

Supporting information

Lactose targeting mesoporous silica nanoparticles to deliver platinum(IV) prodrug for liver cancer therapy

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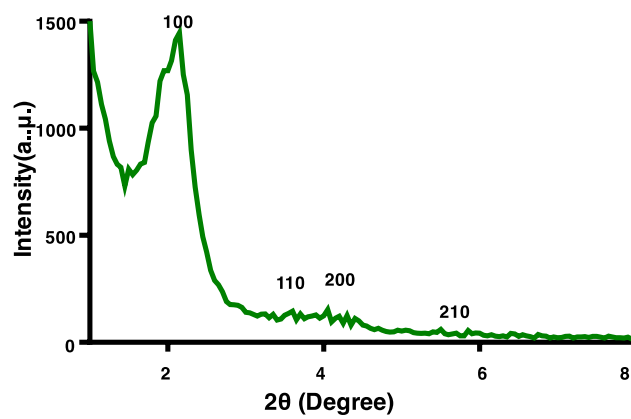


Fig. S1 XRD spectrum of MSN-1.

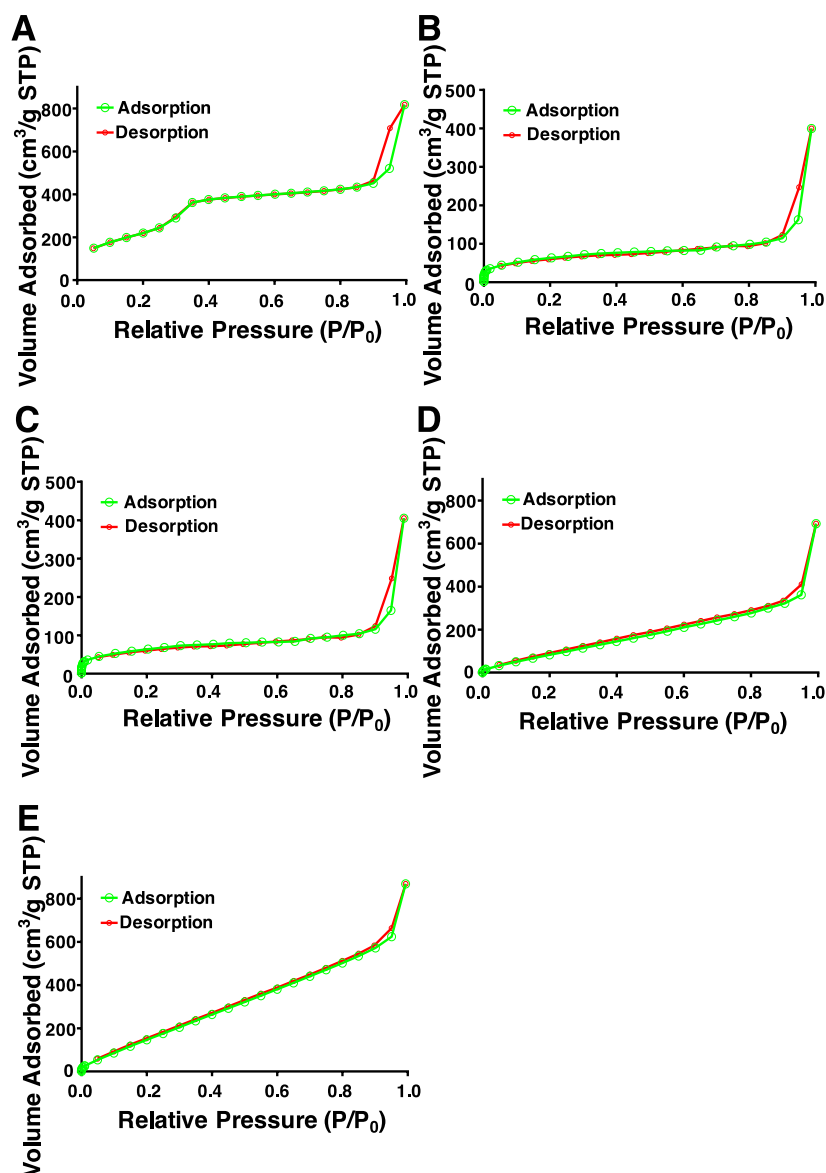


Fig. S2 Nitrogen adsorption–desorption isotherms of (A) MSN-1, (B) MSN-P/LA, (C) MSN-P/LA-Pt, (D) MSN-P and (E) MSN-P-Pt. The specific surface area was 1134 m²/g, 380 m²/g, 225 m²/g, 836 m²/g and 449 m²/g, respectively.

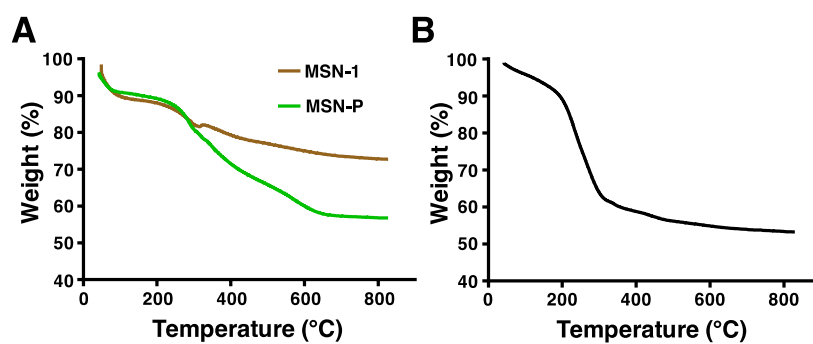


Fig. S3 TGA curves of (A) MSN-1 and MSN-P under air condition and (B) unmodified MSN under N₂ atmosphere.

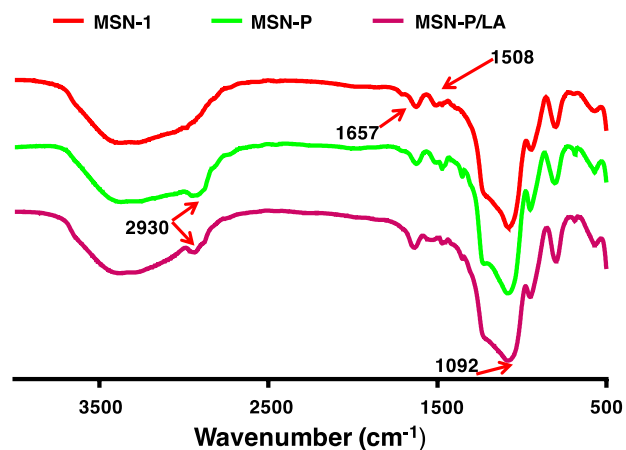


Fig. S4 FT-IR spectra of MSN-1, MSN-P and MSN-P/LA. The peaks at 962 cm⁻¹ and 1092 cm⁻¹ were ascribed to the stretching vibration of C–O and siloxane (–Si–O–Si–). After modification with amino, new peaks appeared at 1508 cm⁻¹ and 1657 cm⁻¹ were ascribed to the bending vibration of –NH₂. After modification with mPEG_{2k}, new peak belonging to the stretching vibration of mPEG_{2k} was appeared at 2930 cm⁻¹. After conjugation of LA, the peaks of LA at 1657 cm⁻¹ and 1536 cm⁻¹ were overlapped with those of MSN-1.

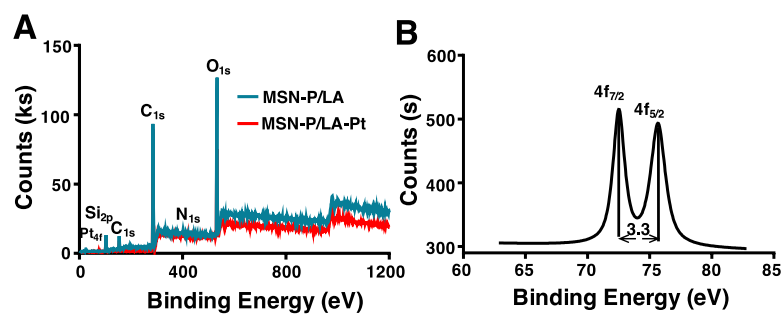


Fig. S5 (A) Wide scan XPS spectra of MSN-P/LA and MSN-P/LA-Pt; (B) Deconvoluted XPS spectrum of Pt_{4f} .

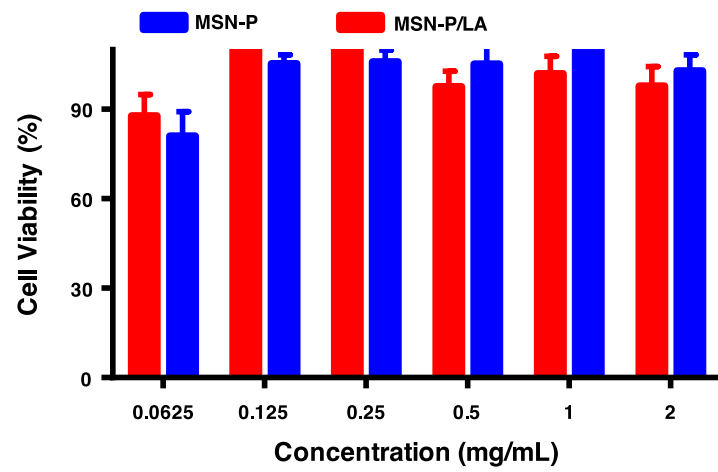


Fig. S6 Viability of L929 cells after treated with different concentration of MSN-P and MSN-P/LA for 48 h.

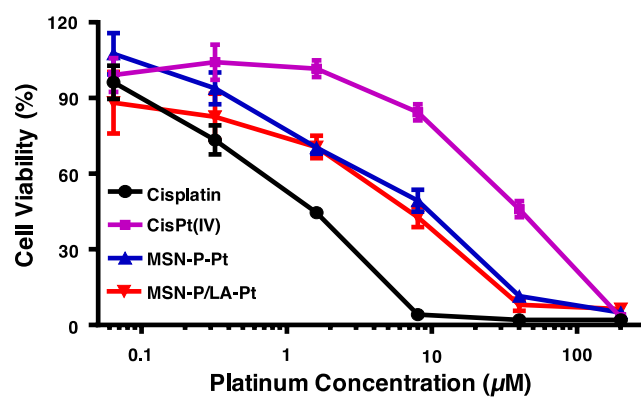


Fig. S7 Cytotoxicity curves of cisplatin, CisPt(IV), MSN-P-Pt and MSN-P/LA-Pt nanoparticles against HepG-2 cells for 72 h.