Supporting Information

A Novel Manganese Dioxide-Based Drug Delivery Strategy via In Situ Coating γ-Polyglutamic Acid/Cisplatin for Intelligent Anticancer Therapy

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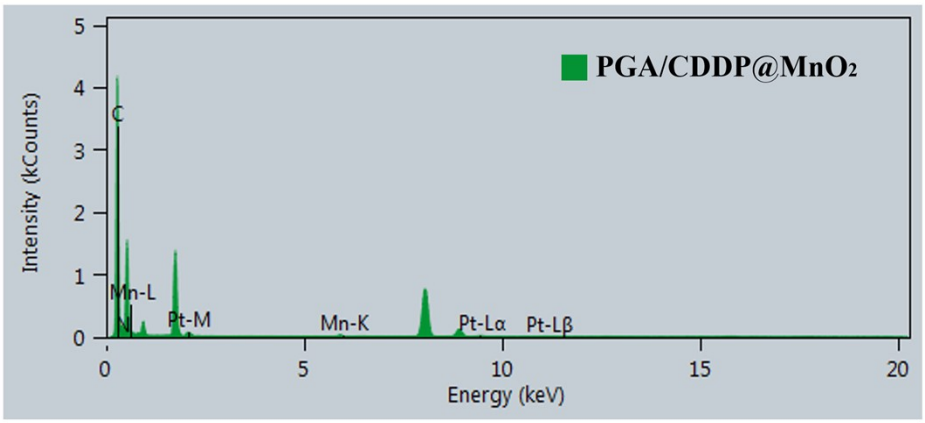
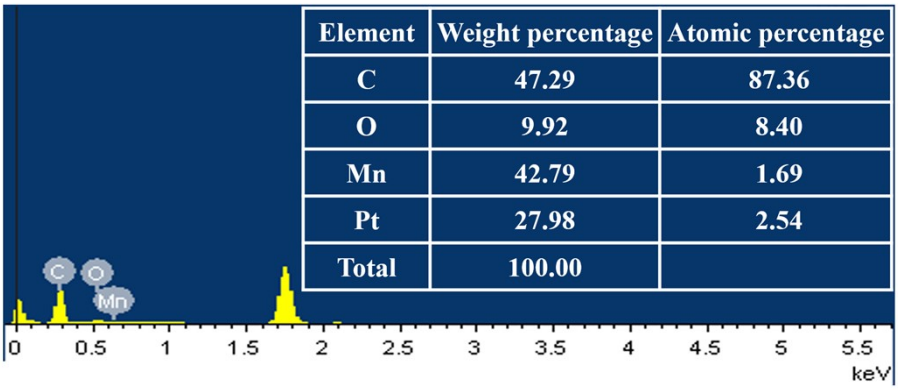


Fig. S1. TEM-energy dispersive X-ray spectroscopy (EDS) of PGA/CDDP@MnO_2 NPs.



Element	Weight percentage	Atomic percentage
C	47.29	87.36
O	9.92	8.40
Mn	42.79	1.69
Pt	27.98	2.54
Total	100.00	

Fig. S2. FESEM-energy dispersive X-ray spectroscopy (EDS) of PGA/CDDP@MnO_2 NPs..

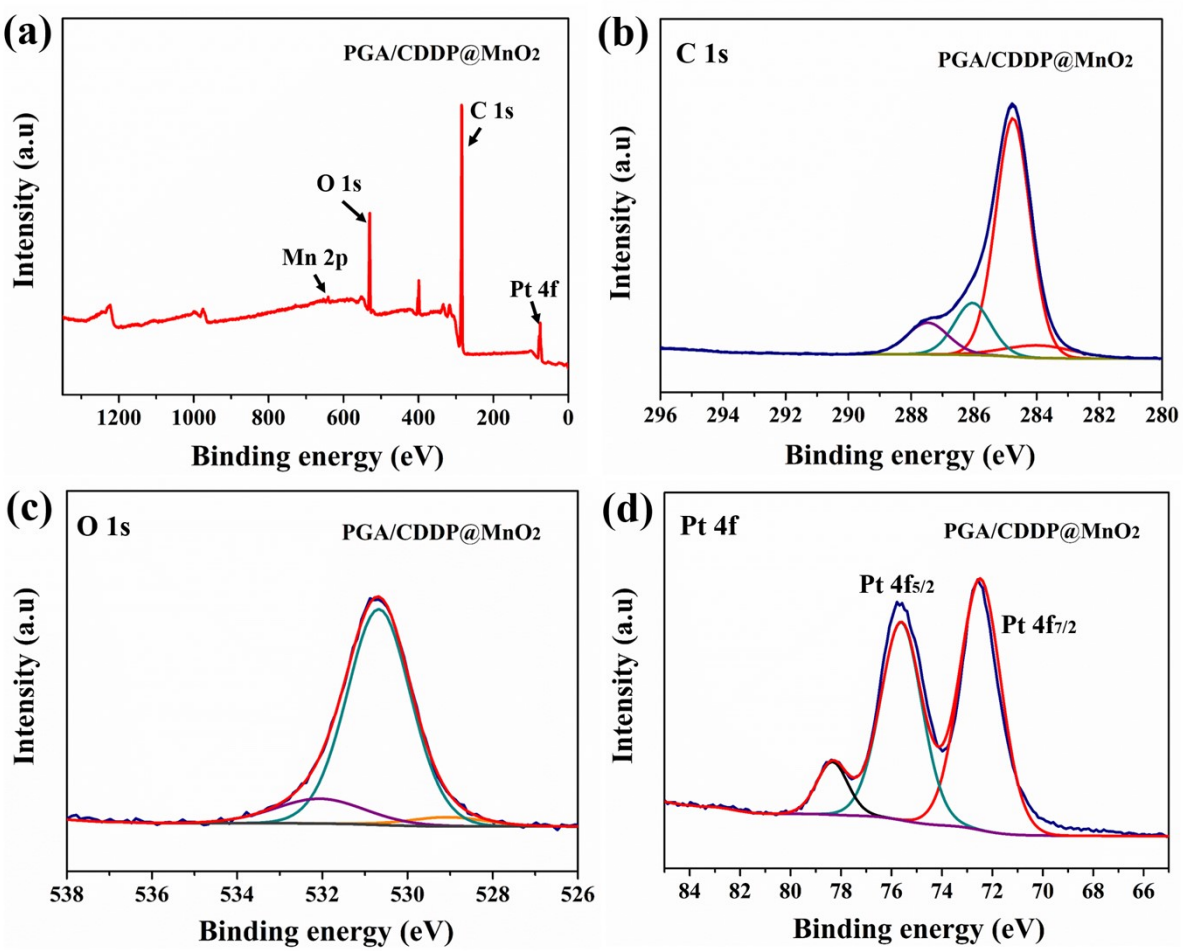


Fig. S3. The wide-scan X-ray photoelectron spectroscopy (XPS) spectra (a), C1s (b), O1s (c), and Pt4f (d) spectra of PGA/CDDP@MnO_2 NPs.

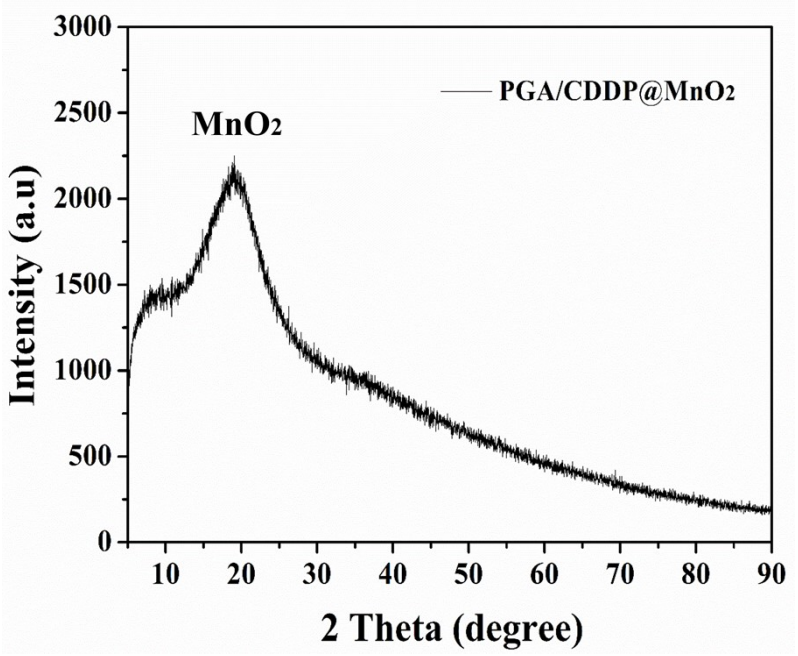


Fig. S4. X-ray diffraction (XRD) spectrum of PGA/CDDP@MnO_2 NPs.

Table S1. Parameters *k*, *n* and R^2 determined by Eq. (1) for the CDDP release from PGA/CDDP@MnO_2 NPs at different release conditions.

Sample	Release condition	*k*	*n*	R^2
PGA/CDDP@MnO_2 NPs	GSH=2 mM	3.63×10^{-7}	0.9703	0.9134
PGA/CDDP@MnO_2 NPs	GSH=5 mM	8.06×10^{-7}	1.0077	0.9653
PGA/CDDP@MnO_2 NPs	GSH=10 mM	8.24×10^{-7}	0.9338	0.6811
PGA/CDDP@MnO_2 NPs	pH 6.5	7.31×10^{-5}	0.5827	0.9908
PGA/CDDP@MnO_2 NPs	pH 4.5	1.10×10^{-8}	1.5131	0.8020
PGA/CDDP@MnO_2 NPs	pH 2.1	4.64×10^{-6}	0.1376	0.9428

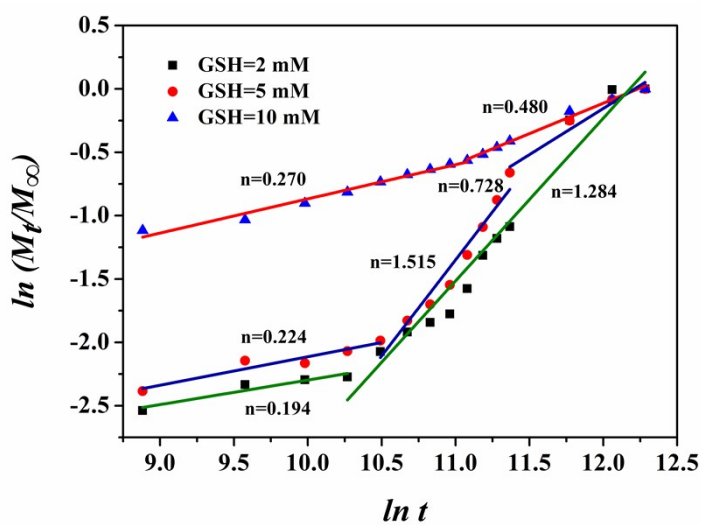


Fig. S5. Plots of $ln(M_t/M_\infty)$ versus *lnt* for the release profiles of PGA/CDDP@MnO_2 NPs under different GSH conditions.

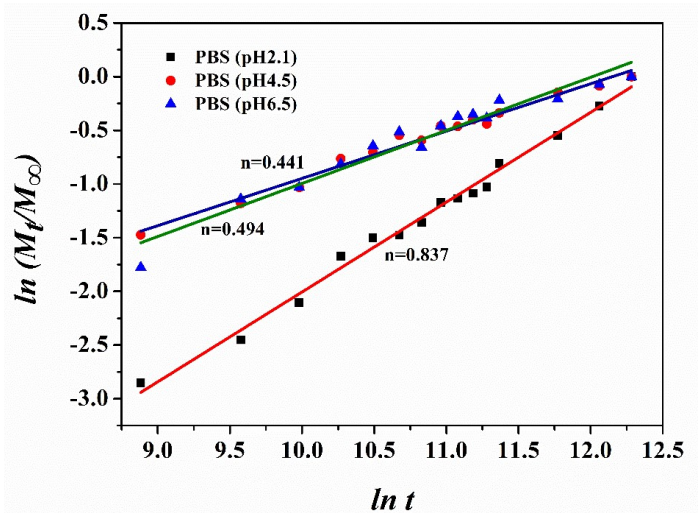


Fig. S6. Plots of $ln(M_t/M_\infty)$ versus *lnt* for the release profiles of PGA/CDDP@MnO_2 NPs under different PBS conditions.

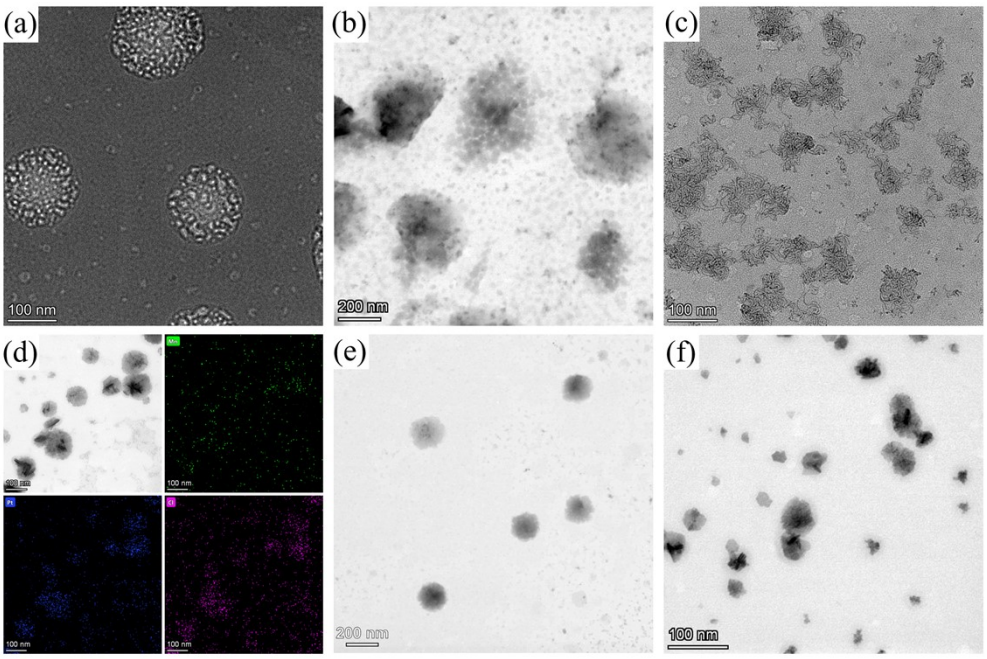


Fig. S7. HR-TEM images of the PGA/CDDP@MnO_2 NPs after degradation (24 h) in GSH medium with the concentration of 2 mM (a), 5 mM (b), and 10 mM (c). HR-TEM image and elemental mapping of PGA/CDDP@MnO_2 NPs after degradation in PBS medium with pH 6.5 (d), pH 4.5 (e), and pH 2.1 (f).

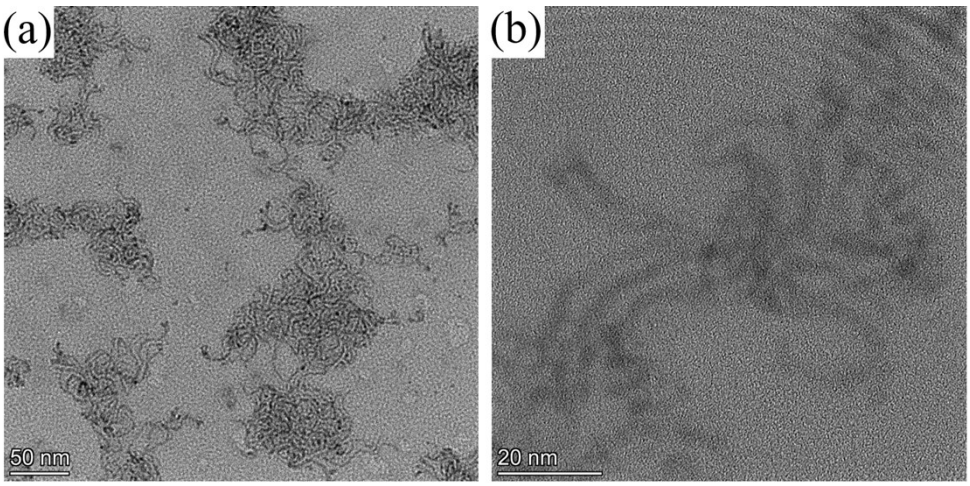


Fig. S8. The high magnification image of PGA/CDDP@MnO_2 NPs after degradation in GSH medium (10 mM) for 24 h (a: scale bar = 50 nm, b: scale bar = 20 nm).