

Fig. S1 (a) The process for the preparation of cisplatin(IV) prodrug (Pt(IV)). (b) FTIR spectra of cisplatin and Pt(IV).

As shown in Fig. S1a, Pt(IV) was prepared as follows: Two axial hydroxyl groups were added to cisplatin with hydrogen peroxide. $(c,c,t-[Pt(NH_3)_2Cl_2(OH)_2])$ as the intermediate product was produced. The intermediate product was then further functionalized with carboxylic acid groups by reacting with succinic anhydride for getting the final product Pt(IV) $(c,c,t-[Pt(NH_3)_2Cl_2(OH)(O_2CCH_2CH_2COOH)])$.

As depicted in Fig. S1b, the broad absorption peak at 3200-3500 cm^{-1} was assigned to the stretching vibration of O-H bond. The absorption peak at 1652 cm^{-1} corresponded to the stretching vibration of C=O bond of carboxyl group. The sharp peak at 1014 cm^{-1} was attributed to the C-O bond of the carboxyl group. The FTIR analysis showed that the preparation of Pt(IV) was rich in carboxyl groups.

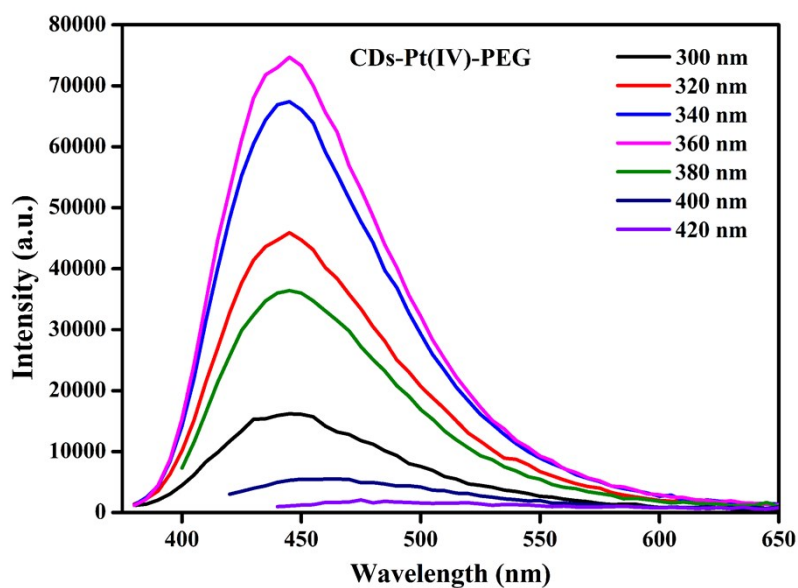


Fig. S2 Fluorescence spectra of CDs-Pt(IV)-PEG under different excitation wavelengths.

As shown in Fig. S2, fluorescence spectra of CDs-Pt(IV)-PEG under different excitation wavelengths showed that the maximum emission intensity was obtained under 360 nm excitation. The fluorescent emission peak of CDs-Pt(IV)-PEG presented redshift from 445 to 475 nm with increase the excitation wavelength. Compared with the fluorescence spectra of CDs, there were some changes in the emission peaks of CDs-Pt(IV)-PEG owing to the functionalization of CDs with the various surface states of cisplatin(IV) and mPEG-CHO.

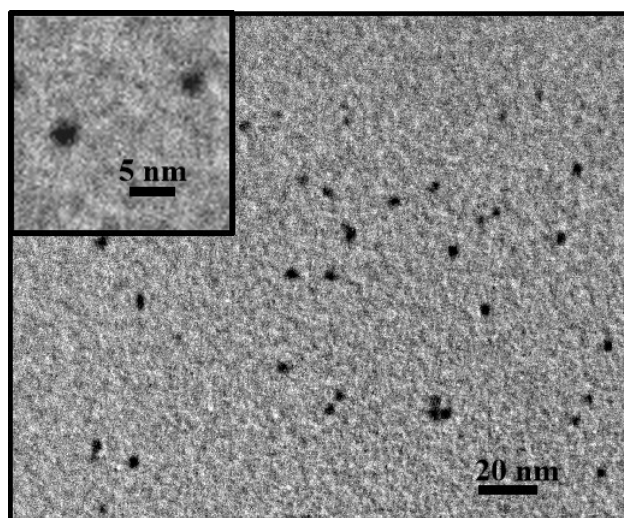


Fig. S3 TEM image of CDs, insert is the magnified TEM image.

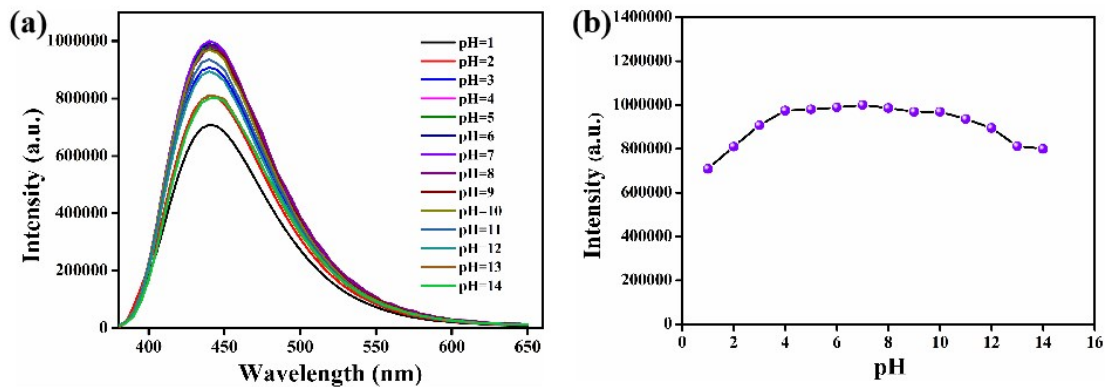


Fig. S4 (a) Fluorescence spectra of CDs versus pH values under excitation at 360 nm. (b) Fluorescence intensity of CDs versus pH values.

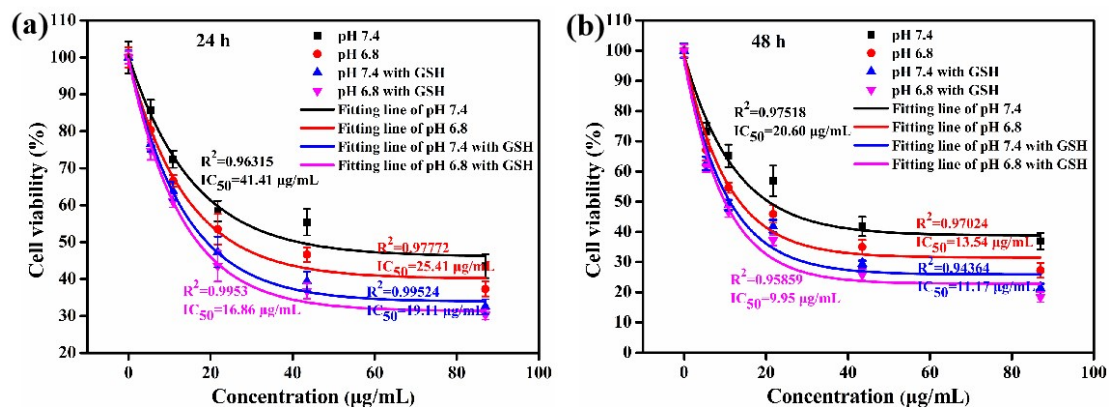


Fig. S5 Fitting curve of cell viability of MGC-803 cells after co-incubation of CDs–Pt(IV)-PEG for (a) 24 h and (b) 48 h at pH 7.4 or pH 6.8 with or without GSH.

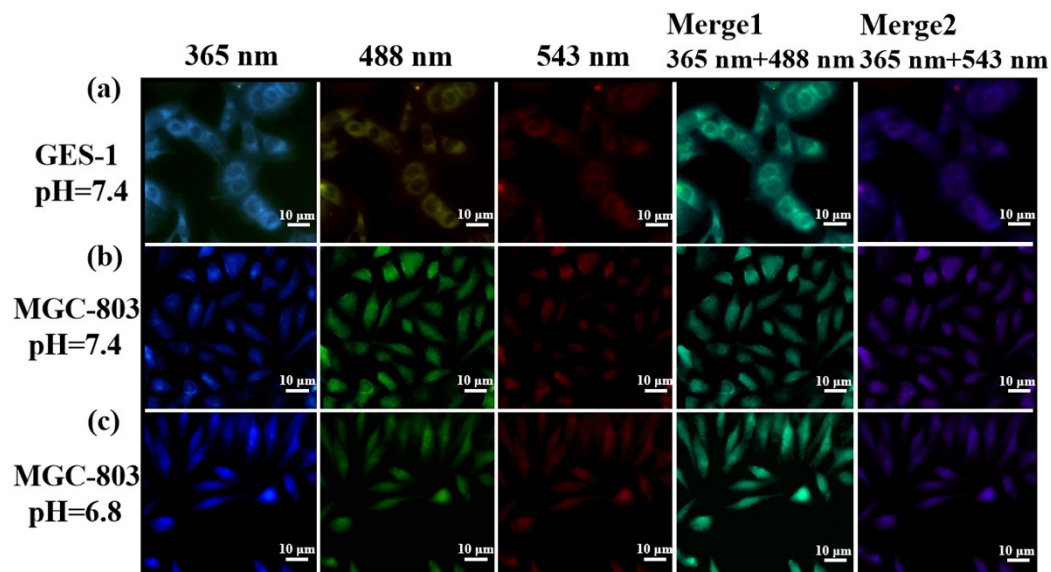


Fig. S6 The fluorescence microscopy images under different excitation wavelengths (365, 488, and 543 nm) and the corresponding merged images. The cells were incubated with CDs-Pt(IV)-PEG for 6 h at different pH values. (a) GES-1 cells at pH 7.4, (b) MGC-803 cells at pH 7.4, and (c) MGC-803 cells at pH 6.8.

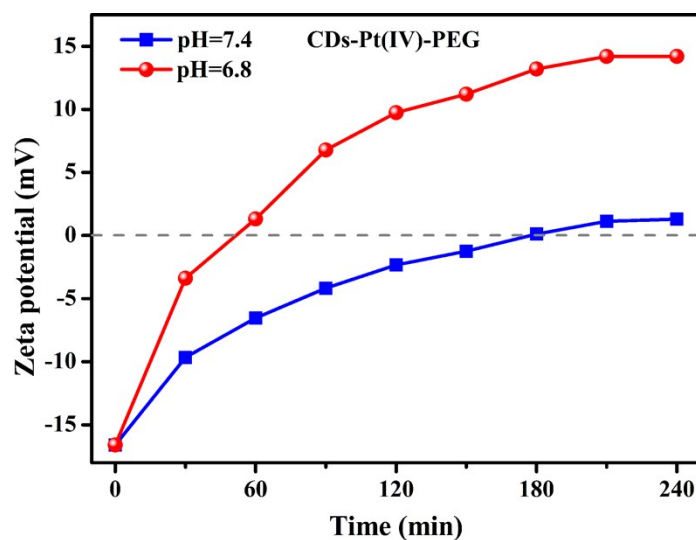


Fig. S7 Zeta potential of CDs-Pt(IV)-PEG in a PBS buffer solution (pH=7.4 or 6.8) for incubation at 37 °C for 4 h.