Supporting Information

Doxorubicin-Loaded pH-Responsive Porphyrin-Derived Carbon Dots as a Promising Biocompatible Drug Delivery System for Effective Chemotherapy of Breast Cancer

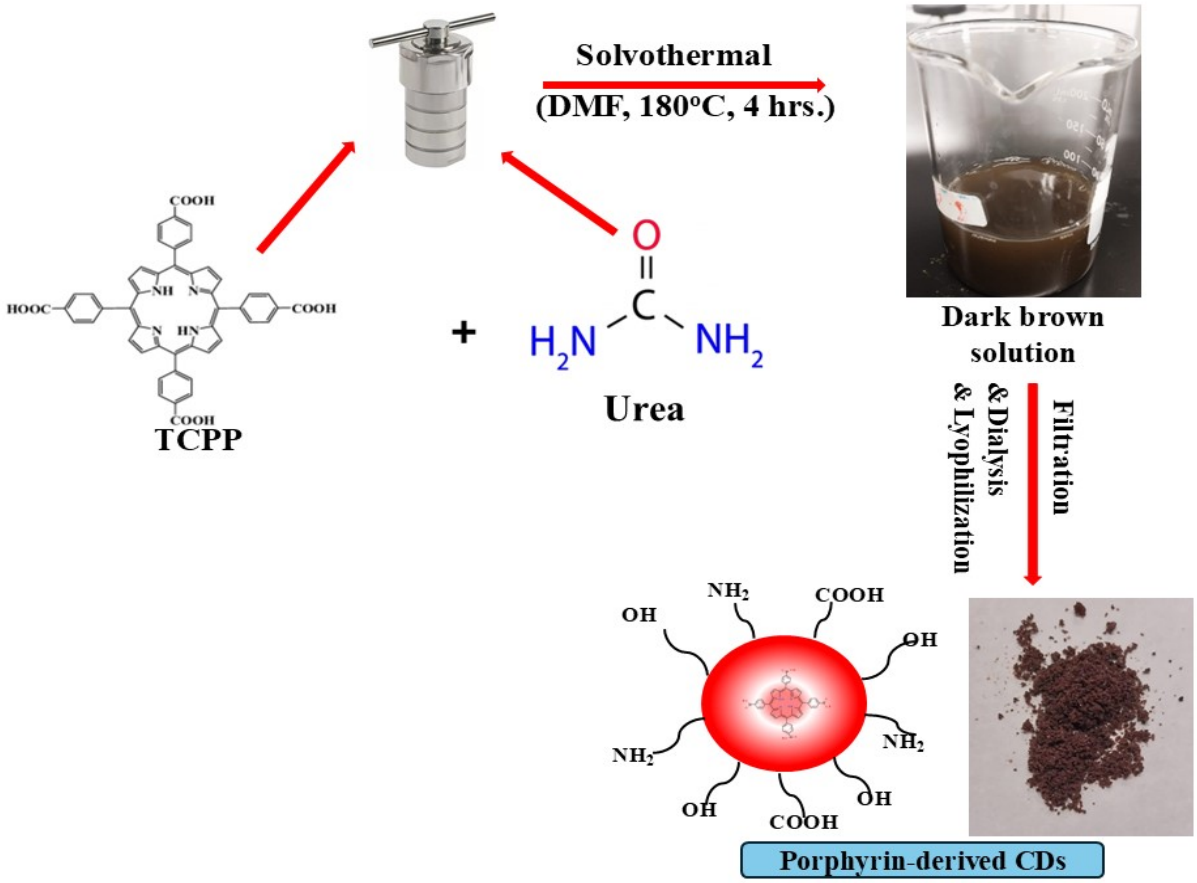

Fig. S1 Schematic description of the porphyrin-derived CDs' fabrication procedure.

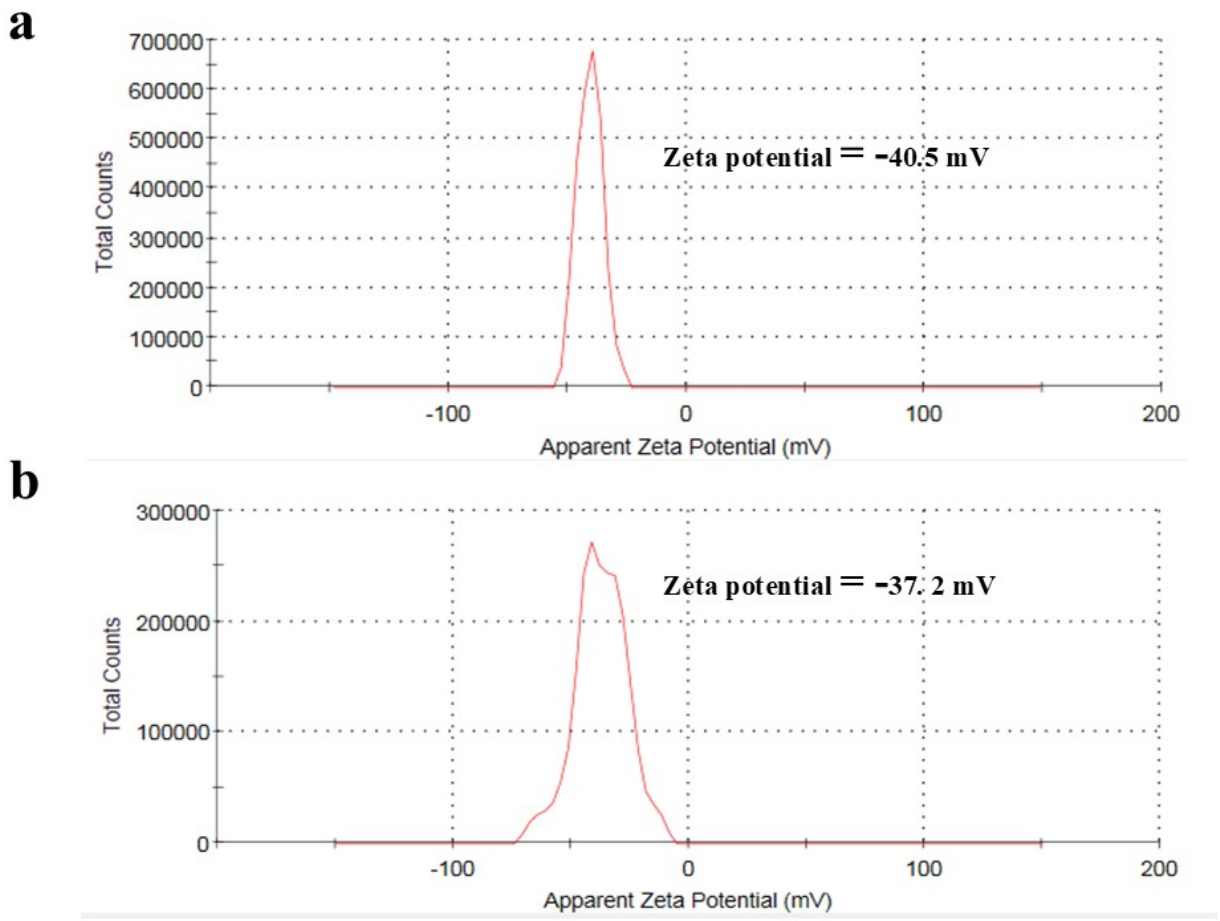

Fig. S2 Zeta potential measurements of porphyrin-derived CDs (a), and DOX@CDs complex (b).

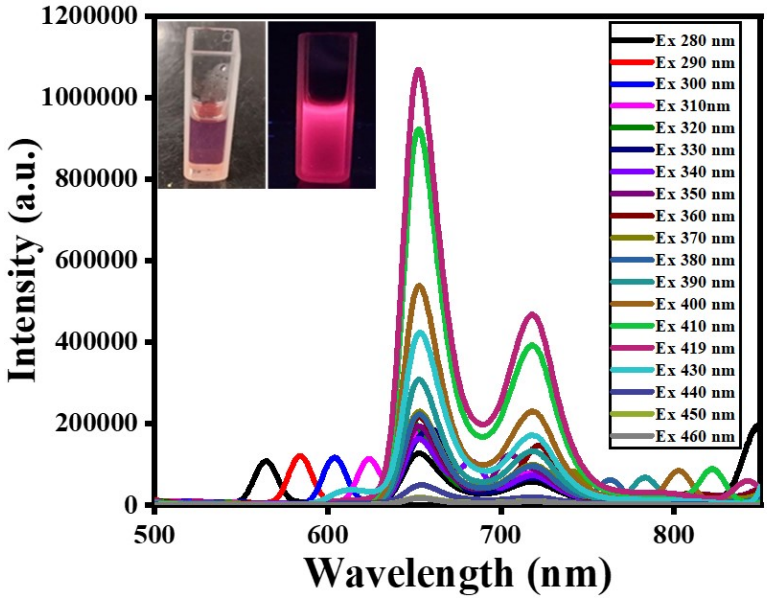

Fig. S3 The excitation-independent emission behaviour of the synthesized CDs with a maximum emission intensity at 650 nm in response to excitation at 419 nm (a). Insets: Photographing of the CDs' solution under daylight (left) exhibiting a transparent pale pink color, while under UV-lamp at 365 nm (right), displaying an intense red fluorescence.

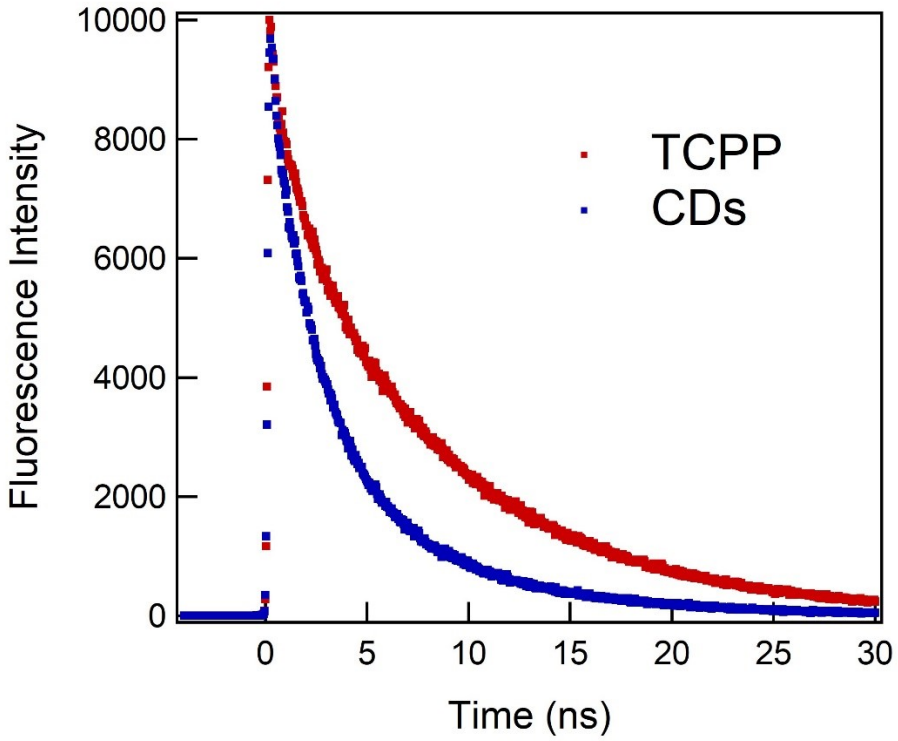

Fig. S4 Fluorescence decay behavior of TCPP (in DMF) and CDs (in H_2O); λ_{ex} = 439 nm and λ_{em} = 650 nm.

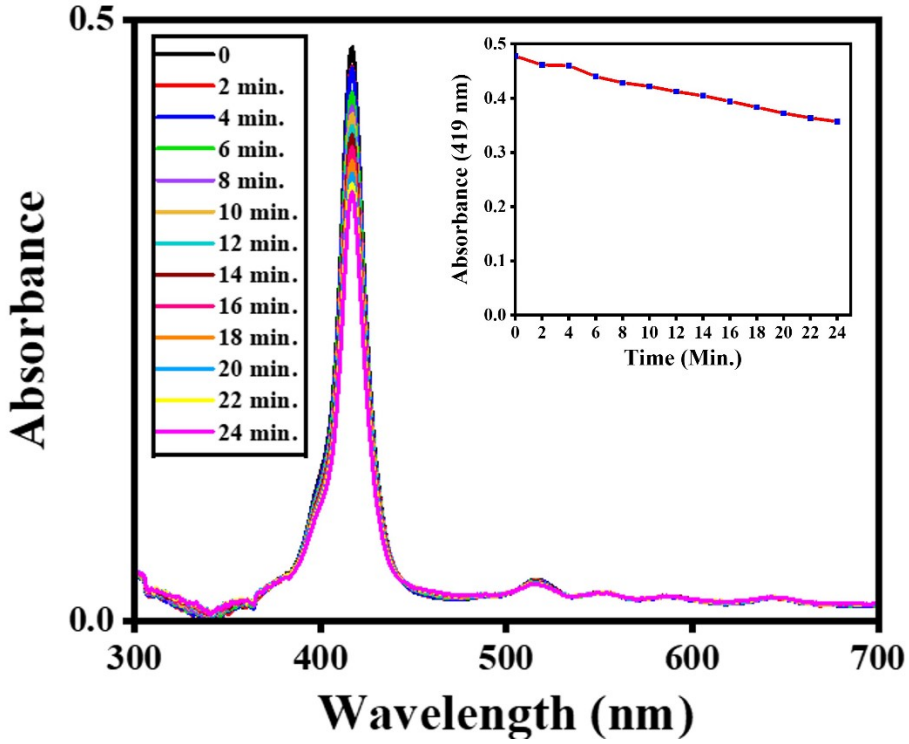

Fig. S5 Spectroscopic photostability assessment of the CDs. Inset: plotting the maximum absorption value (at λ= 419 nm) against the corresponding time.

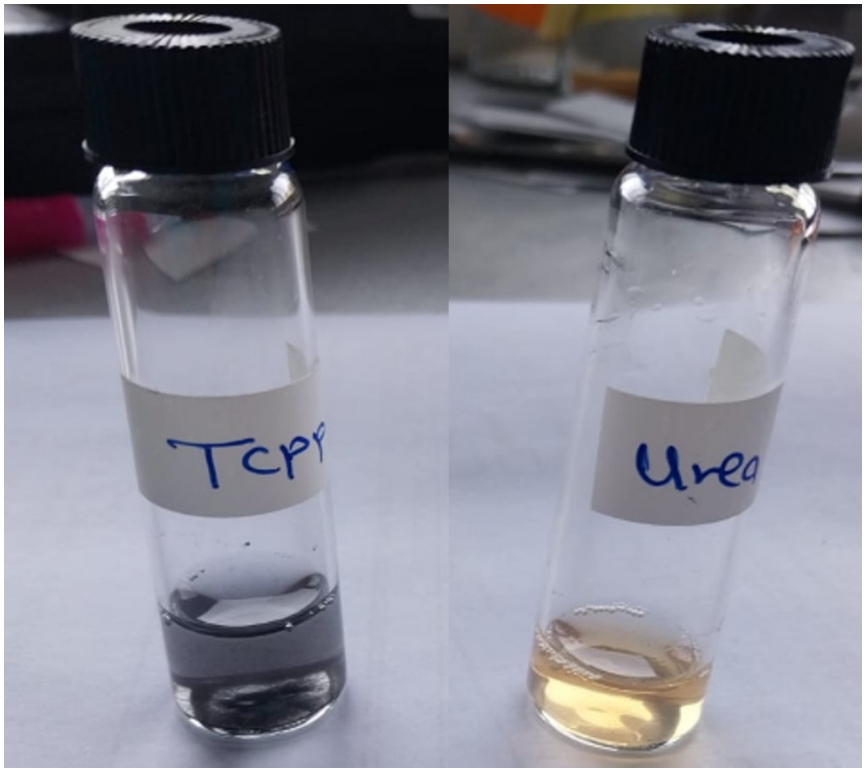

Fig. S6 Comparison between the aqueous solubility of the starting porphyrin molecule (left) and the fabricated porphyrin-based CDs (right).

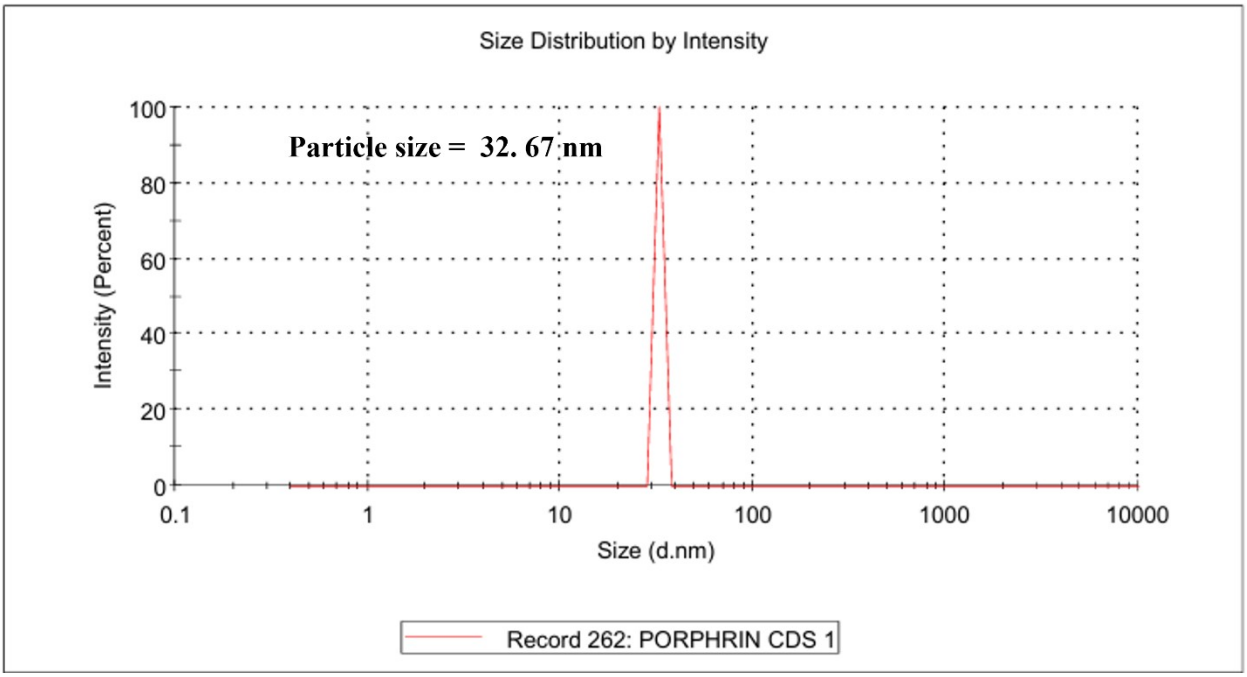

Fig. S7 Size distribution by DLS of the porphyrin-based CDs (1 mg/mL).

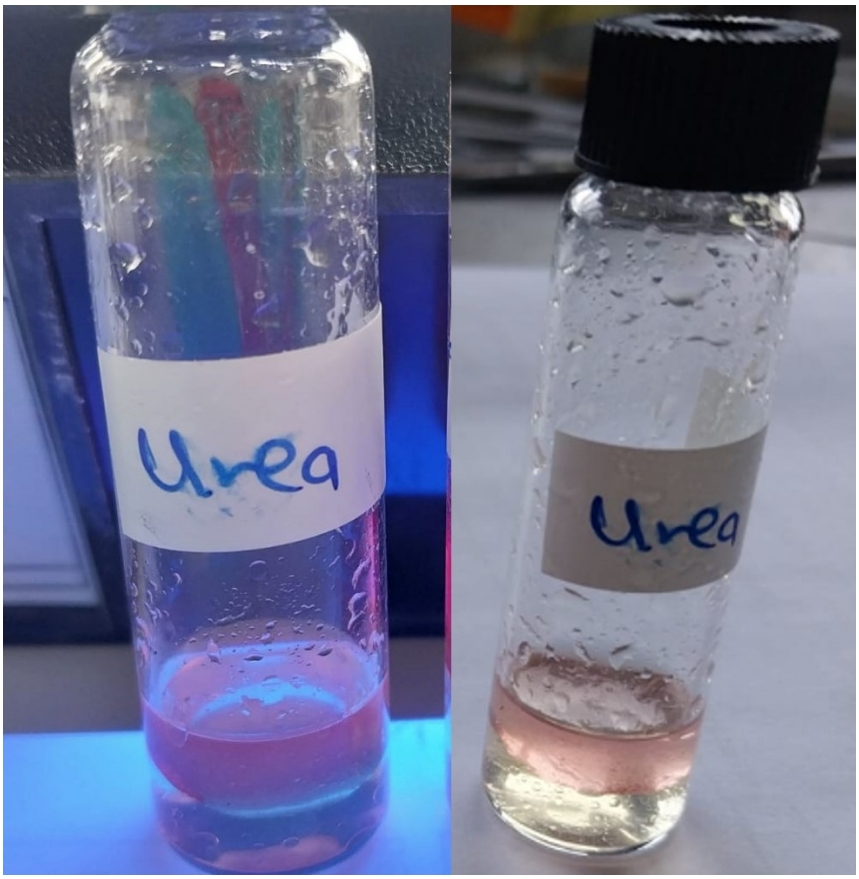

Fig. S8 Photographing of the CDs' distribution between aqueous and organic phases under daylight (right) and UV-lamp at 365 nm (left).

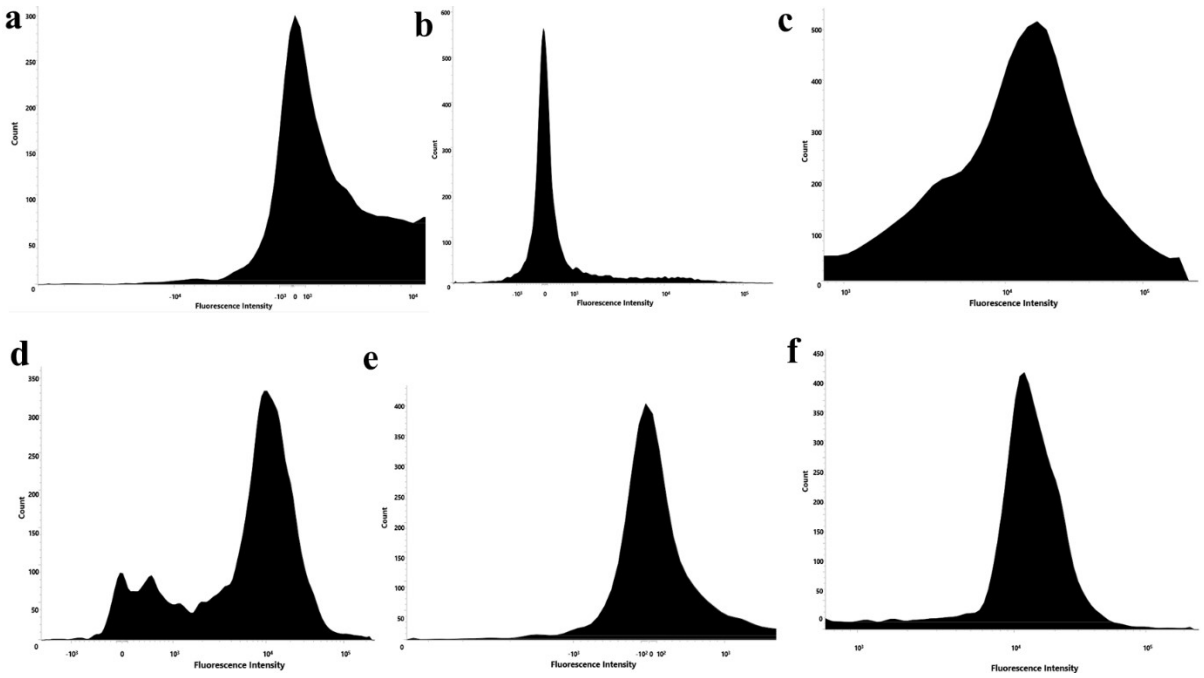

Fig. S9. Intracellular uptake by Flow cytometry after 2 hours of incubation. MCF-7 and MDA-MB-231 cells treated with CDs (a,d), free DOX (b,e), and DOX@CDs complex (c,f) and at concentrations of 250 µg/mL and 260 µg/mL of DOX, respectively.