Electronic Supplementary Information (ESI)

Ultrasmall and photostable nanotheranostic agents based on carbon quantum dots passivated with polyamine-containing organosilane molecules

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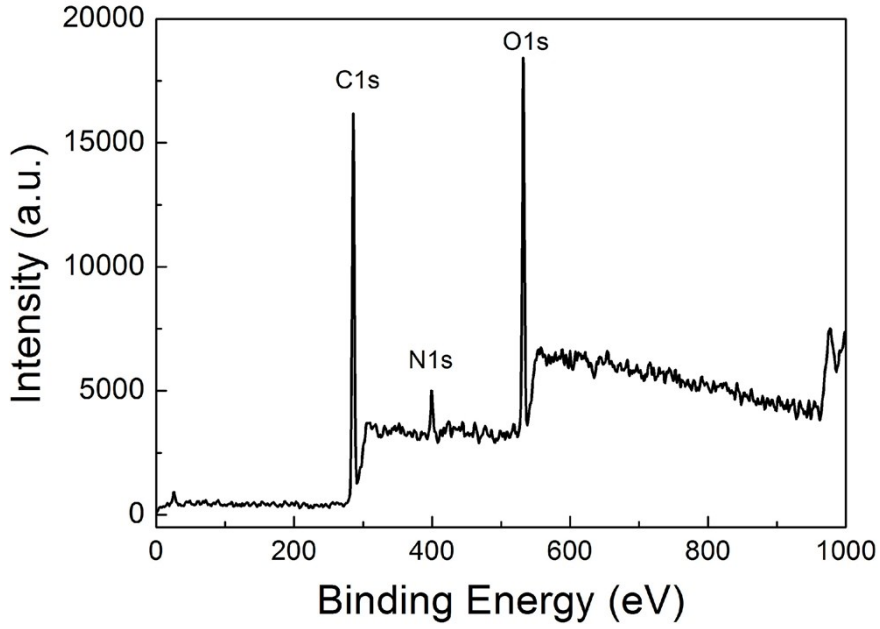

Fig. S1 XPS spectrum of CDs.

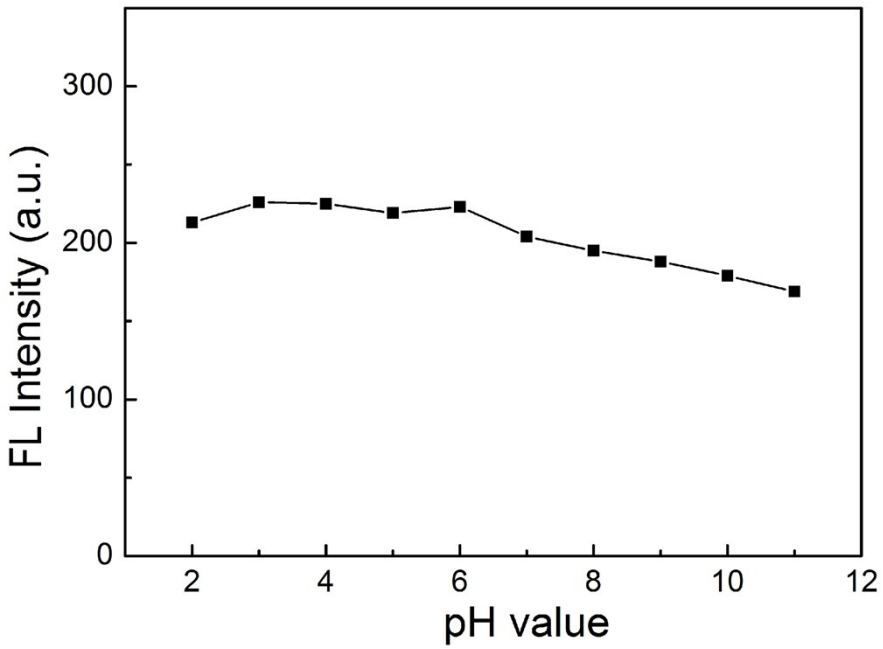

Fig. S2 Change of the fluorescence intensity of CDs in solutions with different pH values.

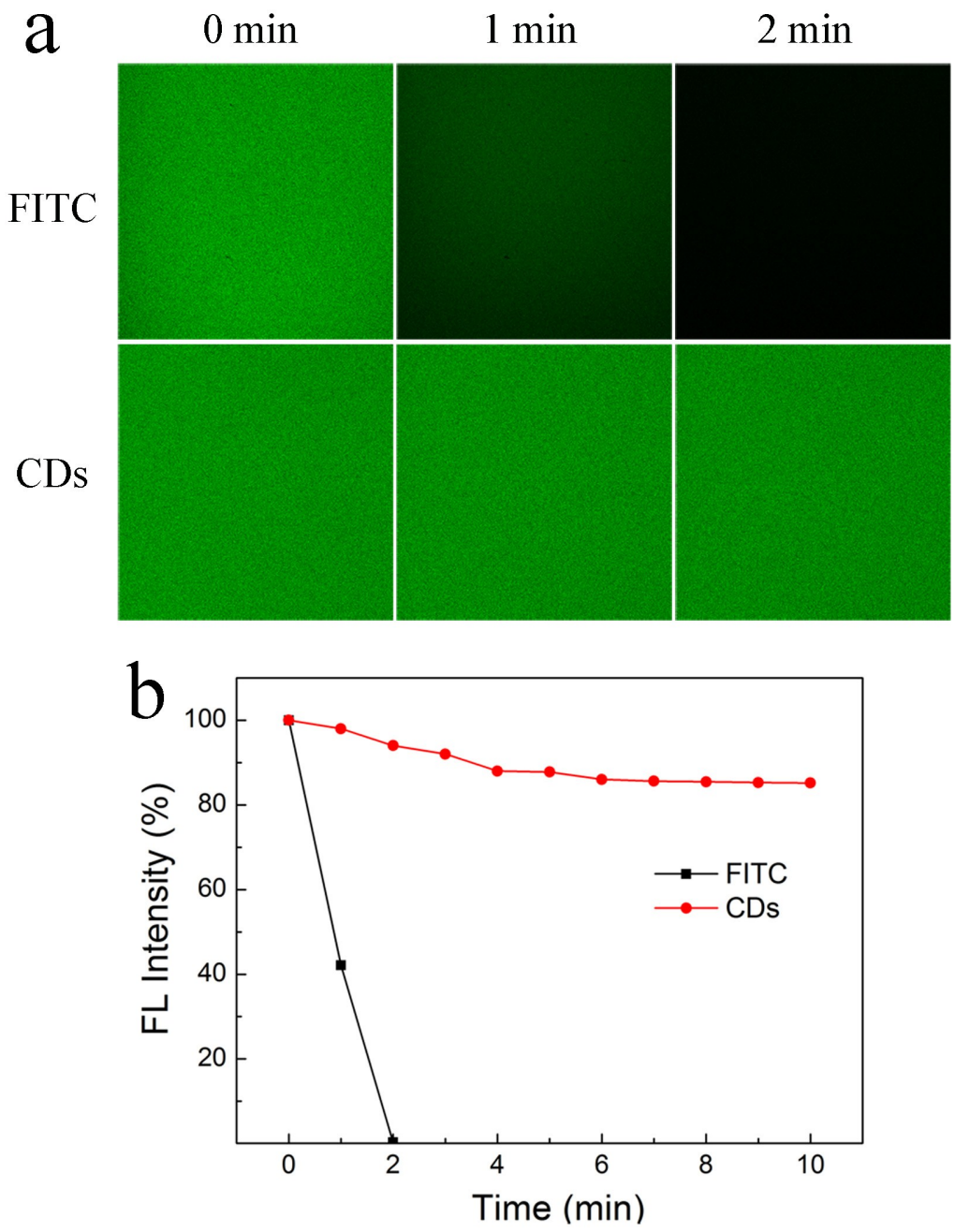

Fig. S3 Photostability comparison between FITC and CDs. (a) The confocal images of FITC and CDs solutions after irradiation using a mercury lamp (20 mW, 450−500 nm) for different time periods. (b) The change of fluorescence (FL) intensity as a function of irradiation time for FITC and CDs.

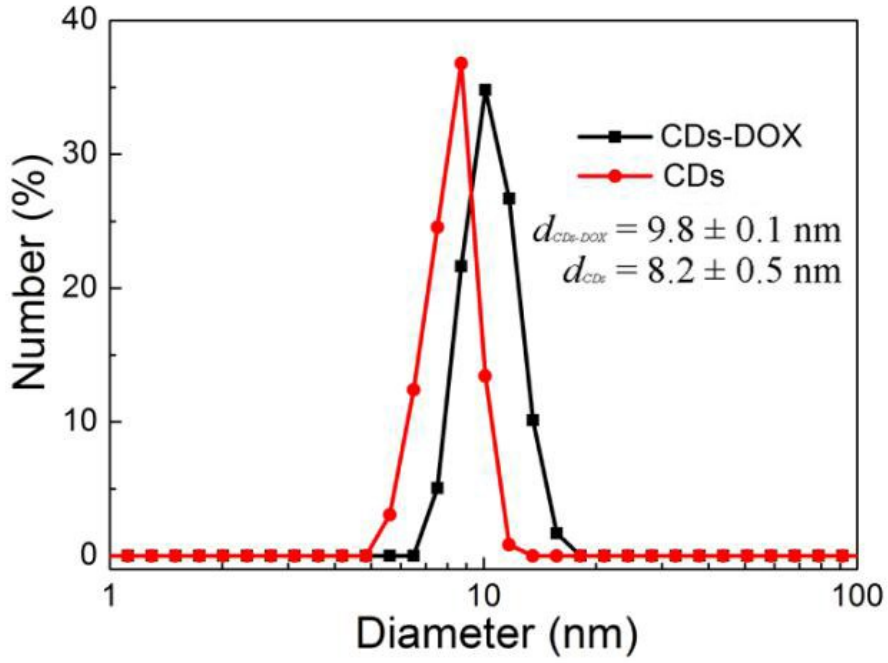

Fig. S4 Dynamic light scattering (DLS) results of CDs and CDs–DOX.

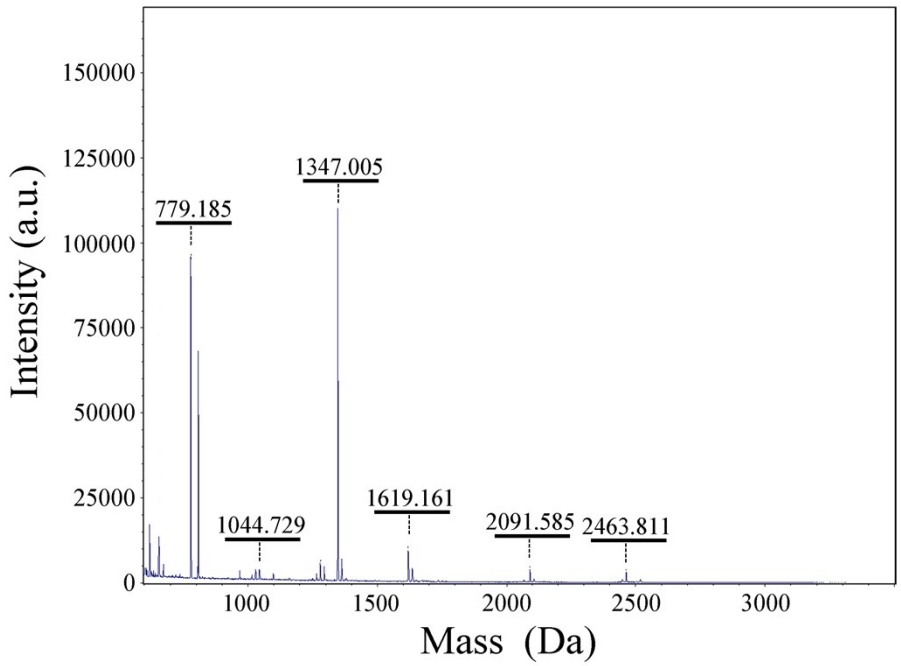

Fig. S5 MADLI-TOF mass spectrum of CDs.

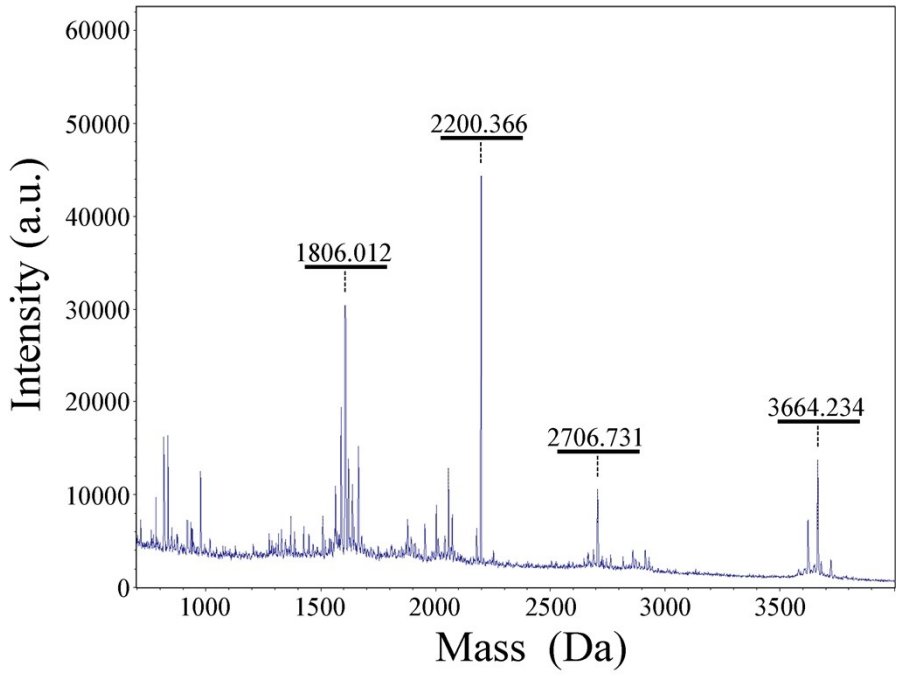

Fig. S6 MADLI-TOF mass spectrum of CDs–DOX.

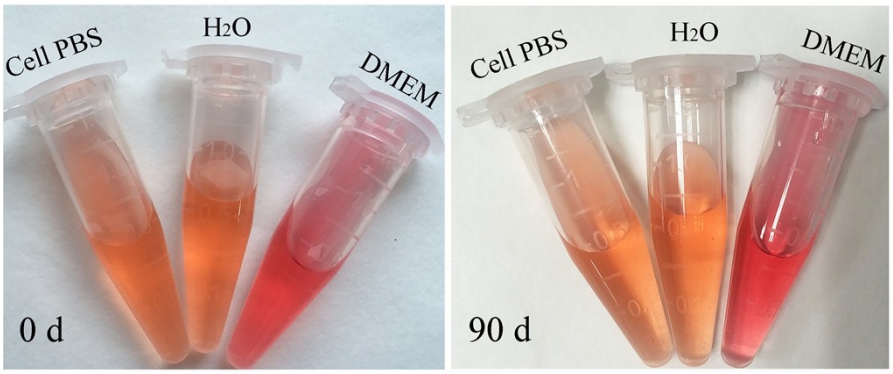

Fig. S7 Photographs of CDs–DOX in different solutions including cell PBS, H_2O and DMEM medium at 0 d (left) and 90 d (right).

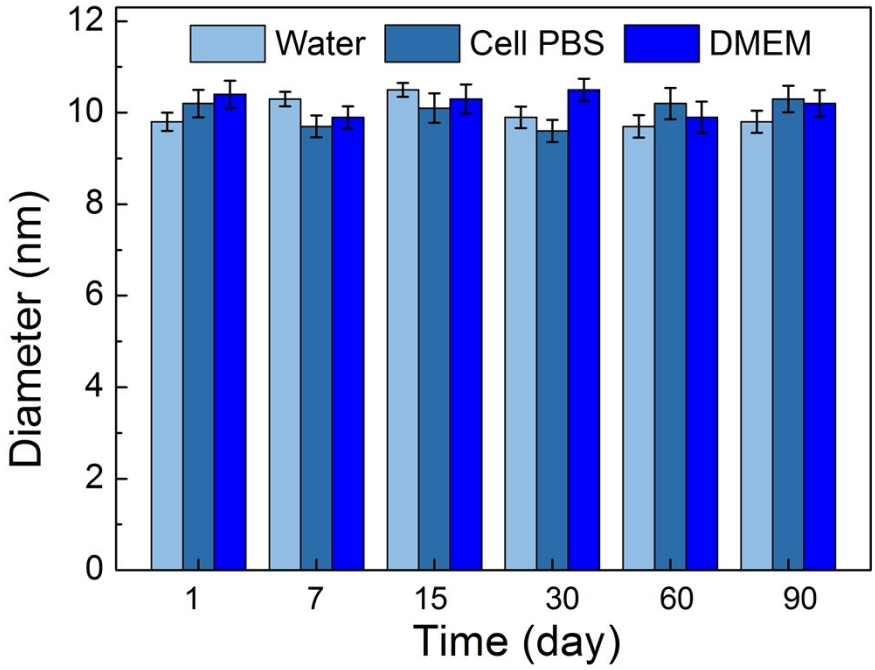

Fig. S8 DLS results of CDs–DOX after storage for different time periods as indicated.

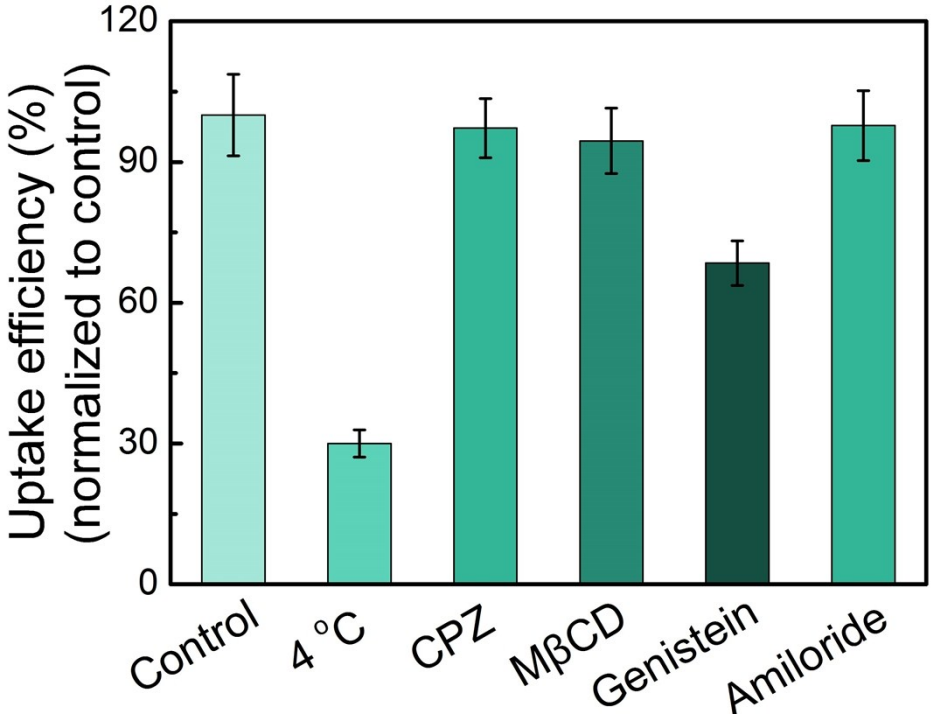

Fig. S9 Flow cytometric analysis of MCF-7 cells pretreated with 4°C, or incubated with CPZ, *β*-CD, genistein, or amiloride for 2 h before the introduction of CDs.

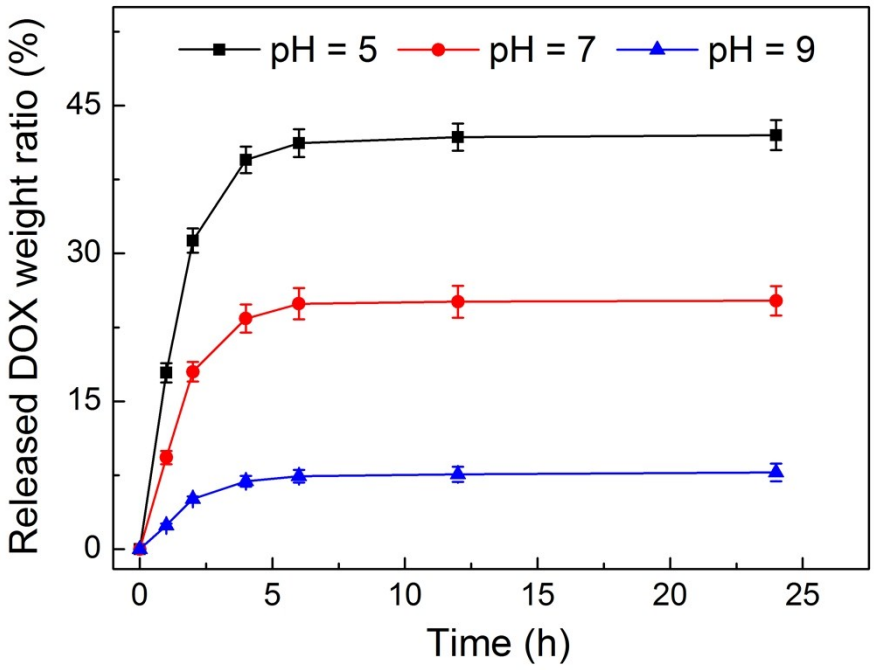

Fig. S10 Release behavior of DOX from CDs–DOX under different pH values (5, 7 and 9).

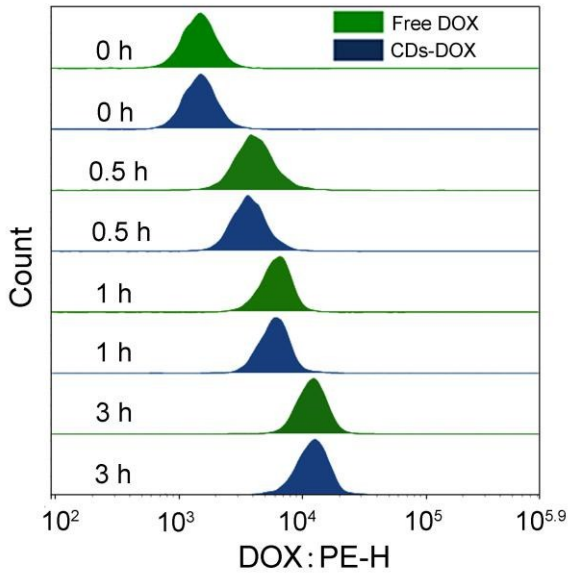

Fig. 11 Flow cytometric analyses of MCF-7 cells treated with CDs–DOX or free DOX (1 μg/mL DOX) for different time periods (0, 0.5, 1 and 3 h).

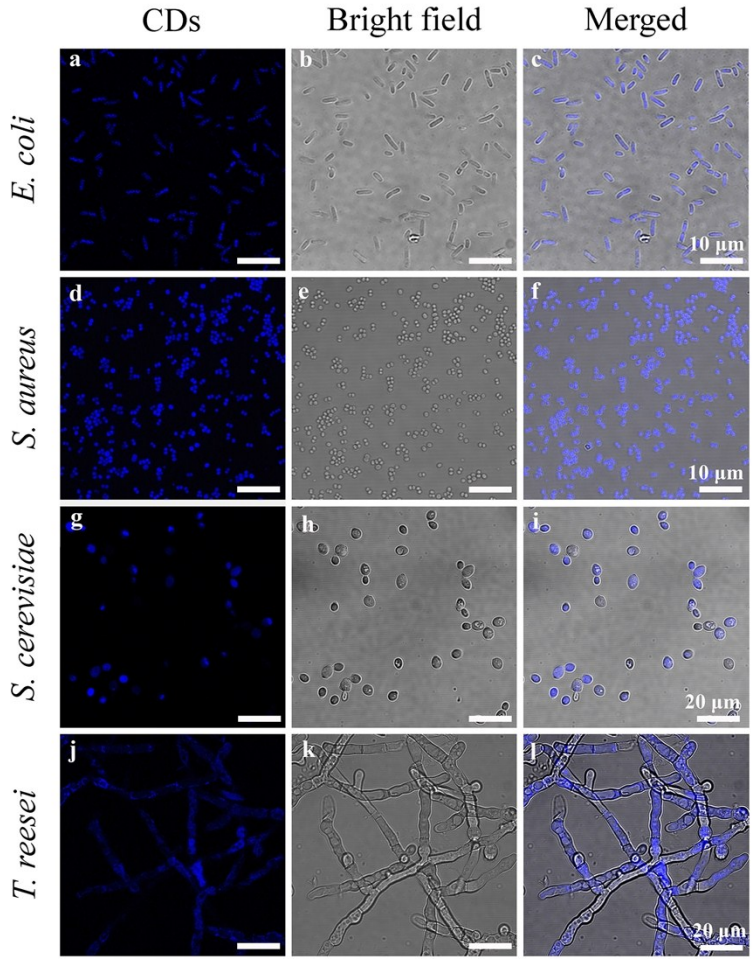

Fig. S12 Confocal images of *E. coli*, *S. aureus*, *S. cerevisiae* and *T. reesei* cells after treatment with 200 μg/mL CDs at 37 °C for 1 h.

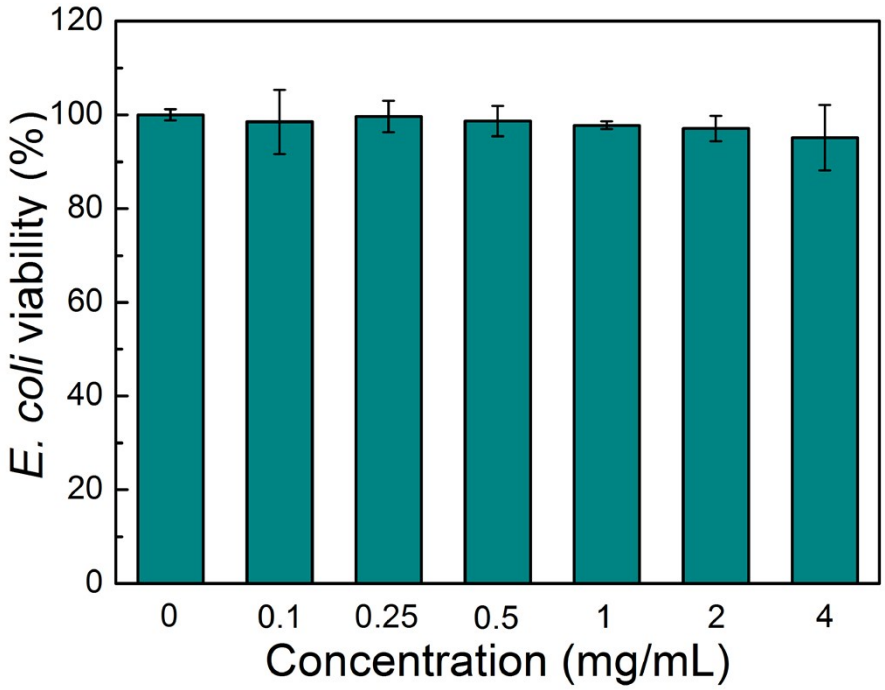

Fig. S13 MTT assay results of *E. coli* cells after incubation with different concentrations of CDs for 2.5 h.