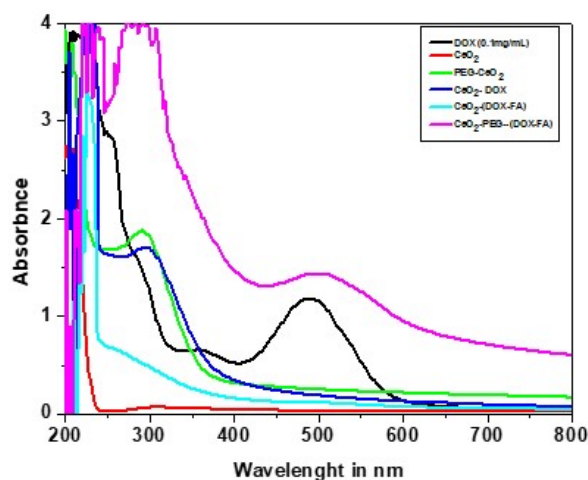


Figure S2: TEM images of (a) CeO₂ NPs and (b) PEG-CeO₂ NPs. (Inset SAED)

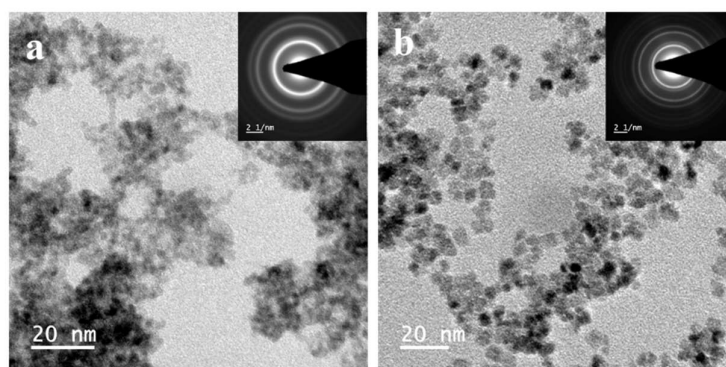


Figure S3: The % stability of the nanoconjugates over a period of 48 h.

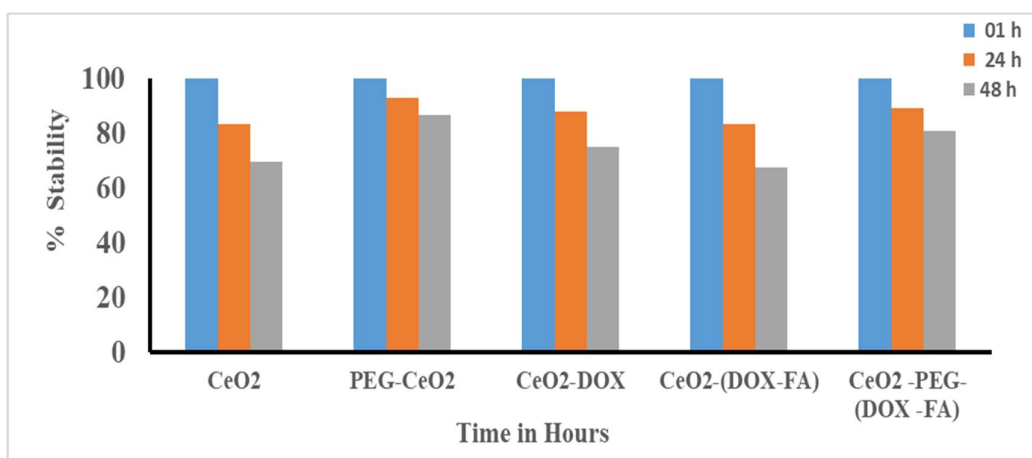


Figure S4: DLS (a, c & e) and Zeta Potential (b, d & f) for CeO₂-DOX (a, b), CeO₂-(DOX-FA) (c, d) and CeO₂- PEG-(DOX-FA) (e, f).

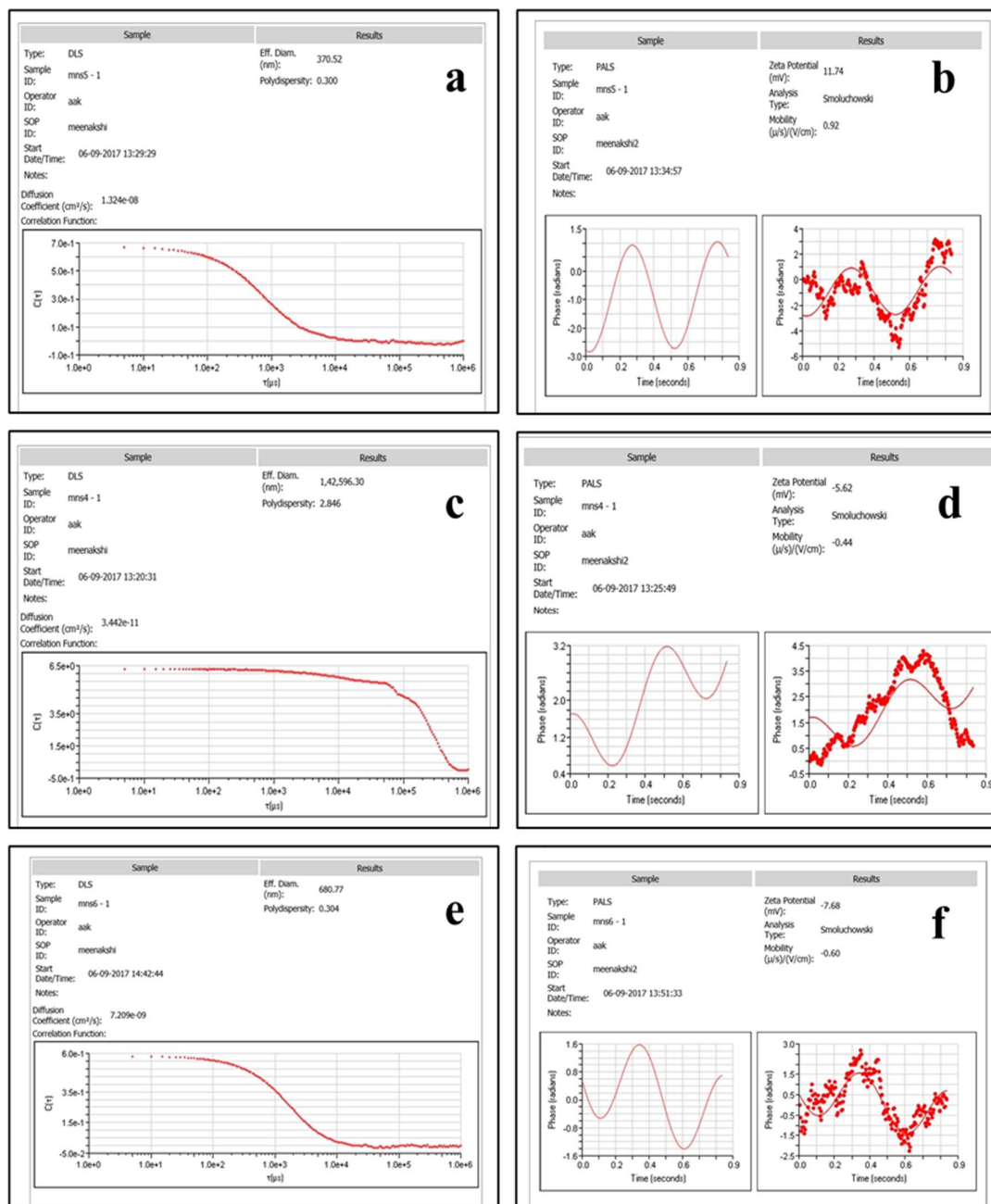


Figure S5: Redox potentials of uncoated CeO₂ NPs (a, b) and PEGylated NPs (c, d) at pH 4.4 and 9.2 respectively.

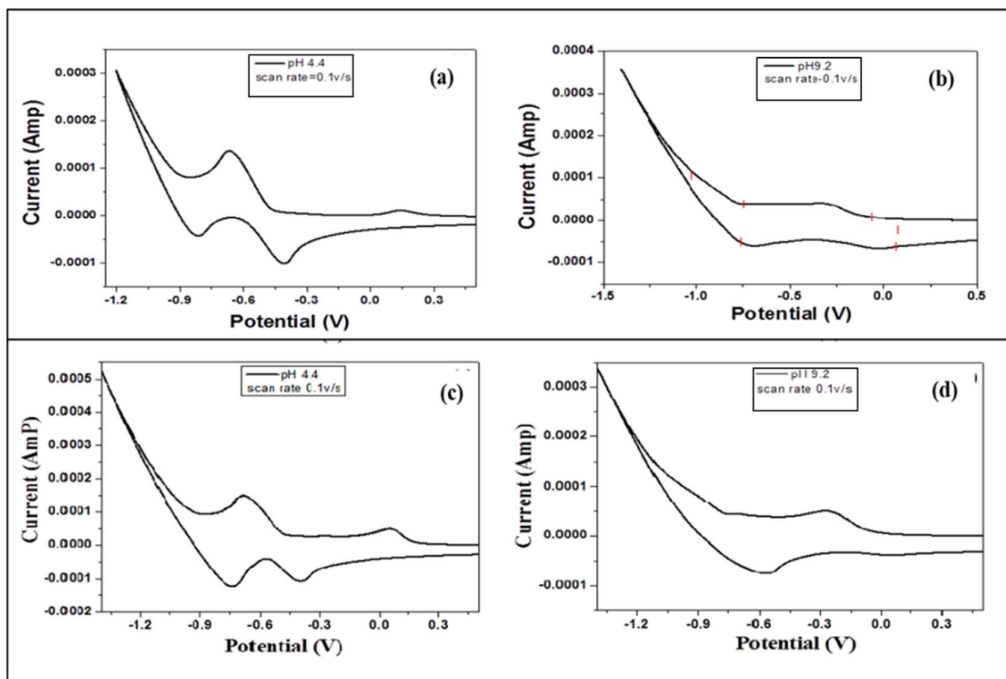


Figure S6: DNA binding assay for uncoated (a) and PEG CeO₂ NPs (b)

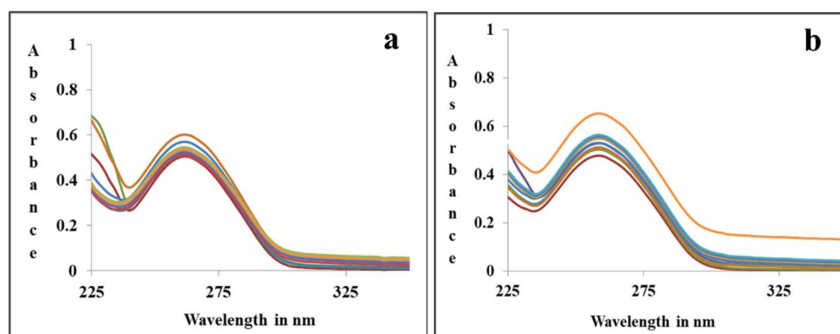


Figure S7: Cell viability of 293T Cells on treatment with (a) CeO₂ NPs and (b) PEG-CeO₂ NPs

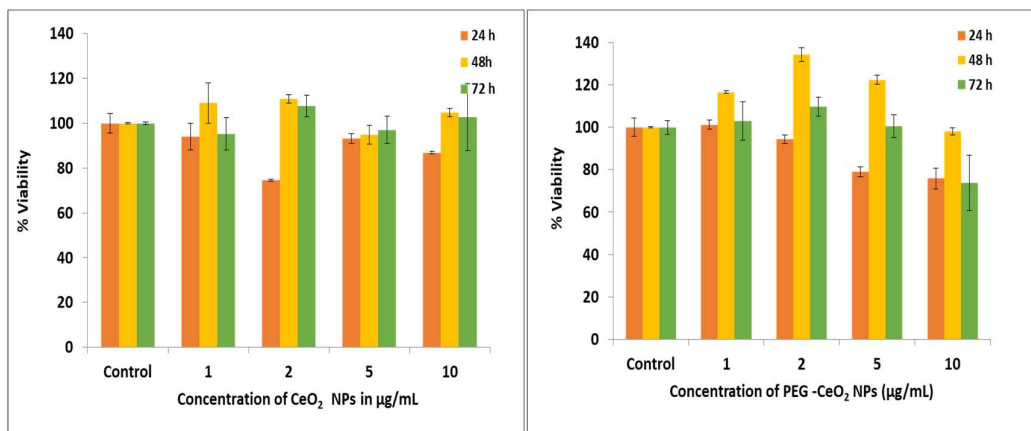


Figure S8: Cell viability studies on MCF-7 cells after exposure to PEG, FA and DMSO at different concentration (0.25-2 $\mu\text{g/mL}$)

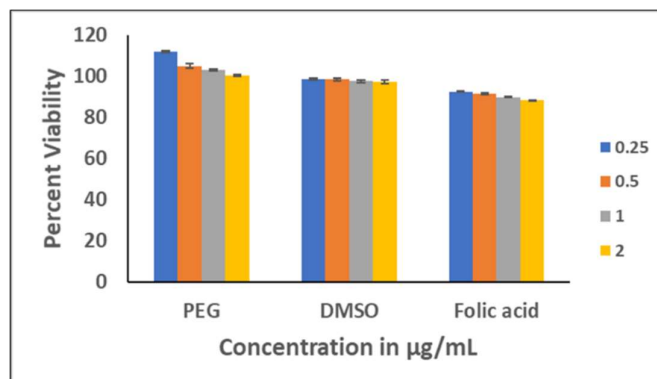


Figure S9: Monochromal images of MCF-7 cells by confocal microscopy on treatment with CeO_2 NPs and its nanoconjugates, a: Control cells, b: DOX, c: CeO_2 , d: PEG- CeO_2 , e: CeO_2 -DOX, f: CeO_2 -(DOX-FA), g & h: PEG- CeO_2 -(DOX-FA)

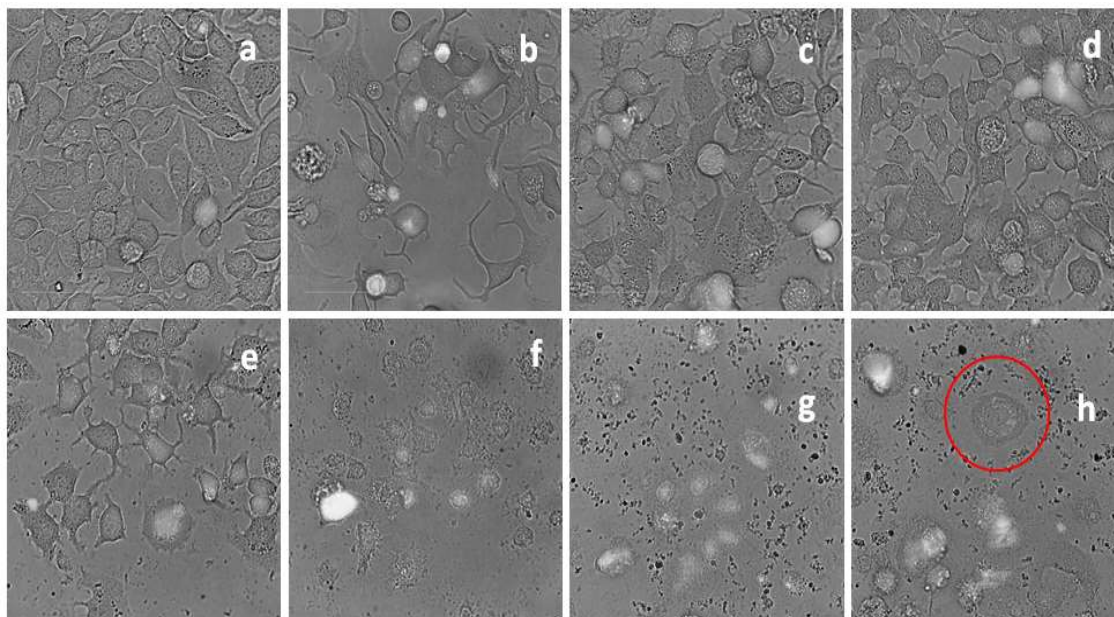


Table T1: IC₅₀ values of DOX-conjugated metal-based nanocarriers against MCF-7

Sr. No.	Compound	DOX loading (wt.%)	IC ₅₀ (µg/mL)	Ref.
1	CaCO ₃ -DOX	19.3	1.83	1
2	DOX-DNA@CaP	12.4	0.68	2
3	Chitosan-CuO-DOX	15.97	30.0	3
4	Chitosan-SiO ₂ -Fe ₃ O ₄ -DOX	19.81	1.5	4
5	Au-GA-DOX	9.1	0.15	5
6	Ti-MIL 125-DOX	25	5.62	6
7	CeO ₂ -DOX	12	3.54	Present work
8	CeO ₂ -(DOX-FA)	5.9	3.28	
9	CeO ₂ -PEG-(DOX-FA)	2.3	3.09	

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